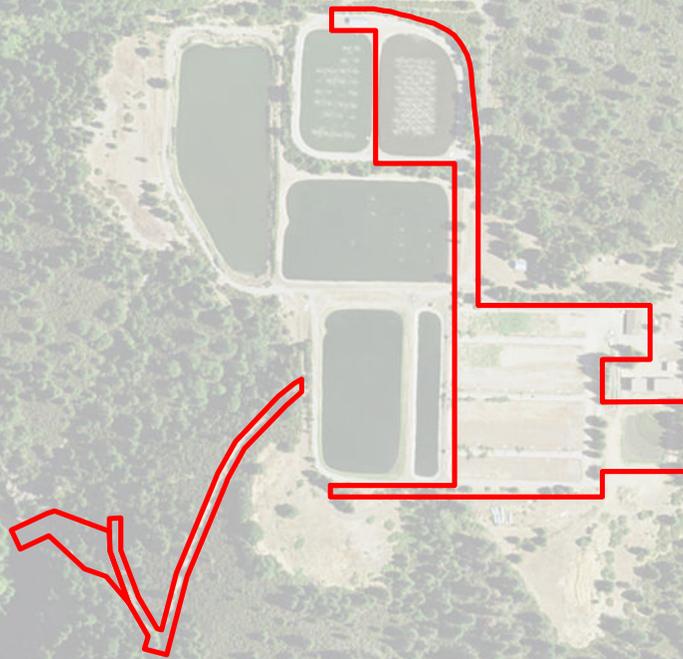


PROPOSED MITIGATED NEGATIVE DECLARATION and INITIAL STUDY

**State-Mandated Wastewater Treatment and Outfall Improvement Project
Mt. Shasta, California**



Prepared for:

City of Mt. Shasta

November 2015

32-21

ENPLAN

PROPOSED MITIGATED NEGATIVE DECLARATION

LEAD AGENCY: City of Mt. Shasta
305 N. Mt. Shasta Boulevard
Mt. Shasta, CA 96067

PROJECT: The proposed project entails improvements to the Mt. Shasta Wastewater Treatment Plant (WWTP) and Sacramento River outfall. These improvements are necessary to comply with Central Valley Regional Water Quality Control Board requirements for wastewater discharge. The proposed improvements would be located within the footprint of the existing facilities and would include a replacement treatment plant and a new diffuser at the river outfall.

LOCATION: The WWTP is located at the southern terminus of Grant Road, southeast of the Mount Shasta Resort Golf Course, just south of the City of Mt. Shasta, Siskiyou County, California. See Figure 1 of the Initial Study.

**PROJECT
PROPONENT:** City of Mt. Shasta

PROJECT NAME: State-Mandated Wastewater Treatment and Outfall Improvement Project

FINDINGS

As documented in the Initial Study, project implementation could result in possible effects on special-status wildlife species, encroachment into the Sacramento River, temporary loss of riparian habitat, disturbance of nesting migratory birds, disturbance of subsurface cultural resources, increased soil erosion and water quality degradation, increased air emissions, and temporarily increased noise 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 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.

Signature

Date

Name

Title

INITIAL STUDY

**CITY OF MT. SHASTA
STATE-MANDATED WASTEWATER TREATMENT
AND OUTFALL IMPROVEMENT PROJECT
SISKIYOU COUNTY, CALIFORNIA**

November 2015

Prepared for:
**City of Mt. Shasta
305 N. Mt. Shasta Boulevard
Mt. Shasta, CA 96067**

Prepared by:
**ENPLAN
3179 Bechelli Lane, Suite 100
Redding, CA 96002
(530) 221-0440**

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- California Natural Diversity Database RareFind Query Summary
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- List of Vascular Plant Species Observed

I. THE PROJECT

A. Introduction

The City of Mt. Shasta (City) is proposing to improve the treatment and discharge capabilities of the Mt. Shasta Wastewater Treatment Plant (WWTP) in order to comply with Central Valley Regional Water Quality Control Board (Central Valley RWQCB) requirements. The City owns and operates the WWTP, which provides service to the City and adjacent areas. The WWTP serves approximately 1,777 connections, consisting mainly of single-family residential and commercial uses. The WWTP is located at the southern terminus of Grant Road, just south of the City limits and west of Interstate 5, in a semi-rural area of Siskiyou County, California (Figure 1). The ±10-acre project site is located at and upslope of the Sacramento River, east of Lake Siskiyou, and just south of the Mount Shasta Resort Golf Course. The service area boundary for the WWTP encompasses approximately 11,714 acres, as shown in Figure 2.

Originally constructed in 1976, the WWTP was designed for average dry-weather flows (ADWF) of 0.7 million-gallons-per-day (MGD) and peak wet-weather flows (PWWF) of 2.8 MGD. With subsequent improvements, the dry-weather design capacity is now 0.75 MGD and the wet-weather capacity is 3.56 MGD. The WWTP currently manages an ADWF of 0.7 MGD. This wastewater flow is equal to approximately 2,700 equivalent dwelling units (EDUs)¹. The current treatment methodology involves processing influent through a series of six lagoons followed by clarification, filtration, and disinfection. Treated effluent is discharged at one of three locations: the Sacramento River, Mount Shasta Resort Golf Course, and a leach field located east of the Interstate 5/Highway 89 interchange. Sludge is occasionally removed from the lagoons, laid out to dry, and taken to a landfill for disposal. The following is an abbreviated step-by-step narrative of the current treatment and discharge processes.

Collection

A gravity collection system, consisting of collector and interceptor lines, transfers wastewater from sewer connections within the service area boundary to the WWTP.

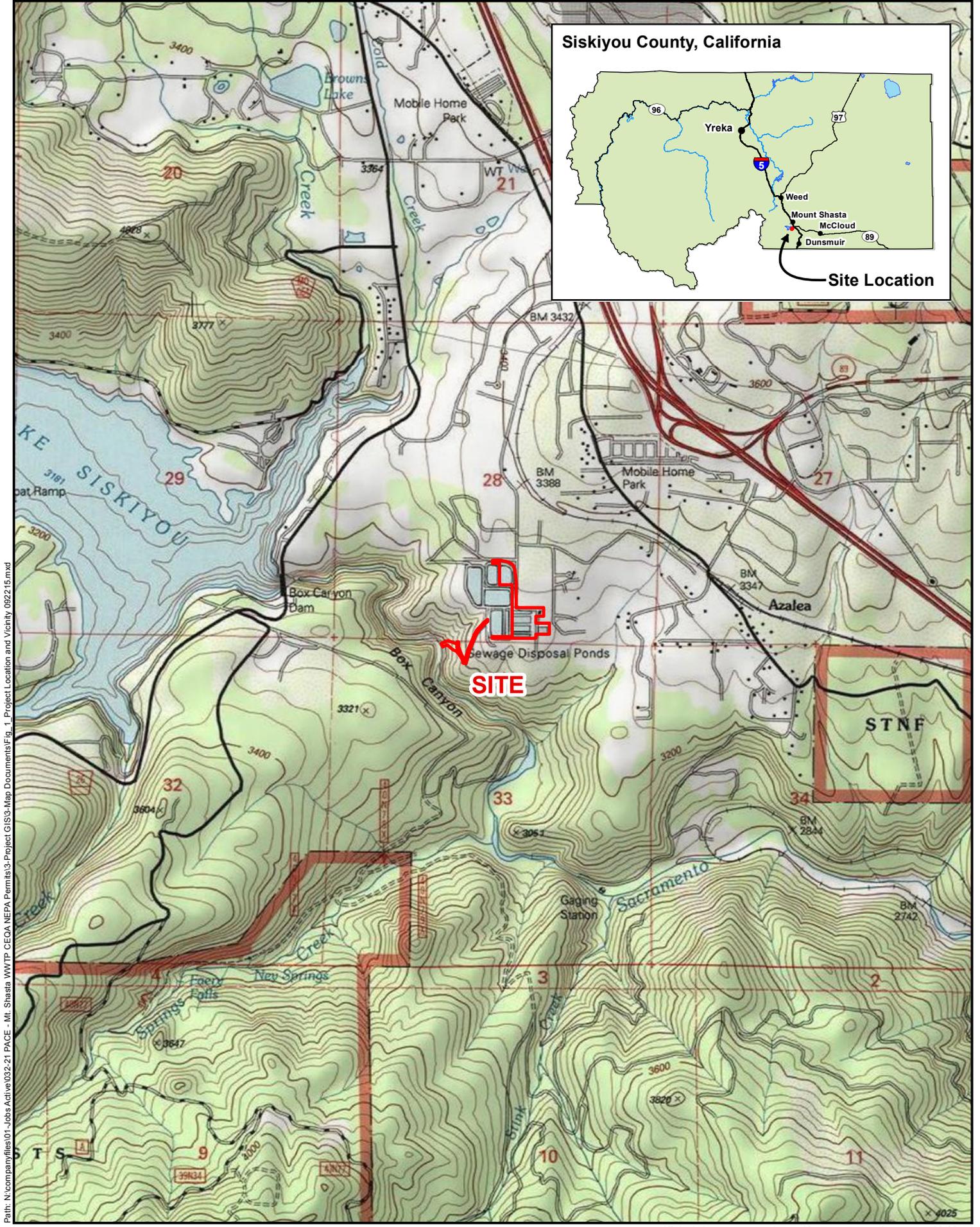
Headworks

Influent wastewater first enters the headworks, where untreatable debris is removed prior to biological treatment. The headworks consist of a coarse bar screen, comminuter, and Parshall flume for flow measurement.

Biological Treatment

Screened wastewater enters an unlined lagoon system for biological treatment. The lagoon system consists of three aerated lagoons and two un-aerated lagoons. A sixth ballast lagoon is used during high-flow periods to store wastewater in excess of the treatment lagoons' capacity. Wastewater stored within the ballast lagoon is metered back into the treatment lagoons after high-flow periods have passed. As wastewater progresses through the series of lagoons, organics and suspended solids are removed through a combination of aerobic and anaerobic processes, as well as aeration.

¹ Equivalent dwelling units are based on City of Mt. Shasta sewer service billing records for Fiscal Year 2012-2013.



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Figure 1
Project Location and Vicinity

All depictions are approximate. Not a survey product. 09.22.15



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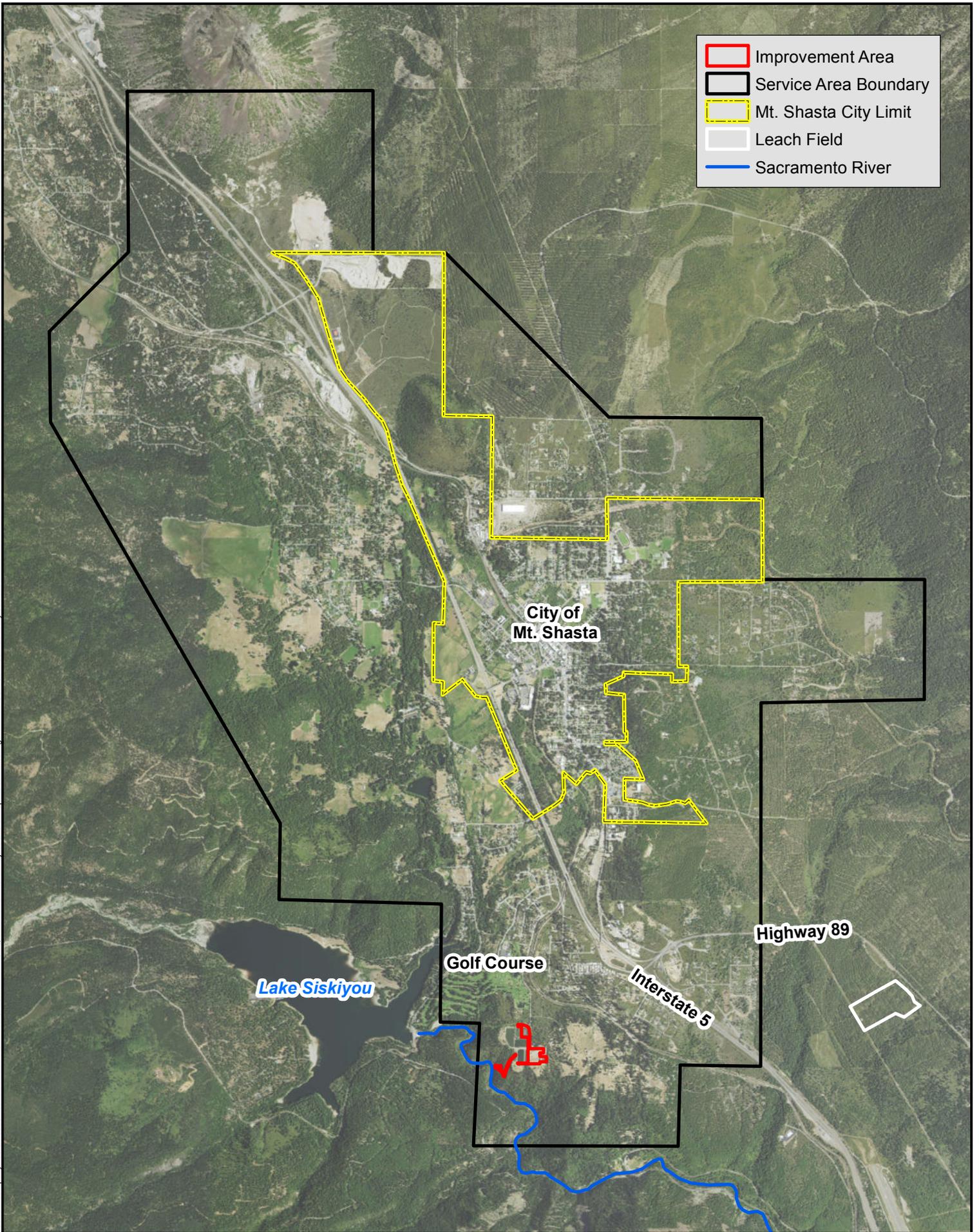


Figure 2

All depictions are approximate. Not a survey product. 09.22.15



WWTP Service Area Boundary

Clarification, Filtration, and Disinfection

During the spring, summer, and fall months, lagoon effluent is pumped to a dissolved air flotation thickener that polishes and clarifies water prior to filtration. Polished water flows into a rapid sand filtration system to remove suspended solids. Filtered effluent is then disinfected with gaseous chlorine and pumped to the golf course for irrigation as tertiary effluent. When effluent limits cannot be met, wastewater is pumped to the leach field located east of Interstate 5 and south of Highway 89.

During the winter, early spring, and late fall months, lagoon effluent is disinfected with gaseous chlorine and discharged to the Sacramento River. When effluent limits cannot be met, wastewater is discharged to the leach field.

Sludge Processing and Disposal

The existing treatment facility produces sludge as a result of two treatment steps. Sludge that has settled to the bottom of the treatment lagoons is infrequently removed and dried on top of the old intermittent sand filters, located west of the southwestern-most lagoon. Once enough water content has evaporated from the sludge, reducing the overall weight of the material, the sludge is tested, and then hauled off-site for disposal at Dry Creek Landfill in southern Oregon. Additionally, sludge generated from the dissolved air flotation thickener and rapid sand filtration system is conveyed to and stored in an unlined earthen basin, or “backwash pond”, just west of the old intermittent sand filters. The volume of material discharged to the backwash pond is relatively small, and the pond has not yet needed cleaning; when removal is needed, the same process would be used as for the lagoon sludge.

Treated Effluent Discharge

Under its National Pollution Discharge Elimination System (NPDES) permit, the City is allowed to discharge treated effluent at three locations: the Sacramento River, Mount Shasta Resort Golf Course, and leach field. The selected discharge location is determined by time of year, effluent quality, Sacramento River flow rate, and economics. Discharge to the leach field is the least-desired option because it involves costly pumping of the treated effluent. Discharge must also be pumped to the golf course, but the elevation change is less and costs are borne, in part, by the golf course. Discharge to the Sacramento River occurs via gravity flow, which is most cost-effective.

There are three distinct time periods that dictate to which of the three locations effluent can be discharged: the “recreation season” (June 15 to September 15), the “non-recreation season” (November 16 to April 14), and during “extended periods” (April 15 to June 14, and September 16 to November 15). During the recreation season” river flows are relatively low, recreationists are likely to be using the river, and irrigation at the golf course is needed; therefore, discharge of treated effluent at the golf course is the preferred option. If effluent quality standards cannot be met during the recreation season, or if irrigation water is not needed at the golf course, treated effluent is pumped to the leach field. During the non-recreation season, when recreationists do not typically use the river and river flows are moderate, treated effluent is discharged to the Sacramento River. However, if river flows exceed 400 cubic feet per second (CFS), kayakers may use the Box Canyon reach of the river, so discharge is allowed only if a higher standard of treatment is met. The WWTP is allowed extended periods of discharge to the Sacramento River in the spring and fall, provided that a higher quality of effluent is produced. If a higher quality effluent cannot be achieved, the effluent is discharged to the leach field.

As mandated by the NPDES permit, during the non-recreation season and extended periods when discharged to the Sacramento River is allowed, specific standards apply:

- Non-recreation season (November 16 to April 14): Discharge must meet or exceed a 20 to 1 dilution ratio of river water to effluent, and a maximum average dry weather flow of 0.8 MGD may be discharged; however, if the river flow exceeds 400 CFS—i.e., kayakers are more likely to be present—higher effluent limits are required. The stricter standard requires that the effluent be oxidized, coagulated, filtered, and adequately disinfected pursuant to the California Department of Public Health, Title 22 Disinfection Requirements, or equivalent.
- Extended periods (April 15 to June 14, and September 16 to November 15): As with the non-recreation season, discharge must meet or exceed a 20 to 1 dilution ratio of river water to effluent, and a maximum average dry weather flow of 0.8 MGD may be discharged. However, all effluent to be discharged must be oxidized, coagulated, filtered, and adequately disinfected pursuant to the California Department of Public Health, Title 22 Disinfection Requirements, or equivalent.

Discharge to the Sacramento River is provided through a partially submerged diffuser located at the base of Box Canyon, approximately 380 feet below the elevation of the treatment facility. Treated effluent is discharged from the treatment facility through a combination of 15-inch and 10-inch ductile iron pipeline to an energy dissipater located approximately 20 feet above the river. The energy dissipater consists of an 8-foot diameter corrugated galvanized tank filled with 12-inch minimum diameter rocks. The pipeline from the energy dissipater to the diffuser is a 12-inch-diameter welded steel pipe. A five-foot-long diffuser pipe extends from the canyon wall into the river. The diffuser consists of a capped 12-inch diameter pipe with 3-inch diameter ports at 12 inches on center on each side and along the bottom for a total of 15 ports. See photo below.



View looking northwest at outfall pipeline and river diffuser, which extends down from the energy dissipater tank.

B. Project Need and Objectives

Improvements to the WWTP and Sacramento River outfall are needed to: (1) meet new Central Valley RWQCB treatment and discharge requirements and (2) increase the wet weather treatment capacity of the facility. These needs are discussed in detail below.

1. State-Mandated Treatment and Discharge Requirements

On October 4, 2012, the Central Valley RWQCB adopted Waste Discharge Requirement Order No. R5-2012-0086 for the WWTP and concurrently issued Time Schedule Order No. R5-2012-0087. The requirements include limitations and provisions for wastewater discharge, some of which the WWTP cannot meet without improvements to the treatment and discharge facilities. Per the Time Schedule Order, the treatment and discharge facilities must be upgraded to meet the new standards no later than November 2017.

The following provides an overview of the wastewater treatment deficiencies, and structural and operational issues associated with the WWTP. Additional detail is provided in the 2015 *Draft Preliminary Engineering Report and Feasibility Study* (Feasibility Study) and the 2013 *Outfall Line and Diffuser Repair Work Plan*, which were prepared by PACE Engineering, Inc.

New Discharge Requirements.

- The nitrogen removal process of the treatment plant must be improved to meet the more stringent ammonia limit in the NPDES permit, as well as new 2013 ammonia criteria. The current nitrogen removal process utilizes a lagoon system that does not adequately remove nitrogen; this is due partially to the decomposition of organic material that occurs in all of the lagoons.
- The treatment process must be improved to consistently remove other constituents, such as copper and zinc, as identified in the NPDES permit. Currently, the WWTP does not have the ability to remove these metals during high flow periods.
- The WWTP must meet the more stringent effluent limits for 5-day biochemical oxygen demand, total suspended solids, and pH levels, as identified in the NPDES permit. The WWTP has difficulty meeting these requirements consistently.
- The current gas chlorination system should be replaced by another means of disinfection. Gaseous chlorine reduces alkalinity in the wastewater and lowers pH. As a result, the WWTP has occasionally not complied with the effluent pH limits of the NPDES permit. In addition, the NPDES permit contains effluent limits for dichlorobromomethane (DCBM), a disinfection byproduct resulting from use of chlorine. Because disinfection occurs just before discharge, it is difficult to prevent DCBM discharge violations. Further, gas chlorination poses the threat of a chlorine gas leak into the environment, and is unsafe for WWTP staff. Similarly, due to the terrorism threat after 9/11, the federal Department of Homeland Security expressed concern with municipal facilities using chlorine gas.

New Biosolids Disposal Requirements.

- To comply with the NPDES permit, a biosolids use or disposal plan must be developed to manage sludge. Currently, solids are stored in unlined earthen basins, which is not allowed under the new NPDES permit. With the new treatment facility, sludge will be generated on a continuous basis. The biosolids management plan will specify

appropriate handling, testing, dewatering, transportation, and disposal procedures for this material.

Aging Infrastructure.

- To comply with the NPDES permit, new treatment facilities are needed to provide wintertime filtration and improved disinfection of effluent when Sacramento River flows exceed 400 CFS. Under current conditions, the dissolved air flotation thickener and rapid sand filtration system would have to be operated during the winter months in order to remove additional solids from treated effluent. These facilities are located above ground and outdoors, under a steel roof structure with no walls. Consequently, the equipment is exposed to the harsh winter cold and freezing conditions. Therefore, it is not practical to operate these facilities during the winter months. In addition, these facilities were designed for smaller, summertime flows, and thus, there is inadequate capacity to treat the higher flows that occur during the winter.
- A larger operations building is needed to accommodate additional instrumentation for monitoring, as well as appropriate ventilation during laboratory analysis. The current operations building is undersized and is generally in poor condition.
- To comply with the NPDES permit, the outfall pipeline and river diffuser must be repaired to eliminate leaks and to optimize mixing of the effluent with river water. Currently, the pipeline leaks and occasionally effluent is discharged above the river surface.
- As required by the NPDES permit, the treatment lagoons must be repaired to maintain a minimum of two feet of freeboard, if they are to remain in service. Currently, bank erosion caused by wave action from wind and aeration allows water levels to rise to within six inches of overtopping, which may have contributed to a leak in one of the lagoons' dikes.

2. Treatment and Disposal Capacity Expansion

For major infrastructure projects, it is considered reasonable and prudent planning to provide adequate growth capacity for a 20-year period. A 20-year growth projection is typically accepted as “funding eligible” by the major potential funding agencies, such as U.S. Department of Agriculture, Rural Development, and the Clean Water State Revolving Fund. Given that the WWTP is nearing its capacity threshold, expansion would be needed within the next several years regardless of the State-mandated system improvements, which focus on the quality of effluent being discharged. The principal factor driving the need for expansion is anticipated population growth within the WWTP service area. A secondary consideration is the possibility that Crystal Geyser may apply for additional capacity in order to expand its bottling operation.

Population Growth within the Service Area.

The City of Mt. Shasta General Plan points to an anticipated growth rate of about 0.7 percent per year in the incorporated area and about 1.25 percent per year in the unincorporated area over the 20-year time frame of the General Plan². Considering the properties served within and outside the city limits and their respective growth rates, the estimated combined growth rate is about one percent per year, using an average weighted by the area served. As discussed in Section I.A, “Introduction,” of this Initial Study, the WWTP processed 0.7 MGD of wastewater, in Fiscal Year 2012-2013. Completion of construction for the new WWTP is scheduled for July 2019, thus the facility needs to accommodate anticipated growth through 2039. Applying an

² Growth rates are based on data provided in Table 1-1 of the 2006 City of Mt. Shasta General Plan.

average annual growth rate of one percent, a capacity of 0.9 MGD would be required to serve anticipated growth through 2039. Expansion of the treatment and discharge capacity to 0.9 MGD is consistent with the City of Mt. Shasta General Plan Policy LU-16.1 to “ensure that the growth of the community does not outstrip the capacity of the wastewater collection system and treatment facility.”

Anticipated Crystal Geyser Treatment and Disposal Requirements.

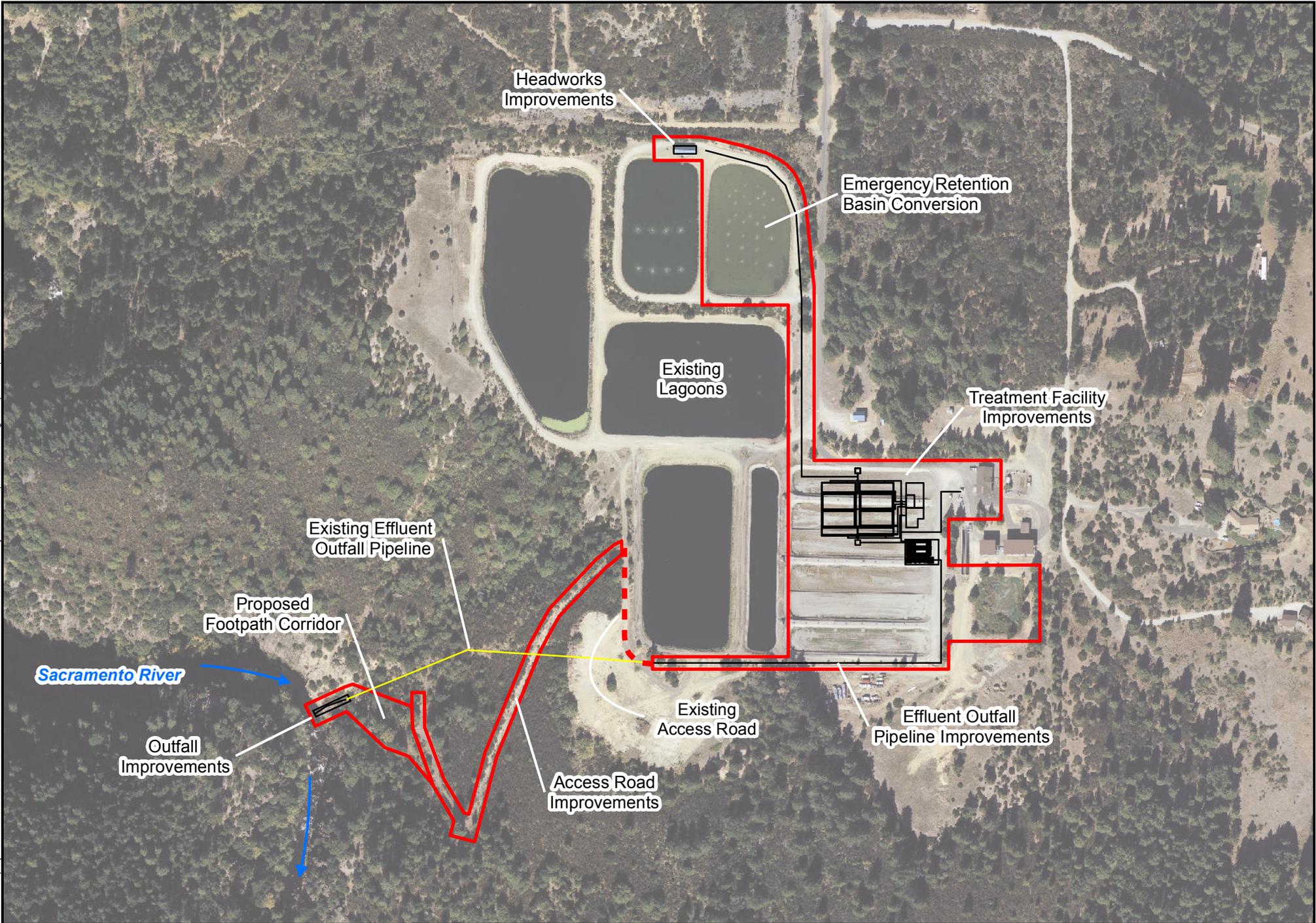
Crystal Geyser owns a ±145,000 square-foot bottling facility just outside of the city limits of Mt. Shasta on Ski Village Drive. The facility is within the service area of the WWTP. Crystal Geyser is proposing to manufacture its Juice Squeeze, Sparkling Mineral Water, Tejava Premium Iced Tea, and Metromint products from the facility. According to Crystal Geyser, the facility would contribute approximately 0.05 MGD of wastewater to the WWTP during the first five years of operation. At full build-out, Crystal Geyser has indicated it could contribute up to 0.15 MGD to the WWTP. Accordingly, if the City were to serve Crystal Geyser, the planned treatment and disposal capacity would need to be increased from 0.9 MGD to 1.05 MGD to serve the anticipated 2039 demand.

A complete application from Crystal Geyser requesting authorization to discharge wastewater to the City’s wastewater collection, treatment, and disposal system has not yet been received by the City of Mt. Shasta. Likewise, the specific constituents that may be included in the wastewater stream have not been identified. The City of Mt. Shasta anticipates that, if it were to allow Crystal Geyser to connect to the City’s wastewater system, pre-treatment of the wastewater by Crystal Geyser would be required to remove any unique constituents (i.e., sugars with a high biological oxygen demand). Further, the City would require that Crystal Geyser pay for its full share of the costs of expanding the facility to handle an additional 0.15 MGD of wastewater. Preparation of a separate environmental document pursuant to CEQA is needed to address the proposed Crystal Geyser operation. In September 2015, Crystal Geyser announced plans to prepare an Environmental Impact Report (EIR) for proposed plant operations.

With respect to Crystal Geyser, the scope of this Initial Study is limited to addressing the potential full-buildout volume of wastewater that could be generated by existing and foreseeable growth, i.e., 1.05 MGD. The City’s approval of this Initial Study and adoption of a Mitigated Negative Declaration would not include or constitute approval for Crystal Geyser to connect to the City’s wastewater system. Rather, the current CEQA coverage would allow the City to proceed with the State-mandated treatment and disposal improvements. The results of this Initial Study could also be included in a broader environmental document addressing the whole of the Crystal Geyser project. It is the City’s intent, following CEQA approvals, to improve the WWTP to meet the new discharge requirements and provide a capacity of 0.9 MGD. Further improvements to increase the capacity to 1.05 MGD would be made only following separate CEQA approval for connection of Crystal Geyser to the City’s wastewater system and receipt of financial assurance from Crystal Geyser that they would cover the cost of the expansion.

C. Project Description

The City of Mt. Shasta is proposing to construct improvements to the WWTP in order to comply with Central Valley RWQCB requirements and increase the capacity of the treatment facility to meet future demand. These improvements would occur within the existing footprint of the treatment and outfall facilities, in previously disturbed areas (see Figure 3).



All depictions are approximate. Not a survey product. 09.22.15



Figure 3
Proposed Improvements

1. Proposed Physical Improvements

Treatment Facility

The existing treatment lagoon system would be replaced with a new treatment facility using a different treatment process. The new facility would be contained in a partially subgrade basin within the footprint of the old intermittent sand filters. Approximately 2,500 linear feet of new piping would be installed leading to and from the treatment facility, and to the outfall. The following new elements would be provided, and are further discussed below:

- A replacement treatment facility.
- Pipelines from the existing headworks to the replacement treatment facility.
- A lined emergency retention basin in place of the northeastern-most lagoon.
- Parallel piping or replacement of the existing effluent pipeline adjacent to the treatment facility.

Sacramento River Outfall

Improvements would be made to the outfall infrastructure and the existing access road that leads from the treatment facility to the outfall. Additionally, a footpath would be created from where the access road ends to the outfall. The following improvements would be constructed:

- A replacement energy dissipater and thrust block at the existing tank site. The new tank influent and effluent connections would be above ground and confined to the existing tank site area. The new influent thrust block would be adjacent to the tank. Some loose rock and other debris that has built up on the uphill side of the tank would require removal to facilitate the improvements.
- A replacement 17-foot-long river diffuser at the same location on the river bank as the existing five-foot-long diffuser, but rotated down to be completely submerged during low-flow periods. Some submerged rock would be shifted to allow the new diffuser to be installed.
- Minor grading, brushing, and placement of aggregate base on the existing access road to facilitate access to the outfall during construction.
- A footpath from the access road to the energy dissipater tank. The path will provide safe access for construction workers and WWTP staff. The path route would be field-fitted to avoid trees and rock outcrops. Pressure-treated retaining boards held with rebar and backfilled with aggregate base would likely be used for construction of stair steps in areas where the grade is the steepest. Some vegetation may need to be cleared to facilitate path construction.

2. Proposed Operational Procedures

With implementation of the proposed improvements, the capacity of the WWTP would increase to accommodate an ADWF of 0.9 MGD. This increase in capacity accounts for existing needs plus an allocation for anticipated future growth at a rate of one percent over the next 20 years. Further expansion of the treatment and disposal system to accommodate addition of 0.15 MGD from Crystal Geysers would be possible in the future if approved by the City of Mt. Shasta.

Peak wet-weather flow in excess of the daily design capacity would be held in the emergency retention basin and slowly metered back into the treatment plant when flows decrease. The

WWTP would discharge a greater volume of treated effluent to two of the existing discharge sites (i.e., Sacramento River and golf course) and on a more consistent basis due to the improved effectiveness of the treatment process. In turn, the leach field would receive less effluent.

The new treatment facility would employ a Sequential Oxidation Activated Sludge (SEQUOX®) treatment process. This process uses microorganisms to feed on organic constituents in the wastewater, producing a high-quality effluent. The system includes concrete common-wall construction to form two parallel treatment trains consisting of an anoxic selector, aeration basin, aerobic digester, and clarifier. A preliminary diagram of the proposed process is shown in Figure 4. The new treatment and discharge processes would include the following steps:

Collection

The existing collection system would not change with implementation of the proposed improvements. Potential future improvements related to the capacity or structural components of the collection system would be evaluated as separate projects, and thus, require separate CEQA review and approvals.

Headworks

Influent from the collection system would pass through one of two self-cleaning spiral screens to remove large debris. Screenings would be deposited in a dumpster for disposal. Screened effluent would gravity-flow to the aerated treatment basins.

Settling, Denitrification, and Mixing

Screened influent would first enter an anoxic selector that would promote bacterial growth while returning nitrate to the front of the treatment process for denitrification. To accomplish this, influent would be mixed with return activated sludge (sludge particles produced in the aeration basins) from the two clarifiers. A wall-mounted coarse bubble aeration system would deliver large quantities of oxygen to provide mixing and keep solids in suspension.

Stage 1 Aeration

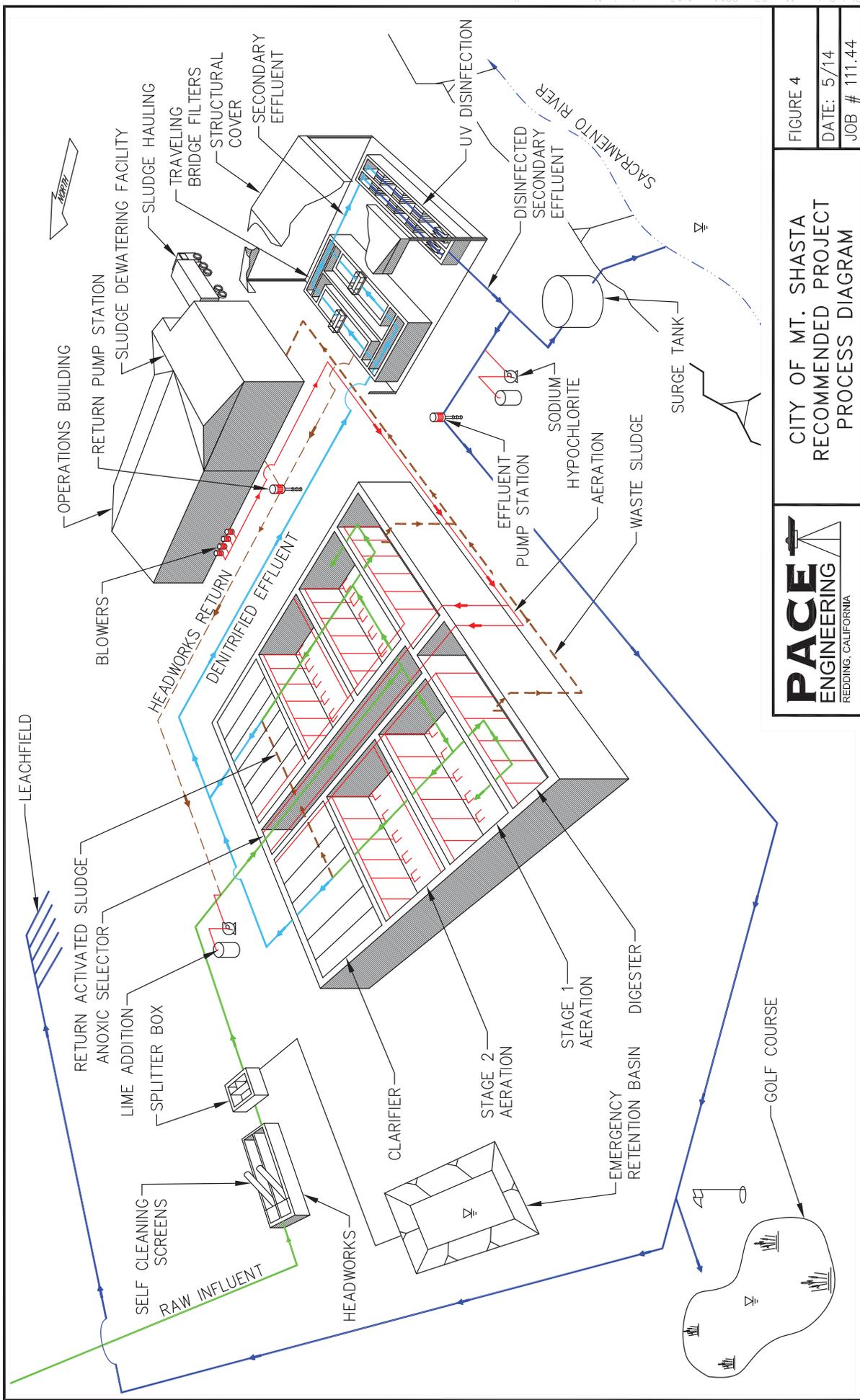
Effluent from the anoxic selector would be diverted to one of the two Stage 1 aeration basins where the biological reactions would occur. A wall-mounted fine-bubble aeration system would provide continuous mixing and dissolved oxygen for biochemical oxygen demand consumption, ammonification, and nitrification.

Digesters

A portion of the mixed liquor (the concentration of suspended solids) formed in the Stage 1 aeration basins would be transferred to one of the two aerobic digesters by air-lift pumps, as waste activated sludge (excess sludge particles not returned to the anoxic selector). A wall-mounted aeration system would provide aeration and mixing to the digester sludge. Digester supernatant (a relatively clear liquid that is removed from settled sludge) would travel over a weir into the anoxic selector to be blended with influent wastewater and return activated sludge. The sludge retained in the digesters would settle to the bottom and undergo stabilization for an average of 30 days before conveyance to the dewatering facility.

Stage 2 Aeration

Remaining effluent from the Stage 1 aeration basins would pass to the Stage 2 aeration basins through blockouts in the interior walls. Similar to Stage 1, a wall-mounted coarse bubble



CITY OF MT. SHASTA
 RECOMMENDED PROJECT
 PROCESS DIAGRAM

FIGURE 4
 DATE: 5/14
 JOB # 111.44

aeration system would provide sequenced aeration that would allow for simultaneous nitrification and denitrification.

Clarification

Stage 2 effluent would be drawn from the surface of the aeration basins through outlet screens and dispersed along the bottom of one of two clarifiers. An air-lift pump would remove sludge at timed intervals from eight stationary suction hoods. Some sludge would be returned as return activated sludge to the anoxic selector. Clarified effluent (in which solids have settled and are separated from treated wastewater) would exit the clarifier through submerged effluent weirs. These weirs would allow the effluent flow to be regulated so that surges in influent flow could be absorbed by utilizing the clarifiers as retention basins.

Filtration³

Clarified effluent would travel to one of the two traveling bridge filters, or another type of filtration system, for further removal of total suspended solids. These filters would utilize sand media beds that are partitioned into many smaller cells. As the filter rate slows, a traveling carriage would move a suction hood from cell to cell, backwashing individual sections of the filter. This type of filter would not require the entire filter to be shutdown to perform a backwash. An enclosure over the filter would help to protect the filter from the environment and limit the amount of algal growth. Other filtration technologies, such as disk (cloth) filters will be evaluated as part of the design effort.

Ultraviolet Disinfection³

Filtered effluent would be received by one of two UV channels. Each of the UV channels would contain three banks of UV lamps. Both UV channels would share the same enclosure as the traveling bridge filters to reduce exposure to the environment. Disinfected effluent leaving the UV channels would gravity-flow to the river during permitted times. Alternatively, effluent would be pumped to the golf course or leach field for disposal.

Sludge Processing and Disposal

A centrifuge or sludge blower dewatering facility would dewater the aerobically digested sludge to reduce water content before hauling to the landfill. The dewatering facility would be enclosed in a separate building to protect equipment and electrical/control facilities. The facility would consist of a sludge grinder and pumping facilities, polymer blending system, elevated centrifuge, and conveyors. The addition of a polymer would be required to achieve optimal solids concentrations. Supernatant from the sludge would be returned to the anoxic selector for further treatment. The dewatering facility would be required to run approximately 12 days per month for approximately six hours each day. At full treatment capacity, approximately 150 cubic-feet of dewatered sludge would be produced each day. Sludge would be weighed on a scale and then hauled to a landfill once every three days. Sludge would likely be contained in an 18-yard covered dumpster inside of a haul truck.

Treated Effluent Discharge

With implementation of the proposed improvements, the WWTP discharge locations and periods of discharge would stay the same. However, with an ultimate treatment capacity of 1.05 MGD, the volume of treated effluent discharged to the Sacramento River and golf course would increase by up to 85 percent, while the leach field would likely receive an approximate 50

³ The City of Mt. Shasta has applied for a \$3,000,000 grant from the U.S. Department of Commerce, Economic Development Administration. If awarded, this grant would provide for replacement of the filtration and disinfection systems, which would then be constructed in advance of the other treatment and discharge improvements described in this Initial Study.

percent decrease in volume of discharged effluent. This is because the WWTP would have the ability to more frequently meet the stringent standards for discharge at the golf course and Sacramento River. During the recreation season when irrigation water is need at the golf course, the golf course would likely receive the entire WWTP effluent flow. However, in a year that receives a statistical 100-year annual rainfall, the golf course would not have sufficient capacity to receive the entire WWTP effluent flow. According to the Feasibility Study, during a 100-year annual rainfall year (approximately 60 inches), a combination of all three discharge sites would be required.

The new parallel piping or replacement piping with a larger diameter would result in faster water conveyance from the treatment facility to the river outfall. Specifically, the hydraulic capacity of the outfall pipeline would increase from 2.1 MGD to 3.3 MGD, which would be sufficient to handle anticipated wet-weather flow volumes. See Figures 5 and 6 for preliminary plans of outfall improvements.

3. Construction Considerations

Demolition and Abandonment

Existing WWTP structures such as the operations building, chlorine basin, dissolved air flotation thickener, rapid sand filtration system, chlorine contact basin, and their associated buildings, may be demolished or repurposed once the new WWTP facility is operational. Solids contained in the “backwash pond,” west of the old intermittent sand filters, may be removed for abandonment of the pond. All the lagoons, with the exception of the northeastern-most lagoon, would be either: 1) abandoned and allowed to be naturally inundated by rain and snowmelt, whereas they would continue to support waterfowl and other wildlife species, or 2) be supplemented with treated effluent which would enhance the habitat for waterfowl and other wildlife species. According to hydraulic balance computations by PACE Engineering, Inc., provided that the lagoons are approximately 70 percent full or less at the start of the wet season, the lagoons would not be expected to overflow as a result of rainfall and snowmelt.

Construction Schedule and Activities

It is anticipated that the existing treatment and disposal system would remain in service during construction activities.

At the outfall, the work area would likely be limited to 10 feet on either side of the dissipation tank, outfall pipeline, and diffuser, and out towards the centerline of the river. Because of the steepness of Box Canyon, use of a helicopter may be required to transport heavy equipment (i.e. air hammer, pipe) to the work area for improvements to the outfall. Other construction equipment utilized for the new treatment facility and improvements to the access road would include a compactor, excavator, dozer, backhoe, loader, dump truck, and grader.

Construction of the proposed treatment facility and outfall improvements would require approximately 19 months for completion. Improvements to the treatment facility would occur between November 2017 and July 2019, over two years. Improvements to the outfall would occur between June 15 and September 15, when discharge of treated effluent to the Sacramento River is prohibited.

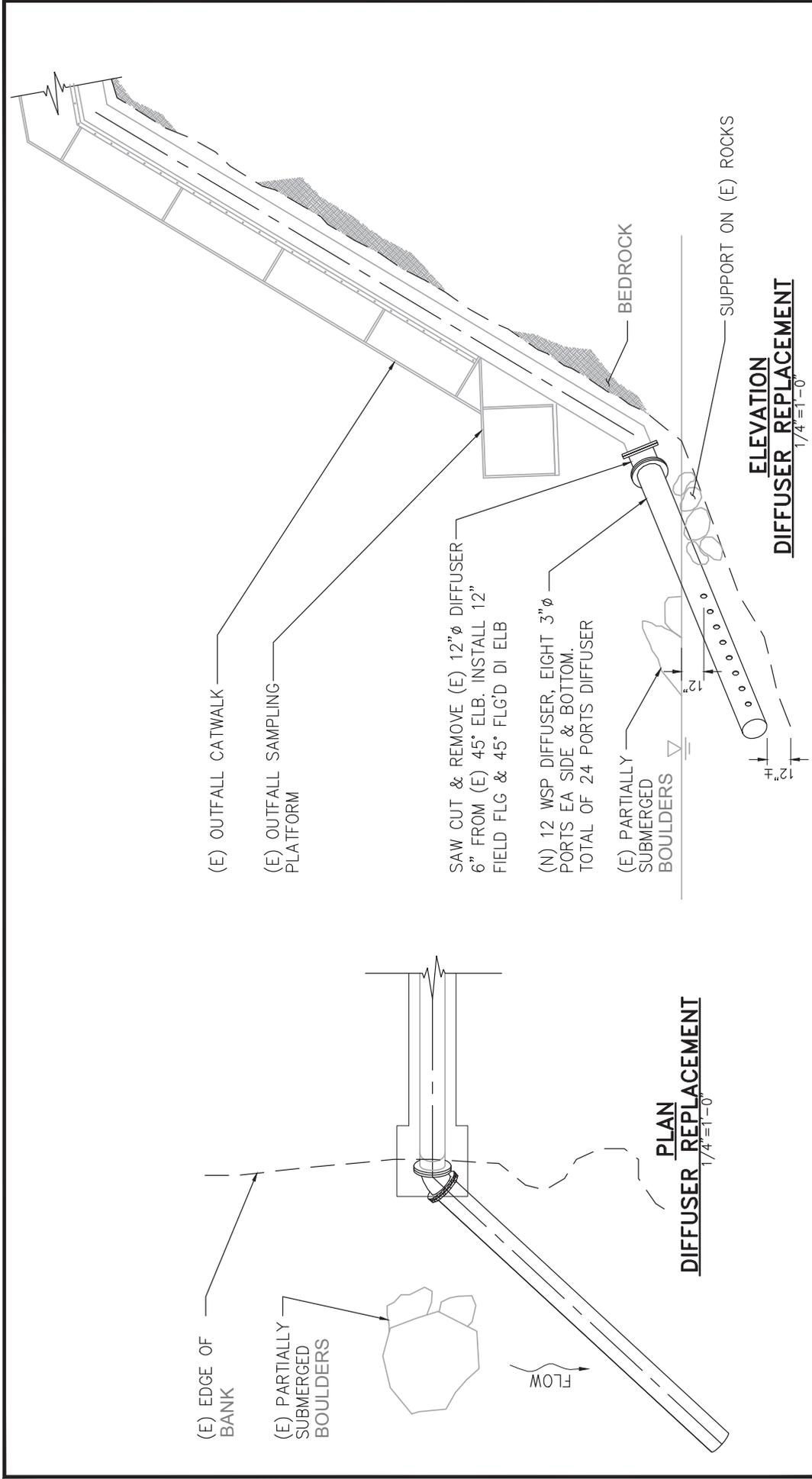
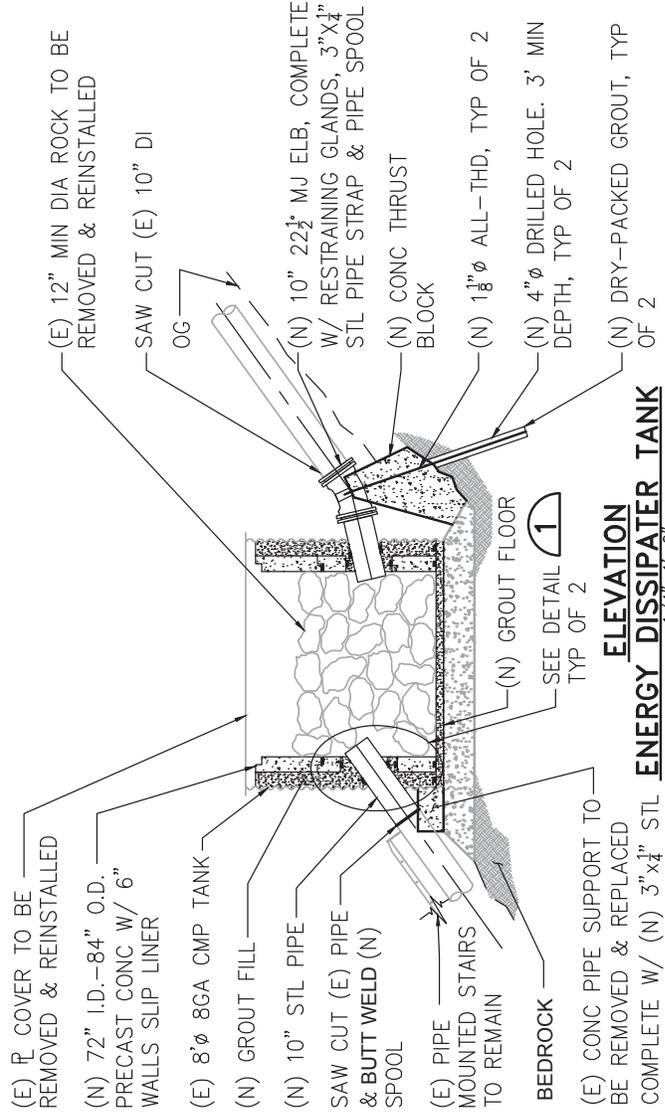


FIGURE 5
DATE: 10/13
JOB # 111.42

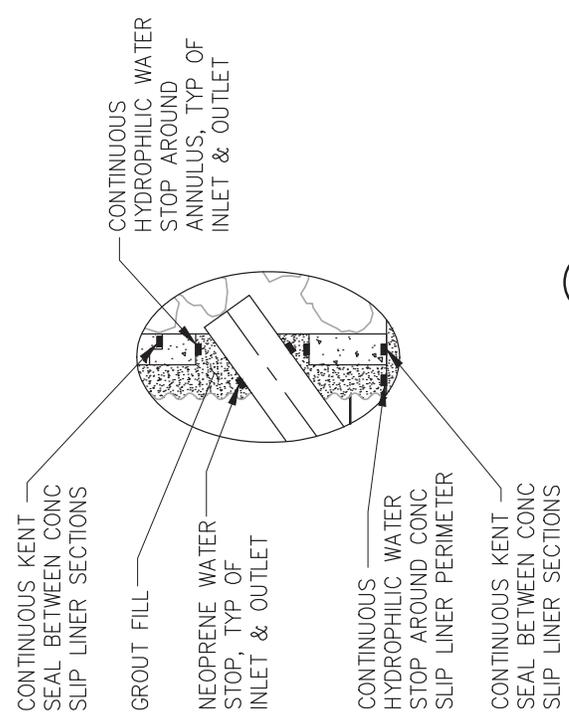
CITY OF MT SHASTA
RIVER OUTFALL REPLACEMENT





ELEVATION
ENERGY DISSIPATER TANK
 1/4"=1'-0"

*NOTE: (E) INFLUENT & EFFLUENT PIPE PENETRATIONS ARE WELDED TO TANK WALLS. PIPE/TANK CONNECTION TO BE SAW CUT FREE.



DETAIL 1
 1/2"=1'-0"



CITY OF MT SHASTA
 RIVER OUTFALL REPAIRS

FIGURE 6
DATE: 10/13
JOB # 111.42

D. Permits and Approvals

The following permits and approvals will be needed prior to implementation of the proposed project with a treatment capacity of 0.90 MGD ADWF. If an additional 0.15 MGD capacity were to be provided to accommodate Crystal Geysers, additional permits and approvals would be required.

- City of Mt. Shasta – Adoption of a Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program for the proposed project.
- Central Valley RWQCB – General Construction Activity Storm Water Permit and preparation of a Storm Water Pollution Prevention Plan (SWPPP).
- Central Valley RWQCB – Clean Water Act Section 401 Certification.
- U.S. Department of Agriculture, Rural Development – NEPA approval for funding.
- State Water Resources Control Board – NEPA approval for funding from the State Revolving Fund.
- State Historic Preservation Officer – NEPA approval through consultation with the federal lead agency, for the purposes of protecting cultural resources.
- U.S. Army Corps of Engineers – Clean Water Act Section 404 Permit for discharge of fill to Waters of the U.S.
- California Department of Fish and Wildlife – Section 1600 Lake and Streambed Alteration Agreement.

II. ENVIRONMENTAL SETTING

General Plan Designation: The WWTP site is located within the City's sphere of influence. The site is designated under the City of Mt. Shasta General Plan as Public Land and Parks. The Siskiyou County General Plan Land Use Element identifies the project site as being located within the following mapped areas: Soils – Erosion Hazard (High); Building Foundation Limitation – Severe Pressure Limitations Soils; Slope; Flood Hazard – Dam Inundation Areas; Surface Hydrology – Rivers and Streams; Critical Deer Wintering Area – Deer Wintering Area; Wildfire Hazard (High); and Woodland Productivity – High Suitability (site classes I and II).

Zoning: The City of Mt. Shasta does not provide zoning for the project site. The site is zoned by Siskiyou County as Non-Prime Agricultural/Combining District for 40-acre parcels (AG-2-B-40). According to Article 49, Section 10-6.4903, of the Siskiyou County Code, a public utility is permitted in the AG-2 District under a special use permit. However, because the project site is owned by the City, the WWTP is not subject to County zoning requirements.

Surrounding Land Uses: Surrounding lands are primarily undeveloped. Lake Siskiyou is located to the west of the project site, and the Sacramento River is to both the west and south of the site. The Mount Shasta Resort Golf Course is located to the north. The area to the east supports several semi-rural residences.

Topography: The WWTP is located at approximately 3,300 feet above sea level, and is relatively flat. The river diffuser is located downslope of the treatment facilities at approximately 2,920 feet above sea level, in Box Canyon (U.S. Geological Survey's City of Mount Shasta 7.5-minute quadrangle).

Soils: According to the Natural Resource Conservation Service, soils within the project site are mapped as Neer-Ponto stony sandy loams, 15 to 50 percent slopes, and Ponto-Neer complex, 2 to 15 percent slopes.

Vegetation: Vegetation communities present at the WWTP are described below.

Treatment Facility: The treatment facility is primarily comprised of treatment lagoons; the corresponding access roads are highly disturbed and support a ruderal plant community. The ruderal plant community is represented by various grasses, dyer's woad, chicory, hawksbit, and dove weed.

Access Road: The access road to the outfall occurs within montane chaparral and mixed-conifer forest. The montane chaparral is dominated by green-leaved manzanita, with a few emergent oaks and pines. Herbaceous species occur primarily in openings, and include bromes, dyer's woad, and Plumas lupine. The mixed conifer forest community is represented by ponderosa pine, incense-cedar, white fir, Douglas-fir, canyon live oak, and black oak. The shrub layer is dominated by green-leaved manzanita. Herbaceous species are primarily comprised of the same species occurring within the montane chaparral.

Outfall: The majority of the outfall infrastructure is located on a steep slope above the Sacramento River. The upslope portion of the discharge pipe area supports a mixed-conifer forest community, as described above. The downslope portion is dominated by bedrock, with very small patches of riparian vegetation. The riparian vegetation consists primarily of a small clump of willows and a number of torrent sedges.

Water Features: Water features in the study area are limited to the Sacramento River, a treatment lagoon, and the backwash lagoon. The river is located a downslope of the WWTP, in Box Canyon. The river is subject to federal and State jurisdiction. Lake Siskiyou and Box Canyon Dam are located approximately 0.7 miles upstream of the project site. The lagoons were constructed in upland areas and are not regulated as wetlands.

III. ENVIRONMENTAL CHECKLIST FORM

A. Environmental Factors Potentially Affected

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

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

B. Determination (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION has been prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a significant effect(s) on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Kristen Maze

Date

11.18.15

Kristen Maze
Name

City Planner
Title

C. Evaluation of Environmental Impacts

This section analyzes the potential environmental impacts associated with the proposed project. The issue areas evaluated in this Initial Study include:

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

The environmental analysis in this section is patterned after the Initial Study Checklist recommended in the State CEQA Guidelines. For the preliminary environmental assessment undertaken as part of this Initial Study, a determination that there is a potential for significant effects indicates the need to more fully analyze the 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 project. To each question, there are four possible responses:

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

Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
--	--------------------------------	--	------------------------------	-----------

1. AESTHETICS. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| 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 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 which would adversely affect day or nighttime views in the area? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion

a, c.

The proposed project includes improvements to the treatment facility and the Sacramento River outfall. These improvements would be located in previously disturbed areas within the existing footprint of the WWTP. None of the improvements would be visible from locations outside of the project site, including potential views from nearby residential lots, due to existing vegetation that lines the perimeter of the property, and the steepness of Box Canyon. Further, the City of Mt. Shasta General Plan does not identify the project site as a scenic viewshed area. As such, the proposed project would not have a substantial adverse effect on a scenic vista.

b.

There are no officially designated State Scenic Highways in Siskiyou County; thus, project implementation would not damage scenic resources within a designated State Scenic Highway. Interstate 5, from the City of Weed to Highway 89 in Mt. Shasta, and Highway 89, itself, are designated as Eligible State Scenic Highways by Caltrans. The Siskiyou County General Plan also designates these stretches of highway as scenic routes. However, the project site is located over 0.7 miles from these designated stretches of highway, and is separated from them by City infrastructure, and thus, would not be visible.

d.

The replacement treatment facility would include new sources of exterior lighting for security purposes. However, the new lighting would be similar in scale and type to existing facility lighting, and would not be a new source of substantial light. The potential for glare could be increased by window surfaces, and exterior materials/coatings; however, these types of surfaces would be minimal and nearby residents would be screened by existing vegetation that lines the perimeter of the property. Implementation of the proposed project would not cause significant impacts with respect to light or glare.

Mitigation

None necessary

Documentation

ENPLAN. Field survey. April 30, 2015.

California Department of Transportation. 2015. Scenic Highway Program. Siskiyou County. http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm. Accessed March 2015.

City of Mt. Shasta. 2007. City of Mt. Shasta General Plan. 5.0 Open Space/Conservation Element. <http://ci.mt-shasta.ca.us/planning/genplan/5OpenSpaceandConservationElement.pdf>. Accessed July 2015.

Siskiyou County. 1974. General Plan for Siskiyou County, California. Scenic Highways Element. http://www.co.siskiyou.ca.us/sites/default/files/docs/GP_ScenicHighwaysElement.pdf. Accessed March 2015.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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2. AGRICULTURAL AND FORESTRY RESOURCES.

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| 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))? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. Result in the loss of forest land or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

a.

According to data maintained by the Farmland Mapping and Monitoring Program, neither Prime Farmland nor Farmland of Statewide Importance occur within or adjacent to the project site. The nearest mapped farmland, Farmland of Statewide Importance, is located approximately 2.1 miles north of the project site, west of North Old Stage Road.

b, e.

No lands in or adjacent to the project site are used for commercial agricultural production or subject to a Williamson Act contract. Although the site and surrounding lands are zoned by Siskiyou County as Non-Prime Agricultural/Combining District for 40-acre parcels (AG-2-B-40), project implementation would not change the on-site land use or result in the conversion of off-site lands from farmland to non-agricultural use.

c, d.

The project site is not zoned as forestland or timberland. The proposed project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. The project site does support commercial timber species such as ponderosa pine and Douglas-fir, and thus, may be classified as "timberland" by the California Department of Forestry and Fire Protection (CAL FIRE). Although it is possible that brush clearing activities along the access road and for construction of the footpath would require the removal of some trees, these trees would likely be very few and small in diameter. Impacts would be less than significant.

Mitigation

None necessary

Documentation

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State of California, Department of Conservation. 2012. Farmland Mapping and Monitoring Program.
<ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/sis10.pdf>. Accessed March 2015.

State of California, Department of Conservation. 2013. Siskiyou County Williamson Act FY 2012/2013.
ftp://ftp.consrv.ca.gov/pub/dlrp/wa/siskiyou_12_13_WA.pdf. Accessed March 2015.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
--	--------------------------------	--	------------------------------	-----------

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

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a. Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" 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 non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d. Expose sensitive receptors to substantial pollutant concentrations? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e. Create objectionable odors affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion

a-d.

Both the Federal and State governments have developed standards for air pollutants of principal concern. Pollutants for which national ambient air quality standards have been developed are nitrogen dioxide (NO₂), ozone (O₃), sub 2.5-micron particulate matter (PM_{2.5}), sub 10-micron particulate matter (PM₁₀), sulfur dioxide (SO₂), carbon monoxide (CO), and lead (Pb). The State has adopted similar or more stringent criteria for these pollutants and has also adopted standards for hydrogen sulfide (H₂S), vinyl chloride, and visibility reducing particles. These ambient air quality standards are intended to address regional air quality conditions, not project-specific emissions.

Siskiyou County is in compliance with both Federal and State standards for all of the above air pollutants (i.e., is considered “attainment” or “unclassified” for these pollutants). To ensure continuing compliance, the Siskiyou County Air Pollution Control District (SCAPCD) evaluates new projects for air pollutant emissions. The CalEEMod air emissions modeling program is the accepted tool for estimating project emissions. The software provides results for NO_x, PM_{2.5}, PM₁₀, SO₂, CO, reactive organic gases (ROG)/volatile organic compounds (VOC), and carbon dioxide (CO₂). Siskiyou County has defined 250 pounds (lbs)/day as the threshold of significance for NO_x, PM_{2.5}, PM₁₀, and SO₂ emissions, and 2,500 lbs/day as the threshold of significance for CO emissions. The remaining pollutants, consisting of lead, ozone, hydrogen sulfide, vinyl chloride, and visibility reducing pollutants, are evaluated on an individual basis. Although not directly addressed as a pollutant of concern, ROG and VOC are of interest because they are precursors of ozone. Likewise, CO₂ is not addressed as a pollutant of concern, but is of interest because it is a common greenhouse gas (see Section III.C.7, “Greenhouse Gas Emissions”).

Implementation of the proposed project would result in short-term construction emissions as well as an increase in operational emissions. Operational emissions are based on full buildout of the proposed project, including the potential Crystal Geyser contribution (1.05 MGD); operational emissions from the sludge hauling trucks are also included. During project construction, particulate matter would be generated as a result of earthwork, and a variety of pollutants would be emitted in vehicle and equipment exhaust. Project construction emissions were estimated using the CalEEMod program (CalEEMod 2013.2.2). CalEEMod reports construction emissions as totals for the entire construction period (22 months for the proposed project), while the air quality standard is based on daily emission levels. To allow a direct comparison with SCAPCD’s standards, emissions for each phase of construction (e.g., site preparation, grading, building construction, etc.) were averaged over the anticipated construction period for that

specific phase of work. The values reported in Table 1 are the highest daily levels regardless of construction phase. As could be expected the “architectural coating” phase, which includes painting, generated the highest daily emissions for ROG/VOC, while the site preparation phase, which involves considerable heavy-equipment use, generated the highest daily emissions for other categories of emissions. As shown in Tables 1 and 2, construction and operational emissions would not exceed the numerical significance thresholds established by the SCAPCD.

**Table 1
Projected Construction Emissions (lbs/day)**

NO_x	PM_{2.5}	PM₁₀	SO₂	CO	ROG/VOC	CO₂
53.7	6.5	10.2	0.0	45.1	454.7	4,960.2

**Table 2
Projected Operational Emissions (lbs/day)**

NO_x	PM_{2.5}	PM₁₀	SO₂	CO	ROG/VOC	CO₂
3.91	0.027	0.030	—	0.266	0.070	4,071.94

Likewise, the proposed project would not result in significant impacts associated with lead, ozone, hydrogen sulfide, vinyl chloride, or visibility reducing pollutants, as discussed below.

- According to the U.S. Environmental Protection Agency (EPA), the majority of lead emissions produced nationally are associated with combustion of leaded aviation gasoline by piston-driven aircraft. Elevated levels of airborne lead at the local level are usually found near industrial operations that process materials containing lead, such as smelters. As these conditions are not applicable to the proposed project, the potential for lead emissions is less than significant.
- Ozone is formed primarily from photochemical reactions between two major classes of air pollutants: ROG and nitrogen dioxide. ROG are emitted from a variety of sources, including motor vehicles, chemical manufacturing facilities, refineries, factories, consumer and commercial products, and natural (biogenic) sources (mainly trees). Nitrogen dioxide emissions are primarily emitted from motor vehicles, power plants, and off-road equipment. Because project construction would generate relatively low amounts of both ROG and NO_x, the potential for ozone production/emissions is less than significant.
- Hydrogen sulfide is formed during the decomposition of organic material in anaerobic environments. According to the engineer, with the proposed improvements, the project would result in minimal hydrogen sulfide production; therefore, the potential for hydrogen sulfide emissions is less than significant.
- 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. With respect to the breakdown of chlorinated solvents, the proposed project would not result in an increase in such solvents being discharged to the facility, which represents a very minor and secondary source of vinyl chloride emissions. With PVC manufacturing facilities absent from the Mt. Shasta area, and that 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 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. In Siskiyou County, the California Air Resources Board (CARB) monitors two sites: Marble Mountain Wilderness Area and Lava Beds National Monument. According to the California Regional Haze Management Plan, natural wildfires and biogenic emissions are the primary contributors to visibility reducing pollutants for these sites. For the proposed project, visibility reducing pollutants (e.g., PM_{2.5} and PM₁₀), would be generated only during construction activities. Because only relatively low amounts of particulates would be generated, potential impacts with respect to visibility reducing pollutants are less than significant.

The proposed project would not exceed numerical significance thresholds established by the SCAPCD or otherwise result in significant air pollutant emissions. Therefore, implementation of Best Available Control Technology, as defined by the SCAPCD, would provide appropriate air quality control during project construction. A basic requirement for projects occurring in the SCAPCD is dust control. Dust control measures that would be implemented as part of the proposed project may include: covering, watering, and treating excavated, graded, or stockpiled areas; establishing speed limits for construction vehicles; restricting construction activities when winds exceed 20 mph; covering inactive areas; managing dust during material transport; street sweeping; and re-establishing groundcover. Further, in accordance with CARB regulations, additional measures to minimize impacts to air quality may include: maintaining all construction equipment in proper tune according to manufacturer's specifications, using diesel construction equipment meeting the CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines, registering in the CARB Diesel Off-road On-line Reporting System program, and registering certain portable equipment in the Portable Equipment Registration Program or directly with the SCAPCD. With implementation of required dust control measures, and compliance with CARB regulations, impacts to air quality would be less than significant.

e.

During project construction, the proposed project may result in the release of diesel fumes, paint fumes, or other potentially objectionable odors. However, the WWTP is located in a semi-rural area with the nearest residence being over 300 feet from the site. Given this distance separation, potentially objectionable odors resulting from construction of the treatment plant improvements (e.g., paint fumes and diesel exhaust) would not be significant.

With regard to project operation, sludge would be dried and processed using an enclosed centrifuge or sludge blower dewatering facility. This method of drying poses less risk of odor to surrounding residents than the existing process of drying sludge on top of the old intermittent sand filters, which are not enclosed. Once the sludge is dry, the potential for odors is minimal; in any case, the dried sludge would be hauled from the treatment plant to the landfill in a covered dumpster, which would minimize the odor release. Potentially objectionable odors resulting from facility operation and sludge hauling would be less than significant.

Mitigation

Because the proposed project would be constructed and operated in accordance with existing requirements of the SCAPCD and CARB, no mitigation would be necessary.

Documentation

- California Environmental Protection Agency, Air Resources Board. 2009. California Regional Haze Plan. July 22. http://www.arb.ca.gov/planning/reghaze/final/rhplan_final.pdf. Accessed September 2015.
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Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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4. BIOLOGICAL RESOURCES. Would the project:

- | | | | | |
|--|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? | <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, 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 federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" 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 type="checkbox"/> | <input checked="" 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 type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

a.

The following evaluation of potential impacts on special-status species is based on the findings of a review of California Natural Diversity Data Base (CNDDDB) and U.S. Fish and Wildlife Service (USFWS) records, consultation with California Department of Fish and Wildlife (CDFW) staff, as well as botanical and wildlife surveys completed by ENPLAN. Evaluation of potential effects on federally listed, proposed, or Candidate species entailed review of plant and animal species under jurisdiction of the USFWS and anadromous fish species under the jurisdiction of the National Marine Fisheries Service (NMFS). An IPaC Trust Resource Report was generated for species of concern to the USFWS. NMFS was not consulted because anadromous fish have no potential to occur in or adjacent to the project site due to the construction of Shasta Dam approximately 30 miles downriver from the project site, and Keswick Dam, located approximately 8 miles downriver from Shasta Dam, which are barriers to anadromous fish in the Sacramento River.

Special-Status Plant Species

Review of the USFWS IPaC Trust Resource Report for the project site (Appendix A) identified five federally listed or Candidate plant species as potentially being affected by the proposed project: Gentner's fritillary, Hoover's spurge, Siskiyou mariposa lily, slender Orcutt grass, and whitebark pine. The project site does not contain designated critical habitat for federally listed plant species. Review of CNDDDB records showed that one special-status plant species, Shasta chaenactis, has been previously reported in the project vicinity and the occurrence has been broadly mapped to include a portion of the project site. Twenty-one other special-status plant species have been reported within a

five-mile radius of the project site: subalpine aster, woodnymph, marbled wild-ginger, marsh skullcap, seaside bittercress, Oregon fireweed, northern adder's-tongue, Aleppo avens, woolly balsamroot, Klamath fawn lily, Greene's mariposa-lily, Waldo daisy, pallid bird's-beak, Castle Crags harebell, thread-leaved beardtongue, cylindrical trichodon, Pacific fuzzwort, rattlesnake fern, northern clarkia, Cascade grass-of-Parnassus, and nodding vanilla-grass. In addition, two special-status mosses, three-ranked hump moss and broad-nerved hump moss, have been reported within the search radius.

To determine the presence/absence of special-status plant/moss species, ENPLAN conducted a botanical survey of the project site on May 13, June 27, and July 28, 2015. Most of the special-status plant species potentially occurring on the project site would have been evident at the time the fieldwork was conducted. The potential presence of species not identifiable during the field study was readily determined on the basis of observed habitat characteristics. The potential for special-status plant/moss species to occur on the project site is evaluated in Appendix A. As shown in Appendix A, the project site has potentially suitable habitat for Gentner's fritillary, marbled wild-ginger, marsh skullcap, northern clarkia, pallid bird's-beak, seaside bittercress, Shasta chaenactis, Siskiyou mariposa lily, woodnymph, and woolly balsamroot. However, none of these special-status species were observed or are expected to occur on the site, and no other special-status plant species were observed or are expected to be present.

Special-Status Wildlife Species

Review of the USFWS IPaC Trust Resource Report for the project site (Appendix A) identified twelve federally listed or Candidate animal species as potentially being affected by the proposed project: California red-legged frog, Oregon spotted frog, conservancy fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, longfin smelt (San Francisco Bay Delta population), valley elderberry longhorn beetle, fisher, gray wolf, Delta smelt, western yellow-billed cuckoo, and northern spotted owl. Although critical habitat for northern spotted owl is located in areas west of Lake Siskiyou, there is no designated critical habitat within the project site.

Review of CNDDDB records showed that one special-status animal species, spotted bat, has been previously reported in the project vicinity and the occurrence has been broadly mapped to include a portion of the project site. Twelve other special-status wildlife species have been reported within a five-mile radius of the project area: gray wolf, American peregrine falcon, Cascades frog, bank swallow, western yellow-billed cuckoo, fisher (West Coast distinct population segment), northern goshawk, black swift, Pacific tailed frog, bald eagle, foothill yellow-legged frog, and western mastiff bat. In addition, five non-status wildlife species have been reported within the search radius: osprey, great blue heron, Natural Bridge megomphix, Pacific marten, and silver-haired bat. Although not reported in the CNDDDB records, the project site is within the known range of western pond turtle, a state Species of Special Concern.

To determine the presence/absence of special-status animal species, ENPLAN conducted a wildlife survey of the project site on April 30, 2015. Additional wildlife observations were made in conjunction with the botanical surveys. Most of the special-status animal species potentially occurring on the project site would have been evident at the time the fieldwork was conducted. The potential presence of species not identifiable during the field study was readily determined on the basis of observed habitat characteristics. The potential for special-status animal species to utilize the project site is evaluated in Appendix A. Although no special-status wildlife species were observed during the wildlife survey, the project site has potentially suitable habitat for the following special-status species: foothill yellow-legged frog, Pacific tailed frog, western pond turtle, gray wolf, western mastiff bat, and spotted bat. In addition, rock cliffs outside of the project site near the outfall structure may provide potentially suitable nesting habitat for American peregrine falcons. Similarly, large trees and snags in the vicinity of the project site may provide suitable nesting habitat for bald eagle. Each of these species is described in greater detail below, as well as the potential to occur.

Foothill Yellow-Legged Frog, Pacific Tailed Frog, and Western Pond Turtle

The Sacramento River in the project area has a low potential to be utilized by foothill yellow-legged frogs and Pacific tailed frogs, and has a moderate potential to be utilized by western pond turtles. The lagoons in the project area have a moderate potential to be utilized by western pond turtles; several unidentified turtles were observed outside of the project site in the western-most lagoon. However, proposed improvements would be limited to the northeastern-most lagoon, which would be dewatered, excavated, and lined for conversion to an emergency retention basin. The new emergency retention basin would not contain water on daily basis. However, this permanent loss of a lagoon is not likely to significantly affect available habitat for turtles given that this lagoon features the lowest quality effluent, and is the most unlikely of all of the lagoons to support turtles. Potential direct effects on foothill yellow-legged frogs and Pacific tailed frogs (including their tadpoles and egg masses), and western pond turtles could occur if present during

in-water work periods in the Sacramento River or in the lagoon. If present, foothill yellow-legged frogs, Pacific tailed frogs, and western pond turtles could be injured/killed as a result of being crushed by construction equipment or by placement of construction-related materials into the in-water work area. Potential indirect effects include habitat degradation if sediment-laden water or pollutants are discharged into aquatic habitats. As called for in Mitigation Measure 4.1, potential direct impacts on foothill yellow-legged frogs, Pacific tailed frogs, and western pond turtles will be avoided/minimized by having a qualified biologist conduct a pre-construction survey for these species immediately prior to the start of in-water work each day that in-water work would occur and relocating frogs, eggs masses, tadpoles, and turtles to a safe location outside of the work area. Potential indirect impacts on foothill yellow-legged frogs, Pacific tailed frogs, and western pond turtles would be minimized through use of Best Management Practices (BMPs) for erosion control and spill prevention.

Gray Wolf

Essential habitat elements associated with gray wolf habitat include year-round abundance of natural prey, secluded denning and rendezvous sites, and sufficient space with minimal human disturbance. These elements occur in the general vicinity of the project site. A gray wolf pack, known as the “Shasta Pack” became established in the general project region in the spring of 2015. Continued dispersal of wolves into California is expected. Although gray wolves can travel approximately 30 miles each day, and could potentially forage or stray through the project site, gray wolves would not be expected to den in the project site given the extent of human activity associated with the WWTP. The species would not be impacted by the proposed project.

Western Mastiff Bat and Spotted Bat

Rock crevices in Box Canyon have a moderate potential to be utilized for roosting by western mastiff bat and spotted bat. Trees and buildings on the project site could also potentially be used as roosting habitat by western mastiff bat. However, the proposed improvements would be limited to disturbed areas associated with the existing facilities, and thus, no rock crevices in the canyon would be impacted. Although clearing of vegetation would occur along the access road and for construction of the footpath, removal of mature trees providing suitable roosting habitat for the western mastiff bat is not proposed. Although some of the existing WWTP buildings and structures may be demolished, implementation of Mitigation Measure 4.2 would ensure that impacts to roosting bats would be less than significant.

American Peregrine Falcon

Rock cliffs outside of the project site in the vicinity of the outfall provide potentially suitable nesting habitat for American peregrine falcons, a migratory bird. Although no peregrine falcons or nests were observed during the biological surveys, it is possible that falcons could nest in or near the site in subsequent years. Disturbance of nesting American peregrine falcons can be avoided/minimized through implementation of Mitigation Measure 4.3, described in detail under (d) below.

Bald Eagle

Large trees and snags outside of the project site in the vicinity of the outfall provide potentially suitable nesting habitat for bald eagles, a migratory bird. Although no bald eagles or nests were observed during the biological surveys, it is possible that bald eagles could nest in or near the site in subsequent years. Disturbance of nesting bald eagles can be avoided/minimized through implementation of Mitigation Measure 4.3, described in detail under (d) below.

b, c.

Natural communities present on the project site include riverine habitat (the Sacramento River), riparian habitat, open-water habitat, montane chaparral, and mixed-conifer forest. Each of the communities are described below.

Riverine

The Sacramento River is considered a sensitive natural community. Work in and adjacent to the river is subject to State and/or federal jurisdiction. The Sacramento River could be directly affected by in-water work at the outfall and indirectly affected by construction-related activities along the access road and footpath. Access road and path construction have the potential to degrade water quality in the Sacramento River if sediments were to be discharged into the river. However, as described in Section III.C.6, “Geology and Soils,” a Storm Water Pollution Prevention Plan (SWPPP) would be implemented, including measures to prevent sediments from discharging off-site. Additionally, the proposed project would be subject to conditions of a Clean Water Act Section 404 Permit as required by U.S. Army Corps of Engineers (USACE), and a Section 1600 Lake or Streambed Alteration Agreement as required by CDFW.

The conditions of these permits ensure protection of watercourses and related resources, and include requirements for erosion control. Accordingly, no substantial adverse impacts to the Sacramento River would occur during construction of the proposed project.

With implementation of the proposed improvements, the quantity of treated effluent discharged to the Sacramento River would increase. However, construction of a longer river diffuser would create a larger mixing zone, resulting in better dispersion of the effluent and elimination of “hot spots” of concentrated effluent. The proposed project would also comply with requirements contained in the NPDES permit, such as monitoring for toxic substances, satisfying criteria for the mixing zone, and meeting dilution standards, to protect aquatic life and biologically sensitive or critical habitats. With compliance with regulatory permits, impacts relative to the Sacramento River, and its associated habitat, would be less than significant. Further, additional water in the system could represent a negligible benefit in terms of available water downstream.

Riparian

Along the banks of this segment of the Sacramento River, riparian vegetation is sparse (see photo below). The lack of vegetation is due to the steep canyon walls and bank scour from high flows during storm events, snow melt, and water-release events from Box Canyon Dam. The work area would likely be limited to 10 feet on either side of the outfall pipeline, energy dissipater, and diffuser and out towards the centerline of the river. Although a minor amount of vegetation, including riparian species, may be removed to facilitate the proposed improvements, this impact would be negligible given the volatile nature of the area where riparian vegetation is frequently stripped away by heavy river flows. Further, construction of the footpath from the access road to the outfall would ensure that disturbance associated with construction activities is confined to a specific area to avoid unnecessary impacts to vegetation and to reduce the potential for soil erosion. In addition, as called for in Mitigation Measure 4.4, the loss of riparian habitat would be avoided/minimized by careful pre-construction planning, and pruning riparian plants at ground level. Potential impacts on riparian habitat would be less than significant with mitigation.



Riparian vegetation in the vicinity of the diffuser pipe consists of several sedges upstream of the pipe and a willow cluster and sedges downstream of the pipe.

Open Water

Although not subject to state or federal jurisdiction as wetlands or “Other Waters,” the existing six unlined treatment lagoons are considered open-water habitat. The westernmost lagoon is the lowest-elevation lagoon, and the last lagoon in the treatment chain, and thus, contains the highest-quality effluent. This lagoon features emergent vegetation that provides cover for waterfowl and other wildlife. Waterfowl, as well as some unidentified turtles were observed during the field survey conducted by ENPLAN. As described in Section I.C, “Project Description,” all of the lagoons, with the exception of the northeastern-most lagoon, would be either be: 1) abandoned and allowed to be naturally inundated by rain and snowmelt, whereas the lagoons would continue to support waterfowl and other wildlife; or 2) supplemented with treated effluent which would enhance the habitat for waterfowl and other wildlife. In either case, the lagoons would continue to provide wildlife habitat. If the lagoons are not supplemented with treated effluent, they may dry out during the dry season, but would be filled back up with rain and snowmelt during the wet season. As a result, the lagoons would convert to a seasonal open-water habitat, but would still support waterfowl and provide suitable nesting habitat in the early spring and early summer months, when the majority of the birds would be nesting. If the lagoons are supplemented with treated effluent, they would likely not dry out, and instead, feature year-round open-water habitat. Additionally, the primary lagoons that held the lowest-quality effluent would receive higher quality effluent, and, thus, would be more likely to support emergent vegetation and improved wildlife habitat.

The northeastern-most lagoon would be converted to a lined emergency retention basin. Under the current treatment system, this basin receives raw effluent and therefore has only minimal wildlife habitat value. Conversion to a lined emergency retention basin would not result in significant habitat impacts. Overall, potential impacts on open-water habitat would be less than significant, or negligibly beneficial.

Montane Chaparral and Mixed-Conifer Forest

Project implementation would not substantially affect the montane chaparral and mixed-conifer forest community. Although some brush-clearing would occur along the access road and footpath to facilitate improved access to the outfall, this activity would be minor, and likely be limited to brush that has grown-in since vegetation along the access road was last maintained. If tree removal were to occur, affected trees would be few and small in diameter. Potential impacts on montane chaparral and mixed-conifer forest habitats would be less than significant.

d.

Project implementation would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, nor would it impede the use of native wildlife nursery sites. Numerous native resident and migratory fish and wildlife species inhabit Siskiyou County. Most notable among the migratory species are anadromous salmonids, black-tailed deer, and various species of migratory birds. As described above, no anadromous salmonids would be directly affected because Keswick Dam (over 40 miles downriver from the project site) is a barrier to anadromous fish in the Sacramento River. Anadromous salmonids would not be indirectly affected by project implementation because to the distance to downstream habitat. The black-tailed deer is not designated as a special-status species, but is of concern to CDFW. Review of the Siskiyou County General Plan found that the project site is located within a critical deer wintering area; however, because the proposed improvements would occur within the existing WWTP footprint, project implementation would have no significant impact on critical deer wintering areas.

The project site is located within the Pacific Flyway, and it is possible that migratory birds could nest on the site. Osprey, mallard, Canada goose, acorn woodpecker, Brewer’s blackbird, cliff swallow, common raven, killdeer, northern flicker, red-winged blackbird, Steller’s jay, and turkey vulture—all migratory birds—were observed on or adjacent to the project site. An active osprey nest was observed approximately 340 feet northwest of the project site, atop a man-made platform located at the southwestern corner of the westernmost lagoon. According to the WWTP staff, this pair of osprey is known to nest at this location each year. Canada geese also annually nest on the WWTP site.

The federal Migratory Bird Treaty Act (MBTA) and related international treaties and domestic laws provide protection for migratory birds. The MBTA established that all migratory birds and their parts (including eggs, nests, and feathers) are fully protected. The MBTA is the domestic law that affirms, or implements, the United States’ commitment to four international conventions (with Canada, Japan, Mexico, and Russia) for the protection of a shared migratory bird resource. Each of the conventions protects selected species of birds that are common to each country (i.e., they

occur in each country at some point during their annual life cycle). The USFWS is the federal agency primarily responsible for protection of migratory birds.

Minor vegetation clearing on the access road and for construction of the footpath, potential building demolition, and construction of the proposed improvements could impact nesting birds. Ground-nesting birds such as Canada geese and killdeer could potentially occupy the work area at the time construction is initiated, and other birds could be nesting in nearby woody vegetation. The existing osprey nest may be sufficiently far from the planned work area such that nesting osprey would not be affected by construction noise or other activities. As called for in Mitigation Measure 4.3, to comply with the requirements of the MBTA, vegetation removal and construction activities should occur outside of the nesting season, if possible. In the local area, most birds nest between February 1 and August 31. Accordingly, the potential for adversely affecting nesting birds can be greatly minimized by removing vegetation and conducting construction activities either before February 1 or after August 31. If this is not possible, a nesting survey would be conducted within one week prior to removal of vegetation and/or the start of construction. If active nests are found on the project site, work would need to be postponed in the vicinity of the nests until after the young have fledged. Further, to prevent nest abandonment and mortality of chicks and eggs, vegetation removal and construction activities would not occur within 500 feet of an active nest (including the osprey nest, if actively being used) unless a smaller buffer zone is authorized by CDFW and USFWS. If required by the agencies, a qualified biologist could monitor active nest(s) during construction for signs of disturbance to the nesting birds.

The proposed work would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. While the project site provides potential nesting habitat for migratory birds and potential rearing habitat for resident minnows and trout, the proposed project would not impede the use of suitable nursery sites for other wildlife species because only minimal amounts of natural habitat would be removed. Compliance with the requirements of the MBTA will ensure that nesting migratory birds are not adversely affected by the proposed project. Implementation of BMPs for erosion control and spill prevention would minimize potential effects on rearing fish to less than significant.

e.

Review of the City of Mt. Shasta General Plan confirmed that the proposed project is consistent with local policies and ordinances protecting biological resources.

f.

No adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans are applicable to the project site.

Mitigation

MM 4.1. The potential for direct impacts on foothill yellow-legged frogs, Pacific tailed frogs, and western pond turtles shall be avoided by having a qualified biologist conduct a pre-construction survey for these species immediately prior to the start of in-water work each day that in-water work would occur. Any foothill yellow-legged frogs and Pacific tailed frogs (including their egg masses and tadpoles), and/or western pond turtles that may be found shall be relocated to a safe location outside of the work area. Potential indirect impacts on foothill yellow-legged frogs, Pacific tailed frogs, and western pond turtles shall be minimized through use of Best Management Practices for erosion control and spill prevention.

MM 4.2. To ensure that western mastiff bats and spotted bats are not directly impacted, if existing buildings or structures are to be demolished, an acoustical survey for bats shall be conducted at the project site by a qualified bat biologist to determine presence or absence of bat species. In the event that western mastiff bats, spotted bats, or other special-status bat species are detected, appropriate humane eviction/exclusion measures shall be developed and implemented by the bat biologist in consultation with City of Mt. Shasta staff, preceding demolition activity.

MM 4.3. To ensure that active nests of migratory birds are not disturbed, vegetation removal and construction activities shall occur between August 31 and February 1, if feasible. If vegetation removal or construction must occur during the nesting season, a nesting survey shall be conducted by a qualified biologist to identify active nests in and adjacent to the work area. The survey shall be conducted no more than one week prior to the initiation of vegetation removal or facility construction. If nesting birds are found, the nest sites shall not be disturbed until after the young

have fledged. Further, to prevent nest abandonment and mortality of chicks and eggs, no vegetation removal or construction activities shall occur within 500 feet of an active nest, unless a smaller buffer zone is authorized by the California Department of Fish and Wildlife and the United States Fish and Wildlife Service (the size of the construction buffer zone may vary depending on the species of nesting birds present).

MM 4.4. The loss of riparian habitat along the Sacramento River shall be avoided/minimized and offset through implementation of the following:

- Minimize the construction disturbance to riparian habitat along the Sacramento River through careful pre-construction planning.
- In areas planned for temporary disturbance, prune riparian plants at ground level (as opposed to mechanically removing the entire plant and root system) to promote regeneration from the root systems.

Documentation

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Kate Grossman, Environmental Scientist – California Department of Fish and Wildlife, personal communication, June 22, 2015.

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Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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5. CULTURAL RESOURCES. Would the project:

- | | | | | |
|---|--------------------------|-------------------------------------|-------------------------------------|--------------------------|
| a. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §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 CEQA Guidelines §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 geologic feature? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d. Disturb any human remains, including those interred outside of formal cemeteries? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Discussion

a, b, d.

A cultural resources study, including a records search, Native American consultation, and field survey, was completed for the project by ENPLAN.

Consultation with the Native American Heritage Commission and local Native American community did not reveal any known sacred sites or cultural resources in the project area. The record search included review of the data filed with the California Historical Resources Information System, Northeast Information Center, at California State University, Chico, as well as other sources. The record search indicated that three prehistoric isolates have been previously recorded within one-half-mile of the project site. The prehistoric isolates consist of obsidian flakes. Records indicate that eight cultural resource surveys have been previously conducted within a half-mile of the project site; however none encompassed any portion of the project site.

ENPLAN conducted a pedestrian survey on April 10 and September 3, 2015. The survey resulted in the identification of one prehistoric lithic isolate and one dispersed historic refuse deposit. The isolate was found within aggregate base fill imported to the site, and may have been imported with the fill. The refuse deposit dates to the mid twentieth century and later. Neither of these features are unique, offer research value, or are eligible for listing on the National Register of Historic Places or California Register of Historic Resources.

Given the above findings, project implementation would not cause a substantial adverse change in the significance of a historical resource or archaeological resource. However, the project area is considered moderately sensitive for the presence of historic and prehistoric features, and it is possible that undocumented cultural remains could be encountered during subsurface excavations. Implementation of Mitigation Measures 5.1 and 5.2 below would ensure that potential impacts associated with the proposed project would be less than significant.

c.

According to the California Geological Survey, the project site is comprised of sedimentary rock with nonmarine alluvium, lake, playa, and terrace deposits, of the Holocene and Pleistocene ages. These formations are old enough to contain paleontological resources. However, the proposed improvements would occur within the existing footprint of the WWTP, and would not require substantial excavation or earthwork to construct. Further, no unique geologic features, or paleontological sites are known to exist in the vicinity of the project site. Impacts would be less than significant.

Mitigation

MM 5.1. If any human remains are encountered during any phase of construction, all earth-disturbing work shall stop within 50 feet of the find. The county coroner shall be contacted to determine whether investigation of the

cause of death is required as well as to determine whether the remains may be Native American in origin. Should Native American remains be discovered, the county coroner must contact the Native American Heritage Commission (NAHC). The NAHC will then determine those persons it believes to be most likely descended from the deceased Native American(s). Together with representatives of the people of most likely descent, a qualified archaeologist shall make an assessment of the discovery and recommend/implement mitigation measures as necessary.

MM 5.2. If any previously unevaluated cultural resources (i.e., burnt animal bone, midden soils, projectile points or other humanly-modified lithics, historic artifacts, etc.) are encountered, all earth-disturbing work shall stop within 50 feet of the find until a qualified archaeologist can make an assessment of the discovery and recommend/implement mitigation measures as necessary.

Documentation

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Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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6. GEOLOGY AND SOILS. Would the project:

- a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - 1) 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.
 - 2) Strong seismic ground-shaking?
 - 3) Seismic-related ground failure, including liquefaction?
 - 4) Landslides?
- b. Result in substantial soil erosion or the loss of topsoil?
- c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?
- d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?
- e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Discussion

a. The project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

1) Rupture of a known earthquake fault:

According to the Alquist-Priolo Earthquake Fault Zoning Map for Siskiyou County, there are no Alquist-Priolo Special Study Zones in the project vicinity. The nearest Alquist-Priolo Special Study Zones, which identify fault areas considered to be of greatest risk in the state, occur primarily in the northeastern corner of Siskiyou County. Review of the U.S. Geological Survey’s earthquake fault map shows that the nearest earthquake fault is a north-south trending fault running through the top of Mount Shasta, approximately six miles east of the project site.

2), 3) Strong seismic ground shaking or seismic-related ground failure, including liquefaction:

According to the City of Mt. Shasta General Plan, the local area is located in a “moderate” seismicity zone with a possible maximum earthquake intensity of VI (Strong) or VII (Very Strong) on the Modified Mercalli Scale. Earthquakes of this magnitude would be noticeable by the public and could cause minor to moderate structural damage. However, as described in the City of Mt. Shasta General Plan EIR, the City of Mt. Shasta has adopted the Uniform Building Code (UBC), which establishes building requirements for all new structures. Located in Zone 3 of the UBC, such areas are subject to strict building regulations designed to enhance the ability of a

structure to withstand potential earthquakes. Compliance with UBC seismic standards will reduce the potential impact to less than significant.

Liquefaction is primarily associated with saturated, cohesionless soil layers located close to the ground surface. During liquefaction, soils lose strength and ground failure may occur. This phenomenon is most likely to occur in alluvial (geologically recent, unconsolidated sediments) and stream channel deposits, especially when the groundwater table is high. According to the City of Mt. Shasta General Plan, soils underlain with glacial outwash deposits consisting of sands, such as at the location of the Sisson School, may be subject to liquefaction as a result of seismic activity. Soils of the project site are underlain with sedimentary rock consisting of nonmarine alluvium, lake, playa, and terrace deposits. Although it is possible that liquefaction could occur due to the presence of alluvium, the project site is not located near any known active seismic sources; thus, the potential for liquefaction is low.

Based on the information provided above, the potential for adverse effects resulting from seismic ground shaking, or seismic-related ground failure, including liquefaction, is less than significant.

4) Landslides:

During preparation of the Siskiyou County General Plan, reconnaissance mapping was undertaken to identify potential geologic hazards. Mapping of slope instability of areas west of Interstate 5 included Box Canyon. Additionally, the City of Mt. Shasta General Plan states that landslides may be triggered on or near a volcano by an eruption or by seismic events related to volcanic forces beneath the surface. Although a portion of the project site is located within Box Canyon, and the project site is located in the vicinity of a volcano, the proposed improvements would not result in substantial earthwork or vegetation removal that would increase exposure of people or structures to landslides. Potential effects from landslides on the project site or in the project vicinity are expected to be less than significant.

b.

Soils within the project site are mapped as Neer-Ponto stony sandy loam, 15 to 50 percent slopes, at the location of the outfall, and Ponto-Neer complex, 2 to 15 percent slopes, at the replacement treatment facility. Project soil types are summarized in Table 3.

**Table 3
Soil Type and Characteristics**

Soil Name	Soil Type	Slope (%)	Erosion Potential	Permeability	Drainage	Runoff Rate
Neer-Ponto stony sandy loam	Sandy loam	15-50	High	Rapid	Well drained	Moderate
Ponto-Neer complex	Sandy loam	2-15	High	Moderate	Well drained	Moderate

Sources: U.S. Department of Agriculture, Natural Resources Conservation Service, 2015; U.S. Department of Agriculture, Soil Conservation Service et al., 1983.

BMPs for erosion and sediment control would be implemented during project construction, as required by the Construction General Permit Order issued by the Central Valley RWQCB; the order requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) for all projects that disturb one or more acres of soil. Measures that may be implemented to minimize erosion include limiting construction to the dry season; use of straw wattles, silt fences, and/or gravel berms to prevent sediments from discharging off-site; and revegetating temporarily disturbed sites upon completion of construction. Because BMPs for erosion and sediment control would be implemented in accordance with existing requirements, the potential for soil erosion and loss of top soil would be less than significant.

c.

The potential hazards associated with liquefaction and landslides are addressed in impacts (a)3 and (a)4 above. In regard to the potential for lateral spreading, subsidence, or collapse, according to the Natural Resources Conservation Service (NRCS), soils on the project site have the potential to be unstable, and are likely limited in regards to shallow excavations and construction of small commercial buildings. Excavation up to 15 feet deep would be involved as part of the construction of the proposed project. However, the State provides minimum standards for design and construction through the UBC. In addition, the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal-OSHA), has developed and enforces numerous workplace safety regulations

and requirements within California. Because both the design and construction of project-related facilities in unstable soils is required by law to comply with Cal-OSHA and UBC regulations, which were developed to reduce risks to life and property the maximum extent practical, this impact would be less than significant.

d.

Expansive soils contain higher levels of clay and present hazards for development since they expand and shrink depending on water content. NRCS data shows that soils in the project site have some potential for soil expansion/contraction, but that any such limitations can be overcome or minimized through proper planning, design, and/or construction. No substantial risks to life or property are anticipated.

e.

The proposed project is limited to treatment facility and outfall improvements. As such, the project would not require the use of septic tanks or alternative wastewater disposal systems.

Mitigation

None necessary

Documentation

- City of Mt. Shasta. 2006. Draft Environmental Impact Report for the City of Mt. Shasta General Plan Update Project. Prepared by Pacific Municipal Consultants. Mt. Shasta, California.
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- U.S. Department of Agriculture, Soil Conservation Service and Forest Service; University of California Agricultural Experiment Station. 1983. Soil Survey of Siskiyou County California Central Part.
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Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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7. GREENHOUSE GAS EMISSIONS. Would the project:

- a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Discussion

a.

Improvements to existing wastewater treatment plant facilities would result in short-term construction emissions as well as long-term operational emissions, including greenhouse gas emissions. The principal greenhouse gases of concern for a project of this nature are carbon dioxide (CO₂), nitrogen oxides (NO_x), and methane (CH₄). All greenhouse gases are assigned a global warming potential (GWP). This value is used to compare the abilities of different greenhouse gases to trap heat in the atmosphere. GWPs are based on the heat-absorbing ability of each gas relative to that of carbon dioxide (assigned a value of 1), as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years). GWPs can also be used to define the impact greenhouse gases will have on global climate change over different time periods. Assigning a GWP allows policy makers to compare impacts of emissions and reductions of different gases on an equal basis, termed “CO₂ equivalents” (CO₂e). As can be seen from Table 4, NO_x is 298 times more potent than CO₂ in terms of global warming potential, while CH₄ is 25 times more potent than CO₂.

To identify the threshold of significance for greenhouse gases, ENPLAN contacted Siskiyou County Air Pollution Control District staff (SCAPCD). SCAPCD reviewed the thresholds adopted by other Districts (i.e., Sacramento Metropolitan and South Coast Air Quality Management Districts) and determined that the 10,000 metric tons/year CO₂e threshold adopted by these Districts is appropriate for the proposed project (Sumner, SCAPCD, pers. comm.).

As documented in Section III.C.3, “Air Quality,” project construction would result in emissions of about 36 lbs/day of NO_x and 6,642 lbs/day of CO₂; minor amounts of CH₄ would also be present in vehicle emissions. To determine the project’s overall impact on greenhouse gas levels, emissions from the 22-month project-construction period were amortized over 20 years (the planning timeframe for the proposed project) and added to the projected annual operational emissions; the resulting emission totals are shown in Table 4.

Long-term operational emissions of the proposed project would be comprised of emissions generated by the activated sludge treatment system as well as those generated during the transport of sludge to a landfill located in southern Oregon (combustion of diesel fuel). According to the project engineer, sludge hauling trips would occur up to once every three days. Greenhouse gases emitted during sludge hauling trips are also included in Table 4. Three scenarios are addressed in Table 4: the existing condition, which assumes a lagoon treatment system processing 0.7 MGD ADWF; an activated sludge treatment system in Year 2039 processing 0.9 MGD ADWF, i.e., without a Crystal Geyser connection; and an activated sludge treatment system in Year 2039 processing 1.05 MGD ADWF, i.e., with Crystal Geyser contributing 0.15 MGD of wastewater to the treatment plant.

Table 5 shows the total annual CO₂ equivalents attributable to each scenario, as well as the increase in greenhouse gas emissions anticipated by the Year 2039. Based on this information, greenhouse gas emissions resulting from project construction, treatment plant operations, and sludge disposal would range from about 1,500 to 2,000 metric tons per year, which is well below the 10,000 metric ton threshold. Therefore, the impact of the proposed project on greenhouse gas levels would be less than significant, even if Crystal Geyser is allowed to connect to the City’s wastewater system.

Table 4
Projected Annual Greenhouse Gas Emissions

(Amortized Construction Emissions, Treatment Plant Operational Emissions, and Sludge Transportation Emissions)

	Existing Condition ¹	Proposed Project ²	Proposed + Crystal Geyser ³	Existing Condition ¹	Proposed Project ²	Proposed + Crystal Geyser ³	Existing Condition ¹	Proposed Project ²	Proposed + Crystal Geyser ³
	NO _x			CH ₄			CO ₂		
Metric Tons/Year	0.30	0.94	1.00	54.39	86.51	100.74	137.61	686.33	782.69
GWP ⁴	298			25			1		
CO ₂ e/Year	90.28	281.31	299.19	1,359.63	2,162.75	2,518.50	137.61	686.33	782.69

¹ The existing condition (environmental baseline) assumes a lagoon treatment system processing 0.7 MGD ADWF.

² The proposed project assumes an activated sludge treatment system in Year 2039 processing 0.9 MGD ADWF, i.e., without a Crystal Geyser connection.

³ The proposed project plus Crystal Geyser assumes an activated sludge treatment system in Year 2039 processing 1.05 MGD ADWF.

⁴ Global Warming Potentials are presented by the U.S.EPA in the IPCC Fourth Assessment Report, 2007.

Table 5
Projected Total Greenhouse Gas Emissions and Change from Existing Condition

	Annual CO ₂ e Emissions (metric tons/year)	Increase Above Existing Condition (metric tons/year)
Existing Condition	1,588	--
Proposed Project	3,130	1,542
Proposed + Crystal Geyser	3,600	2,012

See footnotes for Table 4.

b.

The project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Mitigation

None necessary

Documentation

Environmental Protection Agency. 2005. Average Carbon Dioxide Emissions Resulting from Gasoline and Diesel Fuel. <http://nepis.epa.gov/Exe/ZyPDF.cgi/P1001YTF.PDF?Dockey=P1001YTF.PDF>. Accessed September 2015.

Environmental Protection Agency. 2008. Average In-Use Emissions from Heavy-Duty Trucks. <http://www.epa.gov/otaq/consumer/420f08027.pdf>. Accessed September 2015.

Kim Sumner, Air Pollution Specialist, Siskiyou County Air Pollution Control District, personal communication, September 2015.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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8. HAZARDS AND HAZARDOUS MATERIALS. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| 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 checked="" type="checkbox"/> | <input 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 type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard 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 type="checkbox"/> | <input checked="" 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 type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion

a, b.

Project operation would not result in an increased use of hazardous materials, nor would it increase the potential for a release of hazardous materials to the environment. The existing wastewater treatment process utilizes chlorine gas, a hazardous material, to disinfect wastewater effluent. With project implementation, chlorine gas would be replaced by UV radiation, which is considered a non-hazardous material and a safer disinfection alternative for WWTP staff. Although additional sludge would be generated and frequently transported off-site to a landfill, sludge is not considered a hazardous material, and therefore, would not pose a significant hazard to the public. Project construction would involve use of relatively small quantities of materials such as diesel, gasoline, oils, and other engine fluids. Existing State standards govern the transport, use, and disposal of hazardous materials; because work would be conducted in accordance with these existing requirements, potential impacts would be less than significant and no mitigation measures are warranted.

c.

The proposed project would not emit hazardous emissions or handle hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. The nearest school, Mt. Shasta Elementary School, is located approximately 2.2 miles north of the project site.

d.

Review of the State's EnviroStor and GeoTracker databases showed that the project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

e, f.

There are no airports, public or private, located in the project vicinity. Dunsmuir Municipal-Mott Airport, the closest airport, is located approximately 2.1 miles to the southeast of the project site. Implementation of the proposed project would not result in an aviation-related safety hazard for people residing or working in the project area.

g.

The proposed project does not involve a use or activity that could interfere with emergency-response or emergency-evacuation plans for the area. Although an increase in traffic volume could interfere with emergency-response times, construction-related traffic associated with the proposed project 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. Impacts are expected to be less than significant.

h.

The proposed project would be located in a semi-rural area. According to CAL FIRE, the proposed project is located in a "very high" fire hazard area. However, the proposed project entails improvements to the existing WWTP and would not expose people or structures to an increased risk of fire. Impacts would be less than significant.

Mitigation

None necessary

Documentation

CAL FIRE. 2007. Siskiyou County Fire Hazard Severity Zones in State Responsibility Area.

http://frap.fire.ca.gov/webdata/maps/siskiyou/fhszs_map.47.pdf. Accessed March 2015.

Department of Toxic Substances Control. 2007. EnviroStor.

http://www.envirostor.dtsc.ca.gov/public/search.asp?PAGE=11&CMD=search&ocieerp=False&business_name=&main_street_number=&main_street_name=&city=&zip=&county=&branch=&status=ACT%2CBKLG%2CCOM&site_type=CSITES%2COPEN%2CFUDS%2CCLOSE&cleanup_type=&npl=&funding=&reporttype=CORTESE&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SITE+LIST&federal_superfund=&state_response=&voluntary_cleanup=&school_cleanup=&operating=&post_closure=&non_operating=&corrective_action=&tiered_permit=&evaluation=&spec_prog=&national_priority_list=&senate=&congress=&assembly=&critical_pol=&business_type=&case_type=&display_results=&pub=&hwmp=False&permitted=&pc_permitted=&inspections=&complaints=&ORDERBY=county&next=Next+50. Accessed March 2015.

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Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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9. HYDROLOGY AND WATER QUALITY. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a. Violate any water quality standards or waste-discharge requirements? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, 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"/> |
| d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| f. Otherwise substantially degrade water quality? | <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 which 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 the failure of a levee or dam? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| j. Inundation by seiche, tsunamis, or mudflow? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion

a.

The proposed project has the potential to temporarily degrade water quality due to increased erosion during project construction. However, as previously described in Section III.C.6, "Geology and Soils," BMPs for erosion and sediment control would be implemented. In addition, as described in Section III.C.4, "Biological Resources," the footpath leading from the access road to the outfall would be constructed, which would minimize soil disturbance and impacts on vegetation.

The proposed project also has the potential to degrade water quality in the long term, during project operation. However, the project would comply with the terms of the Construction General Permit, which includes BMPs to reduce pollutants in post-construction runoff, as well as with the requirements of Title 22, California Code of Regulations, for discharge to the river under the jurisdiction and enforcement of the California Department of Public Health. The intent of these regulations is to ensure the protection of public health in regards to treated wastewater discharge and the potential for potential water quality concerns associated with pathogens, chemicals, nitrogen, etc. These regulations include measures to adequately disinfect for coliform, and require that incidental runoff be minimized and routinely monitored. Given these requirements, impacts of project construction and operation with respect to water quality standards and wastewater discharge requirements are expected to be less than significant.

b.

The proposed project would not require new groundwater supplies for construction or operation of the project. The project would result in minor overcovering of ground surfaces that could potentially reduce groundwater recharge. However, effects on groundwater levels would be negligible.

c.

Proposed improvements would occur in previously disturbed areas within the existing footprint of the WWTP. Work would not alter the topography of the site or existing drainage patterns. Additionally, as previously described, BMPs for erosion and sediment control would be implemented during project construction. Therefore, no significant impacts with respect to drainage patterns, erosion, or siltation are expected as a result of project construction.

d.

Project implementation would not alter existing drainage patterns, alter 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. In accordance with the General Construction Permit requirements, post-construction peak runoff volume would not exceed pre-construction peak runoff volume.

Project implementation would result in an increase of the volume of treated effluent discharged to the Sacramento River. During peak discharge, the additional inflow could increase the depth of the river by up to approximately 0.03 inches. This increase would have a negligible effect on flooding, according to PACE Engineering, Inc. Further, the velocity of the effluent discharged to the river would not increase. Therefore, no significant impacts with respect to on-site or off-site flooding are expected as a result of project operation.

e.

Other than open drainage ditches, no storm water drainage systems exist or are planned for the project site. Because the proposed project would only minimally increase the amount of impervious surfacing, the volume of storm water generated as a result of construction would increase only slightly, and would not exceed the capacity of the existing ditches. As noted above, project implementation would result in an increase of the volume of treated effluent discharged to the Sacramento River. However, the discharge would be routinely monitored to ensure that acceptable thresholds for water quality are not exceeded. No impacts on storm drain systems or water quality are anticipated.

f.

Project construction could contribute to water quality degradation through increased erosion and sedimentation or through the release of fuels, paints, or other potentially hazardous materials. The use of BMPs for erosion control and spill prevention, combined with compliance with existing requirements governing the transport, use, and disposal of fuels and other potentially hazardous materials, would reduce the potential for water quality degradation during construction to an insignificant level. In addition, construction of the footpath from the access road to the outfall would reduce erosion during construction activities. In the long term, operation of the project would not degrade water quality due to compliance with the NPDES permit.

g.

The proposed project would not involve the construction of any housing. Further, the project site is not within a 100-year floodplain, as mapped on any flood hazard delineation map.

h.

The wastewater treatment plant is not within a 100-year floodplain and, with the exception of the outfall diffuser, the proposed project would not involve the construction of structures within a 100-year floodplain. The diffuser will be within the 100-year floodplain, but will be below the level of the streambed such that it will not be an impediment to flood flows.

i.

The main treatment facility is located approximately 380 feet above the elevation of the Sacramento River, and therefore, would not be at risk of flooding from the river. The Sacramento River outfall is located at the base of Box Canyon, and is subject to flooding. However, the outfall infrastructure is designed to withstand high flows. Thus, the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving flooding.

j.

The project site is located within the interior of California where there is no threat of a tsunami. Although Lake Siskiyou could experience seiches as a result of very strong ground-shaking, this water body is ±100 feet below the elevation of the treatment facility; therefore, with the exception of the outfall, there is no risk of inundation of the project site from seiches. As noted above, the outfall diffuser is designed to withstand flood flows. According to the City of Mt. Shasta General Plan EIR, the proposed project is located in an area mapped as a low potential for a volcanically-triggered mud flow event; however, "such an event may not occur for hundreds of years, if ever, and leads local agencies to conclude that the potential is not a constraint to planning and approval of development projects in areas that may be geographically vulnerable." The project site is not located in an area where inundation by seiche, tsunami, or mudflow is a significant risk to the project.

Mitigation

None necessary

Documentation

- Central Valley Regional Water Quality Control Board. 2012. Order R5-2012-0086. NPDES No. CA0078051. Waste Discharge Requirements for the City of Mt. Shasta and U.S. Department of Agriculture, Forest Service, City of Mt. Shasta Wastewater Treatment Plant, Siskiyou County. October 4.
- City of Mt. Shasta. 2006. Draft Environmental Impact Report for the City of Mt. Shasta General Plan Update Project. Prepared by Pacific Municipal Consultants. Mt. Shasta, California.
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- Federal Emergency Management Agency. 2015. National Flood Hazard Layer. <http://fema.maps.arcgis.com/home/webmap/viewer.html?webmap=cbe088e7c8704464aa0fc34eb99e7f30>. Accessed March 2015.
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- Siskiyou County. 1975. General Plan for Siskiyou County, California. Seismic Safety and Safety Element. <http://www.co.siskiyou.ca.us/content/planning-division-siskiyou-county-general-plan>. Accessed March 2015.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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10. LAND USE AND PLANNING. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a. Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. Conflict with any applicable habitat conservation plan or natural community conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

a.

The proposed project is located outside the city limits of Mt. Shasta, at the southern terminus of a semi-rural road. No established access routes would be eliminated or impeded. Therefore, project implementation would not physically divide an established community.

b.

The City’s General Plan Land Use Map designates the project site as Public Land and Parks. The Siskiyou County General Plan Land Use Element identifies the project site as being located within the following mapped areas: Soils – Erosion Hazard (High); Building Foundation Limitation – Severe Pressure Limitations Soils; Slope; Flood Hazard – Dam Inundation Areas; Surface Hydrology – Rivers and Streams; Critical Deer Wintering Area – Deer Wintering Area; Wildfire Hazard (High); and Woodland Productivity – High Suitability (site classes I and II). While the City of Mt. Shasta does not provide zoning for the project site, the County’s zoning map designates the project site as Non-Prime Agricultural/Combining District for 40-acre parcels (AG-2-B-40). As previously stated, according to Article 49, Section 10-6.4903, of the Siskiyou County Code, a public utility is permitted in the AG-2 District if a use permit is obtained. However, because the project site is owned by the City, the WWTP is not subject to County zoning requirements. Thus, the proposed project is compatible with applicable City and County land use designations and zoning. The proposed project would not conflict with any applicable land use plan, policy, or regulation of any agency with jurisdiction over the project.

c.

There are no habitat conservation plans or natural community conservation plans that are applicable to the project site.

Mitigation

None necessary

Documentation

California Department of Fish and Wildlife. 2014. California Regional Conservation Plans Map. <http://www.dfg.ca.gov/habcon/nccp/>. Accessed March 2015.

City of Mt. Shasta. 2007. City of Mt. Shasta General Plan. Land Use Element. <http://ci.mtshasta.ca.us/planning/genplan/3LandUseElement.pdf>. Accessed April 2015.

Siskiyou County. 1974. General Plan for Siskiyou County, California. Land Use & Circulation Elements. http://www.co.siskiyou.ca.us/sites/default/files/docs/GP_ScenicHighwaysElement.pdf. Accessed August 2015.

Siskiyou County. 2015. Siskiyou County, California - Code of Ordinances. Updated May 27. https://www.municode.com/library/ca/siskiyou_county/codes/code_of_ordinances. Accessed July 2015.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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11. MINERAL RESOURCES. Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 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"/> |

Discussion

a, b.

A mineral resource is land on which known deposits of commercially viable mineral or aggregate deposits exist. The designation is applied to sites determined by the California Geological Survey as being a resource of regional significance, and is intended to help maintain any mining operations and protect them from encroachment of incompatible uses. The project site has not been classified by the California Geological Survey as containing significant mineral resources.

According to the Mt. Shasta General Plan, the only noteworthy mineral resource in the vicinity is aggregate, which is actively mined at the Upton Pit and Spring Hill Mine, located approximately 3.9 and 4.7 miles north of project site, respectively. The Conservation Element of the Siskiyou County General Plan does not identify any specific areas of mineral resources within the County to be protected; nor does it identify any locations of commercial extraction. Project implementation would not result in a change in land use patterns and would therefore have no effect on the on-site or off-site availability of mineral resources.

Mitigation

None necessary

Documentation

City of Mt. Shasta. 2007. City of Mt. Shasta General Plan. 5. Open Space/Conservation Element. <http://ci.mtshasta.ca.us/planning/genplan/5OpenSpaceandConservationElement.pdf>. Accessed May 2015.

Department of Conservation, California Geological Survey. 2007. SMARA Mineral Land Classification Maps. <http://www.quake.ca.gov/gmaps/WH/smaramaps.htm>. Accessed March 2015.

Siskiyou County. 1973. The Conservation Element of the General Plan, Siskiyou County, California. June. http://www.co.siskiyou.ca.us/sites/default/files/docs/GP_ConservationElement.pdf. Accessed March 2015.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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12. NOISE. Would the project result in:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project 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"/> |
| f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

a, c, d.

Project implementation has the potential to increase noise levels in the short term during project construction and in the long term due to project operation. With respect to short-term noise level increases, construction equipment anticipated to be used for project construction typically generate maximum noise levels ranging from 80 to 85 decibels (dBA) at a distance of 50 feet. Noise from construction activities generally attenuates at a rate of 7.5 dBA per doubling of distance, assuming the intervening ground is vegetated or unpacked earth. Typical sound levels and relative loudness for various types of noise environments are described in Table 6. At an attenuation rate of 7.5 dBA, 80-85 dBA noise levels would drop to 60-65 dBA at a distance of 300 feet. The nearest residence to the project site is approximately 310 feet away; the maximum noise level at this location would be approximately 65 dBA. Construction noise levels at and near the project site would fluctuate, depending on the number and type of construction equipment operating at any given time.

Construction activities would be completed within approximately 19 months. The majority of the work would involve use of non-heavy construction equipment (i.e., electrical work) and would therefore generate minimal noise level increases. According to the City of Mt. Shasta General Plan Noise Element, construction activities occurring between the hours of 7:00 a.m. and 5:00 p.m. are exempt from City noise standards. To comply with this policy, work associated with the proposed project would occur during weekdays between the hours of 7:00 a.m. and 5:00 p.m. unless special activities (i.e. tie-ins) are required at night during periods of low flow. With the majority of the construction activities confined to daytime hours, the majority of the work producing low-levels of noise, and the distance to area residences, construction noise levels would be less than significant.

Project operation would not result in a perceptible increase in noise levels. Noise levels generated during normal operations of the new facility are expected to be lower than the noise levels generated by the existing treatment facility. The replacement treatment facility would utilize blowers that are much quieter than the existing blowers. However, the existing blowers may remain in service to provide occasional aeration to the emergency retention basin.

Under this scenario, the new treatment facility would have the same noise level as the existing. Operational noise levels are expected to be less than significant.

**Table 6
Examples of Construction Equipment
Noise Emission Levels**

Equipment	Typical Noise Level (dBA) 50 ft from Source
Air Compressor	81
Backhoe	80
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Derrick	88
Crane, Mobile	83
Dozer	85
Generator	81
Grader	85
Loader	85
Paver	89
Pile-Driver (Impact)	101
Pile-Driver (Sonic)	96
Pump	76
Saw	76
Truck	88

Source: Federal Transit Administration 2006:12-6, adapted by ENPLAN 2015.

b.

Project construction would consist primarily of excavation, trenching, and concrete-pouring activities for improvements to the treatment facility. However, installation of the replacement river diffuser as part of the outfall improvements may require removal of submerged rock in the Sacramento River. If bedrock is present, and rocks cannot be rolled away, a rock drill, or similar tool that can be used by hand, may be necessary to break the rock. Although this method could generate some groundborne noise or vibration, this activity would be small in scale and temporary in nature. With regard to project operation, no groundborne vibration or groundborne noise would occur. Thus, the proposed project would not expose people to or generate excessive groundborne vibration or groundborne noise levels.

e, f.

The airport nearest the project site is the Dunsmuir Municipal-Mott Airport, which is located approximately 2.1 miles to the southeast. Due to the airport's relatively small traffic volume and its distance from the project location, people working within the project area would not be exposed to excessive aircraft-generated noise levels.

Mitigation

None necessary

Documentation

City of Mt. Shasta. 2007. City of Mt. Shasta General Plan. 7. Noise Element.

<http://ci.mt-shasta.ca.us/planning/genplan/7Noise.pdf>. Accessed July 2015.

Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06.

Washington, DC: Office of Planning and Environment.

http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf. Accessed March 2015.

Grant Maxwell, Engineer - PACE Engineering, Inc., personal communication, May 2015.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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13. POPULATION AND HOUSING. Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

a.

The proposed project would not induce substantial population growth in the area, either directly or indirectly. The existing sewage collection and treatment system serves approximately 1,777 connections, which generated an estimated ADWF of about 0.7 MGD (Fiscal Year 2012-2013 data). According to the Feasibility Study, the WWTP is currently near its design capacity, which is an ADWF of about 0.75 MGD.

As described in Section I.B.2, under “Project Need and Objectives,” an annual growth rate of about one percent over the 20-year planning period for the WWTP is reasonable for projecting the number of future sewer services with the service area boundary, which includes both incorporated and unincorporated areas of Mt. Shasta. With implementation of the proposed improvements and in an effort to provide sufficient wastewater treatment for the projected population growth, the WWTP would be designed to provide an ADWF of 0.9 MGD.

A new industrial user, Crystal Geyser, plans to expand its bottling operations at the former Coca-Cola facility just outside of the city limits of Mt. Shasta on Ski Village Drive. According to Crystal Geyser, additional flows during the first 5 years of its operation would be approximately 0.05 MGD. It is anticipated that the existing lagoon system can handle this additional flow while the proposed improvements are constructed. At full build-out, after at least five years of operation, Crystal Geyser has indicated it would contribute up to 0.15 MGD to the City’s wastewater system. If Crystal Geyser is allowed to connect to the City’s wastewater system, the treatment capacity of the WWTP would be modified to accommodate an ADWF of 1.05 MGD in order to serve both the full build-out of Crystal Geyser and the projected population growth. However, as stated in Section I.B.2, under “Project Need and Objectives,” improvements to increase the capacity to accommodate Crystal Geyser would be made following separate CEQA approval for connection of Crystal Geyser to the City’s wastewater system and receipt of financial assurance from Crystal Geyser that they would cover the cost of the expansion.

The population growth rate used to determine the number of future sewer services, one percent, is lower than the two percent population growth rate that was considered in the City of the Mt. Shasta General Plan Draft EIR. Further, under the higher growth rate, considered in itself a high-end estimate, the General Plan EIR concluded that there was adequate land to meet local housing needs, and that the goals and policies contained in the General Plan would not substantially change or result in further inducement of substantial population growth.

Because the increase in treatment capacity would be based on a projected population growth rate that is half the projected population growth rate analyzed in the City of Mt. Shasta General Plan and General Plan EIR, and because the potential additional capacity for Crystal Geyser would be evaluated under separate CEQA review, project implementation would not be expected to induce population growth in the project vicinity beyond that currently anticipated.

b.

Project implementation would consist of improvements to the WWTP and outfall diffuser, as required by the NPDES permit. Implementing the proposed project would not displace existing housing or necessitate the construction of replacement housing elsewhere.

c.

For the reason described in response to item (b) above, implementation of the proposed project would not displace any people, or necessitate the construction of replacement housing elsewhere.

Mitigation

None necessary

Documentation

City of Mt. Shasta. 2006. Draft Environmental Impact Report for the City of Mt. Shasta General Plan Update Project.

Prepared by Pacific Municipal Consultants. Mt. Shasta, California.

Grant Maxwell, Engineer - PACE Engineering, Inc., personal communication, May 2015.

PACE Engineering, Inc. 2015. Draft Preliminary Engineering Report and Feasibility Study. State Mandated Wastewater Treatment and Disposal Improvement Project. Prepared for City of Mt. Shasta. Unpublished document on file with City of Mt. Shasta.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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14. PUBLIC SERVICES.

a. 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 public services:

i. Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

a-i, ii.

The proposed project consists of improvements to the treatment and outfall facilities within the existing WWTP footprint, which is a secure area surrounded by fencing, and is not intended for human occupancy, and therefore, would not affect fire or police protection services.

a-iii.

The proposed project does not include the construction of any new housing units and would not result in any increase in the City’s population or increased numbers of students served by local schools.

a-iv.

The proposed project does not include the provision of any new park facilities nor would it adversely affect any existing park facilities.

a-v.

The proposed project is not intended for human occupancy, and would not result in a substantial increase of construction-related or operational traffic on local roadways. Therefore, the project is not expected to result in a significant impact on other public facilities.

Mitigation

None necessary

Documentation

PACE Engineering, Inc. 2015. Draft Preliminary Engineering Report and Feasibility Study. State Mandated Wastewater Treatment and Disposal Improvement Project. Prepared for City of Mt. Shasta. Unpublished document on file with City of Mt. Shasta.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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15. RECREATION. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 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"/> |

Discussion

a.

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

b.

The proposed project does not include the construction or expansion of new recreational facilities.

Mitigation

None necessary

Documentation

Central Valley Regional Water Quality Control Board. 2012. Order R5-2012-0086. NPDES No. CA0078051. Waste Discharge Requirements for the City of Mt. Shasta and U.S. Department of Agriculture, Forest Service, City of Mt. Shasta Wastewater Treatment Plant, Siskiyou County. October 4.

Grant Maxwell, Engineer - PACE Engineering, Inc., personal communication, August 2015.

PACE Engineering, Inc. 2015. Draft Preliminary Engineering Report and Feasibility Study. State Mandated Wastewater Treatment and Disposal Improvement Project. Prepared for City of Mt. Shasta. Unpublished document on file with City of Mt. Shasta.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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16. TRANSPORTATION AND CIRCULATION. Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e. Result in inadequate emergency access? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

a, b.

The proposed improvements would be located within the existing footprint of the WWTP, and would not alter the location, distribution, density, or growth rate of the population. As such, implementation of the proposed project is not expected to substantially affect the surrounding transportation network in the long term, and would not conflict with existing plans, ordinance, policies or programs. Short-term increases in traffic volume on the local road network would occur during construction, but would not be considered significant. In the long-term operation of the project, sludge would be hauled from the WWTP to a landfill every three days. The haul truck would likely be a Class 7 (26,001 - 33,000 lbs) diesel truck, which is a common type of heavy-duty vehicle (e.g., refuse, furniture, city transit bus, truck tractor), frequently utilizing local roads and Interstate 5. Impacts on local circulation and congestion would be less than significant.

c.

The nearest airport, Dunsmuir Municipal-Mott Airport, is located approximately 2.1 miles to the southeast of the project site. The proposed project does not involve any aviation-related uses, would not result in a change in air traffic patterns, and would not result in substantial aviation-related safety risks.

d.

The proposed project would not alter public access routes or increase hazards due to transportation design features or incompatible uses. No impact would occur.

e.

The project would not adversely affect emergency access in the short term because construction-related traffic would be minimal and spread over the duration of the construction schedule. Further, proposed improvements would be located within the existing footprint of the WWTP, which is not open to public access, and would therefore not interfere with emergency access. In the long term, heavy-duty truck traffic would increase by about one round trip per three days, which is negligible in terms of overall traffic volumes in the area and would not affect emergency access. Therefore, impacts on emergency access would be less than significant.

f.

The proposed project consists of a replacement treatment facility and improvements to the Sacramento River outfall within the existing footprint of the WWTP, which is not accessible to the general public. Therefore, project implementation would not conflict with local plans, policies, or programs regarding public transit, bicycle, or pedestrian facilities.

Mitigation

None necessary

Documentation

PACE Engineering, Inc. 2015. Draft Preliminary Engineering Report and Feasibility Study. State Mandated Wastewater Treatment and Disposal Improvement Project. Prepared for City of Mt. Shasta. Unpublished document on file with City of Mt. Shasta.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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17. UTILITIES AND SERVICE SYSTEMS. Would the project:

- | | | | | |
|---|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| g. Comply with federal, state, and local statutes and regulations related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

a.

The proposed project would include improvements to the wastewater treatment facility and the Sacramento River outfall in response to the NPDES permit issued by the Central Valley RWQCB. Without improvements, the treatment facility would not meet the new effluent standards. With project implementation, the WWTP would comply with Central Valley RWQCB requirements for discharged effluent. No impact would occur.

b.

The proposed project includes a replacement wastewater treatment facility and improvements to the Sacramento River outfall. These improvements are in response to new requirements included in the NPDES permit. As documented in this Initial Study, construction and operation of the proposed project could result in potentially significant environmental effects. With implementation of the mitigation measures recommended in this Initial Study, and compliance with existing laws and regulations, the proposed project would not result in significant environmental effects.

c.

Project implementation would not require the construction or expansion of storm water drainage facilities.

d.

The proposed project would not require additional water supplies, or new or expanded entitlements. Relatively small amounts of water would be consumed during project construction, and no increase in water consumption would occur as a result of project implementation.

e.

As documented in the Feasibility Study, the proposed improvements would provide sufficient capacity to serve the City's existing and projected wastewater treatment needs.

f.

Construction of the proposed project would result in a minimal amount of debris that would be disposed of at Black Butte Transfer Station in Mt. Shasta, where it would be consolidated and ultimately trucked to Rogue Disposal & Recycling, Inc.-owned Dry Creek Landfill in southern Oregon. This one-time impact is not expected to significantly affect the capacity of the landfill.

In the long-term operation of the project, up to approximately 55,000 cubic feet of dried sludge would be produced each year which would likely be trucked to Dry Creek Landfill. However, this landfill has a projected operational life that exceeds 100 years and thus, has sufficient permitted capacity to accommodate the project's solid waste disposal needs.

g.

The proposed project would comply with all federal, state, and local statutes and regulations as they relate to solid waste.

Mitigation

Implementation of the mitigation measures recommended in this Initial Study, and compliance with existing laws and regulations, would ensure that construction and operation of the proposed improvements would not result in significant impacts.

Documentation

Mike Reusze, Solid Waste & Flood Control Supervisor – Siskiyou County, General Services, Sanitation Division, personal communication, May 2015.

PACE Engineering, Inc. 2015. Draft Preliminary Engineering Report and Feasibility Study. State Mandated Wastewater Treatment and Disposal Improvement Project. Prepared for City of Mt. Shasta. Unpublished document on file with City of Mt. Shasta.

Rogue Disposal Company. 2015. Who We Are. <http://roguedisposal.com/who-we-are/>. Accessed June 2015.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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18. MANDATORY FINDINGS OF SIGNIFICANCE.

- | | | | | |
|--|--------------------------|-------------------------------------|-------------------------------------|--------------------------|
| 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 a rare or endangered plant or animal 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 type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion

a.

As documented in the Initial Study, project implementation could result in possible effects on special-status wildlife species, encroachment into the Sacramento River, temporary loss of riparian habitat, disturbance of nesting migratory birds, disturbance of subsurface cultural resources, increased soil erosion and water quality degradation, increased air emissions, and temporarily increased noise 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 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.

b.

This Initial Study addresses the effects of wastewater treatment covering a period of 20 years following completion of project construction. The effects of increased wastewater generation by a potentially foreseeable project, Crystal Geyser, are also addressed. No other projects that would have impacts beyond the 20-year growth projection have been identified. Based on the discussion and findings in this Initial Study, the City General Plan, and the General Plan EIR, there is no evidence to suggest that the proposed project would contribute to impacts that are cumulatively considerable.

c.

As described previously, project implementation would result in additional effluent being released in the Box Canyon reach of the Sacramento River at certain times of the year. This reach of the Sacramento River is utilized by recreationists for its Class IV (advanced) rapids for whitewater kayaking. Kayakers typically access the river from a path off of W. A. Barr Road, just downhill from the golf course, to the west of the WWTP, descending down the cliff face with the aid of ropes. Other recreation activities that include canoeing, rafting, and catch-and-release fishing may also occur in the project vicinity.

However, discharge to the river would not occur during the recreation season when the majority of recreationists would be present. In addition, a higher effluent treatment standard must be met when river flows are conducive to

kayaking. Further, routine monitoring for toxic substances, effluent mixing, and dilution standards is required. These requirements, along with other conditions of the NPDES permit and Title 22 Disinfection Requirements, ensure that the beneficial uses of the water (including recreationists) are not significantly adversely affected. Thus, the project would not result in environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly. Potential impacts would be less than significant.

IV. LIST OF PREPARERS

ENPLAN

Donald Burk Environmental Services Manager
Lindsay Kantor Environmental Planner
John Luper Environmental Scientist
Darrin Doyle Environmental Scientist
Heidi Shaw Archaeologist
Jessica McCoy Archaeologist
Hazen Kazaks Production Coordinator

City of Mt. Shasta

Kristen Maze City Planner

APPENDIX A.

- California Natural Diversity Database RareFind Query Summary
- U.S. Fish and Wildlife Service IPaC Trust Resource Report
- Potential for Federally Listed, Proposed, and Candidate Species Identified by the IPaC Trust Resource Report, and Special-Status Species Identified by the CNDDDB to Occur on the Project Site
- List of Vascular Plant Species Observed

Rarefind (CNDDDB) Report Summary (March 2015 Data)
 State-Mandated Wastewater Treatment and Outfall Improvement Project

Listed Element	Quadrangle ¹						Status ²
	ME	MC	SL	MS	DU	GR	
Animals							
American peregrine falcon					•		FD, SD, SFP
Bald eagle	•						FD, SE, SFP
Bank swallow				•			ST
Black swift					•		SSSC
Cascades frog			•	•	•		SSSC
Fisher - West Coast DPS	•			•	•		FP, SC, SSSC
Foothill yellow-legged frog	•			•			SSSC
Gray wolf		•		•			FE, SE
Great Blue heron				•			None
Natural Bridge megomphix					•		None
Northern goshawk		•					SSSC
Osprey				•	•		None
Pacific marten		•					None
Pacific tailed frog					•		SSSC
Silver-haired bat				•			None
Spotted bat			•	•			SSSC
Western mastiff bat				•			SSSC
Western yellow-billed cuckoo				•			FT, SE
Plants							
Aleppo avens		•		•			2B.2
Broad-nerved hump moss				•			2B.2
Cascade grass-of-Parnassus					•		2B.2
Castle Crags harebell			•		•		1B.3
Cylindrical trichodon			•				2B.2
Greene's mariposa-lily			•		•		1B.2
Klamath fawn lily			•		•		2B.2
Marbled wild-ginger				•			2B.3
Marsh skullcap				•			2B.2
Nodding vanilla-grass			•				2B.3
Northern adder's-tongue				•			2B.2
Northern clarkia					•		1B.3
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
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
Natural Communities							
Fen				•			None

Highlighting denotes the quadrangle in which the project site is located. One special-status plant species (Shasta chaenactis) and one special-status animal species (spotted bat) have been broadly mapped by the CNDDDB to encompass a portion of the study area; no natural communities have been reported in the study area.

¹Quadrangle Code

MS = City of Mount Shasta
ME = Mount Eddy

MC = McCloud
SL = Seven Lakes Basin

DU = Dunsmuir
GR = Girard Ridge

²Status 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
SD = State Delisted
SSSC = State Species of Special Concern

Other

None = Non special-status species

California Rare Plant Rank

List 1A = Presumed extirpated in California and either rare or extinct elsewhere

List 1B = Rare or Endangered in California and elsewhere

List 2A = Presumed extirpated in California, but more common elsewhere

List 2B = Rare or Endangered in California, but more common elsewhere

List 3 = Plants for which we need more information - Review list (generally not considered special-status, unless unusual circumstances warrant)

List 4 = Plants of limited distribution - Watch list (generally not considered special-status, unless unusual circumstances warrant)

Threat Ranks

0.1 = Seriously Threatened in California

0.2 = Fairly Threatened in California

0.3 = Not Very Threatened in California

My project

IPaC Trust Resource Report

Generated June 01, 2015 09:47 AM MDT



US Fish & Wildlife Service

IPaC Trust Resource Report



Project Description

NAME

My project

PROJECT CODE

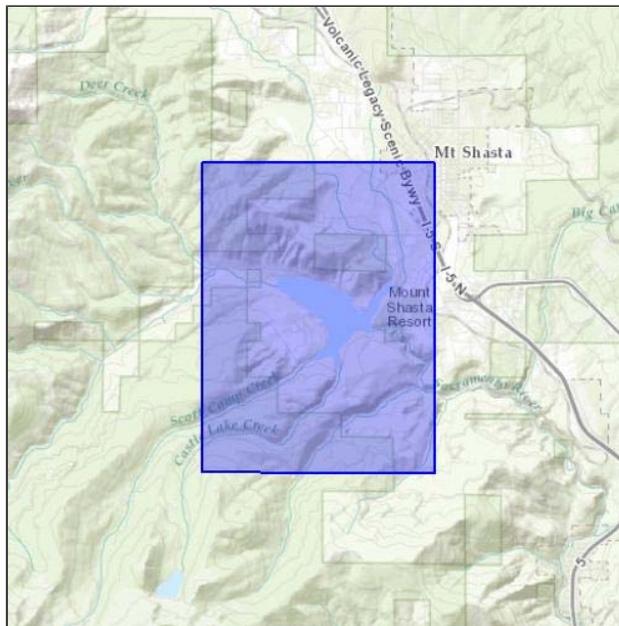
UYEAO-YJFKR-E2VOO-P5WI7-YQC3OI

LOCATION

Siskiyou County, California

DESCRIPTION

No description provided



U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

Yreka Fish And Wildlife Office

1829 South Oregon Street

Yreka, CA 96097-3446

(530) 842-5763

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the [Endangered Species Program](#) and should be considered as part of an effect analysis for this project.

Amphibians

California Red-legged Frog *Rana draytonii*

Threatened**CRITICAL HABITAT**

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=D02D>

Oregon Spotted Frog *Rana pretiosa*

Threatened**CRITICAL HABITAT**

There is **proposed** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=D02A>

Birds

Northern Spotted Owl *Strix occidentalis caurina*

Threatened**CRITICAL HABITAT**

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B08B>

Yellow-billed Cuckoo *Coccyzus americanus*

Threatened**CRITICAL HABITAT**

There is **proposed** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06R>

Conifers and Cycads

Whitebark Pine *Pinus albicaulis*

Candidate**CRITICAL HABITAT**

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=R00E>

Crustaceans

Conservancy Fairy Shrimp *Branchinecta conservatio* **Endangered**

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=K03D>

Vernal Pool Fairy Shrimp *Branchinecta lynchi* **Threatened**

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=K03G>

Vernal Pool Tadpole Shrimp *Lepidurus packardii* **Endangered**

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=K048>

Fishes

Delta Smelt *Hypomesus transpacificus* **Threatened**

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E070>

Longfin Smelt, San Francisco Bay Delta Population *Spirinchus thaleichthys* **Candidate**

CRITICAL HABITAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E088>

Flowering Plants

Gentner's Fritillary *Fritillaria gentneri*

Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q0V6>

Hoover's Spurge *Chamaesyce hooveri*

Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q0E9>

Siskiyou Mariposa Lily *Calochortus persistens*

Candidate

CRITICAL HABITAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q0AL>

Slender Orcutt Grass *Orcuttia tenuis*

Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1AZ>

Insects

Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus*

Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=I01L>

Mammals

Fisher *Martes pennanti*

Proposed Threatened

CRITICAL HABITAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A0HS>

Gray Wolf *Canis lupus*

Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A00D>

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

Northern Spotted Owl Critical Habitat Final designated

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B08B#crithab>

Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

<p>Bald Eagle <i>Haliaeetus leucocephalus</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008</p>	Bird of conservation concern
<p>Calliope Hummingbird <i>Stellula calliope</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0K3</p>	Bird of conservation concern
<p>Cassin's Finch <i>Carpodacus cassinii</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0J6</p>	Bird of conservation concern
<p>Flammulated Owl <i>Otus flammeolus</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DK</p>	Bird of conservation concern
<p>Fox Sparrow <i>Passerella iliaca</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0NE</p>	Bird of conservation concern
<p>Green-tailed Towhee <i>Pipilo chlorurus</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0IO</p>	Bird of conservation concern
<p>Lewis's Woodpecker <i>Melanerpes lewis</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HQ</p>	Bird of conservation concern
<p>Loggerhead Shrike <i>Lanius ludovicianus</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FY</p>	Bird of conservation concern
<p>Long-billed Curlew <i>Numenius americanus</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06S</p>	Bird of conservation concern
<p>Nuttall's Woodpecker <i>Picoides nuttallii</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HT</p>	Bird of conservation concern

Oak Titmouse <i>Baeolophus inornatus</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0MJ	Bird of conservation concern
Olive-sided Flycatcher <i>Contopus cooperi</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0AN	Bird of conservation concern
Peregrine Falcon <i>Falco peregrinus</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FU	Bird of conservation concern
Purple Finch <i>Carpodacus purpureus</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0L0	Bird of conservation concern
Sage Thrasher <i>Oreoscoptes montanus</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0ID	Bird of conservation concern
Short-eared Owl <i>Asio flammeus</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD	Bird of conservation concern
Snowy Plover <i>Charadrius alexandrinus</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0L6	Bird of conservation concern
Swainson's Hawk <i>Buteo swainsoni</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B070	Bird of conservation concern
Western Grebe <i>aechmophorus occidentalis</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0EA	Bird of conservation concern
White Headed Woodpecker <i>Picoides albolarvatus</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HU	Bird of conservation concern
Williamson's Sapsucker <i>Sphyrapicus thyroideus</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FX	Bird of conservation concern
Willow Flycatcher <i>Empidonax traillii</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F6	Bird of conservation concern

Refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.

Potential for Federally Listed, Proposed, and Candidate Species Identified by the IPaC Trust Resource Report, and Special-Status Species Identified by the CNDDDB to Occur on the Project Site

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Plants							
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.	No	No	No	No meadows or other potentially suitable habitat for Aleppo avens are present on the project site. Aleppo avens was not observed during the botanical survey and is not expected to be present.
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	No meadows, seeps, bogs, or fens are present on the project site. Further, the project site is well below the known elevational range of broad-nerved hump moss. The species would thus not be present.
Cascade grass-of-Parnassus	<i>Parnassia 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	No serpentine soils, meadows, seeps, bogs, or fens are present on the project site. The species would thus not be present.
Castle Crag harebell	<i>Campanula shetleri</i>	1B.3	Castle Crag harebell occurs on granite and diorite cliffs near Castle Crag. The species is reported between 4,000 and 5,000 feet in elevation. The flowering period is June through September.	No	No	No	The river canyon on the project site consists of sedimentary rock. Further, the project site is well below the known elevational range of Castle Crag harebell. The species was not observed during the botanical survey and is not expected to be present.
Cylindrical trichodon	<i>Trichodon cylindricus</i>	2B.2	Cylindrical trichodon occurs on sandy, exposed upland soils, and roadcuts in broadleaf forests and upper montane coniferous forests. The species is reported between 100 and 6,500 feet in elevation.	No	No	No	No suitable habitat is present on the project site. Cylindrical trichodon was not observed during the botanical survey and is not expected to be present.

Potential for Federally Listed, Proposed, and Candidate Species Identified by the IPaC Trust Resource Report, and Special-Status Species Identified by the CNDDDB to Occur on the Project Site

COMMON NAME	SCIENTIFIC NAME	STATUS	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.	Yes	No	No	Although suitable dry woodland habitat is present at the project site, Gentner's fritillary is not known or expected to occur in the project site. The species is known from only two locations in California, both near the Oregon border; the nearest population is approximately 40 miles away. The species was not observed during the field survey.
Greene's mariposa-lily	<i>Calochortus greenei</i>	1B.2	Greene's mariposa-lily occurs on volcanic outcrops, and open, dry, gravelly soils in meadows, pinyon and juniper woodlands, and upper montane coniferous forests. The species is reported between 3,400 and 6,200 feet in elevation. The flowering period is June through August.	No	No	No	No suitable habitat for Greene's mariposa-lily is present on 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	No vernal pools or other potentially suitable habitats for Hoover's spurge are present in the project site. Further, the project site is well above the known elevational range of Hoover's spurge. Hoover's spurge was not observed during the botanical survey and 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	No meadows or seeps are present on the project site. Further, the project site is below the known elevational range of Klamath fawn lily. The species was not observed during the botanical survey and is not expected to be present.

Potential for Federally Listed, Proposed, and Candidate Species Identified by the IPaC Trust Resource Report, and Special-Status Species Identified by the CNDDDB to Occur on the Project Site

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Marbled wild-ginger	<i>Asarum marmoratum</i>	2B.3	Marbled wild-ginger occurs on the forest floor of lower montane coniferous forests of the Klamath Mountains, typically in moist forests or on exposed rocky slopes between 600 and 5,700 feet in elevation. The flowering period is April through August.	Yes	No	No	Marginally suitable habitat for marbled wild-ginger is present on the project site. However, the species was not observed during the botanical survey and is not expected to be present.
Marsh skullcap	<i>Scutellaria galericulata</i>	2B.2	Marsh skullcap is a perennial member of the mint family. It occurs in marshes, meadows, along streambanks and in other wet places at elevations of 3000 to 7000 feet. The flowering period is June through September.	Yes	No	No	Marginally suitable habitat for marsh skullcap is present on the project site. However, the species was not observed during the botanical survey and is not expected to be present.
Nodding vanilla-grass	<i>Anthoxanthum nitens</i> ssp. <i>nitens</i>	2B.3	Nodding vanilla-grass is a circumboreal species. In California, it occurs in coastal marshes and in wet meadows and seeps in upper montane coniferous forests, at approximately 6,000 feet in elevation. The flowering period is April through July.	No	No	No	No suitable habitat for nodding vanilla-grass is present on the project site, and the site is well below the known elevational range of the species. The species was not observed during the botanical survey 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.	No	No	No	No suitable habitat for northern adder's-tongue is present on the project site. The species was not observed during the botanical survey and is not expected to be present.
Northern clarkia	<i>Clarkia borealis</i> ssp. <i>borealis</i>	1B.3	Northern clarkia is an annual herb that inhabits chaparral, cismontane woodland, and coniferous forests between 1,200 and 2,400 feet in elevation. The species often occurs in dry, rocky substrates along roads. The flowering period is June through September.	Yes	No	No	Marginally suitable habitat for northern clarkia is present in the project site. However, the species was not observed during the botanical survey and is not expected to be present.

Potential for Federally Listed, Proposed, and Candidate Species Identified by the IPaC Trust Resource Report, and Special-Status Species Identified by the CNDDDB to Occur on the Project Site

COMMON NAME	SCIENTIFIC NAME	STATUS	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.	No	No	No	No springs, bogs, fens, meadows, or serpentine soils are present on the project site. Oregon fireweed was not observed during the botanical survey and is not expected to be present.
Pacific fuzzwort	<i>Ptilidium californicum</i>	4.3	Pacific fuzzwort, a liverwort, grows on trees, fallen and decaying logs, and occasionally on boulders in lower and upper montane coniferous forests. The species typically grows on firs or Douglas-fir in old-growth forests.	No	No	No	No suitable habitat for Pacific fuzzwort is present on the project site. The species was not observed during the botanical survey and is not expected to be present.
Pallid bird's-beak	<i>Cordylanthus tenuis</i> ssp. <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.	Yes	No	No	Suitable habitat for pallid bird's-beak is present on the project site. However, the species was not observed during the botanical survey and is not expected to be present.
Rattlesnake fern	<i>Botrypus virginianus</i>	2B.2	Rattlesnake fern occurs in bogs and fens. The species is reported between 2,400 and 4,300 feet in elevation. The flowering period is June through September.	No	No	No	No bogs, fens, or other potentially suitable habitats for rattlesnake fern are present on the project site. Rattlesnake fern was not observed during the botanical survey 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.	Yes	No	No	Marginally suitable habitat for seaside bittercress is present on the project site. However, the species was not observed during the botanical survey and is not expected to be present.

Potential for Federally Listed, Proposed, and Candidate Species Identified by the IPaC Trust Resource Report, and Special-Status Species Identified by the CNDDDB to Occur on the Project Site

COMMON NAME	SCIENTIFIC NAME	STATUS	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 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.	Yes	No	No	Review of CNDDDB records found that an occurrence of the Shasta chaenactis has been broadly mapped to include a portion of the project site. Marginally suitable habitat for Shasta chaenactis is present in the project area. However, Shasta chaenactis was not observed during the botanical survey and is not expected to be present.
Siskiyou mariposa lily	<i>Calochortus persistens</i>	FC, SR, 1B.2	Siskiyou mariposa lily is a perennial bulbiferous herb that occurs in rocky, acidic soils in lower montane coniferous forest, and North Coast coniferous forest. The species is found between 3,280 and 6,100 feet in elevation. The flowering period is June through July.	Yes	No	No	Although rocky soils are present in the project site, Siskiyou mariposa lily is not known or expected to occur. The lily has been found only on lands within about ten miles to the north and west of Yreka. Given the restricted range of the species and because the nearest population is over 35 miles away, Siskiyou mariposa lily is not expected to be present at the project site. The species was not observed during the botanical survey.
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.

Potential for Federally Listed, Proposed, and Candidate Species Identified by the IPaC Trust Resource Report, and Special-Status Species Identified by the CNDDDB to Occur on the Project Site

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Subalpine aster	<i>Eurybia merita</i>	2B.3	Subalpine aster occurs on moist soils in upper montane coniferous forest. The species is reported between 4,000 and 6,300 feet in elevation.	No	No	No	No suitable habitat for subalpine aster is present on the project site. The species was not observed during the botanical survey and is not expected to be present.
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 is present on the project site. The species was not observed during the botanical survey and is not expected to be present.
Three-ranked hump moss	<i>Meesia triquetra</i>	4.2	Three-ranked hump moss occurs around bogs, fens, meadows, and seeps. The species is reported between 4,200 and 8,200 feet in elevation.	No	No	No	No bogs, fens, meadows, or seeps are present on the project site. Further, the project site is below the known elevational range of three-ranked hump moss. The species would thus not 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 are present on the project site. Waldo daisy was not observed during the botanical survey and is not expected to 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 of whitebark pine. Whitebark pine was not observed during the botanical survey and is not expected to be present.

Potential for Federally Listed, Proposed, and Candidate Species Identified by the IPaC Trust Resource Report, and Special-Status Species Identified by the CNDDDB to Occur on the Project Site

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
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	Marginally suitable habitat for woodnymph is present on the project site. However, woodnymph was not observed during the botanical survey and is not expected to be present.
Woolly balsamroot	<i>Balsamorhiza lanata</i>	1B.2	Woolly balsamroot occurs in open areas and grassy slopes in cismontane woodland in Siskiyou County. The species is reported between 2,600 and 6,300 feet. The flowering period is April through June.	Yes	No	No	Marginally suitable habitat for woolly balsamroot is present on the project site. However, the species was not observed during the botanical survey and is not expected to be present.
Invertebrates							
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 shrimp are present in the project site. Conservancy fairy shrimp would thus 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 elderberry shrubs were observed in the project site and Siskiyou County is outside the known range of the valley elderberry longhorn beetle. The valley elderberry longhorn beetle would thus 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. Vernal pool fairy shrimp would thus not be present.

Potential for Federally Listed, Proposed, and Candidate Species Identified by the IPaC Trust Resource Report, and Special-Status Species Identified by the CNDDDB to Occur on the Project Site

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
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. Vernal pool tadpole shrimp would thus not be present.
Birds							
American peregrine falcon	<i>Falco peregrinus anatum</i>	FD, SD, SFP	American peregrine falcons frequent water bodies in open areas with cliffs and canyons nearby for nesting. This falcon feeds and breeds near water.	Yes	No	Potentially present	Rock cliffs near the outfall facility may provide potentially suitable nesting habitat for American peregrine falcons. Although no peregrine falcons or falcon nests were observed during the wildlife survey, potentially suitable habitat occurs in the vicinity of the project site, and thus, the species could nest nearby.
Bald eagle	<i>Haliaeetus leucocephalus</i>	FD, SE, SFP	Bald eagles nest in large, old-growth trees or snags in mixed stands near open bodies of water. Adults tend to use the same breeding areas year after year and often use the same nest, though a breeding area may include one or more alternate nests. Bald eagles usually do not begin nesting if human disturbance is evident. In California, the bald eagle nesting season is from February through July.	Yes	No	Potentially present	No old-growth trees/snags suitable for nesting are present on the project site. Although no bald eagles or eagle nests were observed during the wildlife survey, potentially suitable habitat occurs in the vicinity of the project site, and thus, the species could nest nearby.
Bank swallow	<i>Riparia riparia</i>	ST	Bank swallows require vertical banks and cliffs with fine-textured or sandy soils near streams, rivers, ponds, lakes, or the ocean for nesting.	No	No	No	Although vertical rock cliffs occur on the project site, no cliffs with fine-textured or sandy soils are present. The bank swallow was not observed during the wildlife survey and is not expected to nest on the project site.

Potential for Federally Listed, Proposed, and Candidate Species Identified by the IPaC Trust Resource Report, and Special-Status Species Identified by the CNDDDB to Occur on the Project Site

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
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	Although a portion of the project site occurs along a steep-walled river canyon, no waterfalls are present on or adjacent to the project site. No black swifts or swift nests were observed during the wildlife survey, nor is the species expected to nest on or adjacent to the project site.
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 on the project site or vicinity. Thus, northern goshawks are not expected to nest on the project 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 on the project site or vicinity. Thus, the spotted owl is not expected to nest on the project site.
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</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	No suitable nesting habitat occurs on the project site for the western yellow-billed cuckoo. Thus, yellow-billed cuckoos are not expected to nest on the project site.

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COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Amphibians							
California red-legged frog	<i>Rana draytonii</i>	FT, SSSC	Suitable aquatic habitat for the California red-legged frog (CRLF) consists of permanent water bodies of virtually still or slow-moving fresh water, including natural and man-made ponds, backwaters within streams and creeks, marshes, lagoons, and dune ponds. The CRLF is not characteristically found in deep lacustrine habitats (e.g., deep lakes and reservoirs). Dense, shrubby riparian vegetation, e.g., willow (<i>Salix</i>) and bulrush (<i>Scirpus</i>) species, and bank overhangs are important features of CRLF breeding habitat. The CRLF tends to occur in greater numbers in deeper, cooler pools with dense emergent and shoreline vegetation.	No	No	No	The project site occurs well outside of the historic and current range of the CRLF. The CRLF would thus not be present.
Cascades frog	<i>Rana cascadae</i>	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.	No	No	No	Review of CNDDDB records found that an adult Cascades frog was collected in the Sacramento River approximately 0.5 miles upstream of the project site in 1953. However, none has been reported in the river reach since 1953, despite intensive surveys following the Cantara Spill in 1991. No Cascades frogs were observed during the wildlife survey. Given that the project site is well below the species' typical elevational range, and the frog has not been reported downstream of Box Canyon Dam since 1953, the species is not expected to be present.

Potential for Federally Listed, Proposed, and Candidate Species Identified by the IPaC Trust Resource Report, and Special-Status Species Identified by the CNDDDB to Occur on the Project Site

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Foothill yellow-legged frog	<i>Rana boylei</i>	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	Potentially Present	Review of CNDDDB records found that the foothill yellow-legged frog has been reported in the Sacramento River approximately 0.5 miles downriver 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 the river.
Pacific tailed frog	<i>Ascaphus truei</i>	SSSC	In California, the Pacific tailed frog occurs in permanent streams of low temperatures in conifer-dominated habitats, including coast redwood, Douglas-fir, Klamath mixed-conifer, and ponderosa pine habitats. This frog also occurs in montane hardwood-conifer habitats. Pacific tailed frogs occur more often in mature or late-successional stands than in younger stands. During the day, adults seek cover under submerged rocks and logs in the stream or occasionally under similar surface objects close to the stream.	Yes	No	Potentially Present	The onsite reach of the Sacramento River has cold, perennial flow, occurs within a young to middle-aged mixed coniferous forest, and the substrate consists predominantly of cobble and boulder. Although no Pacific tailed frogs were observed during the wildlife survey, the species has a low potential to utilize the onsite reach of the river.
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 (approximate minimum size of 9 acres), and is thought to be extirpated from California.	No	No	No	Review of CNDDDB records found that the Oregon spotted frog has been reported from two locations in California, the nearest being ± 70 miles northeast of the project site. The species has not been observed in California since 1918 and no suitable habitat is present. Thus, the Oregon spotted frog is not expected to be present.

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COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Western pond turtle	<i>Emys marmorata</i>	SSSC	The western pond turtle associates with permanent or nearly permanent water in a variety of habitats. This turtle is typically found in quiet water environments. Pond turtles require basking sites such as partially submerged logs, rocks, or open mud banks, and suitable (sandy banks or grassy open fields) upland habitat for egg-laying. Nesting and courtship occur during spring. Nests are generally constructed within 500 feet of a waterbody, but some nests have been found up to 1,200 feet away. Pond turtles leave aquatic sites in the fall and overwinter in uplands nearby. Pond turtles return to aquatic sites in spring.	Yes	No	Potentially Present	Several unidentified turtles were observed adjacent to the project site, in the western-most lagoon. Although no western pond turtles were observed in the project site during the wildlife survey, the lagoon and the onsite reach of the river have a moderate potential to be utilized by western pond turtles.
Fish							
Delta smelt	<i>Hypomesus transpacificus</i>	FT, SE	Delta smelt primarily inhabit the brackish waters of Sacramento-San Joaquin River Delta. Most spawning occurs in backwater sloughs and channel edgewater.	No	No	No	The project site is well outside the range of Delta smelt. Delta smelt would thus not be present.
Longfin smelt, San Francisco DPS	<i>Spirinchus thaleichthys</i>	FC, ST, SSSC	The longfin smelt is a pelagic fish that ranges from Alaska southward to the San Francisco Bay-Delta in California. The range includes at least 20 scattered populations found in estuaries, rivers, and lakes stretching from California to Alaska. The USFWS found that listing of the longfin smelt is warranted only for the Bay-Delta population, not range-wide.	No	No	No	The project site is well outside the range of longfin smelt. Longfin smelt would thus not be present.

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Mammals							
Fisher - West Coast DPS	<i>Martes (Pekania) pennanti</i>	FP, SC, 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	No suitable habitat for fishers occurs in the project site. Further, the fisher is not expected to den on the site due to the level of human disturbance.
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.	Yes	No	No	A gray wolf pack, known as the "Shasta Pack" became established in southeastern Siskiyou County, in the spring of 2015. Continued dispersal of wolves into California is expected. Although gray wolves can travel approximately 30 miles each day, and could potentially forage or stray through the project site, gray wolves would not den in the project site given the extent of human activity in and adjacent to the project site.

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COMMON NAME	SCIENTIFIC NAME	STATUS	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).	Yes	No	Potentially present	Review of CNDDDB records found that an occurrence of the spotted bat has been broadly mapped to include a portion of the project site. The species has a moderate potential to roost in rock crevices and buildings on 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, annual and perennial 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 trees, tunnels, buildings, or other manmade structures. Suitable roost sites feature an unobstructed drop-off of at least 6.5 feet to provide takeoff or launching area for flight, with no obstructions.	Yes	No	Potentially present	Review of CNDDDB records found that an occurrence of western mastiff bat has been reported approximately 1.1 miles southwest of the project site. The species has a moderate potential to roost in crevices in the rocky canyon and cliff faces, trees and buildings on the project site.

Federal Status

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 Status

SFP = State Fully Protected
SR = State Rare
SE = State Listed – Endangered
ST = State Listed – Threatened
SC = State Candidate
SD = State Delisted
SSSC = State Species of Special Concern

Rare Plant Rank

List 1A = Presumed extirpated in California and either rare or extinct elsewhere
List 1B = Rare or Endangered in California and elsewhere
List 2A = Presumed extirpated in California, but more common elsewhere
List 2B = Rare or Endangered in California, but more common elsewhere
List 3 = Plants for which we need more information - Review list (generally not considered special-status, unless unusual circumstances warrant)
List 4 = Plants of limited distribution - Watch list (generally not considered special-status, unless unusual circumstances warrant)

Threat Ranks

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

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Mt. Shasta State-Mandated Wastewater Treatment and Outfall Improvement Project
May 13, June 24, and July 28, 2015

Apiaceae

Osmorhiza berteroi
Sanicula bipinnatifida

Apocynaceae

Apocynum androsaemifolium
Asclepias speciosa

Aristolochiaceae

Asarum hartwegii

Asteraceae

Achillea millefolium
Ageratina occidentalis
Agoseris grandiflora
Agoseris heterophylla
Ambrosia artemisiifolia
Arnica discoidea
Centaurea cyanus
Centaurea solstitialis
Cichorium intybus
Cirsium occidentale
Cirsium vulgare
Erigeron philadelphicus var. *philadelphicus*
Erigeron canadensis
Erigeron inornatus var. *inornatus*
Eriophyllum lanatum
Grindelia camporum
Heterotheca villosa var. *minor*
Hieracium albiflorum
Hypochaeris radicata
Lactuca serriola
Lagophylla ramosissima
Leontodon saxatilis
Leucanthemum vulgare
Madia exigua
Madia gracilis
Matricaria discoidea
Senecio vulgaris
Sericocarpus oregonensis
Taraxacum officinale
Tragopogon dubius

Betulaceae

Alnus rhombifolia
Corylus cornuta subsp. *californica*

Carrot Family

Mountain sweet-cicely
Purple sanicle

Dogbane Family

Bitter dogbane
Showy milkweed

Birthwort Family

Hartweg's wild ginger

Sunflower Family

Common yarrow
Western snakeroot
Large-flowered agoseris
Annual agoseris
Annual ragweed
Rayless arnica
Bachelor's button
Yellow star thistle
Chicory
Cobwebby thistle
Bull thistle
Philadelphia fleabane
Canadian horseweed
California rayless fleabane
Woolly sunflower
Valley gumplant
Sessileflower false goldenaster
White-flowered hawkweed
Rough cat's ear
Prickly lettuce
Common hareleaf
Hawkbit
Ox-eye daisy
Thread-stemmed madia
Slender tarweed
Pineapple weed
Old-man-in-the-spring
Oregon whitetop aster
Dandelion
Goat's beard

Birch Family

White alder
California hazelnut

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Mt. Shasta State-Mandated Wastewater Treatment and Outfall Improvement Project

Boraginaceae

Cryptantha affinis
Lithospermum californicum
Phacelia heterophylla subsp. *virgata*

Borage Family

Common cryptantha
California gromwell
Vari-leaf phacelia

Brassicaceae

Draba verna
Hirschfeldia incana
Isatis tinctoria
Lepidium campestre
Sisymbrium altissimum

Mustard Family

Whitlow grass
Shortpod mustard
Dyer's-woad
English peppergrass
Tumble-mustard

Campanulaceae

Asyneuma prenanthoides

Bluebell Family

California harebell

Caprifoliaceae

Symphoricarpos mollis

Honeysuckle Family

Trailing snowberry

Caryophyllaceae

Arenaria serpyllifolia subsp. *serpyllifolia*
Holosteum umbellatum subsp. *umbellatum*
Scleranthus annuus subsp. *annuus*

Pink Family

Thymeleaf sandwort
Jagged chickweed
German knotgrass

Chenopodiaceae

Dysphania botrys

Goosefoot Family

Jerusalem oak

Convolvulaceae

Calystegia malacophylla subsp. *malacophylla*
Calystegia occidentalis subsp. *occidentalis*
Convolvulus arvensis

Morning Glory Family

Sierra false bindweed
Chaparral false bindweed
Bindweed

Cornaceae

Cornus nuttallii

Dogwood Family

Mountain dogwood

Cupressaceae

Calocedrus decurrens
Juniperus sp.

Cypress Family

Incense cedar
Ornamental juniper

Cyperaceae

Carex feta
Carex multicaulis
Carex nudata

Sedge Family

Green-sheathed sedge
Many-stemmed sedge
Torrent sedge

Dennstaedtiaceae

Pteridium aquilinum var. *pubescens*

Bracken Family

Bracken fern

Dipsacaceae

Dipsacus fullonum

Teasel Family

Wild teasel

Dryopteridaceae

Polystichum imbricans subsp. *imbricans*

Wood Fern Family

Sword fern

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Mt. Shasta State-Mandated Wastewater Treatment and Outfall Improvement Project

Equisetaceae

Equisetum arvense

Ericaceae

Arctostaphylos patula

Euphorbiaceae

Chamaesyce maculata

Croton setigerus

Fabaceae

Acmispon americanus

Acmispon nevadensis var. *nevadensis*

Cytisus scoparius

Hosackia crassifolia

Lathyrus latifolius

Lupinus onustus

Melilotus albus

Trifolium campestre

Trifolium hirtum

Trifolium repens

Vicia americana subsp. *americana*

Fagaceae

Notholithocarpus densiflorus var. *echinoides*

Quercus chrysolepis

Quercus kelloggii

Geraniaceae

Erodium cicutarium

Grossulariaceae

Ribes roezlii var. *roezlii*

Hypericaceae

Hypericum perforatum

Iridaceae

Iris sp.

Juglandaceae

Juglans hindsii

Lamiaceae

Lamium amplexicaule

Marrubium vulgare

Mentha spicata

Monardella odoratissima subsp. *pallida*

Scutellaria tuberosa

Horsetail Family

Common horsetail

Heath Family

Green-leaved manzanita

Spurge Family

Spotted spurge

Dove weed

Legume Family

Spanish lotus

Sierra Nevada lotus

Scotch broom

Big deervetch

Perennial sweet pea

Northern lupine

White sweetclover

Hop clover

Rose clover

White clover

American vetch

Oak Family

Tanoak shrub

Canyon live oak

California black oak

Geranium Family

Red-stemmed filaree

Gooseberry Family

Sierra gooseberry

St. John's-wort Family

Klamath weed

Iris Family

Iris

Walnut Family

Northern California black walnut

Mint Family

Giraffe heads

Horehound

Spearmint

Pallid mountain monardella

Danny's skullcap

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Mt. Shasta State-Mandated Wastewater Treatment and Outfall Improvement Project

Liliaceae

Lilium washingtonianum subsp. *washingtonianum*

Lily Family

Washington lily

Linaceae

Hesperolinon micranthum

Flax Family

Smallflower dwarf-flax

Malvaceae

Sidalcea asprella

Mallow Family

Checkerbloom

Montiaceae

Claytonia rubra

Miner's Lettuce Family

Miner's lettuce

Myrsinaceae

Trientalis latifolia

Myrsine Family

Pacific starflower

Onagraceae

Clarkia rhomboidea

Epilobium brachycarpum

Epilobium ciliatum subsp. *ciliatum*

Epilobium minutum

Oenothera villosa subsp. *strigosa*

Evening-Primrose Family

Diamond clarkia

Tall annual willowherb

Fringed willowherb

Chaparral willowherb

Hairy evening primrose

Orchidaceae

Piperia sp.

Orchid Family

Reinorchid

Orobanchaceae

Castilleja applegatei subsp. *pinetorum*

Broom-rape Family

Applegate's paintbrush

Papaveraceae

Eschscholzia californica

Poppy Family

California poppy

Phrymaceae

Mimulus guttatus

Lopseed Family

Common monkey-flower

Pinaceae

Abies concolor

Pinus attenuata

Pinus ponderosa

Pseudotsuga menziesii var. *menziesii*

Pine Family

White fir

Knobcone pine

Ponderosa pine

Douglas-fir

Plantaginaceae

Penstemon deustus

Penstemon newberryi var. *newberryi*

Plantago lanceolata

Plantain Family

Hot-rock beard-tongue

Newberry's penstemon

English plantain

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Mt. Shasta State-Mandated Wastewater Treatment and Outfall Improvement Project

Poaceae

Bromus carinatus var. *carinatus*
Bromus diandrus
Bromus hordeaceus
Bromus tectorum
Dactylis glomerata
Echinochloa crus-galli
Elymus caput-medusae
Elymus glaucus subsp. *glaucus*
Elymus multisetus
Elymus repens
Festuca microstachys
Festuca myuros
Holcus lanatus
Melica aristata
Phalaris arundinacea
Phleum pratense
Poa bulbosa
Poa compressa
Poa pratensis
Secale cereale
Stipa lemmonii
Stipa nelsonii var. *dorei*

Polemoniaceae

Collomia grandiflora
Collomia heterophylla
Microsteris gracilis
Navarretia divaricata subsp. *divaricata*
Navarretia intertexta subsp. *intertexta*

Polygalaceae

Polygala cornuta var. *cornuta*

Polygonaceae

Eriogonum nudum
Persicaria sp.
Polygonum aviculare subsp. *depressum*
Rumex acetosella
Rumex crispus
Rumex obtusifolius

Pteridaceae

Cheilanthes gracillima

Rhamnaceae

Ceanothus cordulatus
Ceanothus prostratus

Grass Family

California brome
Ripgut grass
Soft chess
Downy brome
Orchard grass
Barnyard grass
Medusa head
Blue wild rye
Big squirreltail
Quack grass
Reflexed fescue
Foxtail fescue
Common velvet grass
Awned melic
Reed canary grass
Cultivated timothy
Bulbous bluegrass
Canadian bluegrass
Kentucky bluegrass
Rye
Lemmon's needlegrass
Mountain needlegrass

Phlox Family

Large-flowered collomia
Variable-leaved collomia
Slender phlox
Mountain navarretia
Needle-leaf navarretia

Milkwort Family

Sierra milkwort

Buckwheat Family

Naked buckwheat
Smartweed
Common knotweed
Sheep sorrel
Curly dock
Bitter dock

Brake Family

Lace lip fern

Buckthorn Family

Whitethorn ceanothus
Squaw carpet

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Mt. Shasta State-Mandated Wastewater Treatment and Outfall Improvement Project

Rosaceae

Amelanchier utahensis
Crataegus gaylussacia
Dryocallis glandulosa var. *glandulosa*
Horkelia tridentata var. *tridentata*
Prunus emarginata
Purshia tridentata var. *tridentata*
Rosa canina
Rosa gymnocarpa
Rubus leucodermis
Rubus laciniatus
Rubus parviflorus
Rubus ursinus
Poterium sanguisorba

Rubiaceae

Galium aparine
Galium parisiense
Galium porrigens var. *tenu*

Salicaceae

Populus trichocarpa
Salix lasiolepis
Salix melanopsis
Salix sp.

Sapindaceae

Acer macrophyllum

Saxifragaceae

Darmera peltata
Heuchera micrantha

Scrophulariaceae

Verbascum thapsus

Solanaceae

Solanum dulcamara

Themidaceae

Triteleia ixioides subsp. *scabra*

Typhaceae

Typha sp.

Violaceae

Viola lobata subsp. *lobata*
Viola sheltonii

Woodsiaceae

Cystopteris fragilis

Rose Family

Utah service-berry
Klamath hawthorn
Sticky cinquefoil
Three-toothed horkelia
Bitter cherry
Antelope bush
Dog rose
Bald-hip rose
Black-capped raspberry
Cut-leaf blackberry
Thimbleberry
California blackberry
Garden burnet

Madder Family

Cleavers
Wall bedstraw
Climbing bedstraw

Willow Family

Black cottonwood
Arroyo willow
Dusky willow
Willow

Soapberry Family

Big-leaved maple

Saxifrage Family

Indian rhubarb
Alum root

Snapdragon Family

Woolly mullein

Nightshade Family

Climbing nightshade

Brodiaea Family

Foothill prettyface

Cattail Family

Cattail

Violet Family

Pine violet
Shelton's violet

Cliff Family

Fragile fern