CEQA ADDENDUM

MITIGATED NEGATIVE DECLARATON

SCH No. 2017082064

CITY OF ETNA

PUBLIC WATER SYSTEM IMPROVEMENT PROJECT

SISKIYOU COUNTY, CALIFORNIA

LEAD AGENCY:

City of Etna
442 Main Street
Etna, CA 96027

PREPARED BY:

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

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SECTION 1. INTRODUCTION AND PURPOSE

The City of Etna (City), as Lead Agency, prepared an Initial Study/Mitigated Negative Declaration (IS/MND) addressing its Public Water System Improvements Project (project) in 2017. Included in **Appendix A** are the IS/MND and Mitigation Monitoring and Reporting Program (MMRP) for the 2017 project. The IS/MND addressed improvements to the City's Water Treatment Plant (WTP), including removing trees and other vegetation; installing ±350 feet of 8- and 12-inch pipeline; and constructing a new ±200,000-gallon water tank, ±382 square-foot filtration building, and a ±1,500 square-foot backwash pond.

Certain elements of the project have since been completed using Community Development Block Grant (CDBG) funding, including the clearing of trees and construction of the new water tank. The City is now proposing to complete the remaining WTP improvements with some modifications as well as to construct additional improvements to the City's water system. Revisions to the WTP improvements include increasing the size of the new filtration building and converting Reservoir 1 to backwash storage instead of constructing a new backwash pond. In addition, the existing WTP building would be remodeled and a new water tank, sewer main, photovoltaic (PV) system, and miscellaneous equipment would be installed. Additional improvements to the City's water system consist of replacing/extending water mains and replacing water meters. **Figure 1** is a vicinity map showing the study areas for both the original project and the additional improvements. **Figure 2** is an overview of the project sites. **Figure 3** shows improvements to be completed at the WTP. Staging would occur on City property at the WTP and within the affected road corridor. Work would be confined to City property, City road rights-of-way (ROW), and utility easements on private property. A more detailed description of the improvements that are currently proposed is provided below:

WTP Improvements

A new ±1,440 square-foot steel filtration building would be constructed adjacent to existing Reservoirs 1 and 2. The building would house coagulation chemicals, a backwash pump system, and two absorption media clarifier/dual media gravity filter units. The new filter units would replace the existing horizontal pressure media vessels, converting the WTP to a direct filtration plant.

Due to its age, Reservoir 1 would be converted to backwash storage and would be equipped with a pump system. To dispose of the backwash water, a ±830-foot sewer main would be installed within the existing WTP access road to connect to the City's collection system near Highland Street. A new 138,000-gallon welded steel water tank would be installed to replace Reservoir 1.

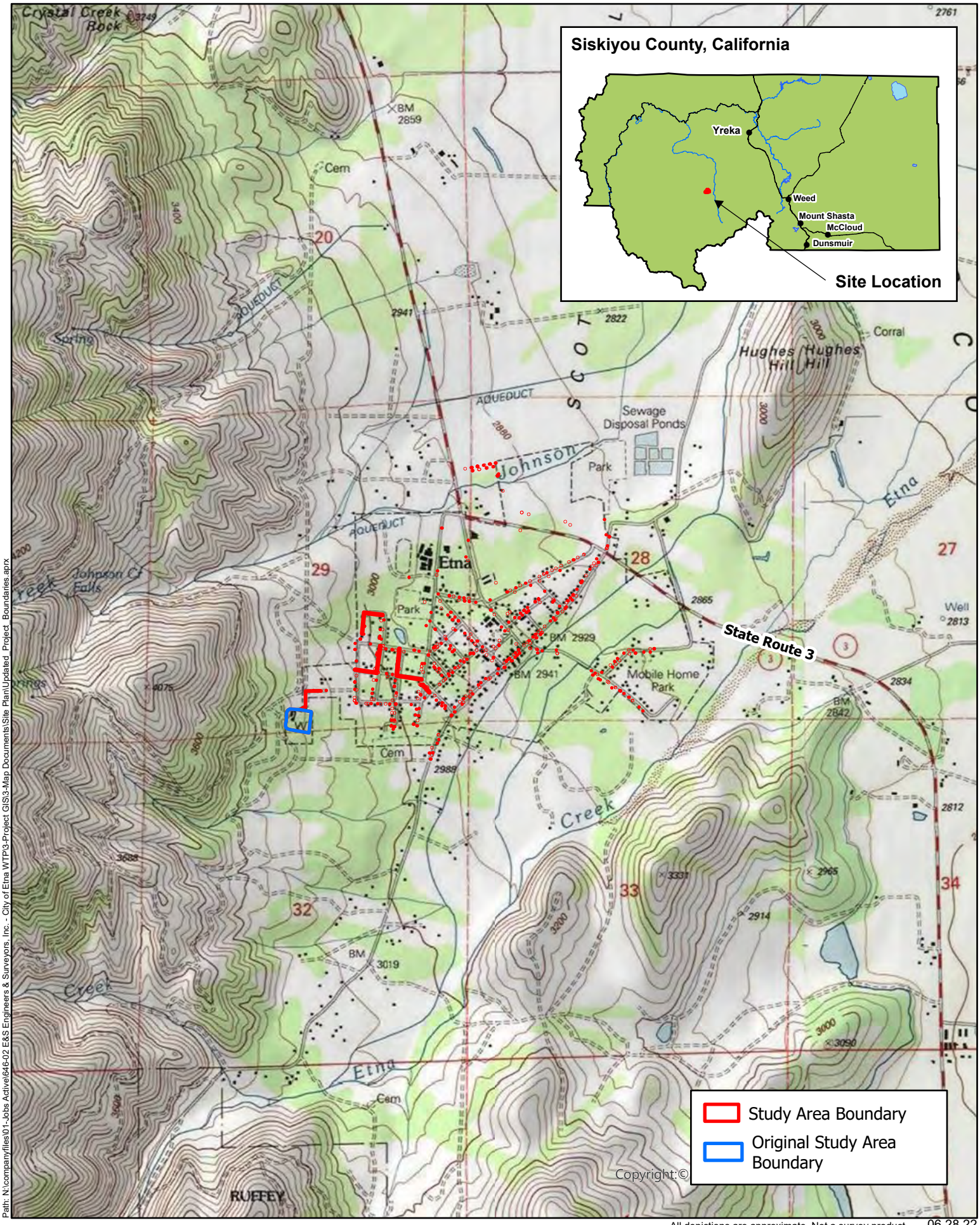
The existing WTP building would be remodeled to house the chlorination unit and laboratory. A backup generator would be installed to ensure operation of the WTP during power outages. A new Supervisory Control and Data Acquisition (SCADA) system, system testing/monitoring equipment, and flow meters would be installed for better record keeping and plant operation. A photovoltaic (PV) system would be installed at the WTP. Use of the PV system would offset a large portion of electrical utility costs associated with operation of the WTP.

Water Meters

Approximately 408 outdated water meters would be replaced with Automatic Read Meters (AMR) throughout the City; meter boxes would not be replaced unless damaged.

Water Mains

- Existing 2-inch water mains within the ROWs of Church Street and Cleveland Street would be replaced with 6-inch mains. Approximately 194 linear feet of 6-inch water main would be installed in Church Street and ±440 linear feet of 6-inch water main would be installed in Cleveland Street.
- Existing 2-inch water main within Bryan Street between Church Street and College Street would be replaced with ±442 linear feet of 6-inch water main.
- Approximately 756 linear feet of new 6-inch water main would be installed within Church Street, between Cleveland Street and Howell Street, and between Highland Street and Bryan Street, to tie together existing water mains and improve fire flows.



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All depictions are approximate. Not a survey product. 06.28.22

0 2,000 Feet

Figure 1

Project Vicinity Map

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State Route 3
Telco Way
Commercial St.
Howell Ave
Collier Way
Island Rd.
Scott St.
State Route 3
Center St.
Collier Way
Fredrick St.
Wilcox St.
Wilcox St.
Bryan St.
College St.
Howell Ave
Oak St.
Diggles St.
Harrison St.
Sawyers Bar Rd.
Callahan Rd.
College St.
Wagner Way
Callahan St.
Church St.
Highland St.
Bryan St.
Cleveland St.
Sawyers Bar Rd.
Church St.
Woodland St.
Howell Ave
Water Treatment Plant

Study Area Boundary
Water Meter Replacement Locations

Feet
0
500

Figure 2

Project Area Overview

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

06.17.22

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Figure 3

WTP Improvements

0 50 Feet

All depictions are approximate. Not a survey product. 06.30.22

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- Approximately 608 linear feet of new 6-inch water main would be installed within Wilcox Street to close the loops between Bryan, College, and Wilcox streets.

This document constitutes an Addendum to the 2017 MND and evaluates whether modifications to the approved project would result in any new or substantially more adverse significant effects or require any new mitigation measures not identified in the 2017 MND. In addition, this document addresses new CEQA requirements with respect to wildfire hazards, traffic analysis (vehicle miles travelled), and energy consumption.

SECTION 2. CEQA FRAMEWORK FOR ADDENDUM

The California Environmental Quality Act (CEQA) Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3) recognize the possibility for a project to be modified after an EIR has been certified or a Negative Declaration has been adopted, and identify various levels of additional environmental review that may be undertaken to provide appropriate environmental disclosure.

Pursuant to Section 15164 (b) of the CEQA Guidelines, "An addendum to an adopted negative declaration may be prepared if only minor technical changes or additions are necessary or none of the conditions described in Section 15162 calling for preparation of a subsequent EIR or negative declaration have occurred." The conditions in Section 15162 are as follow:

1. Substantial changes are proposed in the project which will require major revision of the previous EIR or negative declaration due to the involvement of new, significant environmental effects or a substantial increase in the severity of previously identified significant effects;
2. Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new, significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified or the negative declaration was adopted, shows any of the following:
    a. The project will have one or more significant effects not discussed in the previous EIR or negative declaration;
    b. Significant effects previously examined will be substantially more severe than shown in the previous EIR or negative declaration;
    c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
    d. Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

SECTION 3. ENVIRONMENTAL EFFECTS OF THE MODIFIED PROJECT

3.1 Aesthetics

As documented in the IS/MND, the approved project would have less-than-significant impacts related to aesthetics, and no mitigation measures were necessary.

The water mains, sewer main, and other piping would be subsurface, and the water meters would be flush with the ground. Paved roads that are disturbed during installation of the pipeline would be re-paved following construction. In unpaved areas, the surface would be restored to its pre-existing condition upon completion of construction.

Project components proposed by the modified project that have a potential to affect the visual character of the area include the new 138,000-gallon water tank, PV system, and filtration building. These components would be located at the WTP. As discussed under Section 1, Introduction and Purpose, tree removal was completed at the WTP as part of the original project and no further tree removal would be needed. Existing facilities at the site include two reservoirs, a WTP building, and the 200,000-gallon water tank previously constructed as part of the original project. The proposed construction would be consistent with these features and screened by surrounding trees. Therefore, improvements at the WTP would not significantly change the visual character of the area and the modified project's impacts on aesthetics would remain less than significant.

Determination:

No new significant environmental effects, or substantial increase in the severity of previously identified significant effects, would occur. No mitigation measures are required.

3.2 Agriculture and Forest Resources

As documented in the IS/MND, the approved project would have a less-than-significant impact related to agriculture and forest resources, and no mitigation measures were necessary.

According to the Farmland Mapping and Monitoring Program (FMMP), all additional improvements are located on lands designated as "urban and built-up land" or "other land". According to the City's Zoning Maps, areas in which new improvements are proposed are not currently zoned for agricultural or timber production, nor are they subject to a Williamson Act contract. Properties in and surrounding the City are designated as Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance; however, the modified project does not include any components that would directly or indirectly impact surrounding farmland.

As discussed in the IS/MND, to facilitate construction of the original project, approximately 48 trees ranging in size from 12-inch diameter at breast height (DBH) to 36-inch DBH were proposed to be removed at the WTP site. According to the California Department of Forestry and Fire Protection, a Less than 3 Acre Conversion Exemption for ±2.2 acres of tree removal was filed by the City in 2017. Review of aerial imagery shows that these trees were removed shortly after. The modified project includes the construction of additional improvements at the WTP; however, no further tree removal is proposed. Therefore, impacts would be less than significant.

Determination:

No new significant environmental effects, or substantial increase in the severity of previously identified significant effects, would occur. No mitigation measures are required.

3.3 Air Quality

As documented in the IS/MND, the approved project would have no impact related to air quality, and no mitigation measures were necessary. To provide an accurate account of emissions, all currently proposed improvements addressed in this Addendum were analyzed using the current CalEEMod version (2022.1.0). CalEEMod output files, including all the site-specific inputs and assumptions, are provided in **Appendix B**.

Although neither the City nor the Siskiyou County Air Pollution Control District (SCAPCD) have adopted specific thresholds for construction related emissions, the City typically references current SCAPCD rules, including Rule 6.1-New Source Siting, which includes thresholds for new stationary sources. The City determined that it would be appropriate to use these significance thresholds for construction-related emissions as well. As for new or modified stationary sources, the SCAPCD has defined 250 pounds (lbs)/day as the threshold of significance for NOX, PM2.5, PM10, and SO2 emissions, and 2,500 lbs/day as the threshold of significance for CO emissions (Rule 6.1).

As shown in **Table 3.3-1**, construction of the proposed project would not exceed Siskiyou County's thresholds for any of the pollutants. Because the City is applying for funding through the DWSRF Program, which is partially funded by the USEPA, **Table 3.3-1** also shows estimated emissions in tons per year in accordance with DWSRF

requirements. Construction of the modified project is estimated to start in April 2023 and be completed by April 2024.

TABLE 3.3-1
Projected Construction Emissions

Year	Pollutants of Concern											
	ROG		NOx		PM_{10}		$PM_{2.5}$		CO		SO_2	
	Maximum lbs/day	Tons/ year	Maximum lbs/day	Tons/ year	Maximum lbs/day	Tons/ year	Maximum lbs/day	Tons/ year	Maximum lbs/day	Tons/ year	Maximum lbs/day	Tons/ year
2023	1.84	0.12	18.5	1.03	8.00	0.10	4.21	0.07	18.0	1.06	0.03	Trace
2024	20.0	0.14	9.45	0.76	0.38	0.03	0.34	0.03	10.2	0.83	0.02	Trace

As shown in **Table 3.3-1,** construction of the proposed project would not exceed Siskiyou County's thresholds for any of the pollutants. Furthermore, the Federal General Conformity Rule does not apply to the proposed project because Siskiyou County is designated as attainment or unclassified for all federal ambient air quality standards.

Determination:

No new significant environmental effects, or substantial increase in the severity of previously identified significant effects, would occur. No additional mitigation measures are required.

3.4 Biological Resources

As documented in the IS/MND, the approved project would have less-than-significant impacts related to biological resources with implementation of **Mitigation Measure MM Bio-1:**

MM Bio-1 Should the Project require that trees be removed as part of construction activities, the following will occur to avoid impacts to nesting migratory birds or raptors that may be utilizing trees at the construction site (Fish and Game Code Sections 3503 and 3503.5):

1. Tree removal should be conducted from September 1 to January 31 when birds are not nesting, OR

2. Should trees need to be removed from February 1 to August 31 (nesting season), then nesting bird surveys will be conducted by a qualified biologist no more than one week prior to tree removal during this period.

   a. If no nesting birds are located during the survey, then tree removal may proceed.

   b. Should the survey determine that an active nest is located in the trees to be removed during the survey, the biologist shall delineate a no disturbance buffer that is adequate to prevent nesting failure. No trees shall be removed within the buffer until the young have fledged, as determined through additional monitoring by the qualified biologist.

   c. Results of all nesting bird surveys, both positive and negative, will be sent to the Department of Fish and Wildlife, ATTN: CEQA, 601 Locust Street, Redding, CA 96001.

To determine potential impacts associated with the additional improvements, an updated records search and field evaluation were completed. A field survey was completed by an ENPLAN biologist on May 25, 2022, that addressed improvements proposed under the modified project.

The records search included a review of U.S. Fish and Wildlife Service (USFWS) records for federally listed, proposed, and Candidate plant and animal species under jurisdiction of the USFWS; USFWS records for birds of

conservation concern; National Marine Fisheries Services (NMFS) records for critical habitat, essential fish habitat (EFH), and anadromous fish species under the jurisdiction of the NMFS; California Natural Diversity Data Base (CNDDB) records for special-status plants, animals, and natural communities; and California Native Plant Society (CNPS) records for rare and endangered plants. The CNDDB records search covered a five-mile radius around the study area, which includes portions of the U.S. Geological Survey (USGS) Fort Jones, Gazelle Mountain, Greenview, and McConaughy quadrangles. Included in **Appendix C** are the updated USFWS and NMFS species lists and CNDDB summary report.

Natural Communities

CNDDB records did not identify any critical natural communities in the project area. Field surveys confirmed that no sensitive natural communities are present in the study area. Water line improvements would be located throughout the City of Etna in residential areas and would be primarily within paved or gravel roads. Water meter replacement would occur in place, located entirely within residential areas. Improvements at the WTP would include work within an unpaved roadway and construction at the existing water treatment facility. The primary habitat type at the WTP is barren, surrounded by ponderosa pine forest. No tree removal is proposed during project implementation.

As documented in the IS/MND, in order to minimize indirect effects, erosion and sediment control measures must be employed throughout construction in accordance with County regulations and conditions of regulatory agency permits. This includes implementation of Best Management Practices (BMPs) to control erosion and sedimentation and prevent damage to streams, watercourses, and aquatic habitat. Implementation of BMPs ensures that indirect impacts are less than significant. No additional mitigation measures are required.

Special-Status Plant Species

Review of the USFWS species list identified Yreka phlox as potentially being present in the project area. The project area does not contain designated critical habitat for federally listed plant species. Review of CNDDB records showed that three special-status plants have been reported in the project area: Northwestern moonwort, Scott Mountain bedstraw, and Shasta chaenactis. The following additional special-status plants have been reported within an approximate five-mile radius of the project site: coast checkerbloom, Scott Valley buckwheat, Scott Valley phacelia, Siskiyou clover, and woolly balsamroot. CNPS records do not identify any additional special-status plants within the project area. CNPS records identified the following non-special-status species plants in the U.S. Geological Survey's Etna 7.5-minute quadrangle that were not addressed with the original project: California pitcherplant, clustered lady's slipper, marsh claytonia, Pacific fuzzwort, Siskiyou aster, Siskiyou daisy, Tracy's collomia, and Western waterfan lichen.

Plant species with a potential to occur in the study area would have been identifiable at the time the field survey was completed. No special-status plants were observed during the survey, nor are any expected to be present. No additional mitigation measures are necessary with respect to special-status plants.

Special-Status Wildlife Species

Review of the USFWS species list for the current study area identified the following federally listed wildlife species as potentially being present in the project area: gray wolf, Northern spotted owl, yellow-billed cuckoo, Lost River sucker, shortnose sucker, Franklin's bumble bee, monarch butterfly, conservancy fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp. The USFWS species list does not identify designated critical habitat in the study area for any federally listed wildlife species.

Review of CNDDB records showed that no special-status wildlife species have been reported in the project area. The following special-status wildlife species have been reported within an approximate five-mile radius of the project area: bank swallow, fisher, greater sandhill crane, and Lower Klamath marbled sculpin. The following non-status animals have also been mapped within the search radius: Crotch bumble bee, great blue heron, North American porcupine, prairie falcon, Secret Cave amphipod, western bumble bee, and yellow-based sideband.

Review of the NMFS species list found that Southern Oregon/Northern California Coast (SONCC) Coho salmon are present in the USGS Etna quadrangle. Critical habitat is designated in the Etna quadrangle for SONCC Coho salmon. Essential fish habitat (EFH) is designated in the Etna quadrangle for Coho salmon and Chinook salmon.

Some of the special-status species potentially occurring in the study area would not have been evident at the time the fieldwork was conducted; however, a determination of their presence could readily be made based on habitat characteristics observed during the field survey. No special-status animal species were observed during the field survey; however, suitable habitat is present adjacent to the study area for Franklin's bumble bee and monarch butterfly in the form of flowering plants. No direct or indirect effects are anticipated to these species because proposed improvements would occur in barren/previously disturbed areas. Therefore, no mitigation measures are necessary with respect to special-status animals.

Nesting Birds

Areas adjacent to the current study area include suitable nesting habitat for birds, and the potential for birds to nest in the area is relatively high. Project construction has some potential to directly affect nesting birds if trees are removed during the nesting season. Project construction could also indirectly affect nesting birds by causing adults to abandon their nests in response to loud noise levels and other human-induced disturbances during construction. As required by **Mitigation Measure MM Bio-1,** the potential for adversely affecting nesting birds would be minimized by conducting construction activities outside of the nesting season (between September 1 and January 31), or conducting pre-construction nesting surveys. No additional mitigation measures are warranted.

Wetlands and Waters

As shown in **Figures 3.4-1** and **3.4-2**, the field survey identified both state and federally jurisdictional waters within the vicinity of the proposed project area. Constructed ditches shown throughout the residential portion of the proposed project are expected to be regulated by the state; while ephemeral streams, wet swales, ponds, and seasonal wetlands are likely to be subject to state and federal jurisdiction. Proposed water line improvements would be located primarily within the paved or unpaved roadways, and would cross over or under existing culverts; no impacts are expected to any wetlands or other waters at the water line replacement locations. Proposed improvements to the WTP would be located within previously disturbed, primarily barren areas and would not impact the nearby ephemeral stream. Similarly, replacement of existing water meters would occur in place. Therefore, no impacts to wetlands or other waters are expected at these locations; because there would be no impacts to wetlands or other waters, a formal delineation and further mitigation measures are not warranted.

Determination:

With implementation of **Mitigation Measure MM Bio-1**, the potential for impacts on biological resources would be less than significant; no additional mitigation measures are required.

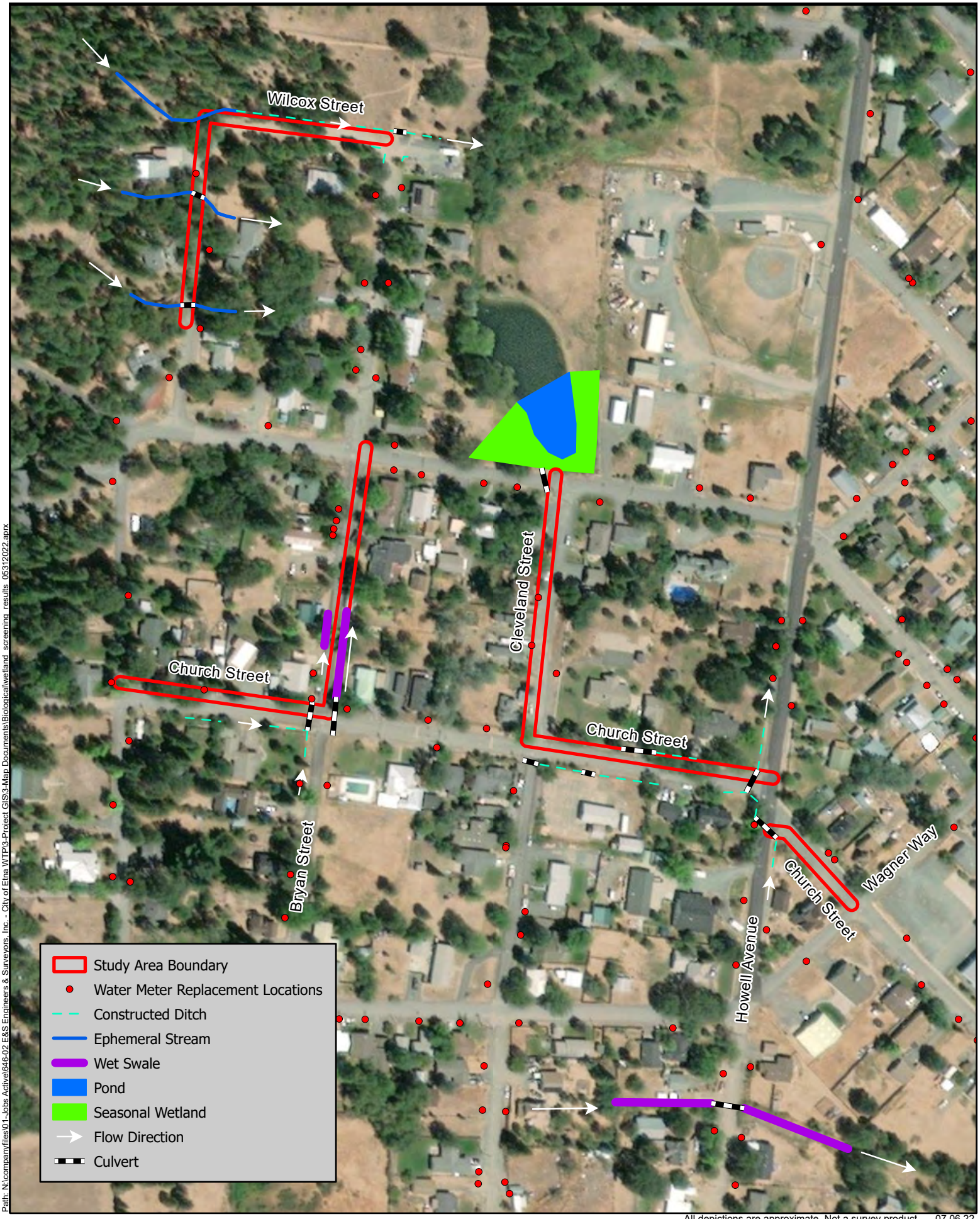

Figure 3.4-2

Wetland Screening Results - Water Line Replacement Locations

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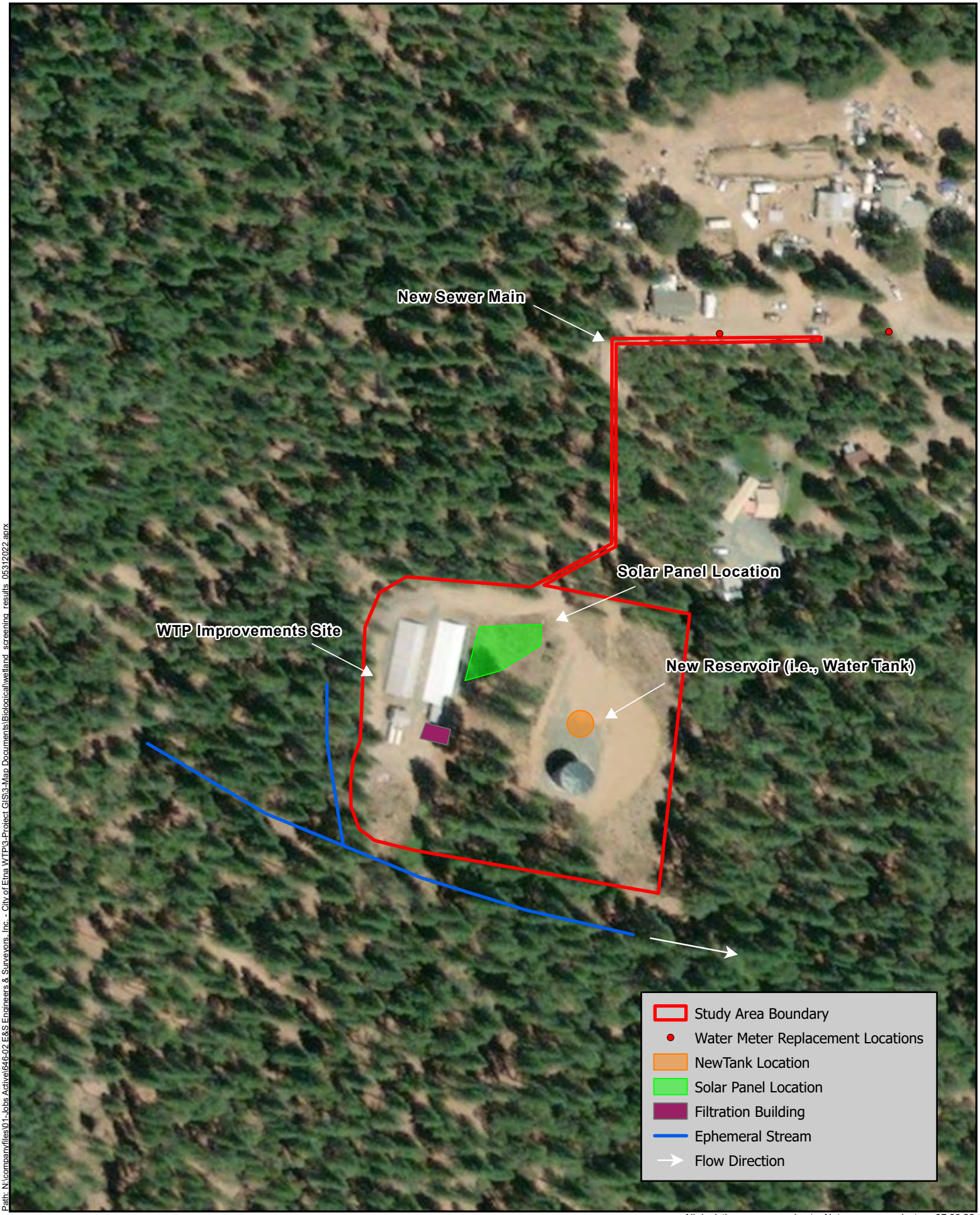

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All depictions are approximate. Not a survey product. 07.06.22

0 150 Feet

Figure 3.4-1

Wetland Screening Results - WTP Improvements

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3.5 Cultural Resources

As documented in the IS/MND, the approved project would have less-than-significant impacts related to cultural resources with implementation of **Mitigation Measures MM CR-1 and MM CR-2:**

CR-1 If cultural resources, such as chipped or ground stone, or bone are discovered during ground-disturbance activities, work shall be stopped within 20 meters (66 feet) of the discovery, as required by the California Environmental Quality Act (CEQA; January 1999 Revised Guidelines, Title 14 California Code of Regulations [CCR] 15064.5 (f)). Work near the archaeological finds shall not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the material and offered recommendations for further action.

CR-2 If human remains are discovered during Project construction, work will stop at the discovery location, within 20 meters (66 feet), and any nearby area reasonably suspected to overlie human remains (Public Resources Code, Section 7050.5). The Siskiyou County coroner will be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it will be necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (NAHC) (Public Resources Code, Section 5097). The coroner will contact the NAHC. The descendants, or most likely descendants, of the deceased will be contacted and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98. Work may resume if NAHC is unable to identify a descendant or the descendant failed to make a recommendation.

An Archaeological Resource Survey Report for the project was prepared by Siskiyou Resource Management LLC in 2017. The Report included a review of records at the Northeast Information Center of the California Historical Resources Information System (CHRIS), as well as review of the National Register of Historic Places (NRHP), California Historical Landmarks, California Points of Historical Interest, Native American Heritage Commission (NAHC), historical maps, and pertinent reports. A field evaluation and Native American consultation were also conducted for the original project.

The NEIC/CHRIS records search covered a quarter-mile buffer around the original site; the records search did not identify any archaeological or historical sites within the project site or quarter-mile buffer. Because the additional work areas are in previously disturbed/developed public street and utility rights-of-way, a records search update was not conducted. Likewise, a field survey was not warranted because no intact surface soils are present in the additional project footprint.

As part of the current work, the age of soils within the additional study area was reviewed to address the new project areas. Soil types present within the project site include Boomer loam, cool, 5 to 30 percent slopes; and Marpa-Kinkel-Boomer, cool complex, 15 to 50 percent slopes. These soils date to the Pleistocene-Holocene and Paleozoic era; although most Pleistocene-age landforms predate any known human presence, Holocene-age soils have the potential to contain buried resources (Meyer, 2013). The modified project area has been subject to prior disturbances from grading activity associated with installation of roads and utility infrastructure. Based on the geomorphological characteristics of the project site, the results of the records and literature search, the age of the on-site soil units, and the level of contemporary disturbance, the project site is considered to have a very low potential for intact buried historic and prehistoric resources; however, there is always some potential for previously unknown cultural resources to be encountered during construction. Implementation of **MM CR-1** and **CR-2** would reduce the potential for adverse effects to a less-than-significant effect.

Determination:

No new significant environmental effects, or substantial increase in the severity of previously identified significant effects, would occur. No additional mitigation measures are required.

3.6 Energy

The IS/MND did not directly address impacts associated with energy use because it was prepared prior to the State's adoption of revisions to the CEQA Guidelines, which now require an analysis of energy impacts for MNDs. Therefore, the following analysis is provided.

Construction-Related Energy Use

Energy consumption during construction of the additional improvements would occur in the form of diesel and gasoline consumption for construction equipment, haul trucks, and construction workers travelling to and from the work site. Construction equipment must comply with State regulations that require the use of fuel-efficient equipment.

Operational Energy Use

Energy use associated with the modified project would be limited to electricity used to power equipment in the filtration building, the SCADA system, and fuel for the generator, which would be operated only in the event of an emergency. However, energy required to operate these components would not be considered wasteful, inefficient, or unnecessary. In addition, the project includes the installation of a PV system at the WTP site. The PV system would off-set the use of electricity at the WTP.

Determination:

As documented above, the project would not result in significant impacts associated with energy use and no mitigation measures are required.

3.7 Geology and Soils

As documented in the IS/MND, the approved project would have less-than-significant impacts related to geology and soils, and no mitigation measures were necessary.

Soil types present within the project site are identified in **Table 3.7-1**.

Table 3.7-1:
Soil Types and Characteristics

Soil Name	Landform and Parent Material	Erosion Potential	Drainage	Surface runoff	Permeability	Shrink-swell potential
Boomer loam, cool, 5 to 30 percent slopes	Mountains; residuum weathered from metamorphic rock	Moderate to High	Well drained	High	Moderately Rapid	Low
Marpa-Kinkel-Boomer, cool complex, 15 to 50 percent slopes	Mountains; residuum weathered from metamorphic rock	High	Well drained	High to Very High	Moderate	Low

Sources: U.S. Department of Agriculture, Natural Resources Conservation Service, 2022; U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Siskiyou County, Central Part, California. 1983.

Potential impacts associated with erosion would be addressed with implementation of BMPs. According to the California Geologic Survey, there are no active fault rupture hazard zones within the project vicinity; however, the northern California area is prone to seismic shaking. As discussed in the IS/MND, any potential issues related to geologic and soils hazards would be addressed through proper engineering design in accordance with local and State regulations.

Determination:

No new significant environmental effects, or substantial increase in the severity of previously identified significant effects, would occur. No mitigation measures are required.

3.8 Greenhouse Gas Emissions

As documented in the IS/MND, the approved project would have less-than-significant impacts related to greenhouse gas (GHG) emissions, and no mitigation measures were necessary.

Thresholds of Significance

§15064.4 of the CEQA Guidelines gives lead agencies the discretion to determine whether to use a model or other method to quantify GHG emissions and/or to rely on a qualitative or performance-based standard.

For a quantitative analysis, a lead agency may determine that a project would result in a less-than-significant impact if emissions do not exceed an established numerical threshold. As stated in the original IS/MND, neither the City of Etna nor Siskiyou County Air Pollution Control District (SCAPCD) have adopted numerical thresholds of significance for GHG emissions. Numerical thresholds that have been referenced for other projects in the region range from 900 MT/year CO_2e (Tehama County) to 1,100 MT/year CO_2e for both construction and operational emissions and 10,000 MT/year CO_2e for stationary sources (various communities in the Sacramento Valley and Northeast Plateau air basins).

If a qualitative approach is used, lead agencies should still quantify a project's construction and operational GHG emissions to determine the amount, types, and sources of GHG emissions resulting from the project. Quantification may be useful in indicating to the lead agency and the public whether emissions reductions are possible, and if so, from which sources. For example, if quantification reveals that a substantial portion of a project's emissions result from mobile sources (automobiles), a lead agency may consider whether design changes could reduce the project's vehicle miles traveled (OPR, 2018).

In the absence of numerical thresholds, the City of Etna evaluated the original project's GHG emissions qualitatively. As discussed in the MND, the original project would contribute a temporary, short-term increase in air pollution including GHG emissions from vehicles and equipment during construction; however, improvements to the water system would enhance the overall efficiency of the water treatment and storage system, potentially reducing long term maintenance and energy consumption.

Project GHG Emissions

GHG emissions resulting from construction and operation of the current project were estimated using the CalEEMod.2022.1.0 software. The model quantifies direct GHG emissions from construction and operation, as well as indirect GHG emissions, such as GHG emissions from energy use, solid waste disposal, and water use. CalEEMod also includes the intensity factors for CO_2, CH_4, and N_2O for the utility company that would serve the proposed project. Therefore, CalEEMod uses PacifiCorp's mix of renewable and non-renewable energy sources to estimate indirect GHG emissions associated with electricity use.

CalEEMod output files, including all the site-specific inputs and assumptions, are provided in **Appendix B**. Site-specific inputs and assumptions include, but are not limited to, the following.

- To provide an accurate account of GHG emissions, all previously proposed improvements that were not completed as well as the additional improvements proposed by this Addendum were analyzed.
- Emissions from construction are based on all construction-related activities, including but not limited to grading, site preparation, use of construction equipment, material hauling, trenching, and paving.
- Construction would start in April 2024 and occur over a period of approximately one year.
- Total land disturbance would be approximately 1.10 acres; 1,700 cubic yards (CY) of dirt would be imported.
- The total area to be re-paved following pipeline installation would be 0.4 acres.
- The total weight of demolition debris (pavement) to be removed from the project site would be approximately 300 tons.
- The modified project would not result in an increase in operational vehicle trips.

- The modified project would not result in an increase in water use or solid waste generation over existing conditions.
- It is conservatively estimated that the solar photovoltaic PV system would generate 50 percent of the energy required for the newly constructed buildings.

As shown in **Table 4.8-1**, the majority of the current project's GHG emissions are attributed to energy use due to the generation of electricity for the project through the combustion of fossil fuels, and to the use of vehicles and equipment during construction.

TABLE 4.8-1
Estimated Annual Greenhouse Gas Emissions (Metric Tons)

Source	Carbon Dioxide (CO_2)	Methane (CH_4)	Nitrous Oxide (N_2O)	Carbon Dioxide Equivalent (CO_2e)
Area	0.02	Trace	Trace	0.02
Energy	11.7	Trace	Trace	11.7
Mobile	0	0	0	0
Waste	0	0	0	0
Water	0	0	0	0
Construction	302	0.01	Trace	304

Source: CalEEMod, 2022. Note: Total values may not add due to rounding (see Appendix B).

Conclusions

As stated above, neither the City nor County have adopted numerical thresholds for GHG emissions. Numerical thresholds that have been referenced for other projects in the north State range from 900 MT per year CO_2e (Tehama County) to 1,100 MT per year CO_2e for both construction and operational emissions and 10,000 MT per year CO_2e for stationary sources (various communities in the Sacramento Valley and Northeast Plateau air basins). As indicated in **Table 4.8-1**, CO2e associated with construction of the proposed project would not exceed the referenced numerical threshold of 900 MT/year of CO2e.

Operation of the modified project would result in a slight increase in indirect GHG emissions due to the generation of electricity for energy use; however, improvements to the water system would enhance the overall efficiency of the water treatment and storage system, resulting in a reduction in vehicle trips associated with water system repairs and a reduction in energy consumption. Further, the project does not include any components that could potentially lead to population growth or a permanent increase in VMT or result in mobile source emissions over existing levels. Therefore, the net increase in operational emissions would be negligible.

Determination:

No new significant environmental effects, or substantial increase in the severity of previously identified significant effects, would occur. No mitigation measures are required.

3.9 Hazards and Hazardous Materials

As documented in the IS/MND, the approved project would have less-than-significant impacts related to hazards and hazardous materials and no mitigation measures were necessary.

The following databases were reviewed to locate "Cortese List" sites in proximity to the modified project elements:

- List of Hazardous Waste and Substances sites from the Department of Toxic Substances Control (DTSC) EnviroStor database.

- California State Water Resources Control Board (SWRCB) GeoTracker Database
- List of solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels outside the waste management unit.
- List of "active" Cease and Desist Orders (CDO) and Clean-Up and Abatement Orders (CAO) from the SWRCB.

Review of the Cortese List records revealed that there are two active clean-up sites within the vicinity of the modified project as described below:

Steve's Mobil
The Steve's Mobil site is located at 118 Diggles Street, immediately adjacent to proposed meter replacement locations along Diggles Street and Main Street. The site was formerly used as a commercial petroleum fueling facility and is currently vacant with an unoccupied former service station building. In October 1991, an unauthorized release was reported after the removal of three gasoline Underground Storage Tanks (USTs). Impacted soil was removed from the site in 1991, 1996, and 1997, and groundwater remediation using ozone injection was conducted from 2014 to 2020. Since 1993, 13 groundwater monitoring wells have been installed and regularly monitored and four groundwater monitoring wells have been destroyed.

According to a Summary Report published by the SWRCB in May 2021, the petroleum release is limited to the soil and shallow groundwater; however, according to groundwater data, water quality objectives have not been achieved. A Site Investigation Work Plan prepared by Lawrence and Associates in December 2021 proposes to conduct further investigations for shallow soil contamination and indoor air vapor intrusion. Although the project includes improvements adjacent to existing monitoring wells within Diggles Street and Main Street, these improvements are limited to the replacement of meters and, unless the meter box is damaged, excavation would not be required. In the unlikely event that contaminated soil or groundwater are encountered during installation of proposed improvements, the City would be responsible for the proper handling and disposal of the contaminated material in accordance with SWRCB requirements. Therefore, the project would not impact or be impacted by the Mobil clean-up site.

Chevron #9-6012
The Chevron #9-6012 site is located at 414 Main Street, immediately adjacent to proposed meter replacement locations off of Main Street. The site is the location of an inactive commercial petroleum fueling facility. An unauthorized release was reported in April 1988 after the removal of one gasoline UST. Four closed and abandoned USTs remain located on site, including three gasoline tanks and one diesel tank. Active remediation has not been conducted at the site; however, since 1993, 12 groundwater monitoring wells have been installed and irregularly monitored.

According to a Summary Report published by the SWRCB in 2021, the petroleum release is limited to the soil and shallow groundwater, and water quality objectives have not been achieved. A Work Plan for Additional Monitoring Well Installation prepared by Lawrence & Associates in 2020 proposed the installation of four additional monitoring wells within the vicinity of the site. According to Figure 2 of the Work Plan, monitoring wells 1, 8AS, and 9 are located in close proximity to proposed meter replacement locations. Unless the meter box is damaged, replacement of the water meters would not require excavation. In the unlikely event that contaminated soil or groundwater are encountered during installation of proposed improvements, the City would be responsible for the proper handling and disposal of the contaminated water in accordance with SWRCB requirements. Therefore, the project would not impact or be impacted by the Chevron #9-6012 clean-up site.

No other potential concerns were identified through the records review. As stated in the IS/MND, current operations at the WTP utilize USEPA approved chemicals for water filtration. The storage of chemicals associated with the water system would occur at the WTP and would be in accordance with applicable federal, State, and local regulations, as would the transport and use of such chemicals.

Determination:

No new significant environmental effects, or substantial increase in the severity of previously identified significant effects, would occur. No additional mitigation measures are required.

3.10 Hydrology and Water Quality

As documented in the IS/MND, the approved project would have less-than-significant impacts related to hydrology and water quality, and no mitigation measures were necessary.

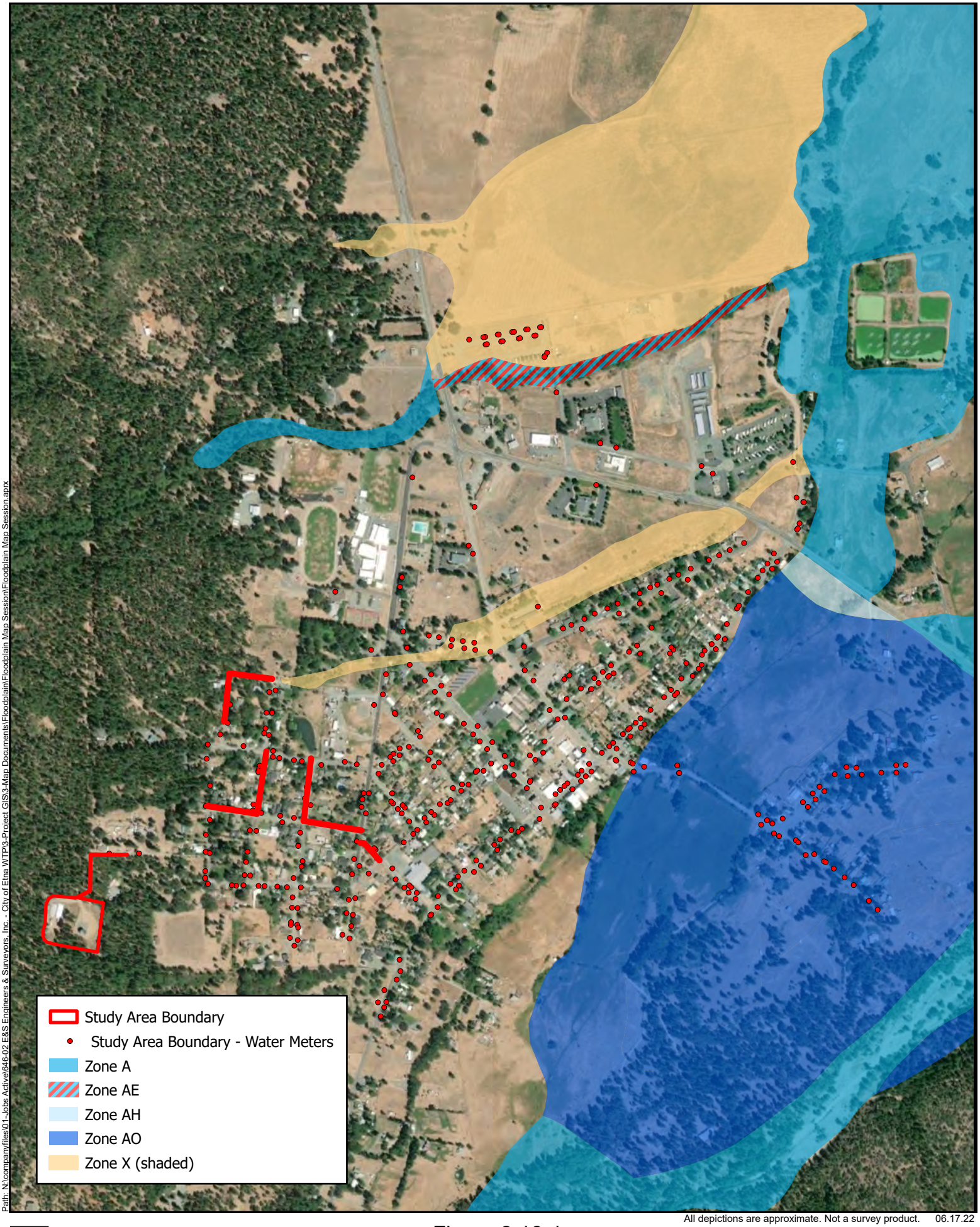
Construction activities associated with the additional improvements would result in the temporary disturbance of soil and would expose disturbed areas to potential storm events, which could generate accelerated runoff, localized erosion, and sedimentation. However, this is a temporary impact during construction and no long-term impacts would occur. BMPs for erosion/sediment control would be implemented in accordance with State and local requirements. The modified project would not require new groundwater supplies for construction of the project.

The modified project includes the installation of subsurface pipelines; paved areas that are disturbed would be repaved following installation of these improvements. New impervious surfaces associated with the proposed project include the new filtration building, 138,000-gallon water tank, and PV system; these improvements would add ±6,400 square feet of impervious surfacing. The addition of impervious surface would decrease the area available for water penetration, thereby reducing local groundwater recharge potential. However, the increase in impervious surface represents a very small percentage of the hydrologic region. In addition, runoff would eventually be directed to areas with pervious surfaces, and the undeveloped land adjacent to the proposed improvements would continue to provide for groundwater recharge.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (Panels 06093C2475D and 06093C2459D, January 19, 2011), the majority of the additional improvements are not located within a designated flood hazard area with the exception of the water meter replacements along Callahan Street, Callahan Road, and Center Street; and within the Etna Creekside Estates mobile home park off of State Route 3. As shown in **Figure 3.10-1,** Callahan Street and Callahan Road improvements are located within Flood Hazard Zone AO which is subject to flood depths of two to three feet. The Creekside Estates and Center Street improvements are located with Flood Hazard Zone X (shaded). FEMA defines Zone AO as areas subject to inundation by 1-percent-annual-chance shallow flooding, usually in the form of sheet flow, with average depths between one and three feet. Shaded Zone X is defined as areas of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. The water meters would be replaced in place and the water meter boxes would only be replaced if damaged; therefore, these improvements would not affect flood levels or flow patterns. In addition, the project area is not in a tsunami zone or seiche zone, and there is no risk of release of pollutants due to project inundation.

Determination:

No new significant environmental effects, or substantial increase in the severity of previously identified significant effects, would occur. No mitigation measures are required.



Path: N:\companyfiles\01-Jobs Active\646-02 E&S Engineers & Surveyors, Inc. - City of Etna WTP\3-Project GIS\3-Map Documents\Floodplain\Floodplain Map Session\Floodplain Map Session.aprx

All depictions are approximate. Not a survey product. 06.17.22

0 850 Feet

Figure 3.10-1

FEMA Flood Hazard Zones

ENPLAN

3.11 Land Use and Planning

As documented in the IS/MND, the approved project would have no impact related to land use and planning, and no mitigation measures were necessary.

Land use impacts are considered significant if a proposed project would physically divide an existing community (a physical change that interrupts the cohesiveness of the neighborhood). The modified project would not result in a physical change that would create a barrier for existing or planned development and would not conflict with any land use plans, policies, or regulations adopted to avoid/mitigate an environmental effect. Therefore, there would be no impact.

Determination:

No new significant environmental effects, or substantial increase in the severity of previously identified significant effects, would occur. No mitigation measures are required.

3.12 Mineral Resources

As documented in the IS/MND, the approved project would have no impact related to mineral resources, and no mitigation measures were necessary. According to the California Geological Survey, a SMARA mineral land classification study has not been conducted for Siskiyou County. The City of Etna General Plan does not identify Mining Resource Buffers in the study area. The modified project would not result in a change in land use patterns and would have no impact on the on-site or off-site availability of mineral resources. Therefore, there would be no impact on mineral resources.

Determination:

No new significant environmental effects, or substantial increase in the severity of previously identified significant effects, would occur. No mitigation measures are required.

3.13 Noise

As documented in the IS/MND, the approved project would have less-than-significant impacts related to noise and no mitigation measures were necessary.

Implementation of the proposed project would generate temporary noise associated with the use and movement of construction equipment during construction activities. The additional pipeline improvements would be located within residential areas along Wilcox Street, Church Street, Bryan Street, and Cleveland Street. Replacement of the water meters would occur within public utility easements on private property throughout the entirety of the City. As stated in the MND, noise generated by construction activities would be short-term and occur during daytime hours. The noise generated by the construction equipment is anticipated to be consistent with existing uses in the area, such as farm equipment, with noise levels ranging from 60 dBA to 65 dBA. The MND also states that periodic exceedances would occur, ranging from 80 dBA to 100 dBA, due to intensive construction activities; however, these activities are expected to occur for limited periods during the daytime.

The additional improvements would not result in a perceptible permanent increase in noise levels. Periodic maintenance of the various project components at the WTP may result in temporary sources of noise, as is currently the case. Therefore, operational noise would not increase above existing levels.

Determination:

No new significant environmental effects, or substantial increase in the severity of previously identified significant effects, would occur. No additional mitigation measures are required.

3.14 Population and Housing

As documented in the IS/MND, the approved project would upgrade existing water treatment facilities and provide additional storage for treated drinking water. The IS/MND concluded that the approved project would not induce substantial population growth in the area of displace housing or people, and no mitigation measures were necessary. The modified project would complete the remaining previously proposed components with revisions, and replace and upsize existing water system components with the purpose of repairing aging infrastructure, increasing system pressures, providing improved fire flows, and ensuring a safe and reliable potable water supply for residents within the City of Etna.

The modified project would not induce substantial population growth in the area, either directly or indirectly, and there would be no impact on population or housing from the modified project.

Determination:

No new significant environmental effects, or substantial increase in the severity of previously identified significant effects, would occur. No mitigation measures are required.

3.15 Public Services

As documented in the IS/MND, the approved project would have no impact related to public services, and no mitigation measures were necessary. The modified project would not result in the need for additional long-term fire protection or police services nor would it directly or indirectly result in an increase in population requiring additional schools or parks, or the expansion of existing schools or parks. Therefore, there would be no impact.

Determination:

No new significant environmental effects, or substantial increase in the severity of previously identified significant effects, would occur. No mitigation measures are required.

3.16 Recreation

As documented in the IS/MND, the approved project would have no impact related to recreation, and no mitigation measures were necessary. The modified project does not include the construction of houses or businesses that would increase the number of residents or employees in the area. Therefore, the modified project would not result in an increased demand for recreational facilities and there would be no impact.

Determination:

No new significant environmental effects, or substantial increase in the severity of previously identified significant effects, would occur. No additional measures are required.

3.17 Transportation/Traffic

As documented in the IS/MND, the approved project would have no impact related to transportation/traffic, and no mitigation measures were necessary.

The modified project would not cause a permanent increase in traffic or vehicle miles traveled in the area; remove or change the location of any sidewalk, bicycle lane, trail, or public transportation facility; or conflict with adopted policies, plans or programs related to alternative transportation.

Short-term increases in traffic volume associated with construction workers and equipment on the local road network would occur during construction, and this increased traffic could interfere with emergency response times. However, temporary traffic control would be required in accordance with State requirements and must adhere to the procedures, methods, and guidance given in the current edition of the California MUTCD.

Additionally, the modified project does not include any components that would permanently increase the potential for hazards due to a design feature or incompatible uses. Because no permanent impacts to the circulation system would occur, and safety measures would be employed to safeguard travel by the general public and emergency response vehicles during construction, impacts would be less than significant.

Determination:

No new significant environmental effects, or substantial increase in the severity of previously identified significant effects, would occur. No mitigation measures are required.

3.18 Tribal Cultural Resources

As noted above, the IS/MND was prepared prior to revisions to the CEQA Guidelines that require analysis of a project's potential impacts on tribal cultural resources pursuant to AB 52 (2014) (Public Resources Code Section 21080.3.1). The Native American consultation requirements mandated by AB 52 (2014) do not apply to Addendums and therefore are not required for the modified project. In any case, as discussed under Section 3.5 above, **Mitigation Measures MM CR-1 and MM CR-2** minimize the potential for significant adverse impacts on cultural resources that may be discovered during construction. This measure would also minimize the potential for impacts on tribal cultural resources.

Determination:

With implementation of Mitigation Measure MM CR-1 and MM CR-2, the potential for impacts on tribal cultural resources
would be less than significant; no additional mitigation measures are required.

3.19 Utilities and Service Systems

As documented in the IS/MND, the approved project would upgrade existing water treatment facilities and provide additional storage for treated drinking water. The IS/MND concluded that the approved project would have less-than-significant impacts related to utilities and service systems, and no mitigation measures were necessary. The modified project would complete the remaining previously proposed components with revisions, and replace and upsize existing water system components with the purpose of repairing aging infrastructure, increasing system pressures, providing improved fire flows, and ensuring a safe and reliable potable water supply for residents within the City of Etna. The modified project would not change the conclusions of the IS/MND, and impacts would remain less than significant.

Determination:

No new significant environmental effects, or substantial increase in the severity of previously identified significant effects, would occur. No additional mitigation measures are required.

3.20 Wildfire

As noted above, the IS/MND was prepared prior to revisions to the CEQA Guidelines that require analysis of a project's potential impacts related to wildfire. Therefore, the following analysis is provided.

The modified project does not involve a use or activity that could interfere with long-term emergency response or emergency evacuation plans for the area. As stated in Section 3.17, short-term increases in traffic volumes during construction could interfere with emergency response times; however, temporary traffic control would be required for work in roadways in accordance with the California Manual on Uniform Traffic Control.

According to the California Department of Forestry and Fire Protection (CAL FIRE), the western portion of the City (excluding the WTP) is designated as a Very High Fire Hazard Severity Zone (VHFHSZ) in a Local Responsibility Area. Project elements within the designated VHFHSZ include the installation of water mains and the replacement of water meters; however, these improvements would be subsurface and would not affect or be affected by wildfire in the long-term.

Although the WTP site is designated as a non-VHFHSZ in an LRA, the WTP site is bound by heavily vegetated open space and land designated as VHFHSZ in a SRA. However, improvements at the WTP are not for human occupancy and the modified project would not require installation of infrastructure that could exacerbate fire hazards (e.g., power lines in vegetated areas); would not construct public roads or otherwise intrude into natural spaces in a manner that would increase wildlife hazards in the long term; and would not require construction of fuel breaks that may result in temporary on on-going impacts to the environment. Likewise, given the local landforms and hydrology, the proposed project would not increase the exposure of people or structures to significant risks related to downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes.

Equipment used during construction activities may create sparks that could ignite dry grass. Also, the use of power tools and/or acetylene torches may increase the risk of wildland fire hazard. However, the California Fire Code includes requirements that must be followed during construction, including Chapter 33 (Fire Safety During Construction and Demolition) and Chapter 35 (Welding and Other Hot Work).

Determination:

As documented above, the project would not result in significant impacts associated with wildfires and no mitigation measures are required.

3.21 Mandatory Findings of Significance

As documented in the IS/MND and this Addendum, design features incorporated into the project would avoid or reduce certain potential environmental impacts, as would compliance with existing regulations. Remaining impacts can be reduced to levels that are less than significant through implementation of the mitigation measures identified above.

The previously adopted mitigation measures extend to the modified project and are included as conditions of project approval, and the City is responsible for ensuring their implementation. Therefore, the modified project would not have a significant adverse impact on the environment.

SECTION 4. DETERMINATION

Based on substantial evidence documented in this Addendum, the City of Etna, as lead agency, has determined that the proposed modifications would not change the conclusions in the adopted MND. The modified project would meet the same objective of upgrading existing water treatment facilities and providing additional storage for treated drinking water. The modified project would also replace and upsize existing water system components with the purpose of replacing aging infrastructure, increasing system pressures, providing improved fire flows, and ensuring a safe and reliable potable water supply for residents within the City of Etna. No substantial changes are proposed, no new potentially significant impacts would occur, and the modified project would not increase the severity of previously identified potentially significant impacts.

Further, as documented herein, the additional analysis of impacts related to GHG emissions, energy, tribal cultural resources, and wildfire concludes that impacts in these resource categories are less than significant and no new mitigation measures are required.

None of the conditions described in Section 15162 of the CEQA Guidelines apply to the project as amended, and the proposed revisions to the project necessitate only minor technical changes or additions to the previously adopted MND. Therefore, preparation of an Addendum to the adopted MND provides an appropriate level of environmental review.

SECTION 5. REFERENCES

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SECTION 6. LIST OF PREPARERS

ENPLAN

Donald Burk ..... Environmental Services Manager
Carla L. Thompson, AICP ..... Senior Environmental Planner
Kiara Cuerpo-Hadsall ..... Environmental Planner
Sabrina Rouse .....Environmental Planner
Hannah Raab .....Environmental Planner
Evan Wiant ..... Archaeologist
Allison Loveless ..... Environmental Scientist

E & S Engineers & Surveyors, Inc.

Morgan D. Eastlick, P.E. ..... Principal Engineer
Jose Hernandez, P.E. ..... Principal Engineer

Appendix A

ORIGINAL INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION

MITIGATION MONITORING AND REPORTING PLAN

Initial Study/Mitigated Negative Declaration

Project Information

Project Title: City of Etna 16-CDBG-11138 Public Water System Improvement Project

Lead Agency
City of Etna
P.O. Box 460
Etna, CA 96027

Project Location: The Project Site is located within the City of Etna, Siskiyou County, California on Siskiyou County Assessor Parcel Number (APN) 056-261-040. The site is within the United States Geological Survey (USGS) 7.5-minute Etna topographic quadrangle. Refer to **Figure 1-1** (Project Location), **Figure 1-2** (Project Site), and **Figure 1-3** (Preliminary Engineering Layout).

Project Applicant: City of Etna

Project Owner: City of Etna

City of Etna General Plan Designation: Open Space (OS); Open Space is defined by the City's general plan as "public lands including schools, parks, natural preserves and public utility facilities and lands" (City of Etna, 2004). Refer to **Figure 1-4** (City of Etna General Plan & Zoning).

City of Etna Zoning: The site is zoned by the Etna general plan as Open Space and Public Uses (O). The City's general plan provides for consistency between land use designations and zoning, and denotes that the OS land use designation is consistent with the O zoning district, which includes public facilities. The zoning at the site is compatible with uses proposed by the Project, and the site has existing public facilities similar to the proposed Project.

Project Description: The City of Etna (City) is proposing to develop improvements to its public drinking water treatment and storage system through grant funding from the Community Development Block Grant (CDBG) program. Through this program, the City has received grant funding to develop the planning and implementation for this these Projects, which includes the preparation of environmental studies and documentation to comply with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA).

Under this program, the City is proposing to make improvements to its water treatment process and provide additional storage for this treated water. Work will be accomplished on City owned land that is currently used as the City's drinking water treatment facility, located on Siskiyou County Assessor's Parcel Number (APN) 056-261-040, a 4.8 acre parcel. Actual work on the parcel is proposed on approximately 0.55 acres. The location of the Project is shown on **Figure 1-1** and **Figure 1-2**.

Work proposed under this Project consists of the following items, with locations displayed on the Preliminary Engineering Layout, shown as **Figure 1-3**:

1. Clearing of existing vegetation on approximately 0.55 acres to create a foundation pad and access clearance for a new water storage tank and clearing for the installation of new water line.

2. Excavation of trenches for the installation of approximately 350 feet of new 8-inch and 12-inch C-900 polyvinyl chloride (PVC) pipe connecting the new tank to the existing water treatment facility and existing water supply line. Water line is anticipated to be installed at a depth of 3 feet from the existing ground surface.
3. Construction of a concrete footing and erection of a steel water tank with the capacity to store 200,000 gallons of water. The tank will be 40 feet in diameter and 25 feet in height.
4. Construction of a new approximately 16′ x 24′ filtration building, adjacent to the existing chlorination building and Reservoir #1. The new structure will house new direct filtration equipment, provide storage for emergency fire protection equipment and help meet standards for water treatment chlorination contact time. Construction of the building will require footing excavation, a new foundation and underground piping connecting to the existing facilities.
5. Construction of a back-wash water pond that will be used to drain the filtration equipment. The pond will be approximately 30′ x 50′ (0.04 acres) in size and will be divided into two parts (though at one location).

Access to the Project Site is by way of existing roads within the City; no new roads would need to be developed and no modifications to the existing roads (including new rights-of-way or easements) would be needed.

Project approvals required from the City of Etna include:

1. Review and approval of the Project by the City of Etna as the CEQA Lead Agency.

Surrounding Land Uses and Setting: The landscape surrounding the Project Site is comprised of sparsely developed residential uses with small agricultural developments (pasture, irrigated pasture, etc.) and undeveloped forest lands. The Project is located within the City of Etna city limits (refer to **Figure 1-5**, Siskiyou County Zoning). Property adjacent to the Project Site, within the City limits, is zoned by the City of Etna as Low Density Residential (LDR), which allows for single family residential development with 1-4 housing units per acre.

To the south and southeast of the Project Site, outside of the city limits, is land designated by Siskiyou County as Rural Residential Agriculture District (R-R). Uses in the R-R zone include one single family dwelling, accessory buildings, small farming operations and associated uses (Siskiyou County Municipal Code Section 10-6.4801-4803). To the west of the proposed Project is land zoned by the County as Rural Residential Agriculture District with a Combining District (B) and a minimum parcel size of 5 acres (R-R-B-5); refer to **Figure 1-5**. Uses in the R-R-B-5 zone are consistent with those uses in the R-R zone, with the exception of lower densities and a minimum parcel size of 5 acres (Siskiyou County Municipal Code Section 10-6.5301-5302).

Other Public Agencies Whose Approval Is or May Be Required

As a City Project, being developed on City-owned land there are no other public agencies whose approval is required for the approval of this Project. This approval, and subsequent development, presumes that the City will comply with applicable California Building Codes, permits and approvals from City/County building officials. The development also presumes that the City will comply with other applicable requirements, such as timber harvest/conversion permits from CALFIRE, construction stormwater permits from the State Water Resources Control Board and other site development regulations and permits, as may be applicable to the Project for the ultimate development and construction.

Environmental Factors Potentially Affected

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

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

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 will be 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 "potentially significant impact" or "potentially significant unless mitigated" impact 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. An ENVIRONMENTAL IMPACT REPORT is required, but it may 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 June 19, 2017
Date

Signature Date

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Appendices

Environmental Checklist

I. Aesthetics. Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?				X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			X	
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?				X

Thresholds of Significance

Evaluations in this section considers the impacts of the Project to the Aesthetic (visual/scenic) resources at and within view of the Project Site, including temporary and permanent changes, and if the Project would have any negative changes to the visual character of the area. The evaluations also consider impacts of new sources of light or glare and impacts to nighttime views in the area.

Discussion:

(a) No Impact: The major visual resources in the area are open pastoral and mountain views. There is no designated scenic vista in the area.

(b) No Impact: The proposed Project is not located within a state scenic highway or scenic highway corridor.

(c) Less than Significant: The City of Etna does not have visual resource objectives for the evaluation of Projects. Project construction could have minor visual effects on the immediate area offsite from the Project. Following the completion of construction, the water tank may be partially seen from nearby structures through gaps in existing vegetation, as are the existing water reservoirs and water treatment buildings. However, the limited visual impacts are not expected to change the visual character or quality of the site and its surroundings from the existing uses, which will remain as generally undeveloped lands and developed public utilities.

d) No Impact: The Project does not include any lighting, and there will be no impact on nighttime views.

Conclusions:

The development of the proposed Project will have a **less than significant impact** on aesthetic resources and therefore no mitigation measures are required.

II. Agriculture 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 Dept. 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:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
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))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?			X	
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 or conversion of forest land to non-forest use?				X

Thresholds of Significance:

Evaluations consider to what degree the proposed Project would have impacts to agricultural and forestry, including impacts to agriculturally important lands, changes to area zoning, and conversion of forest lands to non-forest uses.

Discussion:

(a through c) No Impact: The Project Site is zoned and designated for use as a public services facility site, with existing water treatment and storage infrastructure in-place and providing water to the residents of Etna. No agricultural resources are present at the site. Review of the California Division of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program (FMMP) found that the Project Site is located on areas designated as "Urban and Built Up Land" (California Division of Conservation, 2014). Refer to **Figure 2-2**, Siskiyou County Important Farmlands.

d) Less Than Significant: Some forest vegetation (conifer trees) will be removed from the Project Site, which is zoned as Public Facility for use as a the City's water treatment facility as part of this Project for

the location of the new water tank, access to the tank and clearing around the tank for installation of the foundation and water lines. The preliminary site plan (**Figure 1-3**) shows that approximately 48 trees will be removed, ranging in size from 12 to 36 inches DBH (diameter at breast height). The site has also been previously cleared of significant forest resources as part of historical development of the site decades ago. The site is not designated as forest lands (it is zoned for public uses) and has not been used for forest production since it was converted to a public water utility site.

Timber removal will require that the City develop a timber harvest plan (THP) and possibly a timber conversion permit (TCP) for the removal of these trees with permit approval by CALFIRE, who has permit oversight responsibility for this type of activity. Development of the THP/TCP will occur after Project approvals and final engineering, and prior to during construction.

e) No Impact: No farmlands exist at the Project Site.

Conclusions:

The development of the proposed Project will have **a less than significant impact** on agricultural and forest resources, and therefore no mitigation measures are required.

III. Air Quality.

Where available, the significance criteria established by the applicable air quality management or air and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

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

Thresholds of Significance:

Evaluations consider to what degree the proposed Project would interfere with air quality objectives established by the Siskiyou County Air Pollution Control District (SCAPCD) or have an impact on air quality, including violations of existing air quality standards or impacts to sensitive receptors.

Discussion:

(a through e) No Impact: The City of Etna is located in a region identified as the Northeast Plateau Air Basin, which includes Siskiyou, Modoc, and Lassen Counties. This air basin is divided into local air districts, which are charged with the responsibility of implementing air quality programs. The local air quality agency is the SCAPCD. Etna and Siskiyou County are identified as being in attainment or

unclassified for all federal and state air quality standards. As such, the Project location is not subject to an air quality plan.

While construction activities will create minor amounts of dust from trenching and minor grading activities, these activities will be managed through dust abatement practices (watering) as part of the standard practices required through construction design documents. The Project will not violate any air quality standard, contribute substantially to an existing or Projected air quality violation, or result in a cumulative increase of any criteria pollutant for which the region is in non-attainment.

Due to the nature of the Project, construction is not expected to generate pollutants; therefore it will not expose sensitive receptors to substantial pollutant concentrations or objectionable odors. After completion, the proposed Project will not result in excess or permanent odors.

Conclusions:

The development of the proposed Project will have **no impact** on air quality resources, and therefore no mitigation measures are required.

IV. Biological Resources. Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				X
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?				X
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?				X
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
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?				X

Thresholds of Significance:

Evaluations consider whether the proposed Project would result in a significant adverse impact, direct or indirect effects to any plant or animal species (including fish) or their habitats listed as rare, threatened, or endangered by the federal or state government; impacts to wetlands; or other biological resources identified in planning policies adopted by the City of Etna.

General: The landscape surrounding the Project Site is comprised of sparsely developed residential and rural residential uses, including minor small-scale agriculture and commercial forests. On areas where residential and agricultural uses are less intense, there are small pockets of Ponderosa pine, incense cedar, and scattered brush. Commercial forest land is located immediately to the west of the Project Site, and has had historic timber operations (logging). Refer to **Figure 1-2** (Project Site) for an aerial image of the Project Site and immediate adjacent areas.

There are no riparian areas, wetlands or other sensitive habitat features located at or near the Project Site. Database searches and reconnaissance level field surveys were conducted for special status plant and wildlife species and their habitats. No special status plant or animal species, their habitats, riparian areas or wetlands were found within the Project Site, and none will be impacted by this Project. Refer to the Biological Resources Technical Memo in **Appendix B**.

Discussion:

(a) Less than Significant with Mitigation Incorporated:

Special Status Botanical Species

Database queries identified 70 special status botanical species reported within the region consisting of the study area's quadrangle (Etna) and the surrounding topographic quadrangles. Of theses 70 species, 9 had a moderate potential to occur within the study area. The others have a no or a low potential for occurrence. The botanical technical memorandum reported that no special status plant species were detected within or adjacent to the Project during the survey, and no additional surveys or mitigation measures are warranted (**Appendix B**).

Special Status Wildlife Species

Database queries identified 30 special status species that might be present at the site. Of the 30 potential species listed by the agency resources, 5 species had the potential to occur within the Project Site, due to habitat conditions available at or near the site, migration routes, or historical observations of these species in the area. The other species identified by database searches have no potential to occur at the Project Site based on habitat requirements that are not present. Survey of the Project Site and immediate surrounding habitat failed to locate special status species or specific habitat that might be impacted by this Project. The Biological Resources Technical Memorandum concluded that no additional surveys are warranted, and no avoidance or minimization measures are required (**Appendix B**).

The technical memorandum did determine that due to the removal of site vegetation, mitigation measures for the protection of migratory and nesting birds would be required. The mitigation measures recommended that vegetation be removed during non-nesting periods, or that additional pre-construction surveys be undertaken if vegetation removal was to occur during nesting periods. Mitigation measures are identified in this section as **Mitigation Measure Bio-1.**

(b) No Impact: According to the CNDDB and onsite field investigations, there are no regionally occurring special status natural communities at the Project Site (**Appendix B**). The Project will not impact special status natural communities, riparian habitat or other sensitive natural communities.

(c) No Impact: Review of the National Wetlands Inventory mapping information (USFWS, 2017) and a site visit by a qualified biologist determined that there are no wetlands impacted by this Project (**Appendix B**)**.** There are no surface water sources located at or near the Project Site.

(d) No Impact: The Project may facilitate home range and dispersal movement of resident wildlife species, but does not serve as a wildlife movement corridor. The proposed Project would not restrict regional wildlife movement or wildlife migration patterns.

(e) No Impact: The Project does not conflict with any local policies or ordinances protecting biological resources.

(f) No Impact: No habitat conservation plan, natural community conservation plan, or other local or regional conservation plan has been adopted within the area that encompasses the Project Site; therefore, no impact is anticipated and no mitigation is considered necessary.

Conclusions:

The development of the proposed Project will have a **less than significant impact with mitigation incorporated** on biological resources.

Mitigation Measures:

The following mitigation measures, when implemented, would reduce the Project related impacts to a less than significant level:

Mitigation Measures Bio-1. Should the Project require that trees be removed as part of construction activities, the following will occur to avoid impacts to nesting migratory birds or raptors that may be utilizing trees at the construction site (Fish and Game Code Sections 3503 and 3503.5):

1. Tree removal should be conducted from September 1 to January 31 when birds are not nesting, **OR**
2. Should trees need to be removed from February 1 to August 31 (nesting season), then nesting bird surveys will be conducted by a qualified biologist no more than one week prior to tree removal during this period.
    a. If no nesting birds are located during the survey, then tree removal may proceed.
    b. Should the survey determine that an active nest is located in the trees to be removed during the survey, the biologist shall delineate a no disturbance buffer that is adequate to prevent nesting failure. No trees shall be removed within the buffer until the young have fledged, as determined through additional monitoring by the qualified biologist.
    c. Results of all nesting bird surveys, both positive and negative, will be sent to the Department of Fish and Wildlife, ATTN: CEQA, 601 Locust Street, Redding, CA 96001.

Timing for Implementation/Compliance: Project vegetation removal between September 1 to January 31 or nesting bird surveys and compliance monitoring for vegetation removal from February 1 to August 31.

Person/Agency Responsible for Monitoring: City of Etna.

Monitoring Frequency: As specified in the mitigation measure, by qualified biologists.

Evidence of Compliance: For vegetation removal during the nesting season, survey documentation provided by the City to DFW.

V. Cultural Resources. Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		X		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
d) Disturb any human remains, including those interred outside of formal cemeteries?		X		

Thresholds of Significance:

Evaluations consider to what degree the proposed Project would cause physical changes in known or designated historical resources, archaeological sites or unique paleontological resources or unique geologic features. Evaluations are also made to determine potential impacts from the disturbance of human burial locations.

Discussion:

(a) No Impact: A cultural resources review completed for the site as part of this Project did not find any historic resources at the Project Site; therefore there will be no impact.

(b) Less than Significant with Mitigation Incorporated: A cultural resources review completed for the site did not find any archaeological site that could be impacted by this Project. However, there is a possibility that cultural resources, including buried archaeological materials, could exist in the area and may be uncovered during proposed construction within the Project Site. Therefore, if any resources are found during the construction of the proposed Project, they will be mitigated as necessary by contacting the appropriate agencies. By incorporating Mitigation Measure CR-1, the proposed Project will not cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA §15064.5.

Additional mitigations for the unanticipated discovery of additional cultural resources are included as Mitigation Measure CR-2. Implementation of these mitigation measures will ensure that the Project will have a less than significant impact.

(c) No impact: No known paleontological, geologic, or physical features are known to exist on the proposed Project Site or in the vicinity, or are likely due to the parent material and imported fill located along the Project.

(d) Less than Significant with Mitigation Incorporated: The Project is not expected to disturb any human remains, including those interred outside of formal cemeteries. However, implementation of Mitigation Measure CR-2 has been included in the event that human remains are accidentally discovered during construction. Implementation of Mitigation Measure CR-2 will ensure that the Project will have a less than significant impact.

Conclusions:

The development of the proposed Project will have a **less than significant impact with the incorporation of mitigation measures** on cultural resources. While there is no known resources that will be impacted by this Project, the mitigation measures have been developed to prevent the unintended impacts from cultural resources accidentally discovered during development of the Project.

Mitigation Measures:

Mitigation Measures CR-1. If cultural resources, such as chipped or ground stone, or bone are discovered during ground-disturbance activities, work shall be stopped within 20 meters (66 feet) of the discovery, as required by the California Environmental Quality Act (CEQA; January 1999 Revised Guidelines, Title 14 California Code of Regulations [CCR] 15064.5 (f)). Work near the archaeological finds shall not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the material and offered recommendations for further action.

Mitigation Measures CR-2. If human remains are discovered during Project construction, work will stop at the discovery location, within 20 meters (66 feet), and any nearby area reasonably suspected to overlie human remains (Public Resources Code, Section 7050.5). The Siskiyou County coroner will be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it will be necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the North American Heritage Commission (NAHC) (Public Resources Code, Section 5097). The coroner will contact the NAHC. The descendants, or most likely descendants, of the deceased will be contacted and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98. Work may resume if NAHC is unable to identify a descendant or the descendant failed to make a recommendation.

VI. Geology and Soils. Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?				X
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?			X	
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?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X

Thresholds of Significance:

Evaluations consider Project-related effects that could involve damage to the Project as a result of fault movement along a fault zoned by the state under the Alquist-Priolo Act, or other known faults, strong seismic ground shaking and other seismic effects; the potential for excessive soil erosion resulting from the Project and other damages to the Project or adjacent structures from development of the Project on soils that are unable to accommodate the proposed Project development.

(a)(i) No Impact: The Project is not located near fault rupture hazard zones as identified by the California Geological Survey (CGS). Specifically, there are no State-mandated Alquist-Priolo Earthquake Fault Zones in the Project vicinity.

(a)(ii) Less than Significant: Although there are no known earthquake faults in the Project vicinity, the entire northern California region is subject to the potential for moderate to strong seismic shaking. Seismic shaking can be generated on faults many miles from the Project Site. Seismic shaking potential is, therefore, a regional hazard; it is neither higher nor lower at the Project Site relative to other sites in the region. Standard design and construction practices meeting current California Building Codes will provide adequate protection of the water tank and associated pipelines from seismic events anticipated for the Project Site.

(a)(iii) Less than Significant: Although located in a seismically active region, the site is not likely to be subject to seismic shaking of adequate strength or duration to generate secondary seismic effects.

Geologically recent (late Holocene age) alluvial soils associated with liquefaction potential are not present within the Project Site.

(a)(iv) No Impact: The Project Site is located on a low gradient slopes near the valley bottom. There is a negligible potential for landsliding to impact a proposed buried water line in a roadway in this setting. Standard design and construction practices meeting current California Building Codes will provide adequate protection of the water tank and associated pipelines from seismic events anticipated for the Project Site.

(b) Less than Significant: No erosion was evident at the Project Site during a May 2017 site visit and the site has minimal chance of significant erosion in the area of proposed developments. This is due to 1) the relatively flat topography over the majority of the site, and 2) the Project construction activities will comply with erosion control measures prescribed on the final construction documents. Implementation of standard erosion control BMP's will protect soils at the Project Site and prevent substantial soil erosion or loss of topsoil from the Project. Refer to **Appendix C** for the USDA Soil Report.

(c) Less than Significant: The Project is not located on an area of known instability and soils at the site have successfully supported other similar infrastructure (water reservoirs, buildings, pipelines, roads) without adverse effects. As such, it appears the Project is not located on soils that are prone to subsidence, collapse or liquefaction. Standard Project design and construction practices meeting current California Building Codes will ensure that the construction of the Project will not adversely affect site stability.

(d) No Impact: There are no known expansive soils at the Project Site and discussions with the City Engineer have not identified any issues with existing structures that would indicate expansive soils are present.

(e) No Impact: The Project is a water treatment building and tank Project and does not involve septic tanks or wastewater disposal; therefore there is no impact.

Conclusions:

The development of the proposed Project will have a **less than significant impact** on geology and soils and therefore no mitigation measures are required. The Project is designed to incorporate recommendations of a geotechnical report for the site as part of the final design of the Project, which will provide site specific contract requirements for the development grading and foundation preparation work.

VII. Greenhouse Gas Emissions

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

Thresholds of Significance:

Evaluations consider Project-related effects that could involve: **a)** generating significant greenhouse gases that would significantly impact the environment; and **b)** conflict with an applicable plan, policy for the purposes of reducing emissions of greenhouse gases.

Discussion:

(a and b) Less Than Significant: California has passed Assembly Bill 32, mandating a reduction in greenhouse gas (GHG) emissions and Senate Bill 97, evaluating and addressing GHG under CEQA. On April 13, 2009, Governor's Office of Planning and Research (OPR) submitted to the Secretary for Natural Resources its proposed amendments to the state CEQA Guidelines for GHG emission, as required by Senate Bill 97 {Chapter 185, 2007} and they became effective March 18, 2010.

At this time, the City of Etna, California Air Resources Board or SCAPCD have not established thresholds of significance for evaluating a Project's production and contribution of GHG. The City has not adopted plans, policies, or regulations for the purpose of reducing GHG.

In an attempt to determine Project impacts, potential GHG generators were qualitatively reviewed. During construction, the proposed Project would contribute a temporary, short-term increase in air pollution including GHG from vehicles and equipment during construction. Once construction is complete, the resulting water system improvements will enhance the overall efficiency of the water treatment and storage system, potentially reducing long term maintenance and energy consumption. No new pumps or other energy consuming devices are planned to be installed. Due to the limited size of the development and short term time frame for construction emissions, impacts from the generation of GHG will be less than significant.

Conclusions:

The development of the proposed Project will have a **less than significant impact** on greenhouse gas emissions and therefore no mitigation measures are required.

VIII. Hazards and Hazardous Materials. Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
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?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
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?				X
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?				X
g) Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized area or where residences are intermixed with wildlands?				X

Thresholds of Significance:

Evaluations consider to what degree the proposed Project would involve: **a)** potential storage or use, on a regular basis, of chemicals that could be hazardous if released into the environment; **b)** operating conditions that would be likely to result in the generation and release of hazardous materials; **c)** use of hazardous materials, because of construction-related activities or operations, within a quarter-mile of an existing or proposed school; **d)** be located on a site listed as hazardous pursuant to Government Code Section 65962.5; **e)** Project-related increase in use intensity by people within the boundaries of, or within two miles of, the airport planning areas; **f)** result in a safety hazard for people working within and adjacent to a private airstrip; **g)** Project-derived physical changes that would interfere with emergency responses or evacuations; or **h)** potential major damage because of wildfire.

Discussion:

(a) Less than Significant: The proposed Project includes the use of regulated materials (such as petroleum hydrocarbons, fuels, and lubricants) for the use of mechanized equipment during construction. All hazardous or regulated materials that are used on site during construction activities will be properly stored and secured to prevent access by the general public; no

construction equipment fuel or lubricants will be stored onsite during the Project development. No hazardous materials will be disposed of at the Project Site. Procedures will be followed when handling or storing hazardous materials, and all job site employees will be trained in the proper usage and storage of hazardous materials, as needed. The potential hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials is less than significant.

Ongoing operations of the water treatment facility include the use of Aluminum Sulfate and Nalco 8102 Cationic Polymer which are both chemicals that bind with particulates such as sediment, small organic matter, etc., and removes them from the water prior to final filtration and disinfection. Once the particulates are bound (coagulated or flocculated) they are removed by mechanical filtration as they are larger in particle size than the filter. Once removed, they are eventually discharged from the filtration process by routine "backwashing" of the filters, which expels these particles bound to the chemicals out of the filter system.

Both chemicals are USEPA approved for use in drinking water supplies for the removal of particulate matter, which is the existing and continued use at the Project.

Aluminum Sulfate
Aluminum Sulfate is a liquid that is currently used in the City of Etna's drinking water treatment process as a way to coagulate and flocculate suspended solids and organic particles in the untreated drinking water supply prior to filtration of the water. The use of Aluminum Sulfate improves water treatment efficiencies, reduces the amount of filter maintenance needed, and reduces the amount of chlorine that is needed for drinking water disinfection. It is in a liquid form and stored at the existing treatment facility. For the proposed Project, the use of this chemical will continue and is not a new product being added to the drinking water treatment process. The Safety Data Sheet (SDS) for this product is included in **Appendix D.**

Nalco 8102 Cationic Polymer
Nalco 8102 is a chemical flocculant that uses a cationic exchange process to bind to particles such as silica or organic substances which can then be filtered out in the water filtration process. Removing these particles by flocculation improves the overall filtration process which leads to decreased maintenance and use of other chemicals in the disinfection process. This liquid, while similar to Aluminum Sulfate, uses a cationic polymer process that works slightly differently and binds to other particles that may not be absorbed by Aluminum Sulfate. The SDS for this product is included in **Appendix D**.

(b) Less than Significant: The proposed Project includes the use of regulated materials (such as petroleum hydrocarbons, fuels, and lubricants) for the use of mechanized equipment during construction and water treatment chemicals (Aluminum Sulfate and Nalco 8102) for coagulation/flocculation of suspended solids and organic materials.

As part of standard construction practices, site contractors will have spill prevention materials on-site and personnel will be adequately trained in spill prevention and spill cleanup, should an accidental release occur. The risk to the public and environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials is less than significant.

For the existing and future uses of water treatment chemicals, these are currently stored in locked treatment buildings at the water treatment facility, and will continue to be confined there. Application of these chemicals is by trained water treatment personnel. Any accidental release of these chemicals (spilling on the ground) would be easily cleaned up by collection of solid material

and disposal in conventional solid waste containers. Backwashing of these chemicals in suspension from the water treatment filters would be contained in a new backwash water pond, which produces no hazards to humans or animals.

(c) No Impact: The Project Site is not located within one-quarter mile of a school; therefore, the proposed Project will not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

(d) No Impact: The California Envirostor database was queried for hazardous materials site pursuant to Government Code Section 65962.5. No site is located within the vicinity (Cal-EPA, 2017). Refer to **Figure 2-3** Hazardous Materials Inventory for depiction of sites in proximity to the Project Site.

(e and f) No Impact: The Project Site is not located within the vicinity of an airport or private airstrip. The Scott Valley Airport, a general aviation facility managed by Siskiyou County, is located approximately 7 air miles to the north.

(g) No Impact: The Project is not located in an area that is a part of an adopted emergency response or evacuation plan and is not located on any primary transportation route that would act as an emergency evacuation corridor. The Project will not impair the implementation, or physically interfere with, any future emergency response plan or emergency evacuation plan.

(h) No Impact: The proposed Project will construct a new water treatment filtration building and water storage tank, and will augment the City's existing water system, providing greater efficiencies in operations and maintenance and providing consistent water pressure to existing customers and the City's fire suppression systems. This Project is seen as a benefit to the community in terms of fire protection. Standard fire protection measures, as part of the construction contract for the Project, will ensure that fire prevention and suppression standards are in-place for construction activities performed during the fire season.

Conclusions:

The development of the proposed Project will have a **less than significant impact** from the use or disposal of hazardous materials at the site, therefore no mitigation measures are required.

IV. Hydrology and Water Quality.

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?			X	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?			X	
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?			X	
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?			X	
f) Otherwise substantially degrade water quality?			X	
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary of Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?				X
i) Expose people or structures to a significant risk or loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
j) Result in inundation by seiche, tsunami, or mudflow?				X

Thresholds of Significance:

Evaluations consider to what degree the proposed Project would impact water quality through the discharges of sediments, or other materials that would violate water quality and discharge standards. Evaluations also consider the Projects effect on surface runoff and increases as a result of the development. Additionally, evaluations are made related to the Project impact on Federal Emergency Management Agency (FEMA)-designated 100-year flood hazard areas and what affect flood flows would have on the Project, or be affected by the Project. Lastly, evaluations are made of the Project affects to levees and dams, and any inundations from a seiche, tsunami, or mudflow.

Discussion:

(a) Less Than Significant: Construction of the proposed Project will involve site preparation work and construction activities including excavation and trenching. The area of ground disturbing activity is less than 1-acre and is not subject to coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (NPDES General Permit No. CAS000002). The Project will comply with erosion control measures (prepared as part of the final engineering design documents) during construction that will prevent the discharge of sediment and/or other potential pollutants off-site. Implementation of these requirements and standard practices will reduce the potential for violation of water quality standards to a less than significant level.

(b) No Impact: The proposed Project will not require any new water supply. Existing surface water supplies are unaffected by this Project which will add additional filtration and water storage to the site. The additional water storage will be within the City's current water allocation, and is not an increase in water use. This Project does not propose to increase water supply or increase water demands by City customers. Therefore, the Project would not deplete groundwater supplies or interfere with groundwater recharge.

(c and d) Less Than Significant: Site review determined that existing site drainage would not be affected by the Project and that no excessive erosion appears to be occurring at the site. This Project does not propose to alter the existing drainage pattern of the site or area, nor the course of a stream or river. There are no surface water sources located at or near the Project Site. The Project will have an erosion control plan (or similar document) developed as part of the engineering design process that when implemented will provide adequate protection of the site from surface erosion and sedimentation due to construction. Therefore the impact regarding erosion and siltation is less than significant.

(e and f) Less Than Significant: The Project will not create or contribute runoff that would exceed the capacity of an existing or planned stormwater drainage system. No developed public stormwater facilities are located at the Project Site. Existing site drainage will be maintained by the Project to carry surface water away from the new developments at the same rates and in the same locations as existing conditions. Development of the Project is not anticipated to provide significant additional stormwater to the area and no offsite stormwater facilities are required (Morgan Eastlick, PE, City Engineer, April 2017).

During construction, there is the potential for stormwater runoff to transport pollutants, such as sediment or other constituents. However, standard erosion control measures will be developed as part of the final design documents for the Project that will limit the potential for impacts to runoff and water quality to less than significant level.

(g) No Impact: The Project does not include housing.

(h) No Impact: The proposed Project is not located within a FEMA-designated 100-year flood hazard area (refer to **Figure 2-1**).

(i) No Impact: The City of Etna obtains its water supply from a dam upstream of the Project Site on Etna Creek. However, the construction of this Project does not propose any changes to the existing dam and therefore will have no impact on the failure of the dam.

(j) No Impact: The site is inland so a risk of tsunami inundation is not present. There is no large body of water nearby that could cause a seiche that would affect the site. Due to site characteristics (being located lower on the slope) the site would not be subjected to a mudflow.

Conclusions:

The development of the proposed Project will have a **less than significant impact** on hydrology and water quality resources, therefore no mitigation measures are required.

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

Thresholds of Significance:

Evaluations consider to what degree the proposed Project would impacts on existing land use and future planning at the Project Site and in the vicinity of the Project, and within the municipality where land uses and zoning are administered.

Discussion:

(a) No Impact: The proposed Project is located on City owned property designated for the intended use of the Project and would not divide an established community. Refer to **Figure 1-4** to view the City of Etna zoning for the area.

(b) No Impact: The proposed Project is located on land dedicated in the City general plan and zoning ordinance for the use as public facilities, such as the existing use. While the property is zoned appropriately, the Project is also exempt from City of Etna and Siskiyou County zoning requirements per California Government Code, Section 53091(e) which states, in part: *"Zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage treatment, or transmission of water …."*

(c) No Impact: There is no applicable habitat conservation plan or natural community conservation plan that applies at the proposed Project Site.

Conclusions:

The development of the proposed Project will have **no impact** to land use and planning of the site or surrounding areas, therefore no mitigation measures are required.

XI. Mineral Resources. Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

Thresholds of Significance:

Evaluations consider to what degree the proposed Project would interfere with the extraction of commodity materials or otherwise cause any short-term or long-term decrease in the availability of mineral resources that would otherwise be available for construction or other consumptive uses.

Discussion:

(a and b): No Impact: On-site soils and geologic resources are not suitable as commodity materials that would be of value to the region or the state. The site is not designated as an important mineral resource recovery site by a local general plan, specific plan, or other land use plan.

Conclusions:

The development of the proposed Project will have **no impact** on mineral resources; therefore no mitigation measures are required.

XII. Noise. Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Expose persons to or generate excessive ground borne vibration or ground borne noise levels?				X
c) Result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?				X
d) Result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?			X	
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?				X
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?				X

Thresholds of Significance:

Evaluations consider whether the proposed Project would produce: **a)** sound-pressure levels contrary to City noise standards; **b)** long-term ground vibrations and low-frequency sound that would interfere with normal activities and which is not currently present in the ; **c)** a substantial increase in ambient short-term or long-term sound pressure levels; **d)** changes in noise levels that are related to operations, not construction related, which will be perceived as increased ambient or background noise in the ; **e)** exposure of persons within 2 miles of an airstrip/airport to excessive noise levels; or **f)** expose people residing in the vicinity of a private airstrip to excessive noise levels.

Discussion:

(a) Less Than Significant: The Project is located on the western edge of the City of Etna on public land used for the City's water treatment facilities. Access is by an unpaved driveway from Highland Street. The nearest residence is approximately 360 feet from the proposed water tank site, and over 400 feet from the other site improvements. Vehicle noise from State Route 3 is the most significant noise in the community.

Noise contours have not been developed by the City of Etna for the Project Site, however, there are objectives established by the Etna General Plan (City of Etna, 2004) that provide noise related guidance. Noise standards related to new uses affected by non-transportation noise are established in the General Plan (Section X-Noise Element). Once developed, the Project will not generate any noise, as the periodic filling and draining of the water tank will not make any perceptible noise at or off the site and new equipment is housed within the new filtration building. Compliance standards with the City's General Plan are met for "new non-transportation noise" for industrial operations at 65dBA (General Plan Section X-Noise Element, Table 34).

(b) No Impact: The proposed Project does not include activities that would result in groundborne vibration, such as pile driving. Therefore there will be no impact.

(c) No Impact: Once developed, the Project will not generate any significant noise, as the periodic filling and draining of the water tank will not make any perceptible noise at or off the site. New treatment equipment will be housed inside buildings, and noise will be reduced by this shielding. There will be no impact.

(d) Less Than Significant: Development of the Project will generate construction related noise in the short-term at the Project Site during daytime periods. The noise generated by temporary construction equipment is anticipated to be consistent with existing uses in the area (farm equipment) with noise levels around in the 60-65 dBA range.

It is also anticipated that periodic exceedances will occur, ranging from 80-100 dBA, for short-term periods during intensive construction activities such as concrete pouring, and delivery of materials and equipment. These activities are expected to occur for limited periods (30 minutes to 1 hour) and only during the daytime; no nighttime construction activities will be allowed. These exceedances are not expected to have an impact on adjacent residences as the noise is limited in both time and duration, and once construction is completed, it will be eliminated.

Noise generated by construction equipment is anticipated to be within the 65 dB range at these locations, and would not have an impact on residential noise levels. Once the Project is completed, it will have no long-term noise generation. Therefore, the impact is less than significant.

This noise will be of limited duration and scope, and will not have an impact on the community. Noise may reach 80-100 dBA for short periods (up to 1 hour) but will return to the pre-Project state after construction. Therefore, the impact is less than significant.

(e and f) No Impact: The Project Site is not located within the vicinity of an airport or private airstrip. The Scott Valley Airport, a general aviation facility managed by Siskiyou County, is located approximately 7 air miles to the north.

XIII. Population and Housing. Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and/or businesses) or indirectly (e.g., through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

Thresholds of Significance:

Evaluations consider to what degree the proposed Project would result in, or contribute to, population growth, displacement of housing units, demolition or removal of existing housing units, or any Project-related displacement of people from occupied housing.

Discussion:

(a) No Impact: The Project would not induce population growth directly (e.g., by proposing new homes and businesses), or induce growth through the extension of infrastructure. The Project will upgrade existing water treatment facilities and provide additional storage for treated drinking water. The Project does not extend services, provide additional areas outside of the City's water service area, or otherwise serve new areas that would increase the population

(b and c) No Impact: The Project would not displace any housing or people, as none exist at the Project Site.

XIV. Public Services.

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

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Fire protection?				X
b) Police protection?				X
c) Schools?				X
d) Parks?				X
e) Other public facilities?				X

Thresholds of Significance:

Evaluations consider to what degree the proposed Project would result in any changes in existing fire or police protection service levels, or a perceived need for such changes, as well as any substantial changes in the need for, or use of, schools, parks, or other public facilities.

Discussion:

(a through e): No Impact: The Project Site is located within an established community that has existing services for law enforcement and fire protection. The proposed Project does not include the construction of new homes, or extension of infrastructure. No new parks, schools or other public facilities will be created as a part of or as a result of this Project.

XV. Recreation.

Would the Project:

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

Thresholds of Significance:

Evaluations consider to what degree any aspect of the proposed Project would be related to demand for recreational facilities or increase use of existing recreational areas such that those areas are physically degraded, including secondary effects (such as, degradation through over-use of environmentally sensitive areas).

Discussion:

(a and b) No Impact: The Project will have no effect on recreational facilities in the area, and will not require the expansion of recreational facilities or cause the deterioration of existing facilities.

XVI. Transportation/Traffic. Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				X
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?				X
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?				X
d) Substantially increase hazards due to design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?				X
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				X

Thresholds of Significance:

The evaluation criteria consider to what degree, if any, the proposed Project would be associated with changes to ground and air traffic patterns, changes in the Level of Service (LOS) on area roadways, or have other Project-associated travel restrictions that would prevent emergency vehicles from reaching the location where they are needed.

Discussion:

(a to f) No Impact: This Project is not located on any roadway, will not impact any roadway and would not have any impact on roadway management plans. Also this Project is not located within the vicinity of an airport or private airstrip and would therefore have no impact on air traffic.

XVII. Utilities and Service Systems.

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
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?				X
d) Have insufficient water supplies available to serve the Project from existing entitlements and resources (i.e., new or expanded entitlements are needed)?				X
e) Result in a determination by the wastewater treatment provider, which serves or may serve the Project that it does not have adequate capacity to serve the Project's Projected demand in addition to the provider's existing commitments?				X
f) Be served by a landfill with insufficient permitted capacity to accommodate the Project's solid waste disposal needs?				X
g) Violate any federal, state, and local statutes and regulations related to solid waste?				X

Thresholds of Significance:

Evaluations consider impacts of the proposed Project as to existing city, state, regional and federal utilities such as water and wastewater treatment facilities, stormwater facilities and landfills and if the proposed Project would require additional improvements to these facilities if developed.

Discussion:

(a) No Impact: The Project does not produce wastewater or require wastewater facilities as part of its operation.

(b) Less Than Significant: The Project constructs the following new water treatment facilities.

Filtration System

The Project proposes to construct a new filtration treatment facility that will upgrade filtration of drinking water supplies prior to disinfection and storage. This new facility will be housed in a new building constructed adjacent to existing water treatment buildings and water reservoirs at the City's existing water treatment facility. The location of a new building at the treatment facility is in an area that has existing raw water supply lines which will allow water to be sent to the new filters without significant construction of new pipelines. The location also allows for easy delivery of filtered water to the disinfection building prior to being sent to the treated water reservoirs. Refer to **Figure 1-3**, Preliminary Engineering Layout, for details on the locations of the proposed improvements.

Development of the new filtration building on existing developed areas, and installation of new filtration equipment that will allow the City to comply with drinking water standards, is considered a less than significant impact.

Water Tank

The Project also includes the construction of a new 200,000 gallon steel water tank that will store treated drinking water for delivery to the City's existing distribution system. The tank will also be located at the City's existing drinking water facility, adjacent to the other reservoirs and treatment buildings. Construction will require site grading and foundation development prior to the erection of the water tank. This site development work will be designed by a California registered professional engineer. The construction will require the removal of approximately 48 trees and surface vegetation over a 0.5 acre area, site excavation and installation of engineered fill to create a level pad for the tank. A concrete foundation will then be installed, along with underground piping water delivery. After the foundation is complete, the steel tank will be erected, tested for water tightness and then put into service to provide treated drinking water for the City. Development of the water tank will have a less than significant impact to the environment.

Backwash Pond

The third part of the Project is the creation of a new backwash water pond, which will hold water that is backwashed from the new filtration system. In order to operate properly, the filters need to be backwashed on a routine basis to dislodge and remove particulate matter that has collected in the filters. This particulate matter consists of sediments and organic material that is too large to pass through the filters. The filtration of these sediments and organic particles is accomplished in part through the addition of Aluminum Sulfate and Nalco 8102 Cationic Polymer which bind up these particles through a coagulation/flocculation process. Once bound together, these particles are too large to pass through the filters and are retained in the system. Backwashing (also called back-flushing) is undertaken to dislodge these particles from the filter. Backwash water is often sent to sediment ponds/basins where the water settles and the particulates decant and water evaporates or absorbs into the soil immediately around the pond/basin.

This Project will also construct a new backwash water pond, approximately 30' x 50' in size. Refer to **Figure 1-3**. Backwash water from the filters will be sent to the new earthen pond where water will be absorbed into the soil and will evaporate. The pond will be sized to accommodate normal backwash water volumes, as well as rainfall events during winter months, without overflowing. Aluminum Sulfate and the Nalco 8102 chemicals are bound to sediments and organic matter and will not release back to the soil or be transported to the area groundwater. These sediments are non-hazardous, and when dried will be removed and sent to the Siskiyou County Landfill for disposal, as needed to maintain pond capacity; it is estimated that disposal will occur every 10 years and will consist of approximately one (1) cubic yard of sediment.

Development of the backwash pond is in a location that is generally flat (0-5% slope) with granular soils that are conducive to infiltration of water. Development will require the removal of approximately 1,500 square feet of grasses and brush, none of which are considered special status species, in an area of previous disturbance. Construction will occur under the direction of a California registered engineer, in accordance with final plans and specifications that incorporate current California Building Code standards and an erosion control plan. Development of this Project will have a **less than significant impact**.

(c) No Impact: No new stormwater handling facilities are required for the development of this Project. Refer to Section X: Hydrology and Water Quality for further details on surface water drainage. The Project will not require, or result in, off-site construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

(d) No Impact: The Project will improve existing water treatment facilities and construct a new water storage tank for the City's existing water supply system. The development of the Project will not provide new water supplies or services for new developments, but will simply store more treated water within the City's existing permitted water uses.

(e) No Impact: This Project will have no impact on wastewater treatment and will not require any expansion of the City's wastewater facility from the construction of the Project.

(f and g) No Impact: There will be no change in the volume of solid waste produced by residents in the City of Etna from the development of this Project. The Project would produce miniscule amounts of backwash sediments, estimated at one (1) cubic yard over the next 10 years, which can be disposed of without additional restrictions at the Siskiyou County landfill. The Project will also not violate any federal, state or local statutes related to solid waste.

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

Thresholds of Significance:

Evaluations consider the impacts the Project has to degrade the quality of the environment through impacts to biological resources and those resources that have been determined to be rate and endangered, eliminate important examples of the major periods of California history or prehistory, or result in impacts that are individually limited, but cumulatively considerable, and result in substantial adverse effects on human beings, either directly or indirectly.

Discussion:

(a) Less than Significant with Mitigation Incorporated: As discussed in Section IV Biological Resources, the Project will not 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, or reduce the number or restrict the range of a rare or endangered plant or animal. To protect potential nesting birds that may be present at the site during vegetation removal activities, Mitigation Measure Bio-1 has been developed which provides appropriate protections for migratory and nesting birds, and reduces the impact of the Project to a less than significant level with these mitigations incorporated.

As discussed in Section V Cultural Resources, there is always a possibility that buried cultural resources might be detected during construction Projects. With the implementation of Mitigation Measures CR-1 and CR-2, potential impacts to cultural resources will be reduced to a less than significant level and the Project will not eliminate important examples of the major periods of California history or prehistory.

(b) No Impact: The Project does not have any impacts that are individually limited or cumulatively considerable. Impacts are limited in scope and duration and are not linked with future Projects that may have an impact.

(c) No Impact: There are no environmental effects from this Project that will cause substantial adverse effects on human beings, either directly or indirectly.

List of Preparers

This Initial Study/Mitigated Negative Declaration was prepared on behalf of the City of Etna by SHN Engineers & Geologists who was the primary author. Assistance was provided to SHN by Resource Management who developed the archaeological report for the Project Site, and Morgan Eastlick, PE, Etna City Engineer (under contract with E&S Engineers & Surveyors, Inc.). Primary persons providing professional and technical assistance to this document include those shown below:

- Mark Chaney, Principal Environmental Scientist – SHN Engineers & Geologists
- Greg O'Connell, Biologist – SHN Engineers & Geologists
- Bob Brown, AICP, Principal Planner – SHN Engineers & Geologists
- Kathy Tyler, Archaeologist – Resource Management

Source/Reference List

The following documents were used in the preparation of this mitigated negative declaration:

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The following persons were contacted/consulted regarding preparation of this mitigated negative declaration:

Bray & Associates Engineering, Morgan Eastlick, PE, 530-842-6813. Information regarding City of Etna design plans for the water tank and filtration Project.

Great Northern Services, Rod Merys, Director of Real Estate Development, 530-938-4115, Ext. 112. Information regarding the Project development, grant funding and associated Community Development Block Grant programs.

Proposed Mitigation Measures, Monitoring, and Reporting Program

Biological Resources

Mitigation Measure Bio-1. Should the Project require that trees be removed as part of construction activities, the following will occur to avoid impacts to nesting migratory birds or raptors that may be utilizing trees at the construction site (Fish and Game Code Sections 3503 and 3503.5):

1. Tree removal should be conducted from September 1 to January 31 when birds are not nesting, **OR**
2. Should trees need to be removed from February 1 to August 31 (nesting season), then nesting bird surveys will be conducted by a qualified biologist no more than one week prior to tree removal during this period.
    a. If no nesting birds are located during the survey, then tree removal may proceed.
    b. Should the survey determine that an active nest is located in the trees to be removed during the survey, the biologist shall delineate a no disturbance buffer that is adequate to prevent nesting failure. No trees shall be removed within the buffer until the young have fledged, as determined through additional monitoring by the qualified biologist.
    c. Results of all nesting bird surveys, both positive and negative, will be sent to the Department of Fish and Wildlife, ATTN: CEQA, 601 Locust Street, Redding, CA 96001.

Timing for Implementation/Compliance: Project vegetation removal between September 1 to January 31 or nesting bird surveys and compliance monitoring for vegetation removal from February 1 to August 31.

Person/Agency Responsible for Monitoring: City of Etna.

Monitoring Frequency: As specified in the mitigation measure, by qualified biologists.

Evidence of Compliance: For vegetation removal during the nesting season, survey documentation provided by the City to DFW.

Cultural Resources

Mitigation Measure CR-1. If cultural resources, such as chipped or ground stone, or bone are discovered during ground-disturbance activities, work shall be stopped within 20 meters (66 feet) of the discovery, as required by the California Environmental Quality Act (CEQA; January 1999 Revised Guidelines, Title 14 California Code of Regulations [CCR] 15064.5 (f)). Work near the archaeological finds shall not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the material and offered recommendations for further action.

Timing for Implementation/Compliance: Ongoing throughout construction activities

Person/Agency Responsible for Monitoring: City of Etna, construction contractors

Monitoring Frequency: Ongoing during construction activities

Evidence of Compliance: Documentation of cultural resources found, work stoppage, and implementation of recommendations by professional archaeologist

Mitigation Measure CR-2. If human remains are discovered during Project construction, work will stop at the discovery location, within 20 meters (66 feet), and any nearby area reasonably suspected to overlie human remains (Public Resources Code, Section 7050.5). The Siskiyou County coroner will be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it will be necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the North American Heritage Commission (NAHC) (Public Resources Code, Section 5097). The coroner will contact the NAHC. The descendants, or most likely descendants, of the deceased will be contacted and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98. Work may resume if NAHC is unable to identify a descendant or the descendant failed to make a recommendation.

Timing for Implementation/Compliance: Ongoing throughout construction activities

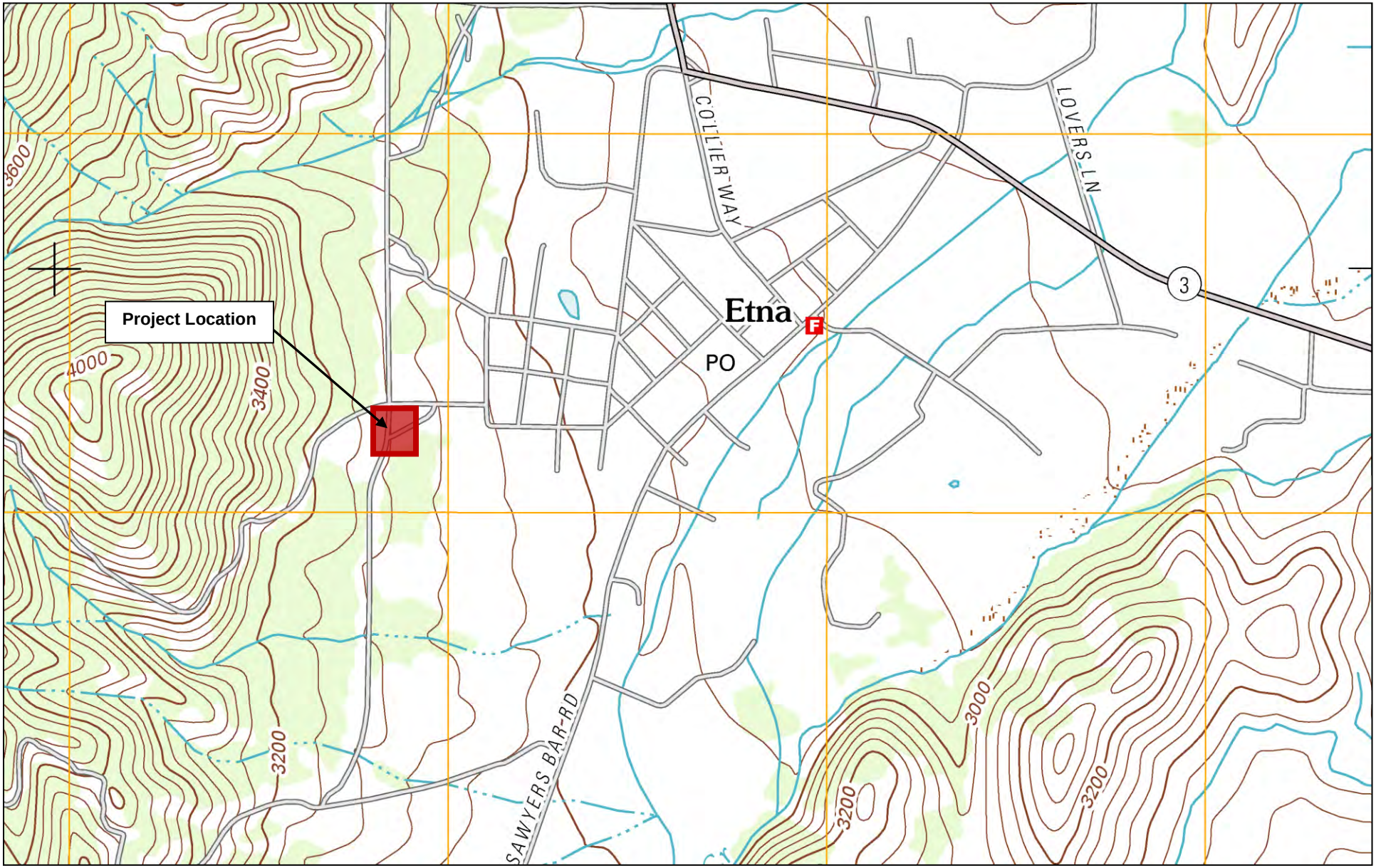
Person/Agency Responsible for Monitoring: City of Etna, construction contractors

Monitoring Frequency: Ongoing during construction activities

Evidence of Compliance: Documentation of human remains found, work stoppage, and implementation of recommendations by Siskiyou County coroner and NAHC.

Appendix A

Project Maps and Figures



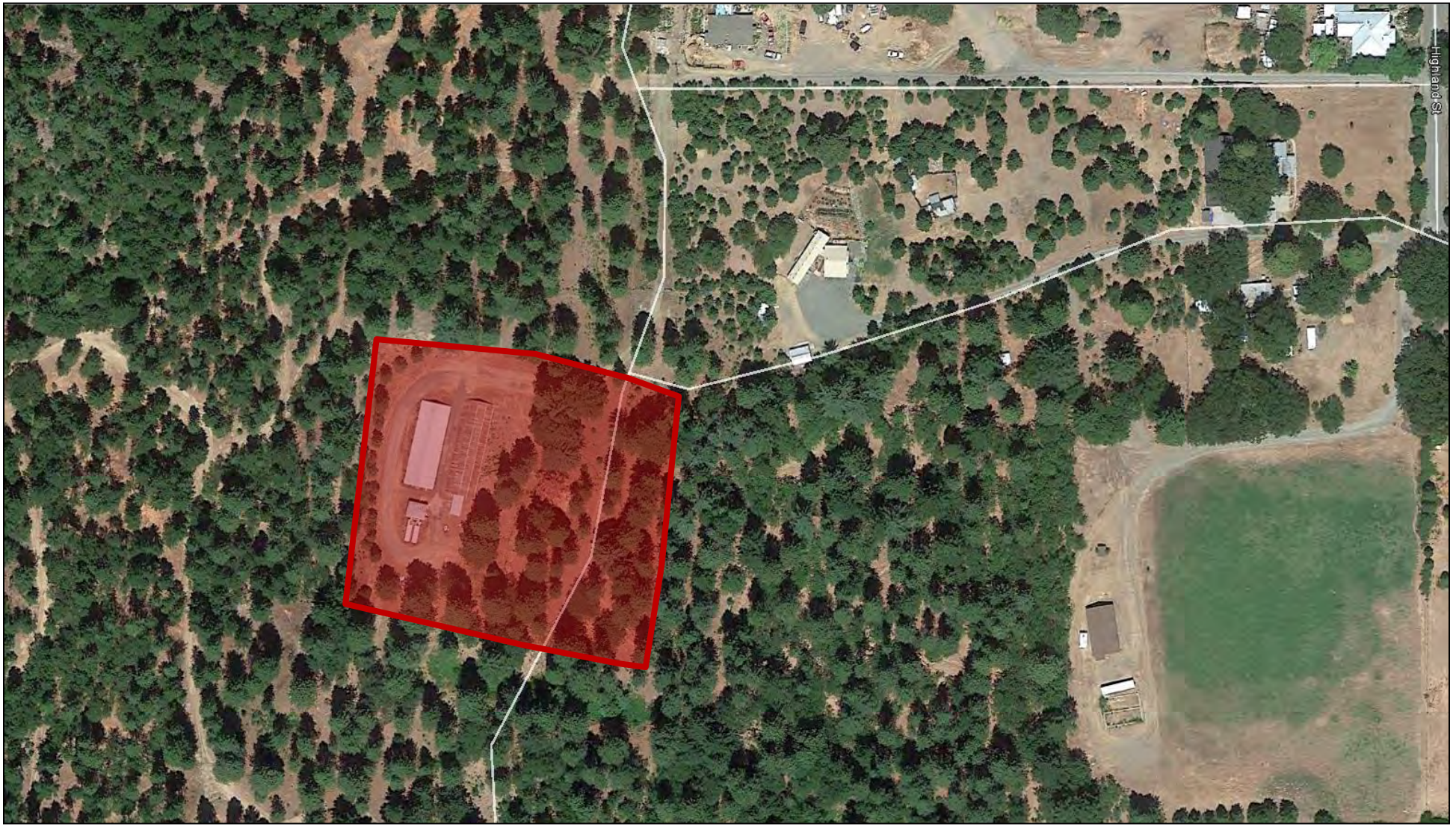
Source: USGS Etna Quad., 2012

City of Etna
16-CDBG-11138 Public Water System
Improvement Project
Reference #517006

NTS

Project Location

Figure 1-1



Source: Google Earth, 2017

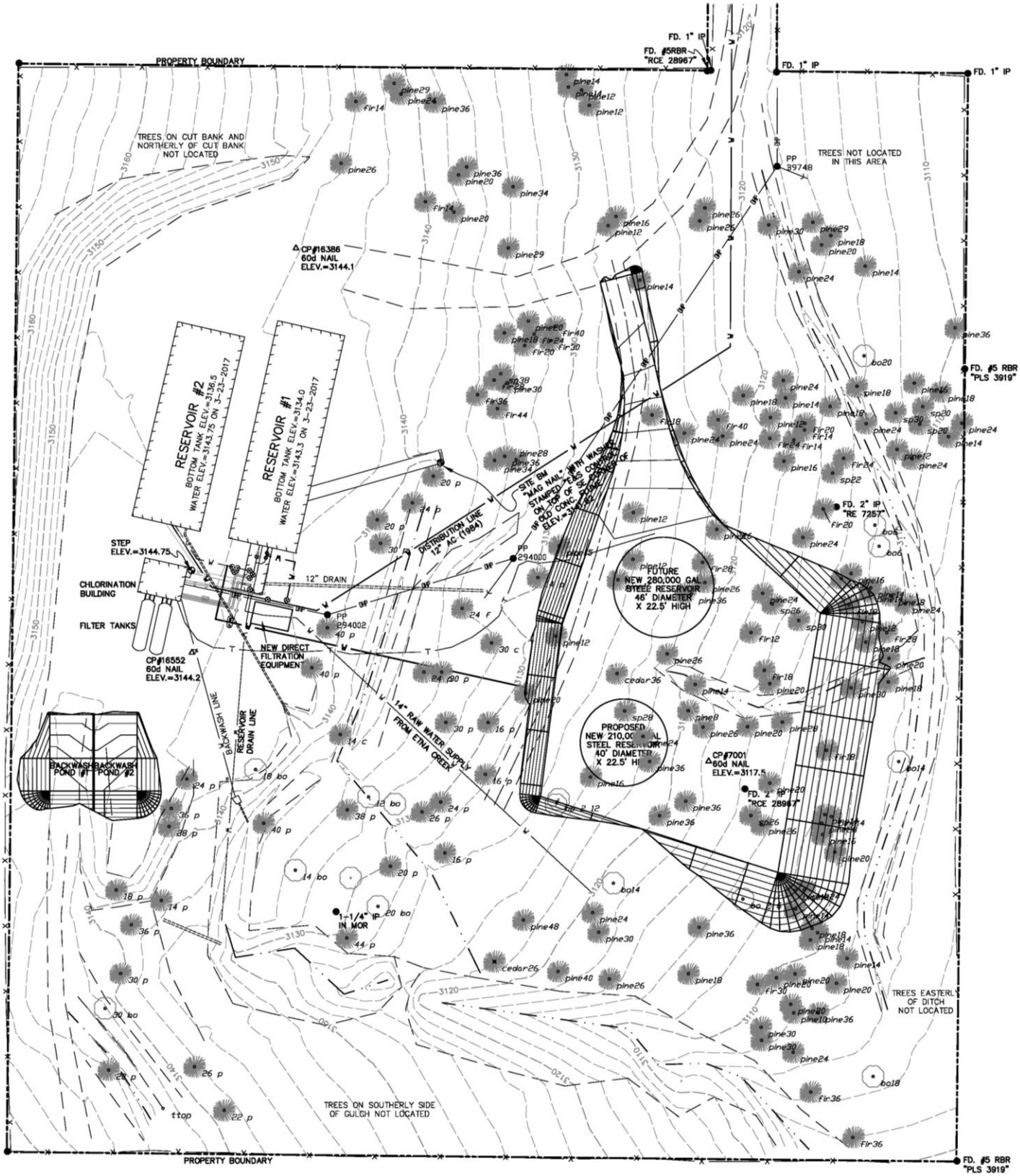
Proposed Project Site

NTS

City of Etna
16-CDBG-11138 Public Water System
Improvement Project
Reference #517006

Project Site

Figure 1-2



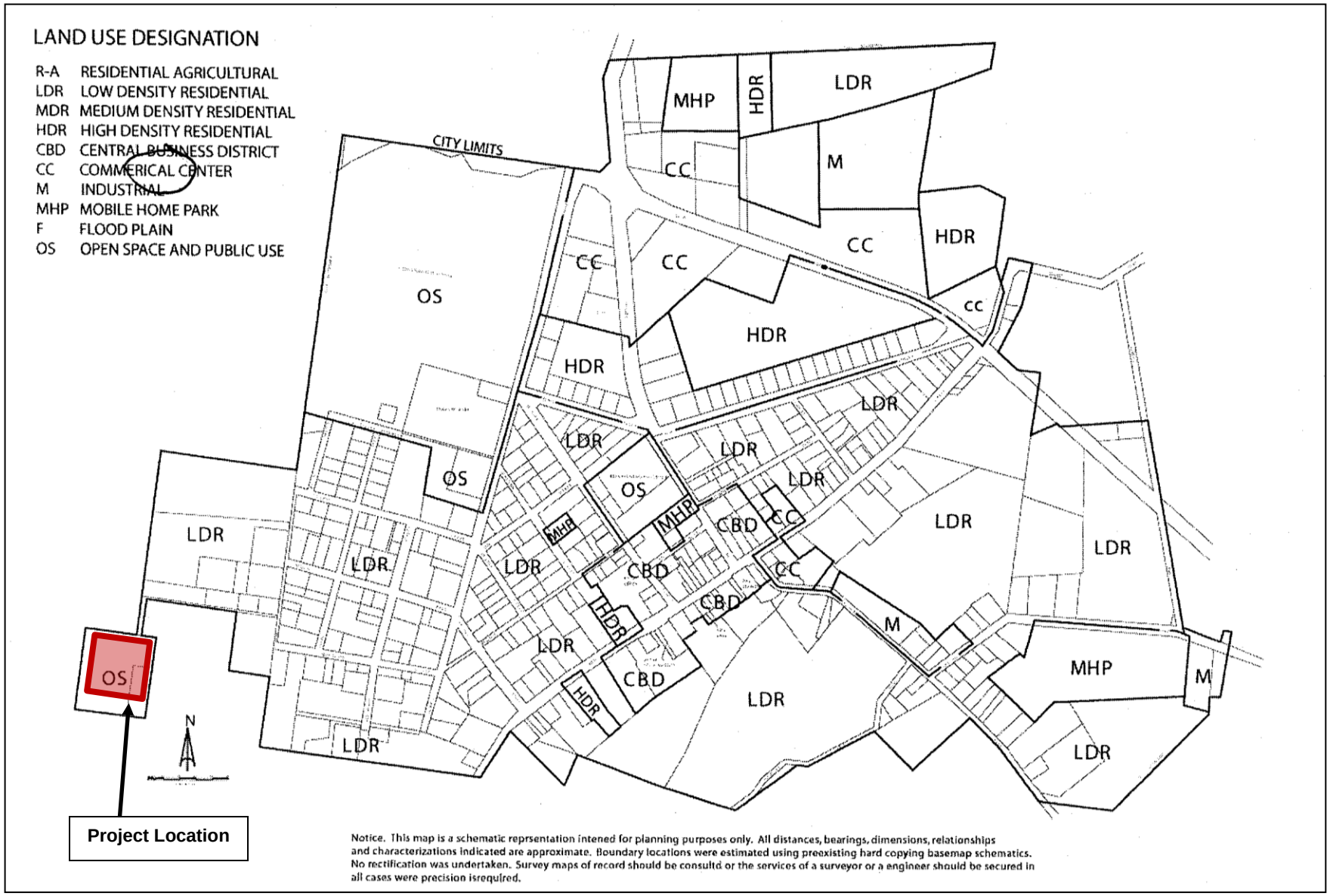
E&S Engineers & Surveyors, Inc., 2017

City of Etna
16-CDBG-11138 Public Water System
Improvement Project
Reference #517006

NTS

Preliminary Engineering Layout

Figure 1-3



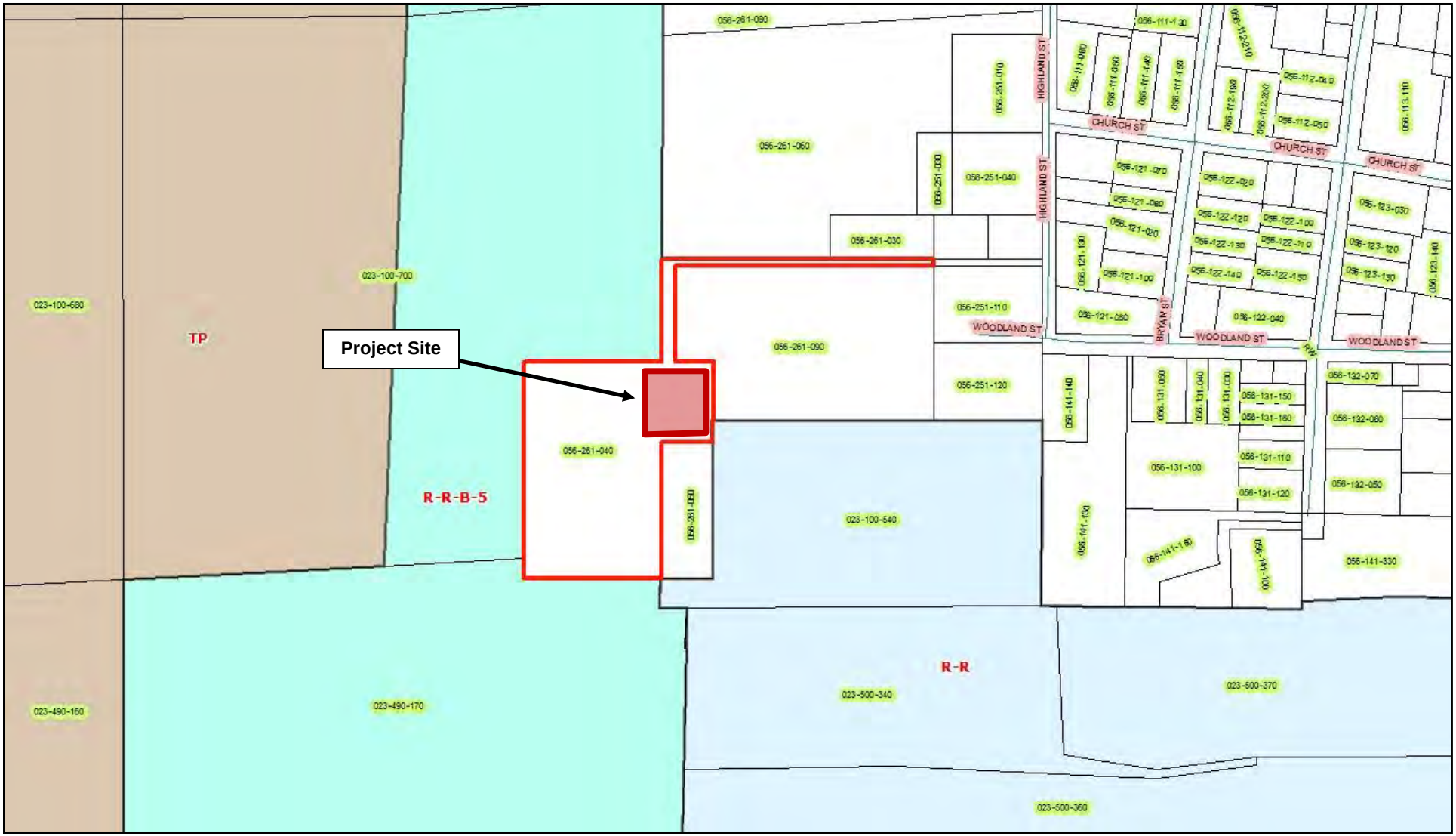
Source: City of Etna General Plan, 2004-2024

City of Etna
16-CDBG-11138 Public Water System
Improvement Project
Reference #517006

NTS

City of Etna General Plan & Zoning

Figure 1-4



Source: Siskiyou County Community Development Department, 2017

KEY to Zoning: **R-R** = Rural Residential Agriculture District
R-R-B-5 = Rural Residential Agriculture District with a Combining District (B) specifying a 5 acre minimum parcel size
TP = Timber Preserve

Note: Project site is within the City of Etna, and has been zoned by the City of Etna.

City of Etna
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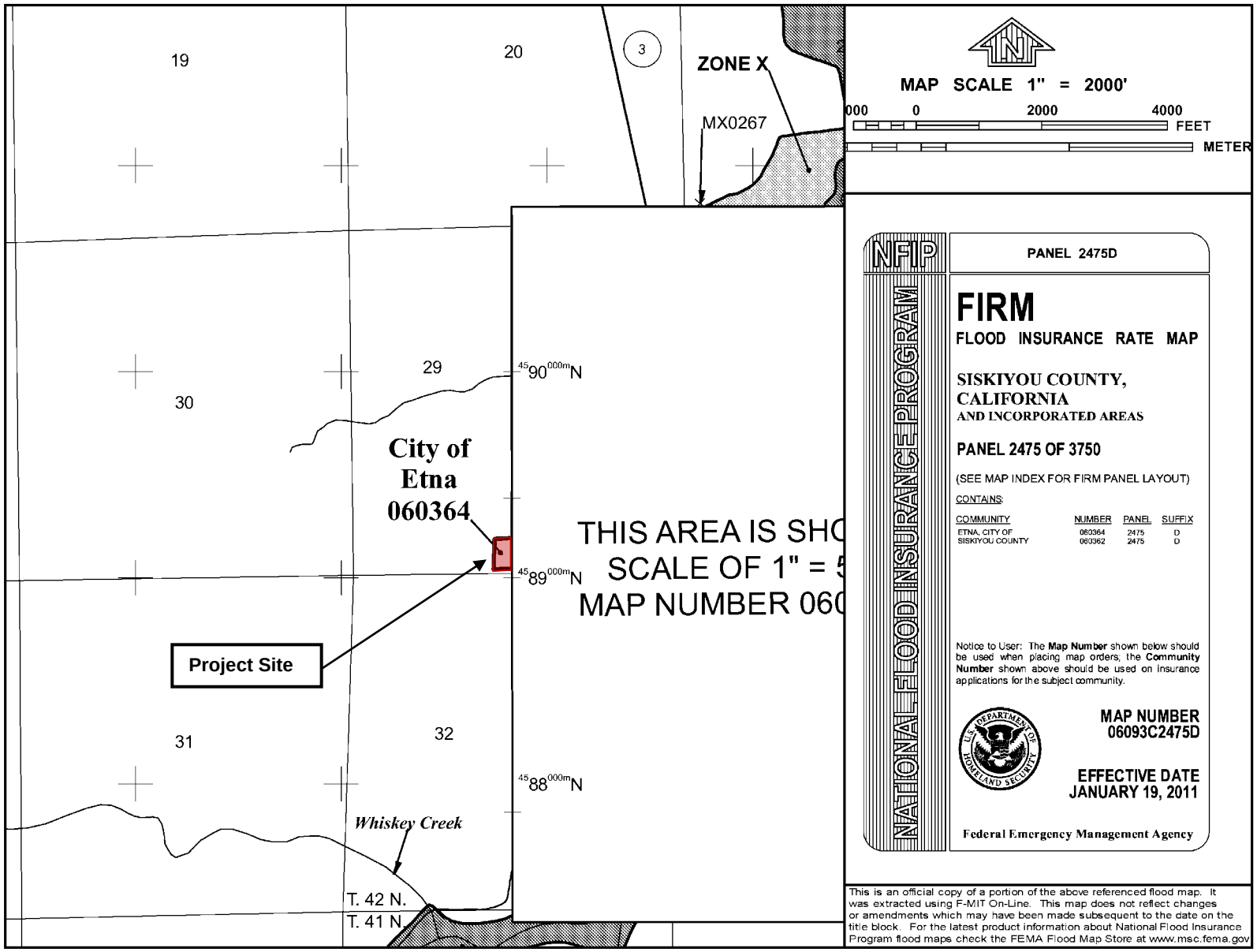
NTS

Siskiyou County Zoning

Figure 1-5



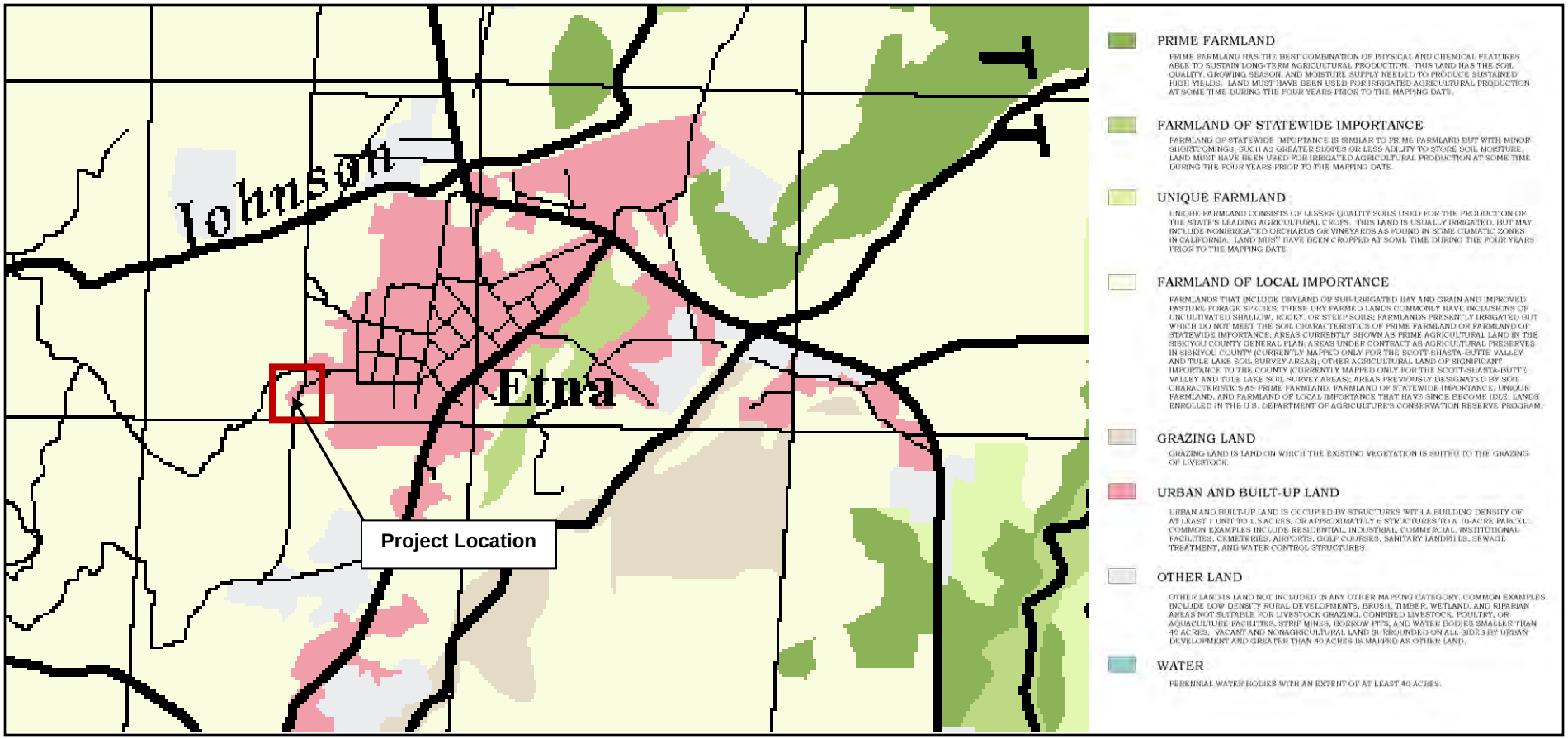
Source: Dept. Homeland Security, FEMA, 2017

NTS

City of Etna
16-CDBG-11138 Public Water System
Improvement Project
Reference #517006

FEMA FIRM

Figure 2-1



Source: Siskiyou County Important Farmland, 2014.
California Farmland Mapping and Monitoring Program

City of Etna
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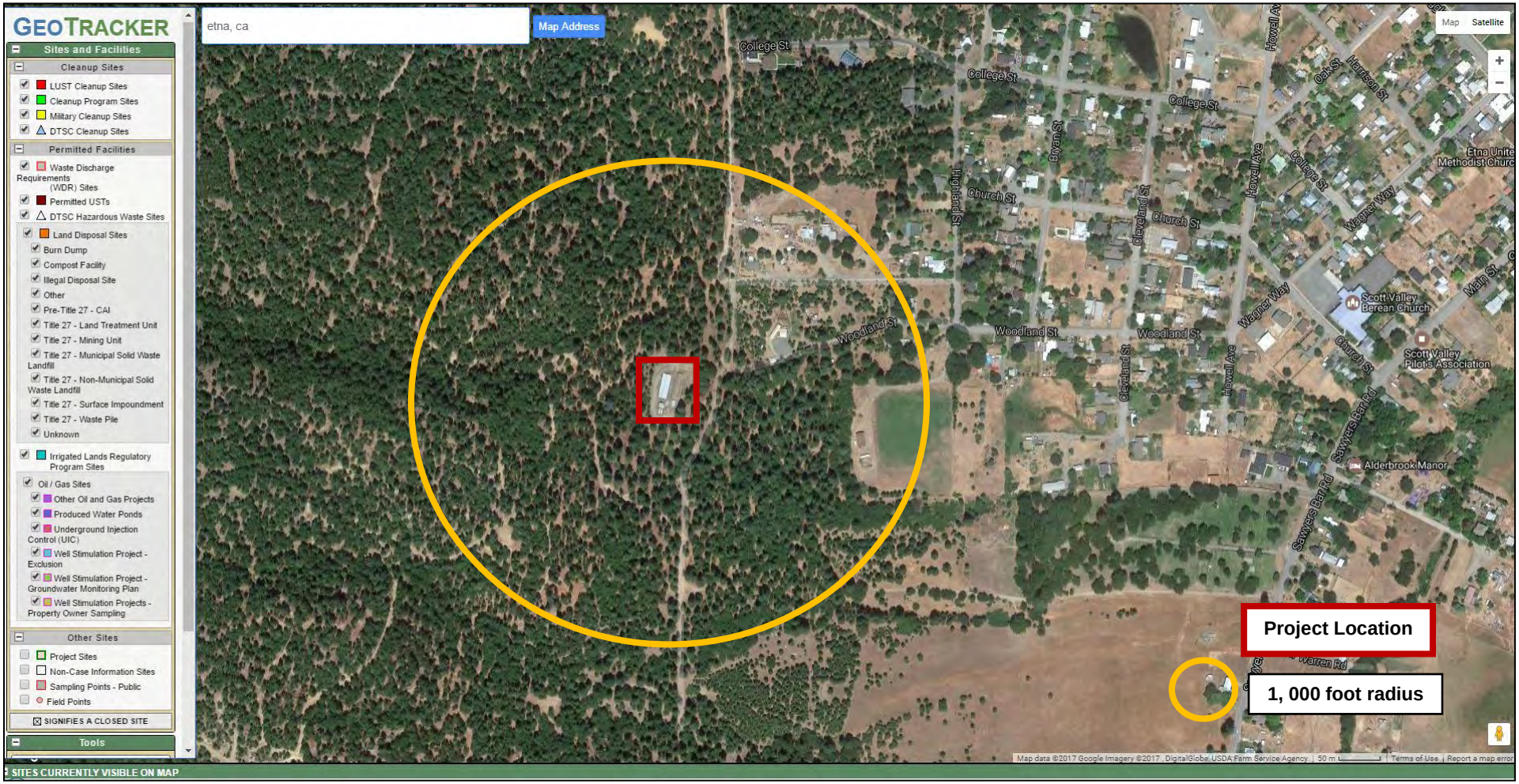
Improvement Project
Reference #517006

NTS

Siskiyou County Important Farmlands

Figure 2-2



Source: California SWRCB Geotracker Database, 2017.

NTS

City of Etna
16-CDBG-11138 Public Water System Improvement Project
Reference #517006

Hazardous Materials Inventory

Figure 2-3

Appendix B

Biological Resources Technical Memorandum

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707/441-8855 • FAX: 707/441-8877 •shninfo@shn-engr.com

Technical Memorandum

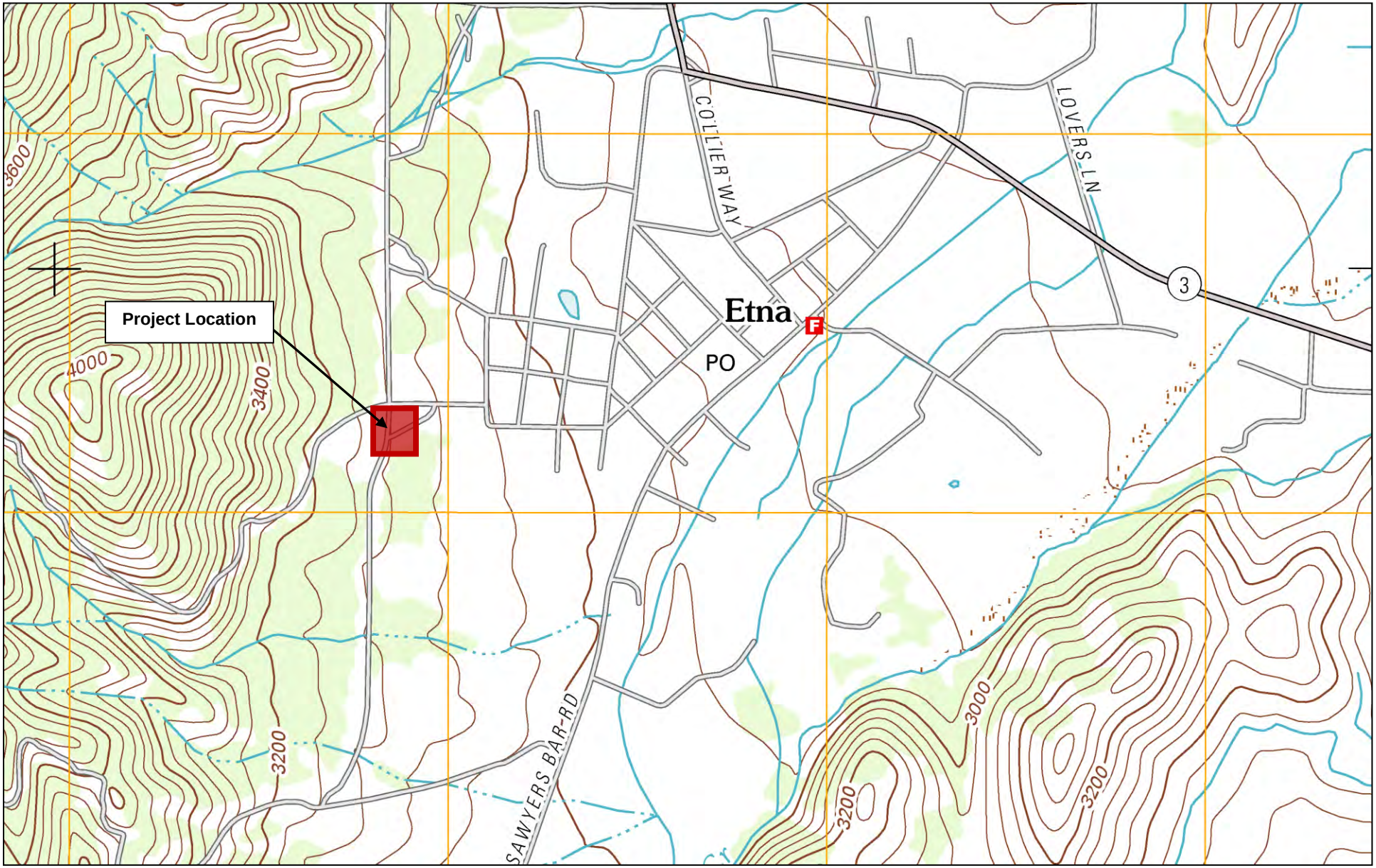
Reference: 517006
Date: **May 22, 2017**
To: **Bob Brown, Principal Planner**
From: **Mark Chaney, Principal Scientist and Greg O'Connell, Project Biologist**
Subject: **Biological Resources Technical Memo-Etna Water Tank Project**

On May 17, 2017 SHN Consulting Engineers & Geologists, Inc. principal scientist Mark Chaney and project biologist Greg O'Connell conducted biological site reconnaissance and surveys for special status botanical and wildlife species[1] within the area of potential effect for a new water storage tank, upgraded filtration facilities and a backwash water pond proposed by the City of Etna. Funding is being provided to the City by the Community Development Block Grant (CDBG), which includes federal funding.

The proposed project consists of installing several water facility components at the City's existing water treatment facility, located in the City of Etna, California. The site is within the United States Geological Survey (USGS) 7.5-minute Etna topographic quadrangle located in Siskiyou County. Refer to **Figure 1-1** for the Project Location and **Figure1-2** for the Project Site location and **Figure 1-3** for the Preliminary Engineering Layout of the proposed improvements. The improvements consist of the following:

1. Clearing of existing vegetation on approximately 0.55 acres to create a foundation pad and access clearance for a new water storage tank and clearing for the installation of new water line.
2. Excavation of trenches for the installation of approximately 350 feet of new 8-inch and 12-inch C-900 polyvinyl chloride (PVC) pipe connecting the new tank to the existing water treatment facility and existing water supply line. Water line is anticipated to be installed at a depth of 3 feet from the existing ground surface.
3. Construction of a concrete footing and erection of a steel water tank with the capacity to store 200,000 gallons of water. The tank will be 40 feet in diameter and 25 feet in height.
4. Construction of a new approximately 16' x 24' filtration building, adjacent to the existing chlorination building and Reservoir #1. The new structure will house new direct filtration equipment, provide storage for emergency fire protection equipment and help meet standards for water treatment chlorination contact time. Construction of the building will require footing excavation, a new foundation and underground piping connecting to the existing facilities.
5. Construction of a back-wash water pond that will be used to drain the filtration equipment.

[1] The Term "Special Status Species" is used collectively to refer to species that are state or federally listed, species that are state or federal candidates for listing, and all species listed by the California Natural Diversity Database. This term is consistent with the biological resources that need to be assessed pursuant to the California Environmental Quality Act and the National Environmental Policy Act.



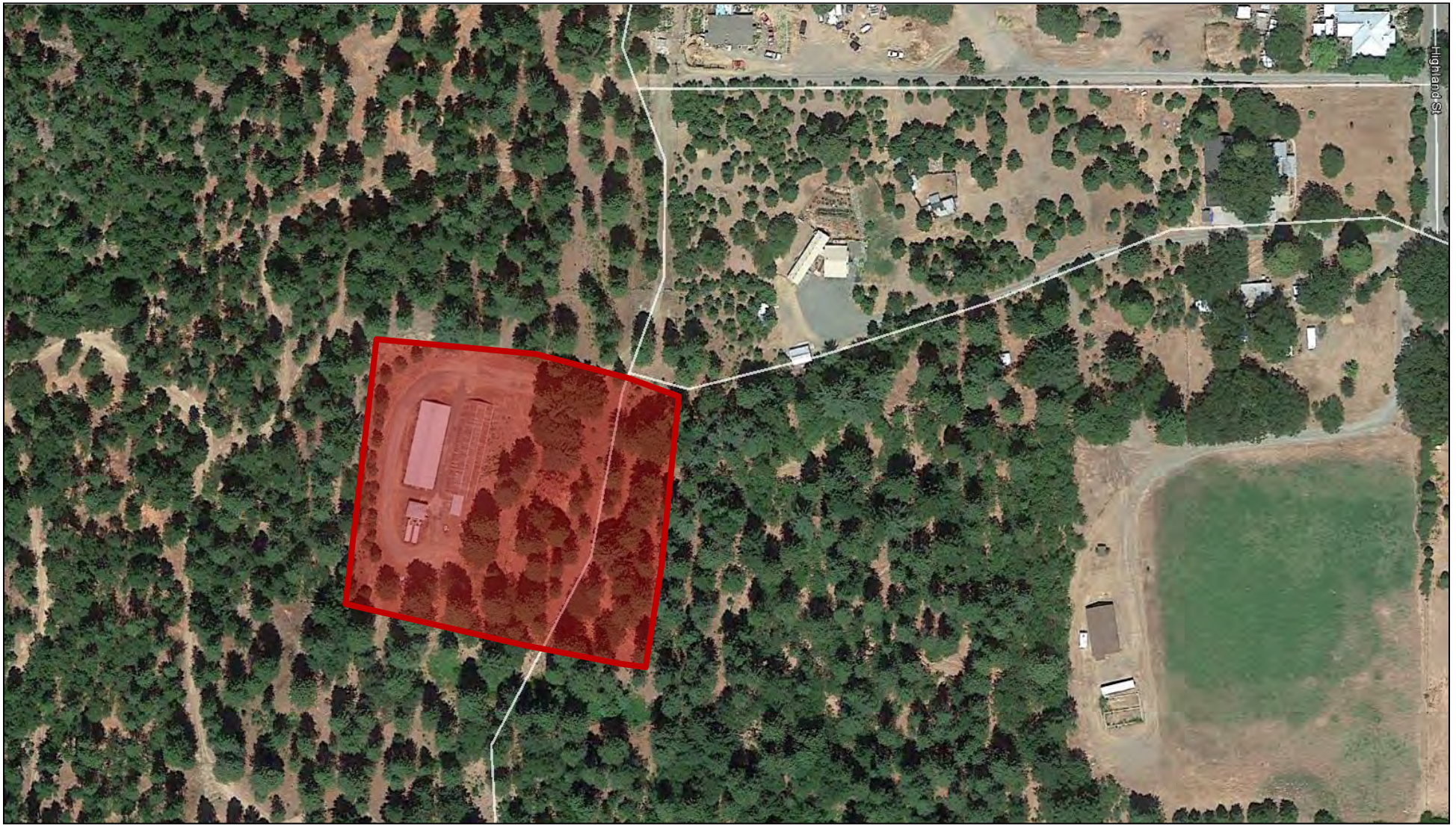
Source: USGS Etna Quad., 2012

City of Etna
16-CDBG-11138 Public Water System
Improvement Project
Reference #517006

NTS

Project Location

Figure 1-1



Source: Google Earth, 2017

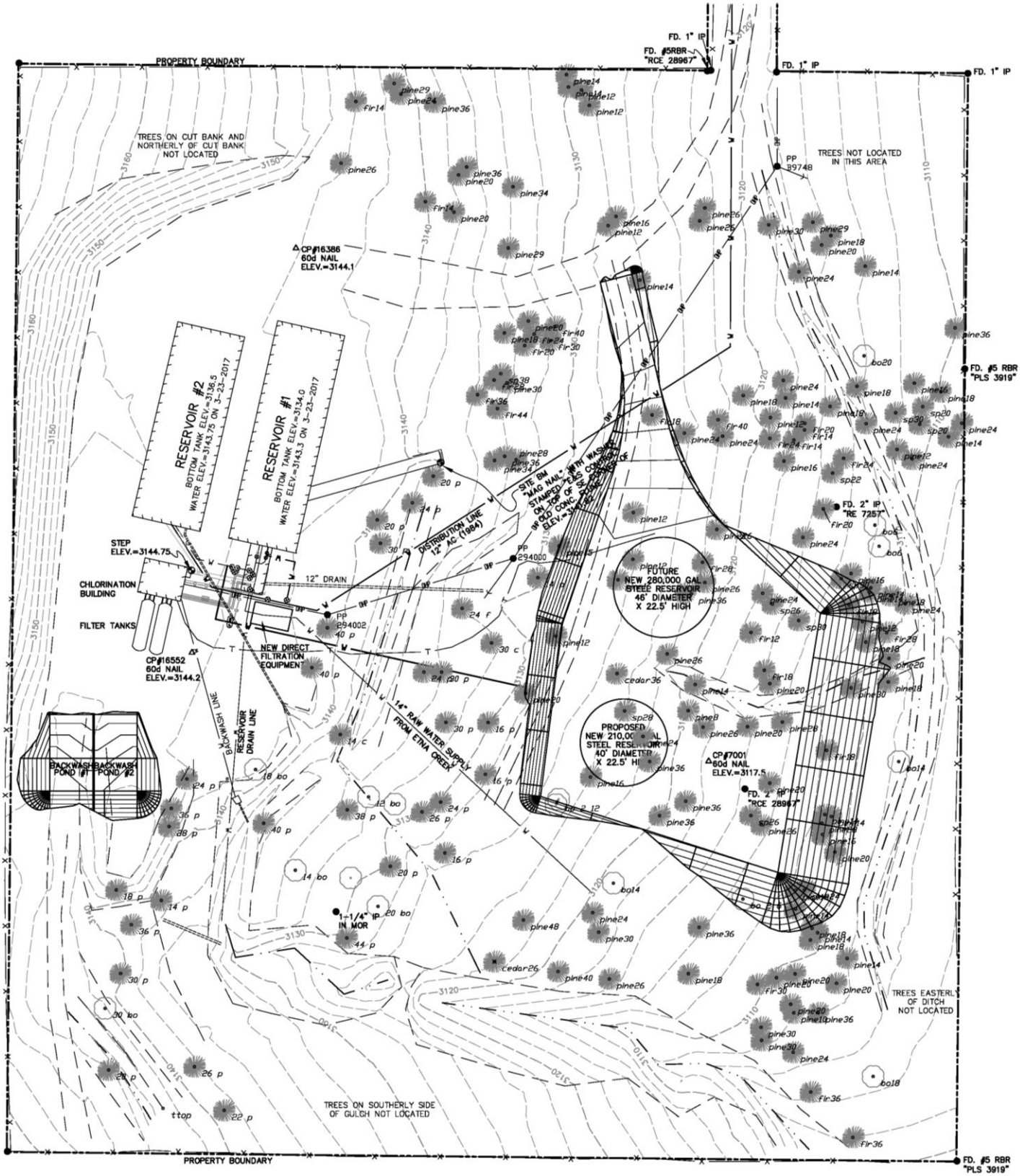
Proposed Project Site

NTS

City of Etna
16-CDBG-11138 Public Water System
Improvement Project
Reference #517006

Project Site

Figure 1-2



E&S Engineers & Surveyors, Inc., 2017

City of Etna
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Improvement Project
Reference #517006

NTS

Preliminary Engineering Layout

Figure 1-3

The pond will be approximately 30′ x 50′ (0.04 acres) in size and will be divided into two parts (though at one location).

This Technical Memorandum documents the biological site investigations and findings related to the project components, described above.

Methodology

The survey protocol for this effort consisted of database queries and a focused biological field survey for target species within suitable and potentially suitable habitat. Prior to conducting fieldwork, the following references were reviewed:

- CNDDB query for the Etna and the surrounding USGS 7.5 minute topographic quadrangles[2] (CDFW, 2017a).
- Electronic Inventory of Rare and Endangered Vascular Plants of California (California Native Plant Society [CNPS], 2017a) query for a list of all plant species reported for the Etna and surrounding USGS 7.5 minute topographic quadrangles.
- United States Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) was query for threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of the proposed project and/or may be affected by the proposed project (USFWS, 2017a).
- Biogeographical Information and Observation System (BIOS; CDFW, 2017b).

From the database queries, a list of potential plant and animal target species for the study area was compiled and is presented as **Table A-1 and Table A-2** in **Appendix A**. These tables include all plant and animal species reported by the CNDDB, CNPS, and USFWS that have the potential to be present at the site. Database queries identified 70 botanical species of concern and 30 wildlife species of concern that might be encountered at or near the Project Site. Of the 30 potential animal species listed by the agency resources, five species have a low potential to occur within the project area, due to available habitat, migration routes, or historical observations of these species at or near the site. The remaining animal species occupy habitats that are not found at the Project Site. Of the 70 potential plant species listed by the agency resources, 52 species have a low or moderate potential to occur within the project area.

Using information about sensitive species potentially present in the project area, SHN conducted a focused biological field survey in an attempt to determine if any of these species were actually located at the Project Site, if suitable habitat was present that might provide habitat for these species, and if project activities would have any adverse impacts to individuals or habitat.

The field survey was conducted on May 17, 2017 for all special status species potentially present (**Tables A-1 and A-2**) in the study area. Survey was conducted during appropriate floristic and breeding periods for species of concern. The survey was conducted on foot and traversed the entire

[2] Boulder Peak, Callahan, Eaton Peak, Etna, Fort Jones, Greenview, McConaughy Gulch, Tanners Peak, Yellow Dog Peak.

Project Site, including areas proposed for development and areas outside of proposed development sites

Biological Investigations

General Observations of the Area

The Project Site has been partially developed for the use as the City's water treatment facility, and includes existing roads, work areas, treatment buildings, water tanks, overhead and underground utility piping and transmission lines. The site also contains remnants of some of the early City water treatment and distribution facilities, including concrete discharge flumes and underground piping. Vegetation in these areas is generally comprised of low-growing grasses/forbs, with trees and shrubs removed as part of the original development, and as a part of on-going maintenance activities. The landscape surrounding the Project Site is comprised of developed residential uses, mixed with undeveloped forest lands that have had previous timber harvest/forest management activities. Residential properties are composed primarily of native and non-native ornamental vegetation managed for residential purposes. Some properties have small pastures that are currently or have been historically used for horse/livestock grazing.

On adjacent forest lands (which also including portions of the Project Site) vegetation is comprised of moderately dense stands of mixed conifer species including Ponderosa pine (*Pinus ponderosa*), sugar pine (*P. lambertiana*), Douglas-fir (*Pseudotsuga menziesii*), and incense cedar (*Calocedrus decurrens*). At the project site, the conifer understory is generally open, with ground cover primarily consisting of conifer seedlings, ranging in height from 6-inches to 3 feet. Small patches of grasses and forbs are also located in the understory.

In small isolated areas where the water storage tanks drain their excess water, healthy concentrations of Himalayan blackberries (*Rubus armeniacus*) can be found. There are no water courses or active flowing ditches at the project site. Refer to the Botanical section for details related to the existing vegetation.

Botanical

The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program (FRAP) categorizes the study area as a Ponderosa Pine coniferous forest (CALFIRE-FRAP 2017). Soils within the study area are classifies as a Marpa-Kinkel-Boomer, cool complex with 15 to 50 percent slopes. The top 9-14 inches of soil in the study area is reported as a gravelly loam, with larger clay component below. Soils within the project area are not rated as hydric. Soil parent material is describes as a residuum weathered metamorphic rock. The geologic classification of the study area describes Paleozoic marine rocks composed of argillite, chert, and quartz that date back to the Devonian to Jurassic periods.

Scott Valley and surrounding mountains host a diverse and unique flora (CNPS 2007). In addition to the region's mosaic of microclimates, edaphic (soil-related) selective pressures on plant evolution has resulted in several rare endemic species. The principle component of this edaphic selective pressure is ultramafic geologic parent material; including serpentine, peridotite, and gabbro. The

closest mapped ultramafic geologic feature is approximately 1.5 miles to the southeast of the study area near Ruffy Gap. It is classified as a Mesozoic Ophiolite material originating in the Ordovician period. Although an important ecological feature of the broad region, ultramafic derived soils were not present within the study area.

Botanical investigations were conducted in conformance with the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW, 2009). A total of 35 plant species were observed during the site visit within the approximately two acre study area (**Appendix B**). Field observation resulted in natural community site characterization as the "*Pinus ponderosa - Pseudotsuga menziesii* Forest Alliance" (CNPS, 2017b). The tree canopy within the study area was dominated by 60 to 80 –foot tall conifers, with a canopy cover ranging from 30 to 70 percent. The shrub and herb layers were open, with less than five percent cover each. The forest floor was covered in a 1 to 2 –inch layer of pine needles, with a 1-inch layer of decomposing litter beneath.

The U.S. Fish and Wildlife Service's "National Wetland Inventory" (NWI) has no records of wetland within the study area (USFWS 2017b; Figure 1-4). However, a small swale containing mesic vegetation was observed approximately 120 feet outside the study area to the south.

No habitat was found that is suitable for any Threatened or Endangered (including Proposed and Candidate) plant species under state or federal endangered species acts; however, nine of the 70 total special status plant species reported within the Etna and surrounding quads had a moderate potential to be present at the Project Site. The following summary is provided for special status plant species with a moderate potential to occur:

- **California androsace** (*Androsace elongata* ssp. *acuta*) is an annual herb in the Primulaceae family. It is reported from chaparral, cismontane woodland, coastal sage scrub, valley and foothill grasslands, and meadow/seep habitats ranging in elevation between 150-1200 meters above sea level. Its reported blooming period is March -June. Although habitat may exist locally for this species, it was not detected within the study area.

- **Rattlesnake fern** (*Botrypus virginianus*) is a perennial herb in the Ophioglossaceae family. It is reported from wetland, lower montane coniferous forest and riparian forest habitats ranging in elevation between 710-1405 meters above sea level. Its reported reproductive period is June – September. Although habitat may exist locally for this species, it was not detected within the study area.

- **Mountain lady's-slipper** (*Cypripedium montanum*) is a perennial rhizomatous herb in the Orchidaceae family. It is reported from dry, undisturbed slopes on lower montane coniferous forest, broadleafed upland forest, cismontane woodland, and north coast coniferous forest habitats ranging in elevation between 185-2225 meters above sea level. Its reported blooming period is March-August. Although habitat may exist locally for this species, it was not detected within the study area.

- **Henderson's fawn lily** (*Erythronium hendersonii*) is a perennial bulbiferous herb in the Liliaceae family. It is reported from lower montane coniferous forest habitats ranging in

Source: USFWS National Wetlands Inventory, V2, 2017

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NTS

Existing Wetlands Inventory

Figure 1-4

elevation between 60-900 meters above sea level. Its reported blooming period is April-July. Although habitat may exist locally for this species, it was not detected within the study area.

- **Saffron-flowered lupine** (*Lupinus croceus* var. *pilosellus*) is a perennial herb in the Fabaceae family. It is reported from slopes and hillsides in lower montane coniferous forest habitats that range in elevation between 835-1700 meters above sea level. Its reported blooming period is May-August. Although habitat may exist locally for this species, it was not detected within the study area.

- **Leafy-stemmed mitrewort** (*Mitellastra caulescens*) is a perennial rhizomatous herb in the Saxifragaceae family. It is reported from mesic sites in broadleafed upland forest, lower montane coniferous forest, north coast coniferous forest habitats ranging in elevation between 5-1700 meters above sea level. Its reported blooming period is March-October. Although habitat may exist locally for this species, it was not detected within the study area.

- **Oregon polemonium** (*Polemonium carneum*) is a perennial herb in the Polemoniaceae family. It is reported from coastal prairie, coastal scrub, and lower montane coniferous forest habitats ranging in elevation between 0-1830 meters above sea level. Its reported blooming period is April-September. Although habitat may exist locally for this species, it was not detected within the study area.

- **English Peak greenbrier** (*Smilax jamesii*) is a perennial rhizomatous herb in the Smilacaceae family. It is reported from wetland and mesic sites in north coast coniferous forest, broadleafed upland forest, lower montane coniferous forest, upper montane coniferous forest habitats ranging in elevation between 505-1975 meters above sea level. Its reported blooming period is May-October. Although habitat may exist locally for this species, it was not detected within the study area.

- **Salmon Mountains wakerobin** (*Trillium ovatum* ssp. *oettingeri*) is a perennial herb in the Melanthiaceae family. It is reported from moist shady spots along streams and near seeps in lower montane coniferous forest, upper montane coniferous forest habitats ranging in elevation between. 855-2025 meters above sea level. Its reported blooming period is February-July. Although habitat may exist locally for this species, it was not detected within the study area.

Wildlife

Very limited wildlife sitings were made during field investigations. Observations included black tailed deer (*Odocoileus hemionus columbianus*) pellets, turkey vulture (*Cathartes aura*), raven (*Corvus corax*), Wilson's warbler (*Cardellina pusilla*), Western tanager (*Piranga ludoviciana*), white-breasted nuthatch (*Sitta carolinensis*), and northern flicker (*Colaptes auratus*). Rodent damage was evident on herbaceous vegetation and from ground burrow debris. Based on the habitat present, it is anticipated that the Project Site and immediate surrounding areas are primarily used by small mammals and birds that can find forage and develop nest sites within the mixed conifer vegetation. The lack of downed logs, dense stands and multi-layered forest vegetation and proximity to human

activities (treatment plant) make it unlikely that the habitat would support old-growth related species.
Larger mammals such as coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), and mountain lion (*Puma concolor*), have been seen in the vicinity (investigator's personal observations and previous studies in the Project area) and are known to frequent the Etna area. They are likely present to hunt prey (both native and residential/agricultural) and find limited daytime refuge in the conifer stands near the Project Site. Denning opportunities are not found at the Project Site, or in the immediate surrounding areas, due to lack of habitat and human disturbances. Other nocturnal mammals such as the striped skunk (*Mephitis mephitis*), opossum (*Didelphis virginiana*), and raccoons (*Procyon lotor*) are frequent visitors to residences and agricultural structures, and while not observed during our review, are known to occur in the area. Habitat offsite of the Project Site (barns, houses, out-buildings, vegetation to the south) is suitable for several of these species to use for daytime refuges.

Larger raptors, such as hawks, owls, vultures, eagles are common in the Scott Valley and there is significant documentation in the literature of their presence in the valley (National Audubon Society, 2017; investigator's personal observations from previous studies in the Project area). Field observations for this Project found turkey vultures working the skies around the Project Site. Prairie falcon (*Falco mexicanus*) is listed in the literature as being present in the surrounding area, but was not observed. Habitat for this species lies further to the east where agricultural operations provide open terrain for this bird to hunt. A pedestrian survey of the Project Site and surrounding areas, including observations of area trees failed to locate large nests/nesting platforms for raptors.

Habitat within the proposed Project Site has been heavily impacted by historical construction the water treatment facility, access roads, overhead power lines and underground utilities. The area where the proposed water tank will be constructed has medium to large diameter conifers, ranging in size from 12 to 26-inches DBH (diameter at breast height), forming a single overstory and little ground vegetation.

Primary species that are anticipated to be temporarily impacted by this Project include small mammals (mice, voles, ground squirrels), birds (finches, sparrows, scrub jay, warblers, etc.) and mammals such as black-tailed deer. Impacts would be to the use of the area by these species during construction, but once construction terminated these species are likely to return to pre-construction levels.

No habitat was found that is suitable for any listed Threatened or Endangered (including Proposed and Candidate) special status species. Specifically, for the 30 special status species of concern for the Project Area, five (5) species had a Low potential to be present at the Project Site, the following was determined from direct observations of the Project:

- **Northern Goshawk, Sharp-shinned Hawk.** These species of raptor have Low to Moderate potential to occur at, or in, the vicinity of the Project due to habitat used by these species, primarily for hunting. While the open conifer stands provide some habitat for the northern goshawk, that utilizes an open understory of conifer stands for hunting, the small size of the conifer stand on the Project Site and the proximity to residential and industrial (water treatment facility) operations reduces the potential for their use due to human disturbance.

Site investigations did not locate any nest sites, "white-wash" on conifer trees that could provide for nesting/roosting/perching sites, or other evidence of use by raptors. The Project will not have an impact on this species.

- **Prairie Falcon.** Known sitings of prairie falcon have been made in the Scott Valley to the east of the Project Site, in agricultural fields and forested hillsides. It nests in rock cliffs and outcroppings that afford both nesting habitat and perches; it is also known to occasionally utilize abandoned nests of other large birds. The potential for this species to be present in low, due to suitable and preferred habitats offsite to the east; there is no nesting habitat present at the Project.

- **Northern Spotted Owl.** Low quality dispersal habitat exists at the Project Site for this species, but no nesting or foraging habitat is present. The conifer stands at the Project Site are open, have no multi-layered understory, and lack downed logs and ground vegetation that would provide suitable habitat for rodents that are a source of food for the owl. Perching sites are limited, reducing hunting potential. The open stands would allow for easy flight through the site, but would not provide any other function for this species. The development of the Project, including the removal of the conifers, would not impact this species.

- **Gray Wolf.** The gray wolf has been documented in Siskiyou County, though it has not been documented to occur in the Scott Valley. Habitat at the site is marginal for this species, and would be used for transition to and from residential and more undisturbed sites to the west, where prey exists, if it were present. Development of this project is not seen as having an impact on this species as there is ample undeveloped forest and agricultural lands in the adjacent areas that would provide suitable conditions for this species.

Conclusions

There are 100 special status plant and animal species reported within the region consisting of the study area's quadrangle (Etna) and the surrounding topographic quadrangles (CDFW, 2017a; USFWS, 2017). Of the 100 special status species, 57 species listed in **Tables A-1and A-2** (Appendix A) are considered to have a Low to Moderate potential to occur near the study area. The other species have no potential to occur based on habitat requirements. Survey of the Project Site and immediate surrounding habitat failed to locate special status species or specific habitat that might be impacted by this Project. Based on this investigation, no additional surveys are warranted.

Avoidance and Minimization

No special status plant or animal species or their habitats were observed within or adjacent to the Project Site; therefore, no avoidance or minimizations of impacts are recommended.

Mitigation Measures

With the removal of conifer overstory vegetation as part of this project, the potential for impacting nesting birds, and birds protected by the Migratory Bird Treaty Act (MBTA), is high. Though no nesting birds were documented at the site during the surveys, there is potential that some nests were unnoticed, and some species may not have completed nest building activities. In order to protect birds that may nest at the Project Site in the areas proposed for development activities, the following mitigation measures are proposed:

Mitigation Measure 1-Nesting Birds
Should the project require that trees be removed as part of construction activities, the following will occur to avoid impacts to nesting migratory birds or raptors that may be utilizing trees at the construction site (State of California Fish and Game Code Sections 3503 and 3503.5):

1. Tree removal should be conducted from September 1 to January 31 when birds are not nesting, **OR**
2. Should trees need to be removed from February 1 to August 31 (nesting season), then nesting bird surveys will be conducted by a qualified biologist no more than one week prior to tree removal during this period.
    a. If no nesting birds are located during the survey, then tree removal may proceed.
    b. Should the survey determine that an active nest is located in the trees to be removed during the survey, the biologist shall delineate a no disturbance buffer that is adequate to prevent nesting failure. No trees shall be removed within the buffer until the young have fledged, as determined through additional monitoring by the qualified biologist.
    c. Results of all nesting bird surveys, both positive and negative, will be sent to the Department of Fish and Wildlife, ATTN: CEQA, 601 Locust Street, Redding, CA 96001.

Responsible Entity: **City of Etna** for scheduling of vegetation removal to avoid impacts, or to contract with qualified biologist to implement surveys. City of Etna is also responsible for providing any nesting bird surveys to the California Department of Fish and Wildlife.

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Appendix A

Potential Regionally Occurring Sensitive Species

Potential Regionally Occurring Sensitive Species
Etna Water Tanks Project
City of Etna, California

A California Natural Diversity Database (CNDDB; CDFW, 2017a) search was completed for the 7.5-minute U.S. Geological Survey (USGS) Etna quadrangle and the surrounding USGS 7.5 minute topographic quadrangles (Tables A-1 and A-2). Additionally, the US Fish and Wildlife Service (USFWS, 2017) species list was used to determine the potential presence of federally protected species (Tables A-1 and A-2).

The databases were queried for historical and existing occurrences of state and federally listed Threatened, Endangered, and Candidate species and species proposed for listing. In addition to querying the CNDDB, a list of all federally listed species that are known to occur or may occur in the Etna quadrangle was obtained from the Arcata U.S. Fish and Wildlife Service (USFWS) website (USFWS, 2017).

Table A-1 presents the botanical species and Table A-2 presents the animal species reported from the queries, their preferred habitat, and whether there is suitable habitat present within the study area for the species. Each species was evaluated for its potential to occur within the study area according to the following criteria:

1) **None**. Species listed as having "none" with regard to their potential to occur on the study area are those species for which:
   - There is no suitable habitat present in the study area. (Habitats in the study area are unsuitable for the species requirements [for example, elevation, hydrology, plant community, disturbance regime, and so on].)
2) **Low**. Species listed as having a "low" potential to occur in the study area are those species for which:
   - There is no known record of occurrence in the vicinity of the study area, and
   - There is marginal or very limited suitable habitat present in the study area.
3) **Moderate**. Species listed as having a "moderate" potential to occur on the study area are those species for which:
   - There is a known record of occurrence in the vicinity of the study area, and
   - There is suitable habitat present in the study area.
4) **High**. Species listed as having a "high" potential to occur in the study area are those species for which:
   - There is a known record of occurrence in the vicinity of the study area (there are many records and/or records in close proximity), and
   - There is highly suitable habitat present in the study area.
5) **Present**. Species listed as "present" in the study area are those species for which:
   - The species was observed in the study area during the investigations.

Table A-1
Potential Regionally Occurring Sensitive Botanical Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/ State/CNPS)[1]	Life Form/General Habitat Requirements[2]	Blooming Period	Potential for Occurrence
Abies amabilis	Pacific silver fir	--/--/2B.3	Perennial evergreen tree. Upper montane coniferous forest. 1700-2195 meters.	N/A	None
Abies lasiocarpa var. *lasiocarpa*	subalpine fir	--/--/2B.3	Perennial evergreen tree. Meadows and seeps, Subalpine coniferous forest, Upper montane coniferous forest. Known only from Siskiyou County in California. 1215-2195 meters.	N/A	Low
Allium siskiyouense	Siskiyou onion	--/--/4.3	Perennial bulbiferous herb. Lower montane coniferous forest, Upper montane coniferous forest. Rocky, sometimes serpentinite. Rocky sites, sometimes on serpentine. 855-2500 meters.	May-Jul	Low
Androsace elongata ssp. *acuta*	California androsace	--/--/4.2	Annual herb. Chaparral, Cismontane woodland, Coastal scrub, Meadows and seeps, Pinyon and juniper woodland, Valley and foothill grassland. Highly localized and often overlooked little plant. 150-1200 meters.	Mar-Jun	Moderate
Arabis rigidissima var. *rigidissima*	Trinity Mountains rockcress	--/--/1B.3	Perennial herb. Upper montane coniferous forest (gravelly or rocky). Open, rocky places. 1265-2075 meters.	Jun-Aug	Low
Arnica viscosa	Mt. Shasta arnica	--/--/4.3	Perennial rhizomatous herb. Subalpine coniferous forest, Upper montane coniferous forest. Rocky. Rocky sites. 1705-2745 meters.	Aug-Sep	None
Balsamorhiza lanata	woolly balsamroot	--/--/1B.2	Perennial herb. Cismontane woodland. Rocky, volcanic. Open woods, grassy slopes. Volcanic substrates. 800-1895 meters.	Apr-Jun	Low
Balsamorhiza sericea	silky balsamroot	--/--/1B.3	Perennial herb. Lower montane coniferous forest (serpentinite). Collections from Douglas-fir forest and Jeffrey pine forest. Can be on serpentine. 850-2135 meters.	Apr-May	Low

Table A-1
Potential Regionally Occurring Sensitive Botanical Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/ State/CNPS)[1]	Life Form/General Habitat Requirements[2]	Blooming Period	Potential for Occurrence
Botrychium pinnatum	northwestern moonwort	--/--/2B.3	Perennial rhizomatous herb. Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest. Mesic. Creek banks. 1645-2045 meters.	Jul-Oct	Low
Botrypus virginianus	rattlesnake fern	--/--/2B.2	Perennial herb. Bogs and fens, Lower montane coniferous forest (mesic), Meadows and seeps, Riparian forest. Streams. 710-1405 meters.	Jun-Sep	Moderate
Campanula wilkinsiana	Wilkin's harebell	--/--/1B.2	Perennial rhizomatous herb. Meadows and seeps, Subalpine coniferous forest, Upper montane coniferous forest. Often on streambanks in meadows. 1270-2600 meters.	Jul-Sep	Low
Castilleja schizotricha	split-hair paintbrush	--/--/4.3	Perennial herb (hemiparasitic). Upper montane coniferous forest (decomposed granitic or marble). Decomposed granite or marble. 1500-2300 meters.	Jul-Aug	Low
Chaenactis suffrutescens	Shasta chaenactis	--/--/1B.3	Perennial herb. Lower montane coniferous forest, Upper montane coniferous forest. Sandy, serpentinite. Sandy or serpentine soils. 750-2800 meters.	May-Sep	Low
Claytonia palustris	marsh claytonia	--/--/4.3	Perennial herb. Meadows and seeps (mesic), Marshes and swamps, Upper montane coniferous forest. Sunny areas in meadows, marshy slopes, and streamside veg. Known from two distinct regions. 1000-2500 meters.	May-Oct	Low
Collomia tracyi	Tracy's collomia	--/--/4.3	Annual herb. Broadleafed upland forest, Lower montane coniferous forest. Rocky, sometimes serpentinite. On rock outcrops. On serpentine at least sometimes. 300-2100 meters.	Jun-Jul	Low

Table A-1
Potential Regionally Occurring Sensitive Botanical Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/ State/CNPS)[1]	Life Form/General Habitat Requirements[2]	Blooming Period	Potential for Occurrence
Cornus canadensis	bunchberry	--/--/2B.2	Perennial rhizomatous herb. Bogs and fens, Meadows and seeps, North Coast coniferous forest. 90-1920 meters.	May-Jul	Low
Cypripedium fasciculatum	clustered lady's-slipper	--/--/4.2	Perennial rhizomatous herb. Lower montane coniferous forest, North Coast coniferous forest. Usually serpentinite seeps and stream banks. In serpentine seeps and moist stream banks. 100-2435 meters.	Mar-Aug	Low
Cypripedium montanum	mountain lady's-slipper	--/--/4.2	Perennial rhizomatous herb. Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest. On dry, undisturbed slopes. 185-2225 meters.	Mar-Aug	Moderate
Darlingtonia californica	California pitcherplant	--/--/4.2	Perennial rhizomatous herb (carnivorous). Bogs and fens, Meadows and seeps. Mesic, generally serpentinite seeps. On ultramafic soils.	Apr-Aug	None
Draba howellii	Howell's draba	--/--/4.3	Perennial herb. Subalpine coniferous forest (rocky). Rocky habitats. 1370-3000 meters.	Jun-Jul	Low
Draba pterosperma	winged-seed draba	--/--/4.3	Perennial herb. Upper montane coniferous forest (rocky or gravelly, often carbonate). On rock outcrops; often on limestone. 1800-2500 meters.	Jun-Aug	None
Drosera anglica	English sundew	--/--/2B.3	Perennial herb (carnivorous). Bogs and fens, Meadows and seeps (mesic). 600-2045 meters.	Jun-Sep	Low
Epilobium septentrionale	Humboldt County fuchsia	--/--/4.3	Perennial herb. Broadleafed upland forest, North Coast coniferous forest. Sandy or rocky. Dry, sandy or rocky ledges. 45-1800 meters.	Jul-Sep	Low

Table A-1
Potential Regionally Occurring Sensitive Botanical Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/ State/CNPS)[1]	Life Form/General Habitat Requirements[2]	Blooming Period	Potential for Occurrence
Epilobium siskiyouense	Siskiyou fireweed	--/--/1B.3	Perennial herb. Alpine boulder and rock field, Subalpine coniferous forest, Upper montane coniferous forest. Rocky, serpentinite. On slopes in gravelly, serpentine soils. 1675-2440 meters.	Jul-Sep	None
Erigeron bloomeri var. *nudatus*	Waldo daisy	--/--/2B.3	Perennial herb. Lower montane coniferous forest, Upper montane coniferous forest. serpentinite. In open areas on dry rocky outcrops on serpentine. 730-1740 meters.	Jun-Jul	Low
Erigeron cervinus	Siskiyou daisy	--/--/4.3	Perennial rhizomatous herb. Lower montane coniferous forest, Meadows and seeps. On granitic rock outcrops, near streams, and in meadows and seeps, often in cracks in boulders. 25-1900 meters.	Jun-Aug	Low
Erigeron petrophilus var. *viscidulus*	Klamath rock daisy	--/--/4.3	Perennial rhizomatous herb. Chaparral, Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest. Sometimes serpentinite. Rocky foothills to montane forest, sometimes on serpentine. 1500-2700 meters.	Jul-Sep	Low
Eriogonum diclinum	Jaynes Canyon buckwheat	--/--/2B.3	Perennial herb. Upper montane coniferous forest (often serpentinite). Often on serpentine. 1735-2440 meters.	Jun-Sep	None
Eriogonum siskiyouense	Siskiyou buckwheat	--/--/4.3	Perennial herb. Lower montane coniferous forest (rocky, often serpentinite). Rocky sites and serpentine outcrops. 970-2740 meters.	Jul-Sep	Low
Eriogonum strictum var. *greenei*	Greene's buckwheat	--/--/4.3	Perennial herb. Lower montane coniferous forest (serpentinite, rocky). Rocky, serpentine sites. 800-2100 meters.	Jul-Sep	Low

Table A-1
Potential Regionally Occurring Sensitive Botanical Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/ State/CNPS)[1]	Life Form/General Habitat Requirements[2]	Blooming Period	Potential for Occurrence
Eriogonum umbellatum var. *glaberrimum*	Warner Mountains buckwheat	--/--/1B.3	Perennial herb. Great Basin scrub, Lower montane coniferous forest, Upper montane coniferous forest. Sandy or gravelly. Sandy or gravelly sites. 1520-2245 meters.	Jun-Sep	None
Eriogonum umbellatum var. *humistratum*	Mt. Eddy buckwheat	--/--/4.3	Perennial herb. Alpine boulder and rock field, Chaparral, Meadows and seeps, Subalpine coniferous forest, Upper montane coniferous forest. Rocky, usually serpentinite. On serpentine soils or outcrops. Occurs in meadows within forest. 1700-2800 meters.	May-Oct	None
Eriogonum umbellatum var. *lautum*	Scott Valley buckwheat	--/--/1B.1	Perennial herb. Cismontane woodland, Lower montane coniferous forest. Sandy to gravelly flats. Sandy to gravelly flats. 880-990 meters.	Jul-Sep	Low
Erythronium citrinum var. *citrinum*	lemon-colored fawn lily	--/--/4.3	Perennial bulbiferous herb. Chaparral, Lower montane coniferous forest. Usually serpentinite. Dry woodlands, shrubby slopes; usually on serpentine. 150-1130 meters.	Mar-May	Low
Erythronium hendersonii	Henderson's fawn lily	--/--/2B.3	Perennial bulbiferous herb. Lower montane coniferous forest. 60-900 meters.	Apr-Jul	Moderate
Euphorbia hooveri	Hoover's spurge	FT/--/1B.2	Annual herb. Vernal pools. Vernal pools on volcanic mudflow or clay substrate. 25-130 meters.	Jul-Sep	None
Fissidens aphelotaxifolius	brook pocket moss	--/--/2B.2	Moss. Lower montane coniferous forest, Upper montane coniferous forest. Rock, stream channels, waterfalls. Moss growing on rocks in stream channels and waterfalls; also in splash zones. 2000-2200 meters.	N/A	None

Table A-1
Potential Regionally Occurring Sensitive Botanical Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/ State/CNPS)[1]	Life Form/General Habitat Requirements[2]	Blooming Period	Potential for Occurrence
Fritillaria gentneri	Gentner's fritillary	FE/--/1B.1	Perennial bulbiferous herb. Chaparral, Cismontane woodland, Lower montane coniferous forest. Sometimes serpentinite. Open sites at edge of woodland or chaparral (in Oregon); sometimes on serpentine. 1005-1120 meters.	Apr-May	Low
Galium serpenticum ssp. *scotticum*	Scott Mountain bedstraw	--/--/1B.2	Perennial herb. Lower montane coniferous forest (serpentinite). Generally on N-facing slopes on serpentine in mixed conifer forest. 1000-2075 meters.	May-Aug	Low
Gentiana plurisetosa	Klamath gentian	--/--/1B.3	Perennial herb. Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest. Mesic. Meadows in red fir and yellow pine forests; mesic sites. 1215-1950 meters.	Jul-Sep	Low
Helianthus exilis	serpentine sunflower	--/--/4.2	Annual herb. Chaparral, Cismontane woodland. serpentinite seeps. serpentine seeps. 150-1525 meters.	Jun-Nov	Low
Ivesia pickeringii	Pickering's ivesia	--/--/1B.2	Perennial herb. Lower montane coniferous forest, Meadows and seeps. Mesic, clay, usually serpentinite seeps. Mesic clay; usually serpentine seeps. 850-1525 meters.	Jun-Aug	Low
Lewisia cotyledon var. *heckneri*	Heckner's lewisia	--/--/1B.2	Perennial herb. Lower montane coniferous forest (rocky). Rocky places. 225-2100 meters.	May-Jul	Low
Lewisia cotyledon var. *howellii*	Howell's lewisia	--/--/3.2	Perennial herb. Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest. Rocky. Rocky sites; bare shale outcrops in shallow soils. 150-2010 meters.	Apr-Jul	Low

Table A-1
Potential Regionally Occurring Sensitive Botanical Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/ State/CNPS)[1]	Life Form/General Habitat Requirements[2]	Blooming Period	Potential for Occurrence
Lilium washingtonianum ssp. *purpurascens*	purple-flowered Washington lily	--/--/4.3	Perennial bulbiferous herb. Chaparral, Lower montane coniferous forest, Upper montane coniferous forest. Often serpentinite. Often collected on dry hillsides; on serpentine. 70-2750 meters.	Jun-Aug	Low
Lomatium engelmannii	Engelmann's lomatium	--/--/4.3	Perennial herb. Chaparral, Lower montane coniferous forest, Upper montane coniferous forest. serpentinite. Gravelly serpentine slopes in yellow pine and red fir forests, serpentine ridges. 870-2740 meters.	May-Aug	Low
Lupinus croceus var. *pilosellus*	saffron-flowered lupine	--/--/4.3	Perennial herb. Lower montane coniferous forest. Slopes and hillsides. 835-1700 meters.	Jun-Aug	Moderate
Lycopus uniflorus	northern bugleweed	--/--/4.3	Perennial herb. Bogs and fens, Marshes and swamps. Wet places. 5-2000 meters.	Jul-Sep	Low
Meesia longiseta	long seta hump moss	--/--/2B.3	Moss. Bogs and fens, Meadows and seeps, Upper montane coniferous forest. Carbonate, on soil. On moist soil along streams and in meadows; often carbonate. 1750-3045 meters.	N/A	None
Mitellastra caulescens	leafy-stemmed mitrewort	--/--/4.2	Perennial rhizomatous herb. Broadleafed upland forest, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest. Mesic, sometimes roadsides. Mesic sites. 5-1700 meters.	Apr-Oct	Moderate
Orcuttia tenuis	slender Orcutt grass	FT/ SE/1B.1	Annual herb. Vernal pools. Often gravelly.. Often in gravelly substrate. 25-1755 meters.	May-Sep	None
Pedicularis contorta	curved-beak lousewort	--/--/4.3	Perennial herb. Bogs and fens, Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest. Mesic. Rocky granitic slopes and damp meadows; mesic sites. 1600-2400 meters.	Jul-Aug	None

Table A-1
Potential Regionally Occurring Sensitive Botanical Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/ State/CNPS)[1]	Life Form/General Habitat Requirements[2]	Blooming Period	Potential for Occurrence
Peltigera gowardii	western waterfan lichen	--/--/4.2	Foliose lichen (aquatic). Riparian forest. On rocks in cold water creeks with little or no sediment or disturbance. On rocks in cold water creeks with little or no sediment or disturbance. Often associated with rich bryophyte flora. 1065-2375 meters.	N/A	Low
Phacelia greenei	Scott Valley phacelia	--/--/1B.2	Annual herb. Closed-cone coniferous forest, Lower montane coniferous forest, Subalpine coniferous forest, Upper montane coniferous forest. serpentinite. Bare serpentine ridges and openings in yellow pine and red fir forest communities. 850-2380 meters.	Apr-Jun	Low
Phlox hirsuta	Yreka phlox	FE/SE/1B.2	Perennial herb. Lower montane coniferous forest, Upper montane coniferous forest. serpentinite, talus. Open slopes and grasslands, on serpentine gravel. 830-1280 meters.	Apr-Jun	Low
Picea engelmannii	Engelmann spruce	--/--/2B.2	Perennial evergreen tree. Upper montane coniferous forest. Slopes and hillsides, often on alluvial terrace. 1065-2135 meters.	N/A	Low
Pinus albicaulis	Whitebark pine	FC/--/--	Perennial evergreen tree. Upper red-fir forest to timberline, especially subalpine forest. 2000-3700 meters.	N/A	None
Pohlia tundrae	tundra thread moss	--/--/2B.3	Moss. Alpine boulder and rock field (gravelly, damp soil). Moss growing on gravelly, damp soil. 2700-3000 meters.	N/A	None
Polemonium carneum	Oregon polemonium	--/--/2B.2	Perennial herb. Coastal prairie, Coastal scrub, Lower montane coniferous forest. 0-1830 meters.	Apr-Sep	Moderate

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Potential Regionally Occurring Sensitive Botanical Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/ State/CNPS)[1]	Life Form/General Habitat Requirements[2]	Blooming Period	Potential for Occurrence
Polemonium pulcherrimum var. *shastense*	Mt. Shasta sky pilot	--/--/1B.2	Perennial herb. Alpine boulder and rock field, Subalpine coniferous forest, Upper montane coniferous forest. Sometimes volcanic. Sometimes volcanic. 2175-3900 meters.	Jun-Sep	None
Polystichum lonchitis	northern holly fern	--/--/3	Perennial rhizomatous herb. Subalpine coniferous forest, Upper montane coniferous forest. Granitic or carbonate. Moist shady crevices in granite or carbonate cliffs. 1800-2600 meters.	Jun-Sep	None
Potentilla cristae	crested potentilla	--/--/1B.3	Perennial herb. Alpine boulder and rock field, Subalpine coniferous forest. Seasonally mesic, often serpentinite seeps, gravelly or rocky. Seasonally wet swales and seeps; gravelly or rocky sites; often on serpentine. 1825-2560 meters.	Aug-Sep	None
Ptilidium californicum	Pacific fuzzwort	--/--/4.3	Liverwort. Lower montane coniferous forest, Upper montane coniferous forest. Usually epiphytic on trees, fallen and decaying logs, and stumps; rarely on humus over boulders. Epiphytic on fallen and decaying logs and stumps. Rarely on boulders over humus. 340-1860 meters.	May-Aug	Low
Sabulina stolonifera	Scott Mountain sandwort	--/--/1B.3	Perennial stoloniferous herb. Lower montane coniferous forest (serpentinite). serpentine soils, Jeffrey pine forest. 1125-2020 meters.	May-Aug	Low
Sidalcea oregana ssp. *eximia*	coast checkerbloom	--/--/1B.2	Perennial herb. Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest. Near meadows, in gravelly soil. 5-1805 meters.	Jun-Aug	Low

Table A-1
Potential Regionally Occurring Sensitive Botanical Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/ State/CNPS)[1]	Life Form/General Habitat Requirements[2]	Blooming Period	Potential for Occurrence
Smilax jamesii	English Peak greenbrier	--/--/4.2	Perennial rhizomatous herb. Broadleafed upland forest, Lower montane coniferous forest, Marshes and swamps, North Coast coniferous forest, Upper montane coniferous forest. Streambanks and lake margins; sometimes mesic depressions. Along streams and lake margins, sometimes mesic depressions. 505-1975 meters.	May-Jul	Moderate
Trifolium siskiyouense	Siskiyou clover	--/--/1B.1	Perennial herb. Meadows and seeps (mesic). Sometimes streambanks. Mesic sites. 880-1500 meters.	Jun-Jul	Low
Trillium ovatum ssp. *oettingeri*	Salmon Mountains wakerobin	--/--/4.2	Perennial herb. Lower montane coniferous forest, Riparian scrub, Upper montane coniferous forest. Mesic. Moist shady spots along streams and near seeps, often in heavily forested areas. 855-2025 meters.	Feb-Jul	Moderate
Vaccinium coccineum	Siskiyou Mountains huckleberry	--/--/3.3	Perennial deciduous shrub. Lower montane coniferous forest, Upper montane coniferous forest. Often serpentinite. Rocky slopes, ridges, and bogs; often on serpentine. 1095-2135 meters.	Jun-Aug	Low
Vaccinium scoparium	little-leaved huckleberry	--/--/2B.2	Perennial deciduous shrub. Subalpine coniferous forest (rocky). Rocky, subalpine woods. Sometimes serpentine. 1035-2200 meters.	Jun-Aug	Low

Table A-1
Potential Regionally Occurring Sensitive Botanical Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/ State/CNPS)[1]	Life Form/General Habitat Requirements[2]	Blooming Period	Potential for Occurrence

1. **CNPS List 1B** includes plants that are rare, threatened, or endangered in CA and elsewhere.
   CNPS List 2 includes plants that are rare, threatened, or endangered in California but more common elsewhere.
   CNPS List 3 includes plants for which more information is needed–a review list.
   CNPS List 4 includes plants of limited distribution and should be documented as they are watch list species
   FC: Federal Candidate. This designation includes taxa that require additional information to propose for listing pursuant to the Federal Endangered Species Act (FESA), as amended.
   FE: Federally listed Endangered, pursuant to the Federal Endangered Species Act (FESA), as amended. This designation includes taxa that are in danger of extinction throughout all or a significant portion of their range.
   FT: Federally listed Threatened, pursuant to the FESA, as amended. This designation refers to species that are not presently threatened with extinction but are likely to become endangered throughout all or a significant portion of their range in the foreseeable future if special protection and management efforts are not undertaken.
   SE: State listed Endangered, pursuant to California Endangered Species Act (CESA). SE designation includes taxa that are in danger of extinction throughout all or a significant portion of their range.
   ST: State listed Threatened, pursuant to CESA. ST designation includes taxa that are likely to become endangered throughout a significant portion of their range.
   N/A: Not Applicable
   "-": no status/listing.
2. Plant habitat descriptions are from CDFW (2017a), CDFW (2017b), CNPS (2017), and Baldwin et. al (2012).

Table A-2
Potential Regionally Occurring Sensitive Wildlife Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/State)[1]	General Habitat Requirements	Potential for Occurrence
Crustaceans/Mollusks				
Branchinecta lynchi	vernal pool fairy shrimp	FT/--	A freshwater fairy shrimp. Found in palustrine habitats of herbaceous wetland, scrub-shrub wetland and temporary pools. This species inhabits vernal pools or basalt flow depression pools in unplowed grasslands.	None
Branchinecta conservation	conservancy fairy shrimp	FE/--	A freshwater fairy shrimp. Found in palustrine habitats of herbaceous wetland, scrub-shrub wetland and temporary pools. This species inhabits vernal pools or basalt flow depression pools in unplowed grasslands.	None
Lepidurus packardi	vernal pool tadpole shrimp	FE/--	Lives in freshwater vernal pools associated with grasslands, primarily in the Central Coast, Sacramento and San Joaquin Valleys, and the southern Sierra Nevada foothills. Requires vernal pools and other seasonally temporary water bodies that are inundated for a portion of the year.	None
Monadenia infumata ochromphalus	yellow-based sideband	--/ST	A terrestrial snail. This sub-species is an old growth and riparian associate found on leaves, sticks, concrete walls of irrigation ditches and mossy boulders and stones. Species has not been found since 1960s and possibly extirpated from the region.	None
Fish				
Chasmistes brevirostris	shortnose sucker	FE/--	A sucker (fish) with a hump on the snout; up to 64 cm long. Adults and juveniles prefer shallow, turbid, and highly productive lakes that are cool, but not cold, in summer. Habitat for this species is found in the Upper Klamath Basin, with young utilizing the mouths of streams along the Klamath River during outmigration. Spawning occurs in lake tributaries, in riffles or runs with gravel or cobble substrate, moderate flows, and depths or 11-130 cm. Fry move into lakes soon after hatching. Shoreline river and lake habitats are important for larvae and young.	None

Table A-2
Potential Regionally Occurring Sensitive Wildlife Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/State)[1]	General Habitat Requirements	Potential for Occurrence
Deltistes luxatus	Lost River sucker	FE/--	A sucker (fish) with a distinct hump on the snout; to 86 cm long. Found in the upper Klamath River Basin. Habitat includes deep-water lakes and impoundments, and swift water and deep pools of small to medium rivers. Suckers can be found throughout the reservoirs they inhabit but they appear to prefer shorelines with emergent vegetation that can provide cover from predators and invertebrate food. Suckers move from lakes into tributary streams to spawn in riffles or runs with gravel or cobble substrate, moderate flows, and depths of 21-128 cm. Spawning also occurs along shore of Upper Klamath Lake (e.g., at spring inflows). Juveniles move downstream into lakes soon after hatching. Larval suckers prefer shallow, near shore, and emergent vegetated habitat in both the lakes and rivers.	None
Oncorhynchus kisutch	Southern Oregon/northern California (SONCC) coho salmon (ESU)	FT/--	Freshwater, near shore and offshore environments throughout their lifecycles. Coho prefer low stream velocity, shallow water and small gravel. Spawning and rearing habitat mainly in low gradient tributaries and side channels of river systems. Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water, and sufficient dissolved oxygen.	None
Oncorhynchus mykiss irideus	Steelhead-Central California Cast (DPS)	--/SSC	A trout of variable appearance. In California, adult migrants of summer-run steelhead enter freshwater streams April-June (sometimes extending into July), during or shortly after final high spring flows. Spawns in gravelly substrate in cool, clear, well-oxygenated streams (natal stream), in water flowing 23-155 cm/sec and 10-150 cm deep, usually at the tail of a pool or at the riffle at the head of a pool; favors areas with well-vegetated banks and abundant in stream cover such as boulders, logs, and undercut banks	None
Onchrhynchus tshawytscha	Chinook Salmon-California Coast (ESU)	FC/--	Spawns tributaries of coastal California, including the Klamath River and Scott River.	None

Table A-2
Potential Regionally Occurring Sensitive Wildlife Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/State)[1]	General Habitat Requirements	Potential for Occurrence
Amphibians				
Ambystoma macrodactylum sigillatum	southern long-toed salamander	--/SSC	A large salamander associated with permanent water where it lays eggs and young live in water before transitioning to terrestrial life stage. Live under logs and in tunnels of other animals burrows, in cool and moist/wet sites.	None
Ascaphus truei	Pacific tailed frog	--/SC	A small frog with a tail-like appendage in males. Found in clear, cold swift-moving mountain streams with coarse substrates. Primarily in older forest sites. May be found on land during wet weather near water in humid forests or in more open habitat. During dry weather stays on moist stream-banks.	None
Plethodon elongates	Del Norte salamander	--/SSC	A terrestrial species, this salamander prefers talus and rocky substrates, and downed logs with nearby rocky substrates of forests. Canopy cover is typically 60% or greater. This salamander uses the rocky substrate that is moist, but not wet, and does not require any standing water.	None
Rana boylii	foothill yellow-legged frog	--/SC	A frog with dorsolateral ridges. This species usually occurs in or near quiet permanent water of streams, marshes, ponds, lakes, and other quiet bodies of water. In summer, frogs estivate in small mammal burrows, leaf litter, or other moist sites in or near (within a few hundred feet of) riparian areas. Individuals may range far from water along riparian corridors and in damp thickets and forests.	None
Rana cascadae	Cascades frog	--/SC	A medium sized frog. Found in wet mountain meadows, sphagnum bogs, ponds, lakes, and streams, in open coniferous forest. Prefers quiet ponds with shallow open water for breeding and egg laying.	None
Rana pretiosa	Oregon spotted frog	FT/--	A medium sized frog. Highly aquatic, avoids dry uplands; rarely found far from permanent quiet water; usually occurs at the grassy margins of streams, lakes, ponds, springs, and marshes.	None

Table A-2
Potential Regionally Occurring Sensitive Wildlife Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/State)[1]	General Habitat Requirements	Potential for Occurrence
Birds				
Accipiter gentilis	Northern Goshawk	--/SSC	Forest habitats of medium to large conifers where it nests and hunts through the tree canopy. May be found near open fields to take prey of small mammals and birds that are feeding in these agricultural areas.	Low
Accipiter striatus	Sharp-shinned hawk	--/SSC	Forest habitat where it nests and hunts. May be found adjacent to open fields during migration periods.	Low
Aquila chrysaetos	Golden Eagle	--/SSC	Wide ranging bird that prefers to build nests in high locations such as cliffs. They hunt a variety of habitats such as forest openings and agricultural fields where they take small mammals.	None
Ardea herodias	great blue heron	--/SSC	Herons live along freshwater habitats, including streams, rivers, lakes, ponds and residential fish/koi ponds where they feed on small fish, rodents, reptiles, insects and sometimes small birds. They use agricultural fields for hunting. Breeding colonies occur in isolated areas of swamps, bogs islands and other areas bordered by water.	None
Coccyzus americanus	Western yellow-billed cuckoo	FT/--	Nests in tall cottonwood and willow riparian woodland. Requires patches of at least 10 hectares (25 acres) of dense riparian forest with a canopy cover of at least 50 percent in both the understory and overstory; nests typically in mature willows.	None
Falco mexicanus	prairie falcon	--/SSC	A brown falcon. Primarily open situations, especially in mountainous areas, steppe, plains or prairies. Typically nests in pot hole or well-sheltered ledge on rocky cliff or steep earth embankment. Vertical cliffs with rock structure overhanging the site are preferred. May use old nest of raven, hawk, eagle, etc. Winter foraging habitat includes wheat and other irrigated croplands. In all cases, large patches with low vegetation stature characterize the habitats used.	Low

Table A-2
Potential Regionally Occurring Sensitive Wildlife Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/State)[1]	General Habitat Requirements	Potential for Occurrence
Falco peregrines anatum	American peregrine falcon	FD/SD	Found in forests, mountain ranges and river valleys. Is also becoming more common in cities with large buildings that can act as breeding locations. Nests are generally 'scraped' into the cliff ledge. Hunts primarily on other birds, but will take small mammals when available.	None
Grus canadensis	greater sandhill crane	--/ST	Habitat for foraging consists of prairies and grasslands and marshes where they hunt invertebrates and grain crops. Breeding areas can be in marshes and bogs or dry land, depending on available habitat and protection from predators.	None
Pandion haliaetus	Osprey	--/SSC	Ospreys are found in a wide variety of habitats, but always associated with rivers, lakes and ocean inlets/bays/estuaries. They are an exclusive fish eater. Nests are at the top or very upper most parts of single trees, tops of telephone/power poles, and other manmade 'pole' structures that provide an adequate platform to build a stick nest and have views of water.	None
Riparia riparia	bank swallow	--/ST	Habitat includes open and partly open situations, frequently near flowing water. Nests are in steep sand, dirt, or gravel banks, in burrows dug near the tip of the bank. They can also be found along the edge of inland water, or along the coast. Occasionally they are seen in gravel pits or road embankments. Individuals tend to return to the same nesting area in successive years.	None
Strix occidentalis caurina	northern spotted owl	FT/--	Northern spotted owl is generally found in coastal to mountainous mature coniferous forests. This species nests in cavities or on natural platforms of dense mature forests.	Low
Mammals				
Canis lupus	gray wolf	FE/SCE	Large tracts of land that include forest, range and agriculturally developed areas. Reported in the Bieber area and Lassen County.	Low

Table A-2
Potential Regionally Occurring Sensitive Wildlife Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/State)[1]	General Habitat Requirements	Potential for Occurrence
Corynorhinus townsendii	Townsend's Big-eared Bat	--/SSC	This bat is known to inhabit mines, caves and buildings where it establishes roosts and maternal colonies to raise young; brood colonies can number into the hundreds of individuals. They feed on a variety of insects.	None
Gulo gulo	California wolverine	FPT/ST	A large mustelid. Found in Alpine and arctic tundra, boreal and mountain forests (primarily coniferous). Usually found in areas with snow on the ground in winter. Riparian areas may be important winter habitat. May disperse through atypical habitat. When inactive, occupies den in cave, rock crevice, under fallen tree in thicket, or similar site. Terrestrial and may climb trees.	None
Pekania pennanti	fisher, West Coast DPS	FPT/SCT	Utilizes low- to mid-elevation coniferous, mixed conifer and hardwood forests that have an abundant variety of physical structures (downed logs, snags, dense ground vegetation, open patches, etc.). These habitats provide a wide variety of prey which are key for the fisher. Fishers also occupy and reproduce in some managed forest landscapes and forest stands not classified as late-successional that provide some of the habitat elements important to fisher, such as relatively large trees, high canopy closure, abundant snags, down logs and variety of vegetation types.	None

Table A-2
Potential Regionally Occurring Sensitive Wildlife Species
City of Etna Water Tank Project, Etna, California

Species Latin Name	Common Name	Status (Federal/State)[1]	General Habitat Requirements	Potential for Occurrence

1. Abbreviation/Acronyme:

"-- ": No Status/Listing

DPS: Distinct Population Segment

ESU: Evolutionarily Significant Unit

FC: Federal Candidate. This designation includes taxa that require additional information to propose for listing pursuant to the Federal Endangered Species Act (FESA), as amended.

FD: Federally Delisted, but protected under other federal laws and management plans

FE: Federally-listed Endangered, pursuant to the FESA, as amended. This designation includes taxa that are in danger of extinction throughout all or a significant portion of their range.

FT: Federally-listed Threatened, pursuant to the FESA, as amended. This designation refers to species that are not presently threatened with extinction but are likely to become endangered throughout all or a significant portion of their range in the foreseeable future if special protection and management efforts are not undertaken.

FPT: Federally Proposed Threatened-while not fully "listed" the Proposed status requires protection as though the species was listed.

SCE: State Candidate Endangered-Species is a candidate for listing and is protected as such

SCT: State Candidate Threatened-Species is a candidate for listing and is protected as such.

SD: State Delisted, but protected under other state laws and regulations

SE: State-listed Endangered, pursuant to California Endangered Species Act (CESA). SE designation includes taxa that are in danger of extinction throughout all or a significant portion of their range.

SONCC: Southern Oregon Northern California Coast

SSC: Species of Special Concern are species that the CDFG consider of conservation concern. These species must be considered pursuant to CEQA.

ST: State-listed Threatened, pursuant to CESA. ST designation includes taxa that are likely to become endangered throughout a significant portion of their range.

Appendix B

Observed Plant Species

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 28, 2016)

For Office Use:	Final database #:	Final vegetation type:	Alliance Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION — circle: **Relevé** or **RA**

Database #: N/A

Date: 5/17/17

Name of recorder: Greg O'Connell

Other surveyors: Mark Cheney

Location Name: Etna Water Facility

GPS name: Gaia GPS — For Relevé only: **Bearing°**, left axis at ID point ____ **of Long / Short** side

UTME ____ **UTMN** ____ **Zone: 11** **NAD83** GPS error: **ft./ m./ PDOP** ____

Decimal degrees: **LAT** 41.453913 **LONG** -122.906493

GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____

and record: **Base point ID** ____ **Projected UTMs: UTME** ____ **UTMN** ____

Camera Name: **Cardinal photos at ID point:**

Other photos:

Stand Size (acres): <1, 1-5, >5 | **Plot Size (m²):** 100 / N/A | **Plot Shape** ____ x ____ m | **RA Radius** ____ m

Exposure, Actual °: ____ NE NW SE SW Flat Variable | **Steepness, Actual °:** ____ 0° 1-5° 5-25° > 25

Topography: Macro: top upper mid lower bottom | **Micro:** convex flat concave undulating

Geology code: ____ **Soil Texture code:** ____ | Upland or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: 0 **BA Stems:** 10 **Litter:** 83 **Bedrock:** 0 **Boulder:** 0 **Stone:** 0 **Cobble:** 0 **Gravel:** 2 **Fines:** 5 =100%

% Current year bioturbation 1 **Past bioturbation present?** Yes / No **% Hoof punch** 0

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known. → Historical

Site history, stand age, comments:

Moderate over-story canopy dominated by conifers. Open shrub & herb layer. 1-2 inch layer of pine needles on ground with another 1-inch of decomposing litter under that. Site dry. No evidence of wetlands within study area - but a small drainage feature was observed ~100 ft south & outside of study area.

Disturbance code / Intensity (L,M,H): ____/____ ____/____ X ____/____ ____/____ ____/____ **"Other"** X /____

II. HABITAT DESCRIPTION

Tree DBH : T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), S2 young (<__% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.)

Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)

III. INTERPRETATION OF STAND

Field-assessed vegetation Alliance name: Pinus ponderosa-Pseudotsuga menziesii Alliance

Field-assessed Association name (optional): X

Adjacent Alliances/direction: X / / /

Confidence in Alliance identification: L M H **Explain:** Membership rules are met.

Phenology (E,P,L): Herb X **Shrub** ____ **Tree** ____ **Other identification or mapping information:** X

Combined Vegetation Rapid Assessment and Relevé Field Form
(Revised April 28, 2016)
SPECIES SHEET

Database #: N/A

IV. VEGETATION DESCRIPTION

% NonVasc cover: <1 **Total % Vasc Veg cover:** 45

% Cover - **Conifer tree / Hardwood tree:** 40/2 **Regenerating Tree:** 5 **Shrub:** >5 **Herbaceous:** >5

Height Class - Conifer tree / Hardwood tree: 8/6 **Regenerating Tree:** 2 **Shrub:** 3 **Herbaceous:** 1

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

Stratum categories: T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular
% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Stratum	Species	% cover	C	Final species determination
T	Pinus ponderosa	30	T	"
T	Pseudotsuga menziesii	30	T	"
T	Pinus lambertiana	10	T	"
T	Calocedrus decurens	5	T	"
T	Quercus kelloggii	5	T	"
H	Poa bulbosa	2	H	"
H	Bellis perennis	1	H	"
H	Festuca californica	1	H	"
H	Festuca microstachys	1	H	"
H	Galium aparine	1	H	"
H	Hypochaeris radicata	1	H	"
H	Isatis tinctoria	1	H	"
H	Lupinus albicaulis	1	H	"
H	Nemophila parviflora	1	H	"
S	Rubus armeniacus	1	S	"
H	Erodium cicutarium	(>1)	H	"
H	Fritillaria recurva		H	"
S	Berberis aquifolium		S	"
H	Osmorhiza berteroi		H	"
H	Madia gracilis		H	"
S	Arctostaphylos nevadensis		S	"
H	Rumex acetosella		H	"
H	Dactylis glomerata		H	"
H	Brassica nigra		H	"
H	Lathyrus nevadensis		H	"
H	Piperia sp.		H	"
H	Collinsia parviflora		H	"
H	Taraxacum officinale		H	"
H	Matricaria discoidea		H	"
H	Lactuca virosa		H	"
H	Sonchus oleraceus		H	"
H	Viola sheltonii		H	"
H	Verbascum thapsus		H	"
H	Achnatherum parviflorus		H	"
S	Ceanothus integerrimus		S	"

Unusual species: N/A

Appendix C

USDA Soils Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Siskiyou County, California, Central Part

Etna Water Tank Replacement Project

March 16, 2017

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:751 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 10 20 40 60

Feet
0 35 70 140 210

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Siskiyou County, California, Central Part
Survey Area Data: Version 8, Sep 12, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 8, 2010—Aug 24, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Siskiyou County, California, Central Part (CA602)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
115	Boomer loam, cool, 5 to 30 percent slopes	0.0	0.7%
184	Marpa-Kinkel-Boomer, cool complex, 15 to 50 percent slopes	1.4	99.3%
Totals for Area of Interest		**1.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Siskiyou County, California, Central Part

115—Boomer loam, cool, 5 to 30 percent slopes

Map Unit Setting

National map unit symbol: hdn7
Elevation: 2,500 to 5,000 feet
Mean annual precipitation: 35 inches
Mean annual air temperature: 48 degrees F
Frost-free period: 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Boomer and similar soils: 85 percent
Minor components: 13 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boomer

Setting

Landform: Mountains
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from metamorphic rock

Typical profile

H1 - 0 to 10 inches: loam
H2 - 10 to 53 inches: sandy clay loam, clay loam, silty clay loam
H2 - 10 to 53 inches: weathered bedrock
H2 - 10 to 53 inches:
H3 - 53 to 57 inches:

Properties and qualities

Slope: 5 to 30 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 23.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Kinkel

Percent of map unit: 5 percent

Hydric soil rating: No

Neuns

Percent of map unit: 5 percent
Hydric soil rating: No

Rock outcrop

Percent of map unit: 3 percent
Hydric soil rating: No

184—Marpa-Kinkel-Boomer, cool complex, 15 to 50 percent slopes

Map Unit Setting

National map unit symbol: hdqg
Elevation: 2,500 to 5,000 feet
Mean annual precipitation: 35 inches
Mean annual air temperature: 48 degrees F
Frost-free period: 110 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Marpa and similar soils: 30 percent
Kinkel and similar soils: 25 percent
Boomer and similar soils: 20 percent
Minor components: 23 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marpa

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from metamorphic rock

Typical profile

H1 - 0 to 14 inches: gravelly loam
H2 - 14 to 30 inches: very gravelly clay loam, very gravelly sandy clay loam
H2 - 14 to 30 inches: unweathered bedrock
H3 - 30 to 34 inches:

Properties and qualities

Slope: 15 to 50 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Kinkel

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from metamorphic rock

Typical profile

H1 - 0 to 9 inches: very gravelly loam
H2 - 9 to 60 inches: very gravelly loam, very gravelly sandy loam
H2 - 9 to 60 inches:

Properties and qualities

Slope: 15 to 50 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Boomer

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from metamorphic rock

Typical profile

H1 - 0 to 10 inches: gravelly loam
H2 - 10 to 53 inches: gravelly sandy clay loam, gravelly clay loam
H2 - 10 to 53 inches: weathered bedrock
H3 - 53 to 57 inches:

Properties and qualities

Slope: 15 to 50 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 13.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Rock outcrop

Percent of map unit: 14 percent
Hydric soil rating: No

Etsel

Percent of map unit: 3 percent
Hydric soil rating: No

Kindig

Percent of map unit: 3 percent
Hydric soil rating: No

Neuns

Percent of map unit: 3 percent
Hydric soil rating: No

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Appendix D

Safety Data Sheets

Aluminum Sulfate, Solution

Safety Data Sheet **SDS ID: 00231225**

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name: Aluminum sulfate, solution

Manufacturer Information

USALCO, LLC
2601 Cannery Avenue
Baltimore, MD 21226

Emergency # 1-800-282-5322

Synonyms

ALUM

Chemical Family

inorganic, salt

Product Use

water treatment coagulant, flocculent, alumina source for catalyst, pH control in papermaking/water treatment

Section 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Color: colorless to amber, colorless to green
Physical Form: liquid
Odor: odorless
Health Hazards: respiratory tract irritation, skin irritation, eye irritation

POTENTIAL HEALTH EFFECTS

Inhalation

Short Term: irritation, cough, sore throat
Long Term: irritation, difficulty breathing, wheezing, lung damage

Skin

Short Term: irritation (possibly severe), allergic reactions
Long Term: irritation (possibly severe), allergic reactions

Eye

Short Term: irritation (possibly severe)
Long Term: irritation (possibly severe)

Ingestion

Short Term: digestive disorders
Long Term: no information is available

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component	Percent	Symbol(s)	Risk Phrase(s)
7732-18-5	Water 231-791-2	>50	---	---
10043-01-3	Aluminum sulfate 233-135-0	<50	Xi	R:36-37-38

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Aluminium compounds.

Section 4 - FIRST AID MEASURES

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

Skin

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

Eyes

Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion

If a large amount is swallowed, get medical attention.

Section 5 - FIRE FIGHTING MEASURES

See Section 9 for Flammability Properties

NFPA Ratings: Health: 1 **Fire:** 0 **Reactivity:** 0

Hazard Scale: 0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe

Flammable Properties

Negligible fire hazard.

Extinguishing Media

Use extinguishing agents appropriate for surrounding fire.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

Thermal Decomposition Products

Combustion: oxides of sulfur

Sensitivity to Mechanical Impact

Not sensitive

Sensitivity to Static Discharge

Not sensitive

Section 6 - ACCIDENTAL RELEASE MEASURES

Occupational spill/release

Stop leak if possible without personal risk. **Small spills:** Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Keep unnecessary people away, isolate hazard area and deny entry. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

Section 7 - HANDLING AND STORAGE

Handling Procedures

Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Storage Procedures

Store and handle in accordance with all current regulations and standards. Store with acids. See original container for storage recommendations. Keep separated from incompatible substances.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

ACGIH and EU have not developed exposure limits for any of this product's components.

Ventilation

Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face

Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Protective Clothing

Wear appropriate chemical resistant clothing.

Glove Recommendations

Wear appropriate chemical resistant gloves.

Respiratory Protection

Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum.

Consider warning properties before use.
Any air-purifying full-facepiece respirator equipped with an N95, R95, or P95 filter. The following filters may also be used: N99, R99, P99, N100, R100 or P100.
Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter.
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator or self-contained breathing apparatus (SCBA) with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid	**Odor Threshold:**	Not applicable
Characteristics:	colorless to clear amber or clear light green liquid	**Odor:**	Negligible odor
		Boiling Point:	109° C/228° F
pH:	2.0 – 2.4 @ 20°C	**Melting Point:**	-13° C/9° F
Evaporation Rate:	1 water=1	**Flash Point:**	Not applicable
%VOC	0.0	**Density:**	11.1 lbs/gal 15.5 °C
Vapor Density (air = 1):	Not applicable	**Specific Gravity (water = 1):**	1.32 - 1.34 @ 15.5 °C
Vapor Pressure:	Not applicable	**Water Solubility:**	Complete
Viscosity:	25 cps @ 20°C/68° F		

Section 10 - STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and pressure.

Conditions to Avoid

Protect from freezing. Keep separated from incompatible substances.

Materials to Avoid

Alkalis, metals
Alkalis (bases): Violent reaction.
Metals: May be corrosive in the presence of moisture.

Thermal Decomposition Products

Combustion: Thermal oxidative decomposition of Aluminum Sulfate occurs at temperatures greater than 1400°F and can produce sulfur oxides.

Possibility of Hazardous Reactions

Will not polymerize.

Section 11 - TOXICOLOGICAL INFORMATION

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Aluminum sulfate (10043-01-3)
Oral LD50 Rat 1930 mg/kg

Water (7732-18-5)
Oral LD50 Rat >90 mL/kg

RTECS Acute Toxicity (selected)

The components of this material have been reviewed, and RTECS publishes the following endpoints:

Aluminum sulfate (10043-01-3)
Oral: 6207 mg/kg Oral Mouse LD50

Water (7732-18-5)
Oral: >90 mL/kg Oral Rat LD50

Acute Toxicity Level

Aluminum sulfate (10043-01-3)

Slightly Toxic: ingestion

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, or DFG.

RTECS Irritation

The components of this material have been reviewed, and RTECS publishes the following endpoints:

Aluminum sulfate (10043-01-3)

10 mg/24 hour Eyes Rabbit severe

Local Effects

Aluminum sulfate (10043-01-3)

Irritant: inhalation, skin, eye

RTECS Mutagenic

The components of this material have been reviewed, and RTECS publishes the following endpoints:

Aluminum sulfate (10043-01-3)

20 mg/L human; 20 mg/L human; 20 mg/L human; 20 mg/L human; 762 mg/kg/7 day(s) continuous rat; 762 mg/kg/7 day(s) continuous rat

RTECS Reproductive Effects

The components of this material have been reviewed, and RTECS publishes the following endpoints:

Aluminum sulfate (10043-01-3)

800 mg/kg Intraperitoneal Mouse TDLo (pregnant 10-13 day(s)); 27371 ug/kg Subcutaneous Mouse TDLo (male 30 day(s)); 27371 ug/kg Intratesticular Rat TDLo (male 1 day(s))

HEALTH EFFECTS

Inhalation - Acute Exposure

Aluminum sulfate: Inhalation may cause irritation of mucous membranes with sore throat and cough due to sulfuric acid which is formed by the hydrolysis of the salt upon contact with moisture.

Inhalation - Chronic Exposure

Aluminum sulfate: Repeated or prolonged exposure may cause bronchial irritation, leading to nocturnal wheezing, and breathlessness. Prolonged inhalation of dusts containing high concentrations of aluminum have produced emphysema, non-nodular pulmonary fibrosis and fatalities.

Skin Contact - Acute Exposure

Aluminum sulfate: Aluminum sulfate hydrolyzes readily with moisture to form some sulfuric acid which may produce irritation, dermatosis and eczema. Excessive formation of sulfuric acid may produce possible burns. Aluminum sulfate may rarely cause skin sensitization.

Skin Contact - Chronic Exposure

Aluminum sulfate: Repeated or prolonged contact with some soluble salts of aluminum results in acid irritation from hydrolysis. A congestive, anesthetic condition of the fingers (acroanesthesia) may occur from prolonged contact. Repeated exposure may result in sensitization.

Eye Contact - Acute Exposure

Aluminum sulfate: May cause irritation, redness, and corneal burns due to the reaction of the compound with moisture to form sulfuric acid.

Eye Contact - Chronic Exposure

Aluminum sulfate: Repeated or prolonged contact with irritants may cause conjunctivitis or effects similar to those for acute exposure.

Ingestion - Acute Exposure

Aluminum sulfate: Ingestion of a large dose was lethal in mice. Aluminum salts, particularly concentrated solutions (20%), may produce gingival necrosis and fatal hemorrhagic gastroenteritis, in coordination, colonic contractions, evidence of nephritis and death.

Ingestion - Chronic Exposure

Aluminum sulfate: No data available.

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

Aluminum sulfate (10043-01-3)

Fish: 96 Hr LC50 Carassius auratus: 100 mg/L; 96 Hr LC50 Gambusia affinis: 37 mg/L [static]

Invertebrate: 15 Min EC50 Daphnia magna: 136 mg/L

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262.
Hazardous Waste Number(s): D002 (Corrosive) if the pH is <2.
May be D002 under §261.22(a)(2) due to the rate of corrosion of steel.

Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

Section 14 - TRANSPORT INFORMATION

US DOT Information, TDG Information, ADR Information, RID Information, IATA Information, ICAO Information, IMDG Information

Shipping Name: UN3264, Corrosive, liquid, acidic, inorganic, n.o.s., (Aluminum sulfate), 8, III, RQ

Required Label(s): 8

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

Aluminum sulfate (10043-01-3)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

SARA Section 311/312 (40 CFR 370 Subparts B and C)

Acute Health: Yes; **Chronic Health:** No; **Fire:** No; **Pressure:** No; **Reactive:** No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Aluminum sulfate	10043-01-3	Yes	Yes	No	Yes	Yes

Not regulated under California Proposition 65

Germany Water Classification

Aluminum sulfate (10043-01-3)

ID Number 486, hazard class 1 - low hazard to waters (footnote 8)

EU Marking and Labeling

Symbols

Xi Irritant

Risk Phrases

R36/37/38 Irritating to eyes, respiratory system and skin.

Component Analysis - Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
Aluminum sulfate	10043-01-3	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Water	7732-18-5	Yes	DSL	EIN	Yes	Yes	No	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

Full text of R phrases in Section 3

R36 Irritating to eyes.
R37 Irritating to respiratory system.
R38 Irritating to skin.

Other Information

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. **Disclaimer:** Supplier gives no warranty of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser will make his own tests to determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental and/or consequential property damage arising out of the use of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights. THIS MSDS IS TO BE UTILIZED SOLEY AS A REFERENCE DOCUMENT AND IT IS NOT TO BE USED TO SATISFY THE DISTRIBUTION REQUIREMENTS OF OSHA'S HAZARD COMMUNICATION STANDARD (HCS) NOR CANADA'S CONTROLLED PRODUCT REGULATION (CPR). Read the Material Safety Data Sheet before handling product.

End of Sheet 00231225

SAFETY DATA SHEET

CAT-FLOC 8102 PLUS

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	CAT-FLOC 8102 PLUS
Other means of identification	:	Not applicable.
Recommended use	:	FLOCCULANT
Restrictions on use	:	Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.
Company	:	Nalco Company 1601 W. Diehl Road Naperville, Illinois 60563-1198 USA TEL: (630)305-1000
Emergency telephone number	:	(800) 424-9300 (24 Hours) CHEMTREC
Issuing date	:	06/18/2014

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS Label element

Precautionary Statements : **Prevention:**
Wash hands thoroughly after handling.
Response:
Specific measures: consult MSDS Section 4.
Storage:
Store in accordance with local regulations.

Other hazards : None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

No hazardous ingredients

SECTION 4. FIRST AID MEASURES

In case of eye contact	:	Rinse with plenty of water. Get medical attention if symptoms occur.
In case of skin contact	:	Wash off with soap and plenty of water. Get medical attention if symptoms occur.
If swallowed	:	Rinse mouth. Get medical attention if symptoms occur.
If inhaled	:	Get medical attention if symptoms occur.
Protection of first-aiders	:	In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders.Use personal protective equipment as required.

Notes to physician	:	Treat symptomatically.

See toxicological information (Section 11)

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	None known.
Specific hazards during firefighting	:	Not flammable or combustible.
Hazardous combustion products	:	Carbon oxides
Special protective equipment for firefighters	:	Use personal protective equipment.
Specific extinguishing methods	:	Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Refer to protective measures listed in sections 7 and 8.
Environmental precautions	:	No special environmental precautions required.
Methods and materials for containment and cleaning up	:	Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	For personal protection see section 8. Wash hands after handling.
Conditions for safe storage	:	Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.
Suitable material	:	Keep in properly labelled containers.
Unsuitable material	:	not determined

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures	:	Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Eye protection	:	Safety glasses
Hand protection	:	Wear protective gloves. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Skin protection	:	Wear suitable protective clothing.
Respiratory protection	:	No personal respiratory protective equipment normally required.
Hygiene measures	:	Wash hands before breaks and immediately after handling the product.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid
Colour	:	Colorless Light Gold
Odour	:	None
Flash point	:	> 93.3 °C
pH	:	5.0 - 8.0, 100 % (25 °C)
Odour Threshold	:	no data available
Melting point/freezing point	:	FREEZING POINT: -3 °C
Initial boiling point and boiling range	:	100 °C
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	similar to water
Relative vapour density	:	no data available
Relative density	:	1.02 - 1.06
Density	:	no data available
Water solubility	:	completely soluble
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Thermal decomposition	:	Carbon oxides
Viscosity, dynamic	:	30 - 160 mPa.s (25 °C)

Viscosity, kinematic	:	no data available
VOC	:	0 %

SECTION 10. STABILITY AND REACTIVITY

Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Freezing temperatures.
Incompatible materials	:	Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.
Hazardous decomposition products	:	Oxides of carbon Oxides of nitrogen

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	:	Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	:	Health injuries are not known or expected under normal use.
Skin	:	Health injuries are not known or expected under normal use.
Ingestion	:	Health injuries are not known or expected under normal use.
Inhalation	:	Health injuries are not known or expected under normal use.
Chronic Exposure	:	Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact	:	No symptoms known or expected.
Skin contact	:	No symptoms known or expected.
Ingestion	:	No symptoms known or expected.
Inhalation	:	No symptoms known or expected.

Toxicity

Product

Acute oral toxicity	:	LD50 rat: 14,600 mg/kg Test substance: Product
Acute inhalation toxicity	:	no data available
Acute dermal toxicity	:	LD50 rabbit: > 20,000 mg/kg Test substance: Similar Product

Skin corrosion/irritation	:	Species: Rabbit Result: 1.0 Method: Draize Test Test substance:Similar Product
Serious eye damage/eye irritation	:	Species: rabbit Result: 8.0 Method: Draize Test Test substance: Similar Product
Respiratory or skin sensitization	:	no data available
Carcinogenicity	:	no data available
Reproductive effects	:	no data available
Germ cell mutagenicity	:	no data available
Teratogenicity	:	no data available
STOT - single exposure	:	no data available
STOT - repeated exposure	:	no data available
Aspiration toxicity	:	no data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects	:	This product has no known ecotoxicological effects.

Product

Toxicity to fish	:	LC50 Rainbow Trout: 0.74 mg/l Exposure time: 96 hrs Test substance: Product tested in clean water LC50 Zebra Danio: 10 - 100 mg/l Exposure time: 96 hrs Test substance: Representative polymer tested in water with DOC
Toxicity to daphnia and other aquatic invertebrates	:	LC50 Daphnia magna: 1.8 mg/l Exposure time: 48 hrs Test substance: Product tested in clean water LC50 Daphnia magna: 10 - 100 mg/l Exposure time: 48 hrs Test substance: Representative polymer tested in water with DOC
Toxicity to algae	:	no data available

Persistence and degradability

The organic portion of this preparation is expected to be poorly biodegradable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.
If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	:	<5%
Water	:	30 - 50%
Soil	:	50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

This preparation or material is not expected to bioaccumulate.

Other information

The hazard characterization is based on the tests or potential hazard in the clean water.

SECTION 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

Disposal methods	:	Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
Disposal considerations	:	Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name	:	PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Air transport (IATA)

Proper shipping name	:	PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Sea Transport (IMDG/IMO)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

TOXIC SUBSTANCES CONTROL ACT (TSCA)
The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)
The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

AUSTRALIA
All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

EUROPE
The substance(s) in this preparation are included in or exempted from the EINECS or ELINCS inventories

JAPAN
All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

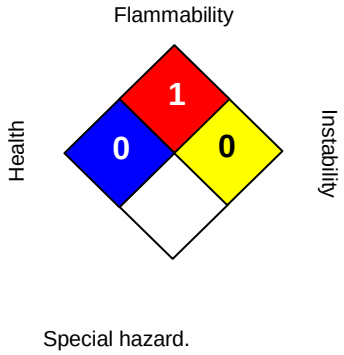
KOREA
All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

NEW ZEALAND
All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996,and are listed on or are exempt from the New Zealand Inventory of Chemicals.

PHILIPPINES
All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

SECTION 16: OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	0
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date	:	06/18/2014
Version Number	:	1.0
Prepared By	:	Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

For additional copies of an MSDS visit www.nalco.com and request access.

Mitigation Measures, Monitoring, and Reporting Program

City of Etna
16-CDBG-11138 Public Water System Improvement Project

This Mitigation Measures, Monitoring and Reporting Program (MMRP) prepared for the above project was developed as part of the CEQA Initial Study and Mitigated Negative Declaration (IS/MND). After public and agency review, there were no comments received to the project that required any changes to the MMRP.

Biological Resources

Mitigation Measure Bio-1. Should the Project require that trees be removed as part of construction activities, the following will occur to avoid impacts to nesting migratory birds or raptors that may be utilizing trees at the construction site (Fish and Game Code Sections 3503 and 3503.5):

1. Tree removal should be conducted from September 1 to January 31 when birds are not nesting, **OR**
2. Should trees need to be removed from February 1 to August 31 (nesting season), then nesting bird surveys will be conducted by a qualified biologist no more than one week prior to tree removal during this period.
    a. If no nesting birds are located during the survey, then tree removal may proceed.
    b. Should the survey determine that an active nest is located in the trees to be removed during the survey, the biologist shall delineate a no disturbance buffer that is adequate to prevent nesting failure. No trees shall be removed within the buffer until the young have fledged, as determined through additional monitoring by the qualified biologist.
    c. Results of all nesting bird surveys, both positive and negative, will be sent to the Department of Fish and Wildlife, ATTN: CEQA, 601 Locust Street, Redding, CA 96001.

Timing for Implementation/Compliance: Project vegetation removal between September 1 to January 31 or nesting bird surveys and compliance monitoring for vegetation removal from February 1 to August 31.

Person/Agency Responsible for Monitoring: City of Etna.

Monitoring Frequency: As specified in the mitigation measure, by qualified biologists.

Evidence of Compliance: For vegetation removal during the nesting season, survey documentation provided by the City to DFW.

Cultural Resources

Mitigation Measure CR-1. If cultural resources, such as chipped or ground stone, or bone are discovered during ground-disturbance activities, work shall be stopped within 20 meters (66 feet) of the discovery, as required by the California Environmental Quality Act (CEQA; January 1999 Revised Guidelines, Title 14 California Code of Regulations [CCR] 15064.5 (f)). Work near the archaeological finds shall not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the material and offered recommendations for further action.

Timing for Implementation/Compliance: Ongoing throughout construction activities

Person/Agency Responsible for Monitoring: City of Etna, construction contractors

Monitoring Frequency: Ongoing during construction activities

Evidence of Compliance: Documentation of cultural resources found, work stoppage, and implementation of recommendations by professional archaeologist

Mitigation Measure CR-2. If human remains are discovered during Project construction, work will stop at the discovery location, within 20 meters (66 feet), and any nearby area reasonably suspected to overlie human remains (Public Resources Code, Section 7050.5). The Siskiyou County coroner will be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it will be necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the North American Heritage Commission (NAHC) (Public Resources Code, Section 5097). The coroner will contact the NAHC. The descendants, or most likely descendants, of the deceased will be contacted and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98. Work may resume if NAHC is unable to identify a descendant or the descendant failed to make a recommendation.

Timing for Implementation/Compliance: Ongoing throughout construction activities

Person/Agency Responsible for Monitoring: City of Etna, construction contractors

Monitoring Frequency: Ongoing during construction activities

Evidence of Compliance: Documentation of human remains found, work stoppage, and implementation of recommendations by Siskiyou County coroner and NAHC.

Appendix B

CalEEMod.2022.1.0 Emissions Report

City of Etna Public Water System Improvement Project Custom Report

Table of Contents

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.19	20.0	18.5	18.0	0.03	0.83	7.17	8.00	0.77	3.44	4.21	—	3,691	3,691	0.11	0.20	2.56	3,755
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.44	1.20	9.83	10.2	0.02	0.41	0.01	0.42	0.38	< 0.005	0.38	—	1,816	1,816	0.07	0.02	< 0.005	1,822
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.81	0.78	5.65	5.81	0.01	0.24	0.31	0.55	0.22	0.14	0.36	—	1,020	1,020	0.04	0.01	0.03	1,025
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.15	0.14	1.03	1.06	< 0.005	0.04	0.06	0.10	0.04	0.03	0.07	—	169	169	0.01	< 0.005	0.01	170

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	2.19	1.84	18.5	18.0	0.03	0.83	7.17	8.00	0.77	3.44	4.21	—	3,691	3,691	0.11	0.20	2.56	3,755
2024	1.37	20.0	9.45	10.2	0.02	0.37	0.11	0.38	0.34	0.02	0.34	—	1,816	1,816	0.07	0.02	0.50	1,822

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	1.44	1.20	9.83	10.2	0.02	0.41	0.01	0.42	0.38	< 0.005	0.38	—	1,816	1,816	0.07	0.02	< 0.005	1,822
2024	1.37	1.14	9.46	10.2	0.02	0.37	0.01	0.38	0.34	< 0.005	0.34	—	1,815	1,815	0.07	0.02	< 0.005	1,822
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.81	0.67	5.65	5.81	0.01	0.24	0.31	0.55	0.22	0.14	0.36	—	1,020	1,020	0.04	0.01	0.03	1,025
2024	0.61	0.78	4.19	4.53	0.01	0.16	< 0.005	0.17	0.15	< 0.005	0.15	—	806	806	0.03	0.01	0.01	809
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.15	0.12	1.03	1.06	< 0.005	0.04	0.06	0.10	0.04	0.03	0.07	—	169	169	0.01	< 0.005	0.01	170
2024	0.11	0.14	0.76	0.83	< 0.005	0.03	< 0.005	0.03	0.03	< 0.005	0.03	—	133	133	0.01	< 0.005	< 0.005	134

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	2.19	1.84	18.5	18.0	0.03	0.83	7.17	8.00	0.77	3.44	4.21	—	3,691	3,691	0.11	0.20	2.56	3,755
2024	1.37	20.0	9.45	10.2	0.02	0.37	0.11	0.38	0.34	0.02	0.34	—	1,816	1,816	0.07	0.02	0.50	1,822
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	1.44	1.20	9.83	10.2	0.02	0.41	0.01	0.42	0.38	< 0.005	0.38	—	1,816	1,816	0.07	0.02	< 0.005	1,822
2024	1.37	1.14	9.46	10.2	0.02	0.37	0.01	0.38	0.34	< 0.005	0.34	—	1,815	1,815	0.07	0.02	< 0.005	1,822
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.81	0.67	5.65	5.81	0.01	0.24	0.31	0.55	0.22	0.14	0.36	—	1,020	1,020	0.04	0.01	0.03	1,025
2024	0.61	0.78	4.19	4.53	0.01	0.16	< 0.005	0.17	0.15	< 0.005	0.15	—	806	806	0.03	0.01	0.01	809

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.15	0.12	1.03	1.06	< 0.005	0.04	0.06	0.10	0.04	0.03	0.07	—	169	169	0.01	< 0.005	0.01	170
2024	0.11	0.14	0.76	0.83	< 0.005	0.03	< 0.005	0.03	0.03	< 0.005	0.03	—	133	133	0.01	< 0.005	< 0.005	134

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.04	0.10	0.16	0.19	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	84.7	84.7	< 0.005	< 0.005	0.39	85.3
Mit.	0.04	0.10	0.16	0.19	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	59.7	59.7	< 0.005	< 0.005	0.39	60.2
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	29%	29%	—	—	—	29%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.03	0.09	0.16	0.12	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	84.4	84.4	< 0.005	< 0.005	0.39	85.0
Mit.	0.03	0.09	0.16	0.12	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	59.4	59.4	< 0.005	< 0.005	0.39	60.0
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	30%	30%	—	—	—	29%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.07	0.02	0.05	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	70.7	70.7	< 0.005	< 0.005	0.39	71.2
Mit.	0.01	0.07	0.02	0.05	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	45.7	45.7	< 0.005	< 0.005	0.39	46.2
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	35%	35%	—	—	—	35%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	11.7	11.7	< 0.005	< 0.005	0.06	11.8

Mit.	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	7.57	7.57	< 0.005	< 0.005	0.06	7.65
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	35%	35%	23%	41%	—	35%

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.07	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.27	0.27	< 0.005	< 0.005	—	0.27
Energy	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	70.5	70.5	< 0.005	< 0.005	—	70.7
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.39	0.39
Stationary	0.03	0.03	0.14	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	13.9	13.9	< 0.005	< 0.005	—	13.9
Total	0.04	0.10	0.16	0.19	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	84.7	84.7	< 0.005	< 0.005	0.39	85.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	70.5	70.5	< 0.005	< 0.005	—	70.7
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.39	0.39
Stationary	0.03	0.03	0.14	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	13.9	13.9	< 0.005	< 0.005	—	13.9

Total	0.03	0.09	0.16	0.12	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	84.4	84.4	< 0.005	< 0.005	0.39	85.0
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.07	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.13	0.13	< 0.005	< 0.005	—	0.13
Energy	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	70.5	70.5	< 0.005	< 0.005	—	70.7
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.39	0.39
Stationary	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	0.07	0.02	0.05	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	70.7	70.7	< 0.005	< 0.005	0.39	71.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.02	0.02	< 0.005	< 0.005	—	0.02
Energy	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.7	11.7	< 0.005	< 0.005	—	11.7
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.06	0.06
Stationary	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	11.7	11.7	< 0.005	< 0.005	0.06	11.8

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.07	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.27	0.27	< 0.005	< 0.005	—	0.27
Energy	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	45.6	45.6	< 0.005	< 0.005	—	45.7
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.39	0.39
Stationary	0.03	0.03	0.14	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	13.9	13.9	< 0.005	< 0.005	—	13.9
Total	0.04	0.10	0.16	0.19	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	59.7	59.7	< 0.005	< 0.005	0.39	60.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	45.6	45.6	< 0.005	< 0.005	—	45.7
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.39	0.39
Stationary	0.03	0.03	0.14	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	13.9	13.9	< 0.005	< 0.005	—	13.9
Total	0.03	0.09	0.16	0.12	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	59.4	59.4	< 0.005	< 0.005	0.39	60.0
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.07	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.13	0.13	< 0.005	< 0.005	—	0.13
Energy	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	45.6	45.6	< 0.005	< 0.005	—	45.7
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.39	0.39

Stationar	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	0.07	0.02	0.05	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	45.7	45.7	< 0.005	< 0.005	0.39	46.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.02	0.02	< 0.005	< 0.005	—	0.02
Energy	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.55	7.55	< 0.005	< 0.005	—	7.56
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.06	0.06
Stationary	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	7.57	7.57	< 0.005	< 0.005	0.06	7.65

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	49.9	49.9	< 0.005	< 0.005	—	50.0
Total	—	—	—	—	—	—	—	—	—	—	—	—	49.9	49.9	< 0.005	< 0.005	—	50.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	49.9	49.9	< 0.005	< 0.005	—	50.0
Total	—	—	—	—	—	—	—	—	—	—	—	—	49.9	49.9	< 0.005	< 0.005	—	50.0

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	8.27	8.27	< 0.005	< 0.005	—	8.28
Total	—	—	—	—	—	—	—	—	—	—	—	—	8.27	8.27	< 0.005	< 0.005	—	8.28

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	25.0	25.0	< 0.005	< 0.005	—	25.0
Total	—	—	—	—	—	—	—	—	—	—	—	—	25.0	25.0	< 0.005	< 0.005	—	25.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	25.0	25.0	< 0.005	< 0.005	—	25.0
Total	—	—	—	—	—	—	—	—	—	—	—	—	25.0	25.0	< 0.005	< 0.005	—	25.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	4.13	4.13	< 0.005	< 0.005	—	4.14
Total	—	—	—	—	—	—	—	—	—	—	—	—	4.13	4.13	< 0.005	< 0.005	—	4.14

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.6	20.6	< 0.005	< 0.005	—	20.7
Total	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.6	20.6	< 0.005	< 0.005	—	20.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.6	20.6	< 0.005	< 0.005	—	20.7
Total	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.6	20.6	< 0.005	< 0.005	—	20.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.41	3.41	< 0.005	< 0.005	—	3.42
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.41	3.41	< 0.005	< 0.005	—	3.42

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.6	20.6	< 0.005	< 0.005	—	20.7
Total	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.6	20.6	< 0.005	< 0.005	—	20.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.6	20.6	< 0.005	< 0.005	—	20.7
Total	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.6	20.6	< 0.005	< 0.005	—	20.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

General Light Industry	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.41	3.41	< 0.005	< 0.005	—	3.42
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.41	3.41	< 0.005	< 0.005	—	3.42

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	19.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.27	0.27	< 0.005	< 0.005	—	0.27
Total	0.01	19.9	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.27	0.27	< 0.005	< 0.005	—	0.27
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.02	0.02	< 0.005	< 0.005	—	0.02
Total	< 0.005	0.06	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.02	0.02	< 0.005	< 0.005	—	0.02

4.3.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	19.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.27	0.27	< 0.005	< 0.005	—	0.27
Total	0.01	19.9	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.27	0.27	< 0.005	< 0.005	—	0.27
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consumer	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.02	0.02	< 0.005	< 0.005	—	0.02
Total	< 0.005	0.06	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.02	0.02	< 0.005	< 0.005	—	0.02

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.4.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.5.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Appendix C

BIOLOGICAL RECORD SEARCH RESULTS

USFWS Species List

NMFS Species List

Table 1. CNDDB Report Summary

Table 2. CNPS Inventory of Rare and Endangered Plants

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

United States Department of the Interior

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

In Reply Refer To:
Project Code: 2022-0040352
Project Name: City of Etna WTP

May 06, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Yreka Fish And Wildlife Office
1829 South Oregon Street
Yreka, CA 96097-3446
(530) 842-5763

Project Summary

Project Code: 2022-0040352
Event Code: None
Project Name: City of Etna WTP
Project Type: Water Supply Pipeline - Maintenance/Modification - Below Ground
Project Description: City of Etna improvements to the water system within the city boundaries.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.4539973,-122.90655297731608,14z

Counties: Siskiyou County, California

Endangered Species Act Species

There is a total of 11 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Wolf *Canis lupus* Population: U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico. There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4488	Endangered

Birds

NAME	STATUS
Northern Spotted Owl *Strix occidentalis caurina* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Fishes

NAME	STATUS
Lost River Sucker *Deltistes luxatus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5604	Endangered
Shortnose Sucker *Chasmistes brevirostris* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7160	Endangered

Insects

NAME	STATUS
Franklin"s Bumble Bee *Bombus franklini* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7022	Endangered
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp *Branchinecta conservatio* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Yreka Phlox *Phlox hirsuta* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8243	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: ENPLAN
Name: Kiara Hadsall
Address: 3179 Bechelli Lane
City: Redding
State: CA
Zip: 96002
Email khadsall@enplan.com
Phone: 5302210440

Quad Name **Etna**
Quad Number **41122-D8**

ESA Anadromous Fish

SONCC Coho ESU (T) - **X**
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat - **X**
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -

Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH - X
Chinook Salmon EFH - X
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds
See list at left and consult the NMFS Long Beach office
562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

TABLE 1
Rarefind (CNDDB) Report Summary
City of Etna Public Water System Improvement Project; Five-Mile Radius of Project Area
April 2022

Listed Element	Quadrangle [1]					Status [2]
	ET	FJ	GM	GR	MG	
ANIMALS						
Bank swallow		•			•	ST
Crotch bumble bee	•					None
Fisher	•				•	SSSC
Great blue heron		•				None
Greater sandhill crane				•		ST, SFP
Lower Klamath marbled sculpin		•				SSSC
North American porcupine	•				•	None
Prairie falcon			•			WL
Secret Cave amphipod				•		None
Western bumble bee	•					None
Yellow-based sideband	•					None
PLANTS						
Coast checkerbloom					•	1B.2
Northwestern moonwort	•					2B.3
Pacific fuzzwort	•					4.3
Scott Mountain bedstraw	•					1B.2
Scott Valley buckwheat					•	1B.1
Scott Valley phacelia				•	•	1B.2
Shasta chaenactis	•			•		1B.3
Siskiyou clover				•		1B.1
Woolly balsamroot					•	1B.2

Highlighting denotes the quadrangle in which the project site is located
No sensitive natural communities were identified within the search radius

[1]QUADRANGLE CODE

ET Etna
FJ Fort Jones
GM Gazelle Mountain
GR Greenview
MG McConaughy Gulch

[2]STATUS CODES

Federal

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

State

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

Rare Plant Rank

1A Plants Presumed Extinct in California and either Rare or Extinct Elsewhere
1B Plants Rare, Threatened or Endangered in California and Elsewhere
2A Plants Presumed Extinct in California but Common Elsewhere
2B Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
3 Review List: Plants About Which More Information is Needed
4 Watch List: Plants of Limited Distribution

Rare Plant Threat Ranks

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

TABLE 2
California Native Plant Society
Inventory of Rare and Endangered Plants
U.S. Geological Survey's Etna 7.5-minute Quadrangle

Common Name	Scientific Name	CA Rare Plant Rank	Blooming Period	State Listing Status	Federal Listing Status
California androsace	*Androsace elongata* ssp. *acuta*	4.2	Mar-June	None	None
California pitcherplant	*Darlingtonia californica*	4.2	Apr-Aug	None	None
Clustered lady's-slipper	*Cypripedium fasciculatum*	4.2	Mar-Aug	None	None
Leafy-stemmed mitrewort	*Mitellastra caulescens*	4.2	(Mar)Apr-Oct	None	None
Marsh claytonia	*Claytonia palustris*	4.3	May-Oct	None	None
Northwestern moonwort	*Botrychium pinnatum*	2B.3	July-Oct	None	None
Pacific fuzzwort	*Ptilidium californicum*	4.3	May-Aug	None	None
Scott Mountain bedstraw	*Galium serpenticum* ssp. *scotticum*	1B.2	May-Aug	None	None
Scott Valley buckwheat	*Eriogonum umbellatum* var. *lautum*	1B.1	July-Sept	None	None
Shasta chaenactis	*Chaenactis suffrutescens*	1B.3	May-Sept	None	None
Siskiyou aster	*Eucephalus glabratus*	4.3	June-Sept	None	None
Siskiyou daisy	*Erigeron cervinus*	4.3	June-Aug	None	None
Tracy's collomia	*Collomia tracyi*	4.3	Jun-Jul	None	None
Western waterfan lichen	*Peltigera gowardii*	4.2	–	None	None

Rare Plant Rank	
1A	Plants presumed extinct in California and either rare or extinct elsewhere
1B	Plants rare, threatened or endangered in California and elsewhere
2A	Plants presumed extinct in California but common elsewhere
2B	Plants rare, threatened, or endangered in California but common elsewhere
3	Review List: Plants about which more information is needed (generally not considered special-status, unless unusual circumstances warrant)
4	Watch List: Plants of limited distribution (generally not considered special-status, unless unusual circumstances warrant)
Rare Plant Threat Rank	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

Source: *California Native Plant Society, Rare Plant Program. 2022. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). http://www.rareplants.cnps.org. Accessed April 2022.*

TABLE 3
Potential for Special-Status Species to Occur on the Project Site
City of Etna Public Water System Improvement

June 2022

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
PLANTS							
Coast checkerbloom	*Sidalcea oregana* ssp. *eximia*	1B.2	Coast checkerbloom, a perennial herb occurs in lower montane coniferous forest, meadows and seeps, and North Coast coniferous forest. The species is reported between 15 and 4,400 feet in elevation. The flowering period is June through August.	No	No	No	CNDDB records show that coast checkerbloom was reported ±1.5 miles from the project site in 1955. As the proposed project takes place within residential areas, suitable habitat for the coast checkerbloom is not present; therefore, this species is not expected to occur in the project area.
Northwestern moonwort	*Botrychium pinnatum*	2B.3	Northwestern moonwort occurs in streamside and meadow habitats in lower and upper montane coniferous forests. The species is reported between 5,800 and 6,700 feet in elevation. The flowering period is July through October.	No	No	No	The project site is located below the elevational range for northwestern moonwort. Therefore, northwestern moonwort is not expected to be present.
Scott Mountain bedstraw	*Galium serpenticum* ssp. *scotticum*	1B.2	Scott Mountain bedstraw occurs on steep serpentine talus slopes in lower montane coniferous forest in Siskiyou and Trinity counties. The species is reported between 3,200 and 7,000 feet above sea level. The flowering period is May through August.	No	No	No	According to CNDDB records, Scott Mountain bedstraw was reported in the general vicinity of Etna in 1930 and is broadly mapped to include the project site; however, the project area does not contain suitable habitat for this species. Therefore, Scott Mountain bedstraw is not expected to be present.
Scott Valley buckwheat	*Eriogonum umbellatum* var. *lautum*	1B.1	Scott Valley buckwheat is a perennial herb that generally occurs on gravelly, sandy flats in cismontane woodland and lower montane coniferous forest. The species is reported between 2,600 and 3,000 feet in elevation. The flowering period is July through September.	No	No	No	According to CNDDB records, Scott Valley buckwheat was reported ±1.5 miles east of Etna in 1949. Suitable habitat for this species does not exist in the project area; therefore, Scott Valley buckwheat is not expected to be present.

TABLE 3
Potential for Special-Status Species to Occur on the Project Site
City of Etna Public Water System Improvement

June 2022

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Scott Valley phacelia	*Phacelia greenei*	1B.2	Scott Valley phacelia generally occurs on bare, gravelly serpentine ridges and slopes in montane coniferous forests. The species is reported between 2,600 and 8,000 feet in elevation. The flowering period is April through June.	No	No	No	CNDDB records show that Scott Valley phacelia has been mapped in multiple located ±3 miles north and ±1-3 miles east of the project location, in 1976 and 1980, respectively. The proposed project area does not contain serpentine habitats; therefore, this species is not expected to be present on the project site.
Shasta chaenactis	*Chaenactis suffrutescens*	1B.3	Shasta chaenactis occurs on rocky open slopes, cobbly river terraces, and along roadcuts. The species is found between 2,400 and 8,800 feet in elevation. The flowering period is May through September.	No	No	No	According to CNDDB records, Shasta chaenactis was reported 2 miles north of Etna in 1937. The proposed project is located in primarily residential and barren habitats; therefore, no suitable habitat for this species is present in the project area.
Siskiyou clover	*Trifolium siskiyouense*	1B.1	Siskiyou clover is a perennial herb that generally occurs in mountain meadows, seeps, or along streambanks between 2,800 and 4,900 feet in elevation. The species has been reported in southern Oregon and northern California but has not been documented in Oregon since 1926 or in California since 1935. Flowering occurs in June and July.	No	No	No	According to CNDDB records, Siskiyou clover was reported ±4.5 miles north of Etna in 1935. No seeps, meadows, or other suitable habitat types for this species are present in the proposed project area; therefore, Siskiyou clover is not expected to be present in the project area.

TABLE 3
Potential for Special-Status Species to Occur on the Project Site
City of Etna Public Water System Improvement
June 2022

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Yreka phlox	*Phlox hirsuta*	1B.2	Yreka phlox, a low-growing perennial plant, that grows in soils derived from igneous rock with high levels of iron and magnesium. This species is known from only five locations in Siskiyou County, in and near the city of Yreka. The species is reported between 2,400 and 4,400 feet in elevation and may be at a particular risk from human land use activities. The flowering period is April through June.	No	No	No	Due to the lack of soil derived from igneous rock, and the high levels of human land use activities, no potentially suitable habitat for Yreka phlox is present on the project site. Therefore, the species is not expected to be present.
Woolly balsamroot	*Balsamorhiza lanata*	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.	No	No	No	According to CNDDB records, wooly balsamroot was reported ±5 miles east of Etna in 1996. The proposed project area is composed of primarily residential and barren habitats; therefore, this species is not expected to be present.
BIRDS							
Bald eagle	*Haliaeetus leucocephalus*	FD, FBCC, SE, SFP	Bald eagles nest in large, old-growth trees or snags in mixed stands near open bodies of water. Adults tend to use the same breeding areas year after year and often use the same nest, though a breeding area may include one or more alternate nests. Bald eagles usually do not begin nesting if human disturbance is evident. In California, the bald eagle nesting season is from February through July.	No	No	No	The project site does not contain suitable nesting habitat for the bald eagle. Additionally, due to high human activity within the project area, it is unlikely that bald eagles would be present. Therefore, this species is not expected to be present.
Bank swallow	*Riparia riparia*	ST	Bank swallows require vertical banks and cliffs with fine-textured or sandy soils near streams, rivers, ponds, lakes, or the ocean for nesting.	No	No	No	The project site does not contain suitable nesting habitat. Therefore, bank swallows are not expected to be present within the site.

TABLE 3
Potential for Special-Status Species to Occur on the Project Site
City of Etna Public Water System Improvement
June 2022

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Greater sandhill crane	*Antigone canadensis tabida*	ST, FP	Greater sandhill cranes nest in wetland habitats near grain fields in northeastern California. Nests generally consist of large mounds of vegetation in shallow water. Shallow islands bordered by tules and cattails are ideal nesting sites; natural hummocks or muskrat houses may also be used as nest sites.	No	No	No	According to CNDDB records, greater sandhill cranes were recorded ±4.5 miles north of the project site in 2000. The project site is not located near wetlands suitable for nesting habitat for greater sandhill cranes. Therefore, this species is not expected to be present.
Northern spotted owl	*Strix occidentalis*	FT	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. The nesting season is March through June.	No	No	No	Suitable habitat for the northern spotted owl is not present within the project area. Therefore, the species is not expected to be present.
Yellow-billed cuckoo	*Coccyzus americanus*	FT	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	Due to the lack of nesting habitat within the project area for the species, it is unlikely that the yellow-billed cuckoo would be present.
CRUSTACEANS							
Conservancy fairy shrimp	*Branchinecta conservatio*	FE	Conservancy fairy shrimp inhabit large, cool-water vernal pools with moderately turbid water.	No	No	No	No vernal pools or other potentially suitable habitat for conservancy fairy shrimp are present in the project site. Conservancy fairy shrimp would thus not be present.

TABLE 3
Potential for Special-Status Species to Occur on the Project Site
City of Etna Public Water System Improvement

June 2022

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	Vernal pool fairy shrimp inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump or basalt-flow depression pools.	No	No	No	No vernal pools or other potentially suitable habitat for vernal pool fairy shrimp are present in the project site. Vernal pool fairy shrimp would thus not be present.
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE	Vernal pool tadpole shrimp occur in vernal pools in California's Central Valley and in the surrounding foothills.	No	No	No	No vernal pools or other potentially suitable habitat for vernal pool tadpole shrimp are present in the project site. Vernal pool tadpole shrimp would thus not be present.
INSECTS							
Franklin's bumble bee	*Bombus franklini*	FE	Franklin's bumble bee has a very limited geographic distribution. The species may be found in Douglas, Josephine, and Jackson counties in Oregon, and in Siskiyou and Trinity counties in California. This species inhabits open grassy coastal prairies and Coast Range meadows from 540 feet to above 7800 feet in elevation. Important food plants include *Lupinus, Agastache, Monardella*, and *Vicia*. The flight season is from mid-May to the end of September. The nesting biology of this species is unknown, but it probably nests in abandoned rodent burrows. Very little is known about overwintering sites utilized by the species. Generally, bumble bees overwinter in soft, disturbed soil, or under leaf litter or other debris.	Yes	No	Pot	Suitable habitat for Franklin's bumble bee is present in the project area and vicinity, including flowering plant species used by the bee for food. Within the project area, these plants are located in the yards of residences adjacent to the project site. Because residential properties will not be affected by project implementation, the Franklin's bumble bee is not expected to be impacted by project implementation should any individuals be present in the proposed project area.

TABLE 3
Potential for Special-Status Species to Occur on the Project Site
City of Etna Public Water System Improvement
June 2022

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Monarch butterfly	*Danaus plexippus*	FC	Monarch butterflies are reliant on milkweed species of development and survival. Adults migrate from their overwintering sites on the California Coast, Baja California, and to some extent the central Mexico mountains in February and March and reach the northern limit of their North America range in California, Oregon, Washington, Idaho, and Nevada, in early to mid-June. Eggs are laid singly on milkweed plants within their breeding range. Once hatched, larva reach the adult stage in 20 to 35 days; adults live 2 to 5 weeks. Several generations can be produced within one season, with the last generation beginning migration to their overwintering range in August and September where they live between 6 and 9 months before migrating north.	Yes	No	Pot	No milkweeds were observed in the project area during the field evaluation; therefore, there would be no direct impacts on pre-adult monarchs. Indirect impacts could occur if important nectar sources for the butterfly were removed. However, work would be confined the existing, disturbed WTP site as well as to roads and adjacent utility rights-of-way. Because the work area does not contain important floral resources, the project has negligible potential to indirectly affect the butterfly.
FISH							
Lost River sucker	*Deltistes luxatus*	FE	The Lost River sucker is native to the Lost River and Upper Klamath River, and is adapted to lakes within these watersheds. In lakes and reservoirs, adult suckers prefer shallow water with vegetation. Spawning occurs from late February to early May. Lake populations spawn in tributary streams, or around springs near the shoreline. River populations spawn in riffles or runs with gravel or cobble substrate, moderate flow, and at depths less than four feet.	No	No	No	No suitable habitat occurs in the project site for the Lost River sucker. The Lost River sucker would thus not be present at the project site.

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Potential for Special-Status Species to Occur on the Project Site
City of Etna Public Water System Improvement
June 2022

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
Lower Klamath marbled sculpin	*Cottus klamathensis polyporus*	SSSC	Lower Klamath marbled sculpin are common in the Klamath River drainage from Iron Gate Dam downstream to the mouth of the Trinity River. The habitat requirements of this species are not well documented, but the fish seem to occur in a wide variety of habitats and are often found in areas with coarse substrates where water velocities range from slow to swift and in streams with widths greater than 20 meters. Spawning occurs between late February and March.	No	No	No	CNDDB records show that Lower Klamath marbled sculpin was documented in the Scott River, ±4.5 miles north of Etna in 1894. Due to the lack of habitat, the Lower Klamath marbled sculpin would not be present within the project site.
Shortnose sucker	*Chasmistes brevirostris*	FE	The shortnose sucker is known to inhabit Upper Klamath Lake and its tributaries, the Lost River, Clear Lake, Gerber Reservoir, the Tule Lake sump, and the Klamath River upstream of Keno. Spawning occurs from early April to early May. Lake populations spawn in tributary streams, or around springs near the shoreline. River populations spawn in riffles or runs with gravel or cobble substrate, moderate flow, and at depths less than four feet.	No	No	No	Due to the lack of habitat, the shortnose sucker would not be present within the project site.

TABLE 3
Potential for Special-Status Species to Occur on the Project Site
City of Etna Public Water System Improvement

June 2022

COMMON NAME	SCIENTIFIC NAME	STATUS [1]	GENERAL HABITAT DESCRIPTION	HABITAT PRESENT (Y/N)	CRITICAL HABITAT PRESENT (Y/N)	SPECIES PRESENT (Y/N/POT.)	RATIONALE/COMMENTS
MAMMALS							
Fisher	*Pekania pennanti*	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	CNDDB records show that fisher have been reported ±2 miles northwest and ±2 miles south of Etna. However, due to human activities within the project site, it is unlikely any fisher dens or fishers are located within the project area.
Gray wolf	*Canis lupus*	FE	Gray wolves are habitat generalists and populations can be found in any type of habitat in the Northern Hemisphere from about 20° latitude to the polar ice pack. Key components of preferred wolf habitat include a year-round abundance of natural prey, secluded denning and rendezvous sites, and sufficient space with minimal human disturbance. Dens may be a hollow log or a tunnel excavated in loose soil. A den may have two or more entrances, which are usually indicated by a large pile of dirt. Den sites are often near water, and are usually elevated to detect approaching enemies. Wolf packs establish and defend territories that may range from 20 to 400 square miles. Wolves travel over large areas to hunt, and may cover as much as 30 miles in a day. Young wolves may disperse several hundred miles to seek out a mate or to establish their own pack.	No	No	No	Due to the high human activity levels within the project area, it is highly unlikely that gray wolves would be present in the project area.

[1] **Status Codes**

Federal:

FE	Federally Listed – Endangered
FT	Federally Listed – Threatened
FC	Federal Candidate Species
FP	Federal Proposed Species
FD	Federal Delisted
FBCC	Federal Bird of Conservation Concern

State:

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

Rare Plant Rank

1A	Plants Presumed Extinct in California
1B	Plants Rare, Threatened or Endangered in California and Elsewhere
2A	Presumed Extirpated in California, but More Common Elsewhere
2B	Rare or Endangered in California, but More Common Elsewhere

Rare Plant Threat Rank

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