TIERED INITIAL STUDY

for the

South Tahoe Public Utility District

Apache Avenue and Lake Tahoe Blvd Waterline Replacement Projects

3 October 2022

PROJECT NAME

South Tahoe Public Utility District Apache Avenue and Lake Tahoe Blvd Waterline Replacement Projects

LEAD AGENCY

The South Tahoe Public Utility District (District), located in South Lake Tahoe, California, will serve as the Lead Agency for the Apache Avenue and Lake Tahoe Blvd Waterline Replacement Projects for this Initial Study in accordance with the California Environmental Quality Act (CEQA).

This Initial Study was prepared under contract with the District by:

Sierra Ecotone Solutions LLC
PO Box 1297
Zephyr Cove, NV 89448.

PROJECT CONTACT INFORMATION

If you have further questions or require additional information regarding this matter, please contact Julie Ryan, Engineering Department Manager at (530) 544-6474.

South Tahoe Public Utility District
1275 Meadow Crest Drive
South Lake Tahoe, CA 96150

Email: jryan@stpud.dst.ca.us

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

If environmental factors are checked below, there would be at least one impact that is a "Potentially Significant Impact" as indicated by the checklist in Chapter 2 of this Initial Study.

☐ Aesthetics	☐ Agricultural Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology Resources
☐ Greenhouse Gas Emissions	☐ Hazards and 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

Chapter 1. PROJECT DESCRIPTION

1.1 INTRODUCTION AND PROJECT BACKGROUND

1.1. A Purpose and Need

The South Tahoe Public Utility District (District) owns and operates the water distribution system and waste water collection and treatment system within its Service Area in the City of South Lake Tahoe (**Figure 1**). The District regularly conducts condition assessments of existing water facilities to identify opportunities to optimize the system to better provide reliable water services safely, efficiently and cost effectively. The Apache Avenue and Lake Tahoe Blvd Waterline Replacement Projects (Project) would replace and upgrade waterlines and install new fire hydrants to improve capacity and reliability, enhance fire protection, and provide an increased level of service within the surrounding community.

For the Apache Avenue area, the Project would replace approximately 2,100 linear feet (LF) of 4-in and 6-in asbestos-cement (AC) water main on Apache Ave from Hwy 50 to East San Bernardino. This water main replacement is elevated in priority because numerous valves along the existing waterline have failed. In addition, the main waterline at storm drain crossings needs to be relocated in order to coordinate with the County of El Dorado Complete Streets Project that is occurring in the project area.

On Lake Tahoe Blvd, the Project would replace approximately 6,300 LF of existing poor condition steel waterline from North Upper Truckee Road to Boulder Mountain Drive.

Both neighborhoods are deficient in fire hydrants and the proposed project includes installation of new water services, valves and fire hydrants spaced at approximately 500- foot spacing. The hydrants are necessary to meet fire standards that require developed properties to be no more than 250 feet from a fire hydrant and undeveloped properties to be no more than 500 feet from a fire hydrant.

The Project Area is located in two neighborhoods; Apache Avenue is one of the main streets that crosses Highway 50 within the unincorporated community of Meyers and Lake Tahoe Blvd begins at North Upper Truckee Road within the City of South Lake Tahoe (**Figure 2).**

1.1. B Project Background

In 2015, the District completed an assessment of its water system service that serves over 16,000 residential and commercial customers to determine how the system could be optimized to provide reliable water services more safely, efficiently and cost effectively. The result was the 2016 Water System Optimization Plan (WSOP) that is used by the District to guide its operations and capital investments to meet the goal of maintaining a reliable potable water service.

The WSOP included a comprehensive condition assessment of existing water facilities that identified deficiencies within the water system. The unincorporated community of Meyers District used the results of the assessment to develop a prioritized Capital Improvement Program (CIP) to correct deficiencies in water system condition, capacity, and Level of Service (LOS). On an

annual basis, the District presents an Annual Plan Update to the CIP that identifies and prioritizes capital projects based on current needs and the adopted budget. The annual plan document is intended to be a desktop resource for basic information regarding the scope, cost, and need for proposed projects. The 2021 annual update identified the proposed Apache Avenue Waterline Replacement Projects as a high priority project for implementation in 2023. The Lake Tahoe Blvd waterline has been elevated in priority because of the poor condition of the line.

1.1.C Project Location

The Project is located within the District's Service Area in the City of South Lake Tahoe and the unincorporated community of Meyers (**Figure 1)**. The Project Area is located in two neighborhoods; Lake Tahoe Blvd begins at North Upper Truckee Road within the City of South Lake Tahoe and Apache Avenue is Avenue is one of the main streets that crosses Highway 50 within the unincorporated community of Meyers (**Figure 2).**

The Project Area is contained within the South Lake Tahoe United State Geological Society (USGS) 7.5 Minute Quadrangle Topographic Map and occurs within Township 12N Range 18E, Section 29 and Township 12N Range 18E in Section 2 on the Mt Diablo Meridian.

1.1.D General Plan Designation, Zoning and Surrounding Land Use

Land use within the Project Area is primarily residential. Apache Avenue is one of the main streets in Meyers that crosses Highway 50 and the waterline replacement would occur on the north side of the highway. The USDA Forest Service Meyers Work Station is adjacent to Apache Avenue at Highway 50 and the Lake Tahoe Environmental Magnet School is located at the terminal end at the intersection with East San Bernardino Avenue. Lake Tahoe Blvd begins at North Upper Truckee Road and passes over Angora Creek and the area impacted by the Angora Fire in 2007. The Lake Valley Fire Protection District station 5 is located at the intersection of Lake Tahoe Blvd and Boulder Mountain Drive.

There are 2 relevant TRPA Plan Area Statements (PAS) in effect within the Project Area. The Mountain View PAS covers the residential subdivisions situated around the Lake Tahoe Blvd/ North Upper Truckee Road intersection. The dominant physical feature is Angora Creek and the surrounding meadow. Apache Avenue is located within the Meyers Residential Plan Area which includes the residential community north of Highway 50, but excludes the commercial core along Highway 50.

1.1.E Tiering Process

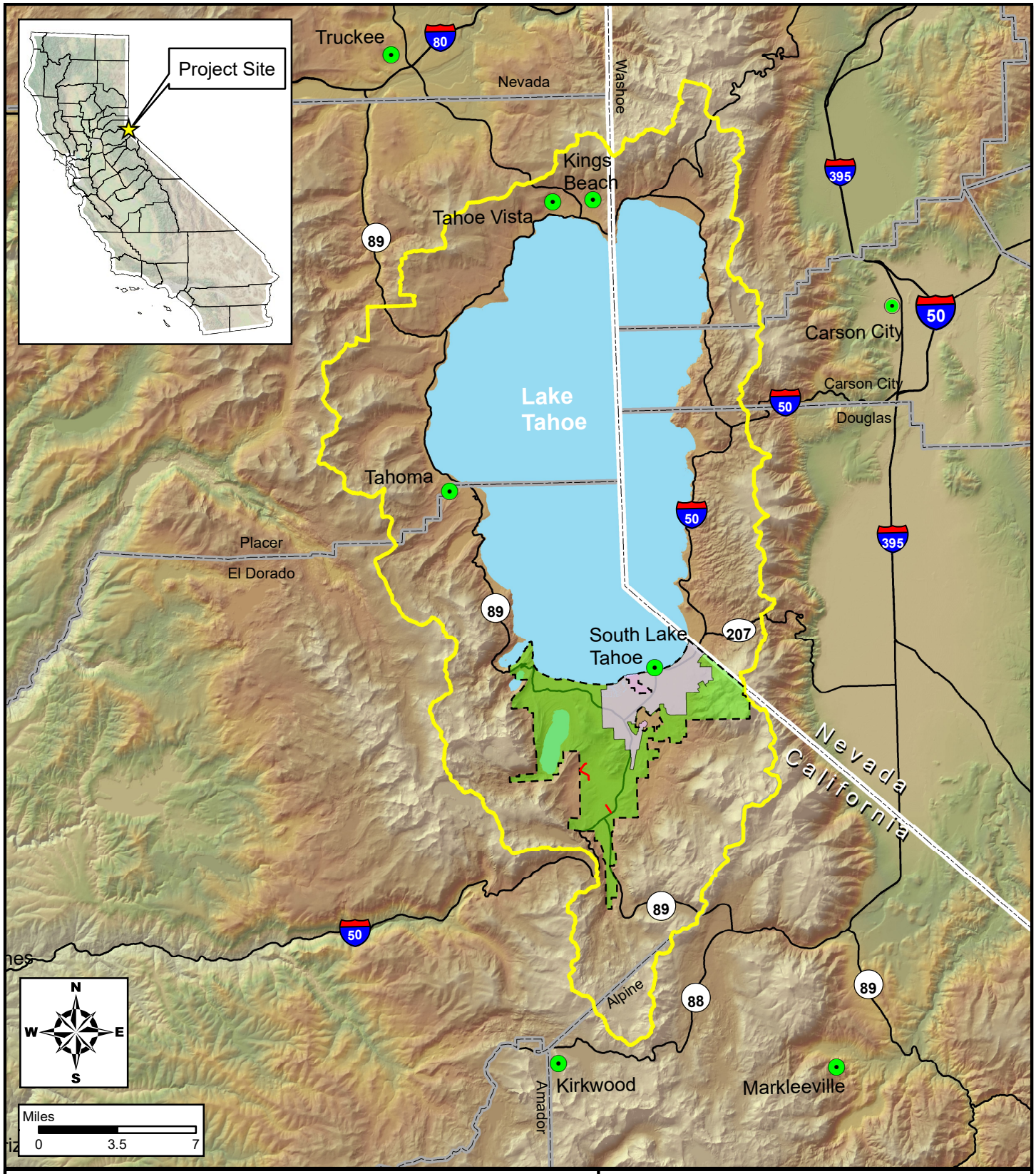
This Initial Study (IS) is tiered from the IS prepared for the South Tahoe Public Utility District District-Wide Right-of-Way Water and Sewer Facilities Upgrade Project (Sierra Ecotone Solutions LLC 2021), in accordance with Section 21094 of the California Public Resources Code and Section 15152 of the State CEQA Guidelines. The District Wide Right-of-Way Water and Sewer Facilities Upgrade Project IS (District Wide IS) evaluated the environmental impacts associated with replacement and upgrading the sewer and water distribution system in areas outside Stream Environment Zones (SEZ). The majority of the Apache Avenue and Lake Tahoe Blvd Waterline

Replacement projects would occur within the right-of-way in the area that the District Wide IS evaluated. However, some of the Project areas are located near SEZ and require additional evaluation. This Tiered IS will only focus on the areas not previously covered by the District Wide IS (i.e. areas of the project in SEZ, as defined by the Tahoe Regional Planning Agency).

Tiering under CEQA involves the preparation of multiple CEQA documents for a sequence of actions so that the later CEQA document incorporates and builds on the information provided in a "first-tier" Initial Study. Put another way, tiering refers to using the analysis of general matters contained in a broader IS, including one prepared for a District wide project, with a later IS or negative declarations on narrower projects, incorporating by reference to general discussions from the broader IS and concentrating the later CEQA documents solely on the issue specific to the later project (State CEQA Guidelines § 15152(a)).

Tiered CEQA documents eliminate the repetitive evaluation of the same environmental issues that were adequately addressed in the first-tier IS. Section 15152(b) of the State CEQA Guidelines encourages the tiering of environmental documents, thereby streamlining the environmental review process for specific development projects, as follows:

Agencies are encouraged to tier the environmental analyses which they prepare for separate but related projects including development projects. This approach can eliminate repetitive discussions of the same issues and focus the later IS or negative declaration on the actual issues ripe for decision at each level of environmental review.



Legend

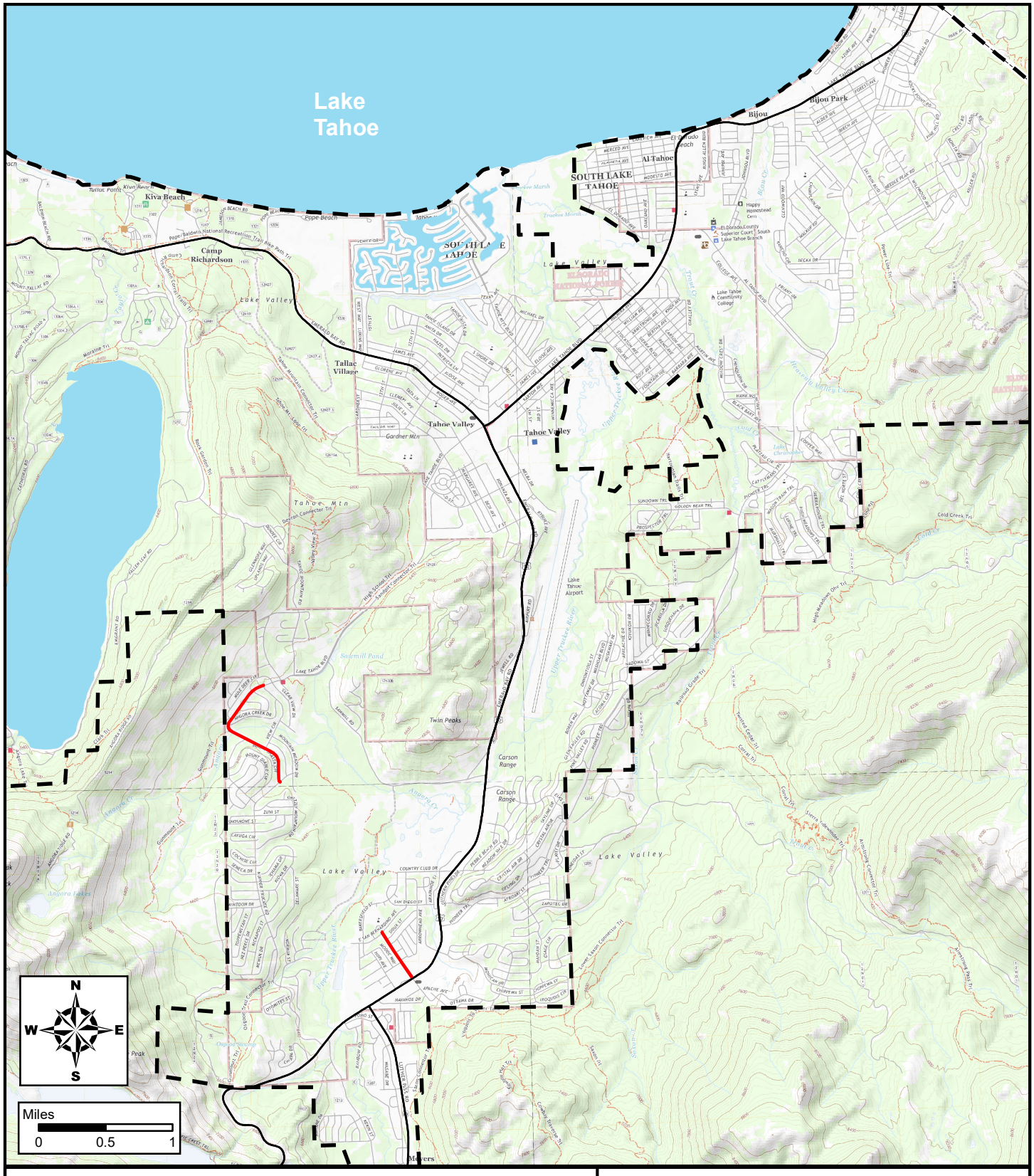
- STPUD Service Area
- Project Area
- City of South Lake Tahoe
- TRPA Boundary
- State Boundry
- County Boundary

Lake Tahoe Blvd & Apache Facilities Upgrade Project

Figure 1.
Project Vicinity

SIERRA ECOTONE SOLUTIONS

Sources: STPUD, TRPA, USGS. Map date: March 8, 2022



Legend

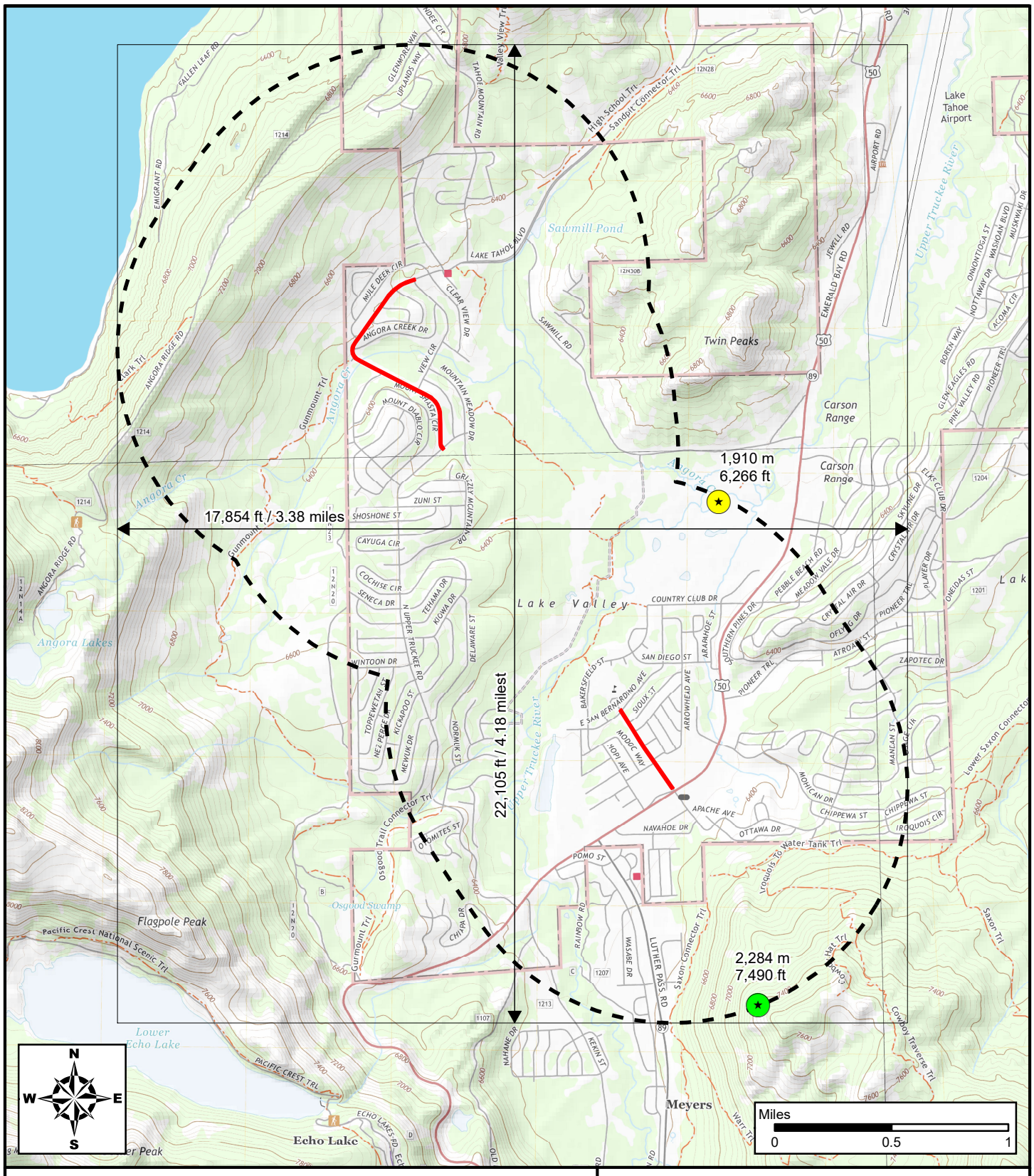
- STPUD Service Area
- Project Area

Lake Tahoe Blvd & Apache Facilities Upgrade Project

Figure 2.
Project Area

SIERRA ECOTONE SOLUTIONS

Sources: STPUD, TRPA, USGS. Map date: March 8, 2022



Legend

- Action Area (±5,329 acres)
- Project Area
- Highest Elevation within the Action Area
- Lowest Elevation within the Action Area

Lake Tahoe Blvd & Apache Facilities Upgrade Project

Figure 3.
Action Area

SIERRA ECOTONE SOLUTIONS

Sources: STPUD, USGS. Map date: March 14, 2022

1.2 DESCRIPTION OF PROJECT

The purpose of the Apache Avenue and Lake Tahoe Blvd Waterline Replacement Projects (Project) is to mitigate existing deficiencies within the water system to provide an increased level of service and enhanced fire protection capability. The District proposes to replace aging and small diameter water pipelines to increase water system efficiency and improve fire flows. The installation of new water services, valves and fire hydrants are necessary to meet fire standards that require developed properties to be no more than 250 feet from a fire hydrant and undeveloped properties to be no more than 500 feet from a fire hydrant. Each of these components are described in further detail below.

1.2.A Project Components

Waterline Replacement

The District has conducted hydraulic capacity and condition assessments of existing waterlines, primarily based on diameter and pressure, but also age, or piping material. Existing water pipelines have been identified on Apache Avenue and Lake Tahoe Blvd that are nearing the end of their useful life (excessive leaking) and/or poor connections from the water main to the water services. The steel waterline in Lake Tahoe Blvd is in very poor condition and has excessive leaks in the recent past (N=18 in the last 12 years). The replacement of these lines would improve water supply by upsizing small diameter pipes and increase water efficiency by replacing aging pipelines that leak.

Waterlines that would be replaced include mains and service laterals. The replacement would begin with pipeline trenching and excavation within the road. A section of new mainline would be installed along with “in line” appurtenances and might include fittings (bends), tees, crosses and valves. Each completed section would be tested for leakage and disinfected. After testing, the new mainline would be tied into the existing system and the new services would be tied to the existing services at the property. The portion of the system being replaced would generally remain in service until the new system has been tied in. Then the old system would be abandoned in place. Upon completion of the install, the trenches would be backfilled and the roadway replaced. Existing guardrail and signage would be protected throughout construction along with any existing curb and gutter

In Lake Tahoe Blvd, approximately 6,300 LF of steel waterlines 8-inches in diameter would be replaced with new 8- or 12-inch waterline made of ductile iron or C900 (to be determined during design). Within Apache Avenue, approximately 2,100 LF of material? waterlines 4 to 6 inches in diameter would be replaced with new 12 inch waterline. The section of waterline begins at Highway 50 and ends at East San Bernardino Avenue. A sliver of SEZ that has been ditched is located adjacent to Apache Avenue. The historic ditch runs between the homes located on East San Bernardino and Sioux Street.

New Fire Hydrant Installation

Fire hydrants within the Service Area will be replaced as necessary. The current fire hydrants meet the spacing requirements so no new hydrants will be installed. Each hydrant would be

connected to the new waterline via a 6-inch fire hydrant lateral and gate valve off of the hydrant tee.

1.2.B Construction Phasing, Schedule and Equipment

Construction is planned for the Apache Avenue portion to commence in 2023 and is anticipated to occur within one TRPA grading season between May 1st to October 15th. The Lake Tahoe Boulevard portion will take place in 2025. The new fire hydrants would be installed in conjunction with the water pipeline replacement and all new components would be pressure tested and disinfected at the same time. When testing is complete, the new components would be tied in with the existing system.

The contractor shall comply with the TRPA standard conditions of approval. Construction that is not completed during the TRPA construction season for earth moving activities between May 1st and October 15th would require a TRPA Grading Season Exception. On-site work would be performed from 8 am to 6 pm Monday through Friday. Work outside these hours would be approved by the District a minimum of 48-hours before the abnormal working hours are scheduled to begin.

General construction equipment that would be utilized for waterline projects include excavator, mini-excavator, loader, water truck, service vehicles, small remote sheep's-foot compactor, vacuum truck, sweeper, milling machine, smooth drum compactor, and a paving machine. All but the paving equipment (the last 3 on the list) are used every day.

1.2.C Earthwork and Excavations

Earthwork and excavations that result in temporary disturbance will be necessary for Project implementation. Excavation is defined as being 18 or more inches of depth below the existing surface. Water pipeline trenches are expected to be 3 to 5 feet wide and generally require excavations of 5 feet deep. Excavations will primarily occur within the City of South Lake Tahoe and El Dorado County ROW. A TRPA pre-grade inspection shall be completed prior to any excavation or saw-cutting activities.

1.2.C.2 Pipeline and Utility Trenching and Excavations

The contractor shall be responsible for contacting all utility companies, local agencies and/or utility districts as to the location of all underground facilities. Location and depth of existing utilities where shown on plans are based on best available information. No guarantee is made as to the accuracy of this information or that all utilities are shown. It shall be the contractor's responsibility to locate, protect, and maintain all existing utilities. The contractor or any subcontractor for this contractor shall notify members of underground service alert 48 hours in advance of performing excavation work by calling underground service alert #811. Excavation is defined as being 18 or more inches of depth below the existing surface.

The contractor shall pothole all utility and storm drain crossings along the pipeline alignment in advance of installation. The contractor shall report the results of the pothole in writing to the engineer 48 hours (not to include weekends or holidays) prior to undertaking any corrective action.

Should any corrective work be done prior to notification, the District assumes no liability for the costs incurred for this work.

All interties between new water mains and the existing water system, including new water service connections, and fire hydrant installations and transfers, shall only be made after all pressure testing and disinfection requirements are satisfactorily met. The contractor shall be responsible to provide all blow offs necessary for flushing and sampling of all new water mains as required by the California State Water Resources Control Board and project specifications.

Where new water mains are being installed in paved sections the maximum width for asphalt replacement the contractor shall be compensated for is the maximum clear trench width for the pipeline size being installed plus twelve inches (12") in County of El Dorado right of way, twenty-four inches (24") in City of South Lake Tahoe right of way, as provided in the contract specifications. The contractor shall replace all traffic striping that is disturbed during construction.

The thickness of replacement pavement is 3 inches in the ROW as specified in the project plans. Trench pavement replacement exceeding this shall be completed at no additional expense to the District.

The contractor shall protect and be responsible for any disturbance or contamination to any dry wells, storm water collection or retainage systems including storm drain pipe, curb & gutter, valley gutters and horizontal drains through-out the project area. Any damage shall be repaired at no additional cost to District. The contractor shall not stock pile any material upon any drainage facilities. All sewer pipes damaged during the execution of the project shall be repaired per plan details.

1.2.C.3 Fill Materials and Placement

All excavations shall be backfilled or trench plated at the end of each day's work per the plan specifications. Within paved areas, trenches will be backfilled with project excavated material compacted at 95% relative compaction. Excavations within existing paved areas shall be hot or cold patched or steel plated as required per specifications to match the existing pavement at the end of each day’s work. All trench plates shall be non- skid type and have cold patch applied to the edge for traffic approach and departure.

The contractor shall provide, on all non-conductive piping, continuous insulated tracer wire rated for direct bury (#10 solid copper or # 12 copper clad steel wire along the pipeline and provide access to tracer wire at all valve boxes installations with a minimum of 1-foot excess tracer wire for future service connections. This shall also apply to all conductive piping unless permanently bonded at each joint. All tracer wire connections shall be made using 3M DBR-6 splice kit or approved equal.

After the new main is placed into service, the existing water mains, where shown on the project drawings, are to be abandoned in place by cutting out a section of pipe and welding a cap on the end of the pipeline, or other approved method of capping. Blind- flange capping shall be utilized where possible. All exposed corporation stops on the existing water mains are to be left in place

in the closed position. For corporation stops that have not been exposed, the capping of the end of the service line using an approved compression fitting shall be acceptable. Existing fire hydrants to be abandoned at the isolation valve, will be removed from the project area and returned to the District, by the contractor. The isolation valve is to be blind flanged or capped by other approved method.

Only new water service connections where shown on the project plans shall be installed per the Districts standard details and project drawings. After Project completion, the locations of all existing water services shall be verified and marked in the field.

1.2.C.4 Disposal of Excess Excavated Material

All excess material from the project is to be removed from the site and disposed of at a site approved by the TRPA. No excess material shall be stored on site after hours. For this Project, excess spoil may be temporarily stored at the Contractor staging area at the District Wastewater Treatment Plant. No material shall be stored in any stream environment zone or wet area. The contractor shall not stock pile any material upon any drainage facilities. Contractor shall remove all material generated by any asphalt saw cutting operation during or immediately after saw cutting by using adequately sized vacuuming equipment to accommodate the removal process.

1.2.D Site Clean Up and Restoration

All disturbed areas shall be restored to match pre-existing conditions. Unimproved areas and areas not landscaped shall be revegetated with native species in accordance with the TRPA handbook of best management practices. Existing vegetation removed during construction shall be chipped and mulched on site and stored for use during revegetation. Application of a mulch may enhance vegetative establishment. Any disturbance of private property shall be restored by the contractor at their expense. All traffic striping that is disturbed during construction shall be replaced by the contractor.

1.2.E Site Access, Staging Areas, and Parking

The District would likely provide a Contractor staging area at the Wastewater Treatment Facility located off of Al Tahoe Blvd. Additional staging may occur within compacted shoulder areas of the project area if allowed by the El Dorado County. Contractor equipment and employee vehicles shall park on existing paved surfaces or existing compacted road shoulders. Contractor shall provide crushed rock in areas of temporary construction access to minimize migration of sediment.

1.3 PROJECT DESIGN FEATURES AND BEST MANAGEMENT PRACTICES

The design features and best management practices (BMPs) that are detailed in Section 1.3 below are proposed as part of the Project to avoid, reduce and minimize potential direct and indirect effects of water meter installations.

1.3.A Construction Dewatering Plan

The contractor shall be responsible for the handling and proper disposal of distribution system water encountered during system tie-ins. The water that would be encountered would come from dewatering of the pipes and not from groundwater. This water would be captured with a Vacuum truck or a sump pump to the sewer syste.in accordance with the plan specifications. For this Project, the contractor shall assume that up to 1,250 gallons could be encountered at each tie-in.

1.3.B Construction Equipment Emissions Control Plan

To ensure that air quality effects will be minimized, the following best management practices will be implemented to reduce emissions from construction equipment exhaust:

- Only equipment of a size and type that will do the least amount of damage, under prevailing site conditions and considering the nature of the work will be used.
- Minimize idling time (e.g., 5-minute maximum).
- Maintain properly tuned equipment according to equipment manufacturer's guidelines.
- Limit the hours of operation of heavy equipment and noise generating activities to 8AM to 6PM.

1.3.C Fugitive Dust Control Plan

The District's contractor will take the necessary steps, procedures, or means as required to prevent its operations in connection with the execution of the Work from causing abnormal dust conditions. The District's contractor will prevent dust from construction activities from being produced in amounts that may be harmful or cause a nuisance to persons living nearby or occupying buildings in the vicinity of the Project.

To ensure compliance with El Dorado County Air Quality Management District's (EDCAQMD) Rule 223 to minimize the amount of particulate matter entrained in the ambient air as a result of man-made fugitive dust sources, the following feasible Particulate Matter (PM10) control measures for construction activities will be implemented:

- The contractor shall provide a water truck to water areas as necessary for dust control. The contractor shall apply either water or a dust palliative, or both, as required to alleviate or prevent dust nuisance.
- During construction, environmental protection devices, such as erosion control, dust control and vegetation protection devices shall be maintained at all times.
- The contractor shall provide a vacuum sweeper truck for cleaning of the site during and after construction each day as required to prevent sediment run off and to aid in dust control.

1.3.D Best Management Practices to Protect Surface and Ground Water/Sediment and Erosion Control Plan

The Contractor shall comply with the State Water Resource Control Board waste water discharge requirements for the project and the County of El Dorado encroachment permit. Portions of this Project are likely to qualify as Exempt or Qualified Exempt under TRPA regulations and therefore, would not require a pre-grade inspection. However, new construction requires a TRPA pre-grade inspection be completed prior to any saw cutting or excavation activities. To ensure that potential impacts to surface water and ground water are avoided, reduced and minimized, the following measures and BMPs will be implemented as necessary based on site conditions at individual work sites:

- During construction, environmental protection devices, such as erosion control, dust control and vegetation protection devices shall be maintained at all times.

- Soil and construction material shall not be tracked off the construction site. Grading operations shall cease in the event that this condition is in danger of being violated.

- Loose soil mounds or surface shall be protection from wind or water erosion by being appropriately covered at the end of each work day or when required by TRPA.

- The contractor shall not stock pile any material upon any drainage facilities. Excavated material shall be stored upgrade from the excavated area whenever possible. No material shall be stored in any stream environment zone or wet area.

- All excess material from the project is to be removed from the site and disposed of at a site approved by the TRPA. No excess material shall be stored on site after hours. Contractor shall remove all material generated by any asphalt saw cutting operation during or immediately after saw cutting by using adequately sized vacuuming equipment to accommodate the removal process.

- No equipment or vehicles shall be placed outside the state, city, or county right of way.

- No washing of vehicles or heavy equipment shall be permitted except when authorized by TRPA in writing.

- Contractor shall provide crushed rock in areas of temporary construction access to minimize migration of sediment.

- The contractor shall protect and be responsible for any disturbance or contamination to any dry wells, storm water collection or retainage systems including storm drain pipe, curb & gutter, valley gutters and horizontal drains throughout the project area. Any damage shall be repaired at no additional cost to the District.

1.3.E Prevent and Control Invasive Species

To prevent the spread of invasive plant species, the following measures and BMPs will be implemented:

- Construction vehicles, including off-road vehicles, will be cleaned when they come into the Basin or come from a known invasive plant infested area. Equipment will be considered

clean when visual inspection does not reveal soil, seeds, plant material, or other such debris.

- Equipment will be staged in weed-free areas to prevent vehicles from introducing or spreading invasive species.
- Earth-moving equipment, gravel, fills, or other materials are required to be weed-free. Onsite sand, gravel, rock, or organic matter will be used when possible or weed-free materials from gravel pits and fill sources that have been surveyed and approved will be used.
- Minimize the amount of ground and vegetation disturbance in the construction areas. Upon completion of construction, vegetation will be reestablished in the footprint to minimize weed establishment after the removal.

1.3.F Construction Noise Reduction

To reduce construction related noise, the following measures will be implemented:

- Noise shall be reduced by mandatory use of mufflers on all construction vehicles and equipment. Where feasible solenoid pavement breakers will be used in lieu of air powered jack hammers.
- Construction activities will be limited to the hours of 8:00 AM and 6:00 PM, pursuant to TRPA Code of Ordinances Chapter 68, Noise Limitations.

1.3.G Cultural Resources Protection

Although the Project Area has been subject to systematic surface archaeological investigations, it is possible that buried or concealed cultural resources could be present and detected during Project ground disturbance activities. In accordance with the National Historic Preservation Act of 1966, (16 U.S.C. 470), the following procedures will be implemented to ensure historic preservation. In the event previously unknown potential historical, architectural, archeological, or cultural resources (herein after cultural resources) are discovered during subsurface excavations the following procedures will be instituted:

- If archaeological features or materials are unearthed during any phase of project activities, all work in the immediate vicinity of the find shall halt until the District has contacted the State and the significance of the resource has been evaluated. Any mitigation measures that may be deemed necessary must have the approval of the State, and shall be implemented, pursuant to the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation, 48 CFR 44716, by a qualified archaeologist representing the District prior to the resumption of construction activities. Consistent with this, the Engineer will issue a “Stop Work Order” directing the District’s contractor to cease all construction operations at the location of such potential cultural resources find.
- Such “Stop Work Order” will be effective until such time as a qualified archeologist can be called to assess the value of these potential cultural resources and make recommendations to the State Office of Historic Preservation.
- If the archeologist determines that the potential find qualifies for inclusion in the National Register of Historic Places and the California Register of Historic Resources, at the

direction of the State Office of Historic Preservation, the Engineer will extend the duration of the "Stop Work Order" in writing, and the District's contractor will suspend work at the location of the find.

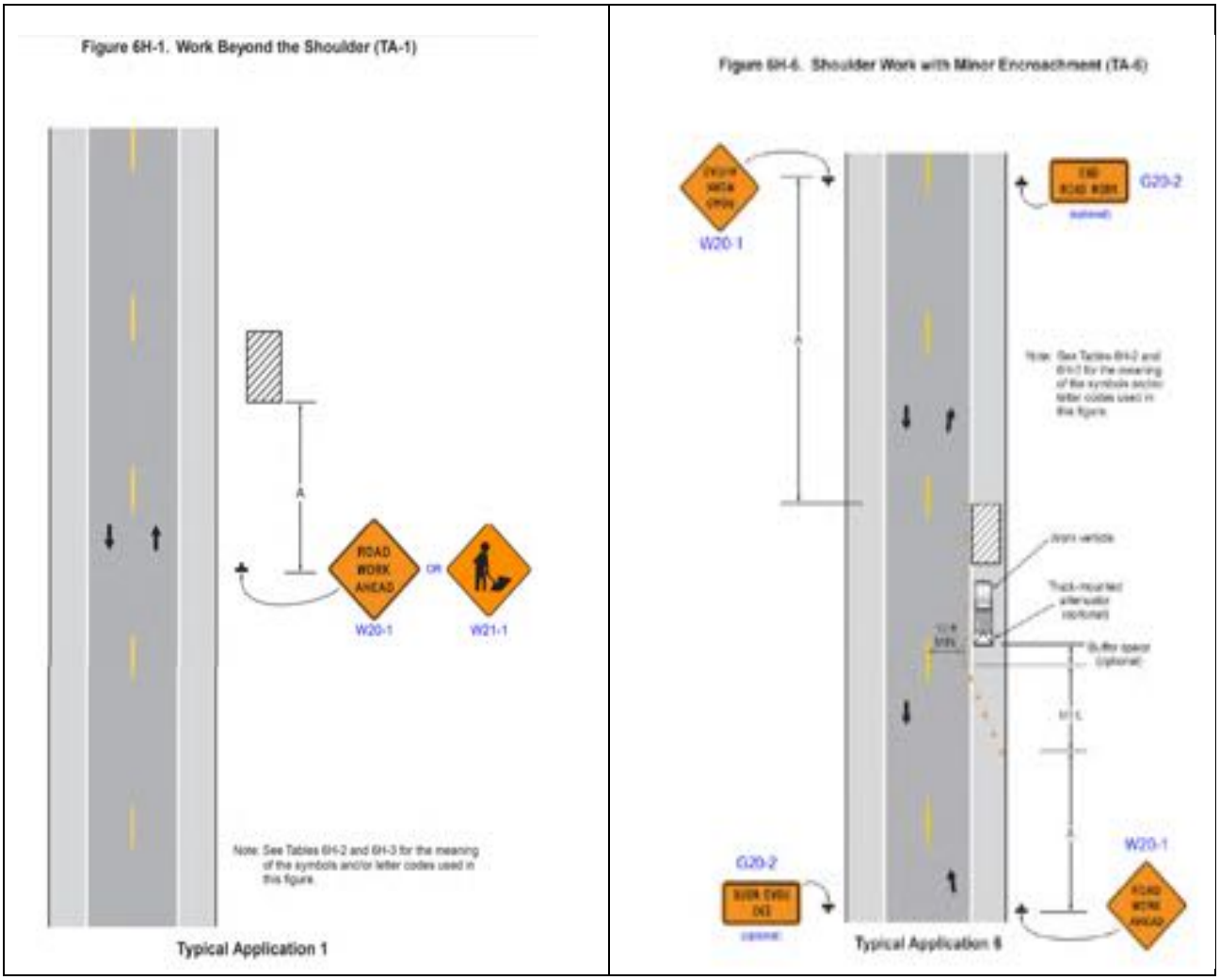
- In the unlikely event that human remains are encountered, all activities should be stopped immediately and the El Dorado County Coroner's Office should be contacted. This is in compliance with California State Health and Safety Code, Section 7050.5, which states that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to California Public Resources Code, Section 5097.98.

1.3.H Traffic Control Plan

Prior to construction activity the contractor shall submit to the District for acceptance a project specific Traffic Control Plan. The Traffic Control Plan will include signage advising road users of construction activities and right of way work in accordance with the current edition of the California Manual on Uniform Traffic Control Devices (CMUTCD), which is the version of the Federal Highway Administration's MUTCD that is amended for use in California. The contractor shall maintain the continuous flow of traffic at all times. Local traffic, in addition to emergency response vehicles, will be allowed to pass though at all times. After working hours, all traffic control devices will be removed and traffic returned to normal.

According to the CMUTCD, when construction activities Occur outside of the roadway, **Figure 3A**, Work Beyond the Shoulder (TA-1), and **Figure 3B**, Shoulder Work with Minor Encroachment (TA-6), are the most commonly used traffic control configurations that are used to allow for the free flow of traffic and ensure a safe work zone for both construction workers and the traveling public.

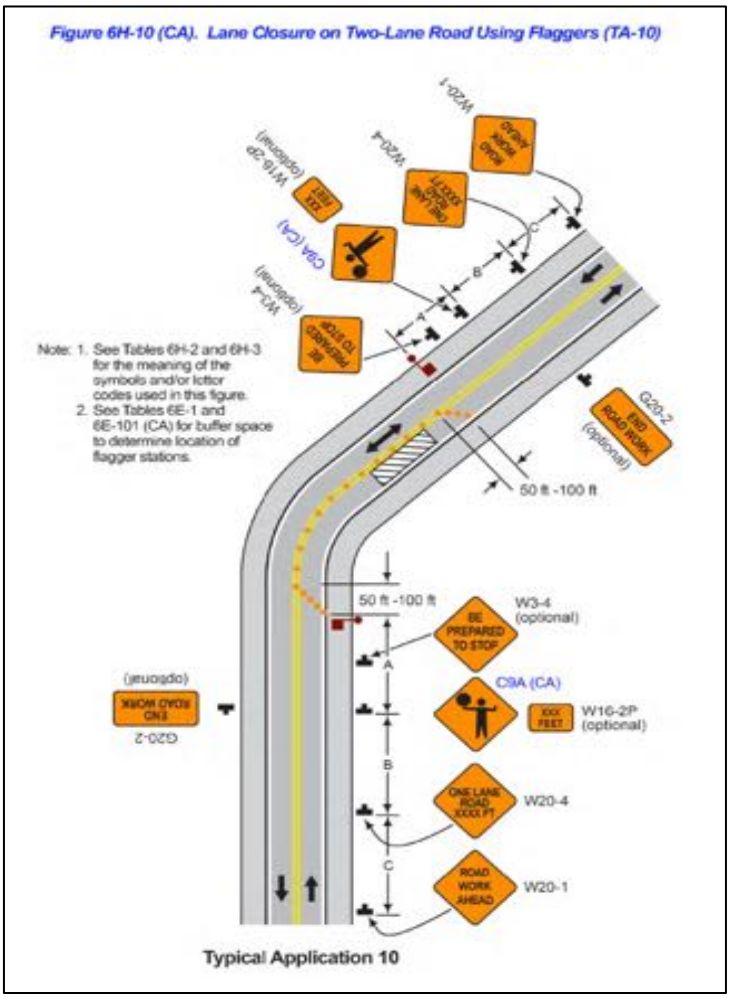
FIGURE 3A AND 3B. TRAFFIC CONTROL CONFIGURATIONS – CONSTRUCTION OUTSIDE OF ROADWAY



SOURCE: CA MUTCD

A majority of the construction for the Project will occur in or in close proximity to the roadway. The Lane Closure on Two-Lane Road Using Flaggers (TA-10) illustrated in **Figure 4** from the CA MUTCD is used for temporary lane closures. This traffic control layout allows the flaggers to maintain the continuous flow of traffic with minimal delays (less than five minutes) while maximizing both worker and public safety.

FIGURE 4. TRAFFIC CONTROL CONFIGURATION – CONSTRUCTION IN OR IN CLOSE PROXIMITY OF ROADWAY



SOURCE: CA MUTCD

1.3.I Hazard and Safety Control Plan

The District maintains a Local Hazard Mitigation Plan that satisfies federal legislation (Disaster Mitigation Act of 2000) and the California requirement for local governments to formulate and enact a pre-disaster mitigation program in order "to identify the natural hazards that impact them, to identify actions and activities to reduce any losses from those hazards, and to establish a coordinated process to take advantage of the plan, taking advantage of a wide range of resources." (44 CFR, sec. 201.1)

To ensure the protection of persons and property and to safeguard the environment the following actions, measures and BMPs will be implemented:

- Excavation on project sites from which the public is excluded will be marked or guarded in a manner appropriate to the degree of hazard.
- The District's contractor will provide suitable and adequate sanitary conveniences for the use of all persons at the site of the Work. Such conveniences will include chemical toilets or water closets and will be located at appropriate locations at the site of the Work. All sanitary conveniences will conform to the regulations of the governmental entities having jurisdiction over such matters. At the completion of the Work, all such sanitary conveniences will be removed and the site left in a sanitary condition.
- First-Aid facilities and information posters conforming, at a minimum, to the requirements of the Occupational Safety and Health Administration (OSHA) will be provided in a readily accessible location or locations.
- Construction hoists, elevators, scaffolds, stages, shoring and similar temporary facilities will be of ample size and capacity to adequately support and move the loads to which they will be subjected. Railings, enclosures, safety devices, and controls required by law or for adequate protection of life and property will be provided.
- Temporary supports will be designed with sufficient safety considerations to assure adequate load bearing capability. The District's contractor will submit design calculations by a professional registered engineer for sheeting, shoring and bracing prior to application of loads.
- The District's contractor will adequately identify and guard all hazardous areas and conditions by visual warning devices and, where necessary, physical barriers. Such devices will, at a minimum, conform to the requirements of Cal/OSHA.
- A sufficient number of fire extinguishers of the type and capacity required to protect the work and ancillary facilities will be provided in readily accessible locations.
- The District's contractor will provide labor and equipment to protect the surrounding property from fire damage resulting from construction operations.

1.3.J Migratory Bird Nest Site Protection Program

For construction activities proposed to occur during the nesting season (March 15 through August 15), and outside of paved areas, the contractor and District shall review the Project Area to identify any migratory bird nest sites that may be present. If a nest is present in the immediate vicinity, a qualified biological monitor shall be contacted to evaluate whether any migratory birds are impacted by the project. The biological monitor shall have the authority to stop construction near occupied sites if it appears to be having a negative impact on nesting migratory birds or their young. If construction must be stopped, the monitor must consult with USFWS and CDFW staff within 24 hours to determine appropriate actions to restart construction while reducing impacts to identified migratory bird nests.

1.4 PROJECT PERMITTING AND APPROVALS

For work performed within the Right-of-Way, the District is allowed access for maintenance and construction based on an annual project specific Encroachment Permit with the City of South Lake Tahoe. Each property owner/customer will be notified prior to work that may interrupt water

service for their respective property. Minor periods of water shut-off will occur during the installation process, which is anticipated to last less than four hours each day on a limited number of occasions during major project activities.

Tahoe Regional Planning Agency

The Tahoe Regional Planning Agency (TRPA) enters into agreements with local agencies to streamline the permitting process. These agreements allow local agencies to perform environmental review on projects for conformance with TRPA standards. The agreements are in the form of Memorandum of Understanding (MOU) that are signed by each partner. The District currently has a Memorandum of Understanding with the Tahoe Regional Planning Agency dated 23 March 2012. The District's MOU with TRPA is an MOU for Public Works Providers that allows for repair and maintenance of underground facilities without TRPA's review. This allows for increased efficiency and provides for increased protection of local and natural resources as agreed to in the MOU. The Memorandum of Understanding between Tahoe Regional Planning Agency and South Tahoe Public Utility District can be located here:

https://www.trpa.gov/wp-content/uploads/documents/archive/FINAL_Public_Works_MOU.pdf

Attachment A, identifying STPUD on page 5 of 9 can be found here:

https://www.trpa.gov/wp-content/uploads/documents/archive/FINAL-Public-Works-MOU-Attachment-A.pdf

The listing of Exempt and Qualified Exempt Activities can be found here:

https://www.trpa.gov/wp-content/uploads/documents/archive/FINAL_Public_Works_MOU_Attachment_B.pdf

While some components of the proposed Project include repair and maintenance activities that would be covered under the MOU, the installation of new facilities are subject to TRPA review. All construction projects, except for work that is exempt or qualified exempt, require a pre-grade inspection. The inspection is an on-site meeting between the TRPA Compliance Inspector and contractor to review the installation of construction BMPs, go over permit conditions, and discuss general construction practices. Information on public service projects can be found here:

https://www.trpa.gov/applications-forms/#public

The standard information and application packet for public service projects can be found here:

https://www.trpa.gov/wp-content/uploads/documents/archive/2/Public_Service_Application.pdf

The TRPA findings document for public services can be found here:

https://www.trpa.gov/wp-content/uploads/documents/archive/PUBLIC-SERVICE-FINDINGS-DOCUMENT.pdf

Encroachment Permits

The District must apply for a Right-of-Way Encroachment, Excavation and Grading Permit from the El Dorado County. The Department of Transportation will issue the permit after review and

will require a BMP Plan and Traffic Control Plan to be implemented at all times during construction.

Water Quality Control Board

The Municipal Storm Water Program regulates storm water discharges from municipal separate storm sewer systems (MS4s) throughout California. The Phase II Permit Program serves municipalities with less than 100,000 customers. The State Water Resources Control Board (State Water Board) and Regional Water Quality Control Boards (Lahontan for this region) implement and enforce the Municipal Storm Water Program. The State Water Resources Control Board issued a General Permit for the Discharge of Storm Water from Small MS4s (Order 2003-0005-DWQ) to provide permit coverage for smaller municipalities, The Phase II Small MS4 General Permit covers Phase II permittees statewide. On February 5, 2013 the Phase II Small MS4 General Permit was re-adopted (Order 2013-0001-DWQ) and the new requirements became effective on July 1, 2013.

1.5 ENVIRONMENTAL REVIEW

1.5.A CEQA Process

This Initial Study was prepared to support a Categorical Exemption for the Project. The Project is consistent with the exemption for Class 1 Existing Facilities per CCR Title 14, Section 15301for the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use and Class 2 Section 15302 (c) for the replacement or reconstruction of existing utility systems and/or facilities involving negligible or no expansion of capacity; and. The Project is also consistent with Class 3 New Construction or Conversion of Small Structures per CCR Title 14, Section 15303 for the construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; including d) Water main, sewage, electrical, gas, and other utility extensions, including street improvements, of reasonable length to serve such construction.

Staff will file a CEQA Notice of Exemption with the County of El Dorado and State Office of Planning and Research.

Chapter 2. Environmental Checklist

The evaluation of environmental impacts is based upon the completion of the checklist portion of the Environmental Checklist Form, and consists of the analysis of each impact issue area required under CEQA. The analysis of each checklist item identifies any significance criteria or thresholds used to evaluate each impact question, and any mitigation measure(s) identified to reduce the impact to a less-than-significant level. This section tiers from the District Wide IS as outlined in Section 1.1.E above. Only the Biological Resources, Cultural Resources, Geology, Soils Seismic/Land Coverage, and Hydrology/Water Quality sections are included herewith for discussion and analysis. All other sections from the District Wide IS (Aesthetics, Agricultural Resources, Air Quality, Greenhouse Gas Emissions, Hazards and Hazardous materials, Land Use Planning, Mineral Resources, Noise, Population/Housing, Public Service, Recreation, Transportation/Traffic, Utilities/Service Systems) have remained unchanged and are referenced herewith (Sierra Ecotone Solutions LLC 2021) in this tiered document.

This checklist identifies physical, biological, social and economic factors that might be affected by the Project. In some cases, background studies performed in connection with the Project indicate no impacts. A “No Impact” answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts.

2.1 BIOLOGICAL RESOURCES (STREAM ENVIRONMENT ZONES, WETLANDS, WILDLIFE AND VEGETATION)

2.4.A Environmental and Regulatory Settings

The Tahoe Basin contains a broad diversity of montane vegetation associations. The current distribution of conifer forest associations and other vegetation associations within the Basin is determined largely by the local physical environment. Vegetation associations range from grassland and montane riparian associations to Jeffrey pine and alpine dwarf shrub. The Basin also contains a number of special-status and rare plant species, including threatened and endangered species. These species are protected through TRPA, Endangered Species Act of 1973 (ESA), California Endangered Species Act (CESA), California Department of Fish and Wildlife (CDFW), and/or the California Native Plant Society (CNPS). Land use or activity restrictions occur in areas inhabited by these species.

The Tahoe Basin provides habitat for over 250 species of resident and migratory vertebrate wildlife species including mammals (64), birds (168), and reptiles and amphibians (23). The quality and size of these species’ habitats generally determine the abundance of any one species or animal population. The Basin also contains a number of

special-status wildlife, including threatened and endangered species. These species are protected through TRPA, ESA, CESA, and/or CDFW.

The proposed waterlines and facilities are located within the El Dorado County Right-of-Way along Pioneer Trail or immediately adjacent The proposed Project locations contain existing disturbance in the form of road shoulder, road base, and pavement. The Project Area includes residential neighborhoods and National Forest land

Database Searches - The California Natural Diversity Data Base (CNDDB; accessed 28 June 2022) and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (accessed 28 June 2022) were searched and reviewed in order to identify sensitive species and habitats that may be within the Project Area. In addition, a species list was generated for the Project Area by the US Fish and Wildlife Service Information for Planning and Consultation (USFWS IPaC https://ecos.fws.gov/ipac/ letter dated 28 June 2022).

Species Occurrences - A one-mile buffer surrounding the Project Area was searched for recorded occurrences in the BIOS database (CNDDB 2022). A CNDDB occurrence report was generated for the South Lake Tahoe 7.5 Minute Quadrangle. The species lists generated in these database searches and the USFWS letter are included in Chapter 6 (Appendices) of this document.

The USFWS identified 5 species as having the potential to exist within the Project Area: Sierra Nevada red fox (*Vulpes vulpes necator*), Sierra Nevada yellow-legged frog (SNYLF; *Rana sierrae*), Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*), monarch butterfly (*Danaus plexippus*) and North American wolverine (*Gulo gulo lucus).* The CNDDB list identified one additional special status wildlife species: willow flycatcher *Empidonax traillii*) and one California endangered plant (Tahoe yellowcress, *Rorippa subumbellata*) (CDFW 2022). **Figure 5** shows the known occurrences of sensitive species identified within the 1-mile buffer of the Project Area grouped by taxonomic categories. **Figure 6** shows the known occurrences and habitat of SNYLF. **Figure 7** identifies stream environment zones (SEZ) located near the Project Area that is a TRPA GIS layer based on mapping by Bailey (1974).

Table 2.4-1 identifies the 6 wildlife species with the potential to occur in the Project Area based on the database searches described above. **Table 2.4-2** identifies the 11 plant species with the potential to occur in the Project Area (HP = Habitat Present, SP = Species Present).

TABLE 2.4-1

WILDLIFE SPECIES OF CONCERN

Species	Status	Habitat	HP	SP	Comments
Fish:					
Oncorhynchus clarkii henshawi Lahontan cutthroat trout	Federally Threatened TRPA Special Interest Species	Historically occurred in all accessible cold waters of the Lahontan Basin in a wide variety of water temps and conditions. Gravel riffles in streams required for breeding. Other salmonids are not tolerated.	No	No	Angora Creek is not known to support LCT. Work will be performed in the road right-of-way and will not impact Angora Creek, which passes under the Project Area through a culvert.
Invertebrates:					

TABLE 2.4-1

WILDLIFE SPECIES OF CONCERN

Species	Status	Habitat	HP	SP	Comments
Danaus plexippus monarch butterfly	Federal Candidate	During breeding and migration, adult monarch butterflies require a diversity of blooming nectar resources. Healthy and abundant milkweeds (Asclepias spp.) are required for both oviposition and larval feeding. Many monarchs use a variety of roosting trees along the fall migration route (USFWS 2020).	Yes	No	Two species of milkweed are known to occur in the LTB, but only one (*A. speciosus*) occurs in wetland areas. Monarchs could potentially pass through the project area. However, work will be performed in the road right-of-way and will not impact any milkweed or flowering plants.
Wildlife:					
Empidonax traillii willow flycatcher	California Endangered	In the central and southern Sierra Nevada, this species typically breeds in willow-dominated riparian vegetation among perennial streams in moist meadows or spring-fed or boggy areas.	No	No	There are no known flycatcher occurrences near the Project Area. Work will be performed in the road right-of-way and will not impact riparian vegetation.

TABLE 2.4-1

WILDLIFE SPECIES OF CONCERN

Species	Status	Habitat	HP	SP	Comments
Vulpes vulpes necator Sierra Nevada red fox	Federally Endangered	Sierra Nevada red fox sightings have consistently occurred in subalpine habitat at elevations ranging from 8,100 to 11,608 ft. Suitable habitat is characterized by a mosaic of high-elevation meadows, rocky areas, scrub vegetation, and conifer forest (*Tsuga mertensiana*, *Pinus albicaulus,* and *P. contorta)*. Forested areas are typically relatively open and patchy and trees may be stunted and bent (krumholtzed) by the wind and low temperatures. (USFWS 2021)	No	No	The Project Area is too low elevation and does not provide suitable habitat for this species.
Rana sierrae Sierra Nevada yellow-legged frog (SNYLF)	Federally Endangered California Threatened	The SNYLF is strongly associated with montane riparian habitats in lodgepole pine, yellow pine sugar pine, white fir whitebark pine and wet meadow vegetation types (Zeiner et al. 1988). Typically, SNYLFs prefer well illuminated, sloping banks of meadow streams, riverbanks, isolated pools, and lake borders with vegetation that is continuous to the water's edge.	Yes	No	Angora Creek passes under the Project Area through a culvert and there is wet meadow habitat present. However, there are no known SNYLF occurrences nearby. Work will be performed in the road right-of-way and will not impact potential habitat.

TABLE 2.4-1

WILDLIFE SPECIES OF CONCERN

Species	Status	Habitat	HP	SP	Comments
Gulo gulo luscus North American wolverine	Federally Proposed Threatened	Habitats used in the southern Sierra Nevada include red fir, mixed conifer, lodgepole, subalpine conifer, alpine dwarf-shrub, barren, and probably wet meadows, montane chaparral, and Jeffrey pine. (CDFG 1980)	No	No	There are no records of detections in the Lake Tahoe Basin and this species is thought to be extirpated from the vicinity. High levels of existing human presence and activity are not suitable for wolverine.

SOURCE: SIERRA ECOTONE SOLUTIONS 2022

Table 2.4-2 Plant Species of Concern								
Scientific Name	**Common Name**	**CA Rare Plant Rank**	**CESA**	**FESA**	**Blooming Period**	**Habitat**	**Micro Habitat**	**Suitable Habitat in Project Area?**
Arabis rigidissima var. demota	Carson Range rockcress	1B.2	None	None	August	Known from Trinity and Placer County and in Nevada in open, rocky areas and slopes at 7,500 ft. & above.	Found along forest edges of conifer and/or aspen stands often on north aspects.	No. The Project Area is outside the elevation range.
Asragalus austiniae	Austin's milkvetch	1B.3	None	None	Jul-Sep	Alpine fell fields, subalpine conifer forest	Ridges	No. The Project Area is outside the elevation range.
Botrychium ascendens	upswept moonwort	2B.3	None	None	Jul-Aug	On the LTBMU, this species has been found on shady streams with dense cover among incense cedar (*Calocedrus decurrens*).	Wet edges of streams.	Yes; Angora Creek provides marginal habitat with few shady areas but no cedar.
Botrychium crenulatum	scalloped moonwort	2B.2	None	None	Jun-Sep	Meadows, bogs, fens, marshes, swamps, and seeps in upper and lower montane coniferous forest from 4,100 to 10,800 ft.		Yes; Angora Creek provides wet meadow habitat.

Table 2.4-2 Plant Species of Concern								
Scientific Name	**Common Name**	**CA Rare Plant Rank**	**CESA**	**FESA**	**Blooming Period**	**Habitat**	**Micro Habitat**	**Suitable Habitat in Project Area?**
Botrychium minganense	Mingan moonwort	2B.2	None	None	Jul-Sep	Meadows, bogs, fens, marshes, swamps, and seeps in upper and lower montane coniferous forest from 5,100 to 10,300 ft.		Yes; Angora Creek provides wet meadow habitat.
Bruchia bolanderii	Bolander's bruchia moss	4.2	None	None		Occurs in disturbed areas and openings on the edges of meadows and stream banks; 5,500 to 9,200 ft.	Found on bare, slightly eroding soil where competition is minimal.	Yes; Angora Creek provides wet meadow habitat, but there is little disturbance or opening areas.
Carex limosa	Mud sedge	2B.2	None	None	June-Aug	Wetlands, bogs and fens in yellow pine and red fir forest.	In the LTBMU, this species is found only in fens.	Yes; there are known occurrences in fen habitat in Washoe SP.
Draba asterophora var. asterophora	Tahoe draba	1B.1	None	None	July-Aug	Known from the Lake Tahoe Basin on Mt. Rose, Freel Peak, Relay Peak, and Heavenly Resort at 8,000- 10,200 ft.	Rock crevices, open granite, volcanic soils on north-east slopes.	No. The Project Area is outside the elevation range.

Table 2.4-2 Plant Species of Concern								
Scientific Name	**Common Name**	**CA Rare Plant Rank**	**CESA**	**FESA**	**Blooming Period**	**Habitat**	**Micro Habitat**	**Suitable Habitat in Project Area?**
Meesia uliginosa	broad-nerved hump moss	2B.2	None	None		Bogs and fens, but also very wet meadows.	Often occurs with sphagnum moss.	Yes; there is a known occurrence in Angora meadow near the Project off View Circle drive.
Rorippa subumbellata	Tahoe yellow cress	1B.1	CE	None	May-Sep	TYC is only found on the beaches of Lake Tahoe (Stanton et. al 2015).	Optimal TYC habitat occurs in the dynamic mouths of creeks that enter Lake Tahoe.	Project area does not include Lake Tahoe.
Scutellaria galericulata	marsh skullcap	2B.2	None	None	Jun-Sep	Very wet meadows and marsh.	Found in the wettest parts of Angora meadow with *Carex utriculata*.	Yes; there are known occurrences near the Project Area and in Washoe SP.

CE: CA Endangered

Source: CNDDB; CNPS 2022

2.4.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
A) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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 wildlife nursery sites?	☐	☐	☐	☒
E) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
F) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

2.4.C Discussion

A) Less than Significant Impact

Several plant species have the potential to occur in within the Project Area based on the database searches **(Table 2.4-2)**. As shown in **Figure 5**, there are known CNDDB occurrences of 2 sensitive plants (marsh skullcap and broad-veined hump moss) mapped in Angora meadow very close to the Project Area at Lake Tahoe Blvd. There are also sensitive plants present in nearby Washoe State Parks. Known wildlife occurrences include Northern goshawk, sharp-shinned hawk, long-eared owl, and western bumble bee. **Figure 6** identifies potentially suitable Sierra Nevada yellow-legged frog (SNYLF) habitat within Angora Creek and meadow within the Project Area.

Within the Project Area, all work will occur in paved areas or areas previously disturbed immediately adjacent to paved surfaces within the Right-of-Way. Project activities for the waterline would create temporary disturbance in the El Dorado County ROW. Therefore, the proposed Project would not have any direct adverse effects on identified sensitive plant or wildlife species. The inclusion of Best Management Practices to control erosion would limit the potential for sediments to drain into Angora Creek or the adjacent meadow. Therefore, impacts to suitable habitat for SNYLF or other sensitive species would be less than significant.

The proposed project is not located in any essential fish habitat as defined by the Magnuson-Stevens Act. The closest essential fish habitat is located in the Pacific Ocean along the coast of California.

The USFWS species list (see Chapter 6) includes bird species that are protected under the Migratory Bird Treaty Act of 1918 and have potentially suitable habitat surrounding the Project Area. The Project will not result in the removal of any foraging or nesting habitat for the migratory bird species listed; however, indirect impacts to migratory bird species could result because of construction noise and activities associated with the proposed Project. To ensure no impacts to migratory bird species occurs, the Migratory Bird Nest Site Protection Program (design feature 1.3.J) is included in the project description. Through implementation of the above measure, impacts to nesting migratory bird species would be less than significant.

B) Less than Significant Impact

As shown in **Figure 7,** Stream Environment Zone (SEZ) is located within the Project area along Angora Creek and the meadow at Lake Tahoe Blvd. The SEZ mapped on Apache Ave has been developed. Construction activities are limited to within the roadway, and the inclusion of Best Management Practices to control erosion will limit the potential for sediments to drain into SEZ. Therefore, impacts to SEZs from the proposed Project would be less than significant.

C) Less than Significant Impact

The National Wetlands Inventory (USFWS) was searched for the presence of federally protected wetlands within the Project Area (the map is located in Appendix C). The map

shows two wetland polygons within the Project Area, including the freshwater emergent wetland (PEM1C-palustrine, emergent, persistent, seasonally flooded) and forested/shrub wetland (PSSC- palustrine, scrub-shrub, seasonally flooded) of Angora Creek and the meadow. Construction activities are limited to within the roadway, and the inclusion of Best Management Practices to control erosion will limit the potential for sediments to drain into wetlands within the Project Area. Therefore, there proposed Project would have a less than significant impact on existing wetlands.

D) No Impact

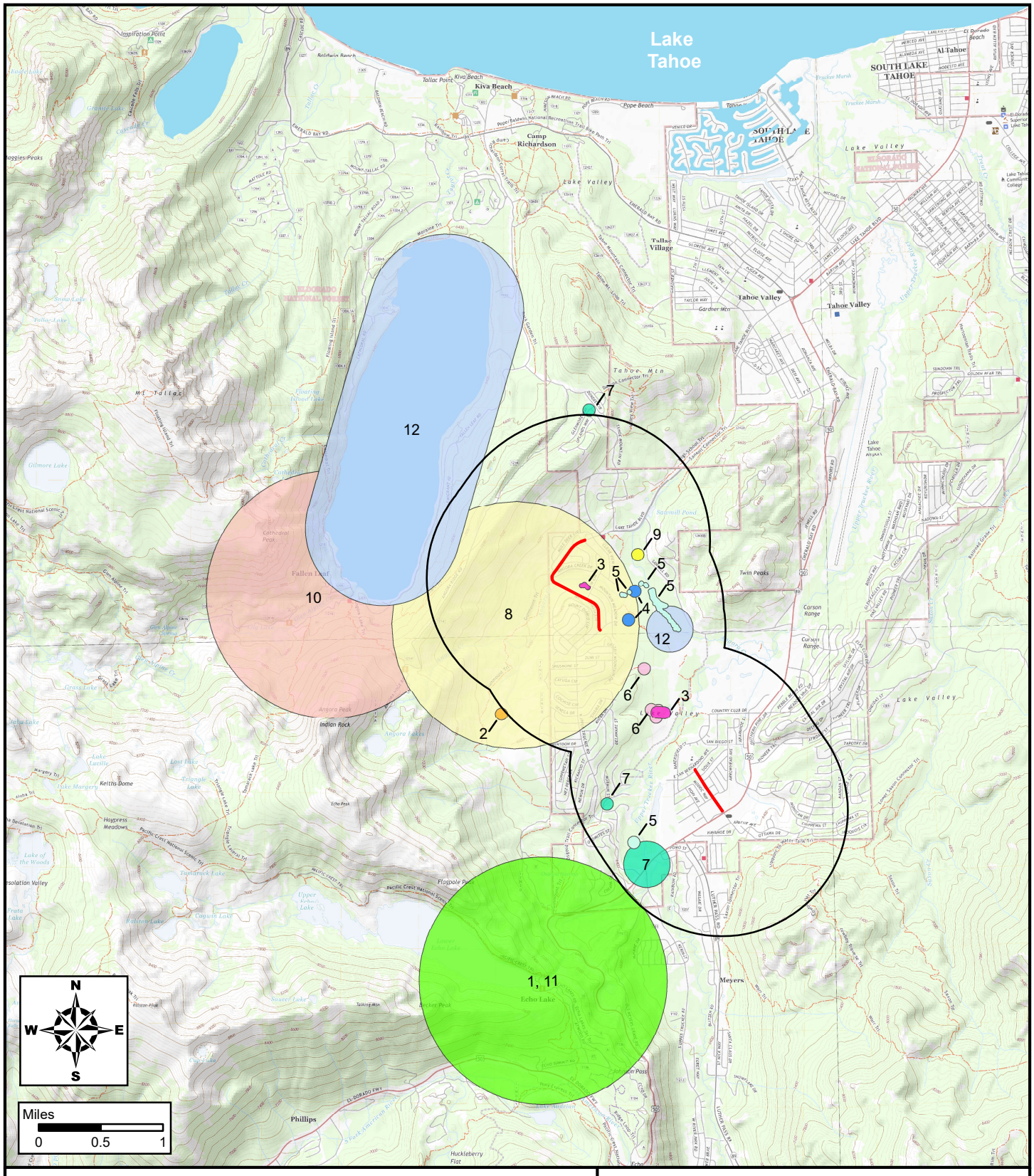
The Project will not interfere or impede the movement of any wildlife species or migratory fish species as Project components would be installed underground or in Right-of-Ways. No waterways, known migratory wildlife corridors, or wildlife nursery sites will be impeded. Therefore, there is no impact as a result of the proposed Project.

E) No Impact

The Project will not conflict with TRPA or El Dorado County policies and ordinances aimed at protecting biological resources because all Project activities will occur within the ROW and the Project components provide essential public utility services.

F) No Impact

The Project does not conflict with the provisions of an adopted Habitat Conservation Plan or Natural Community Conservation Plan, because no such plans exist for the Project Area.



Legend

- 1-mile Radius of Project
- Project Area
- broad-nerved hump moss
- American badger
- Sierra Nevada snowshoe hare
- marsh skullcap
- North American porcupine
- Sierra Nevada mountain beaver
- black-backed woodpecker
- long-eared owl
- mud sedge
- northern goshawk
- sharp-shinned hawk
- western bumble bee

Lake Tahoe Blvd & Apache Facilities Upgrade Project

Figure 5.
California Natural Diversity Database

SIERRA ECOTONE SOLUTIONS

Sources: STPUD, CNDDB, USGS. Map date: March 8, 2022

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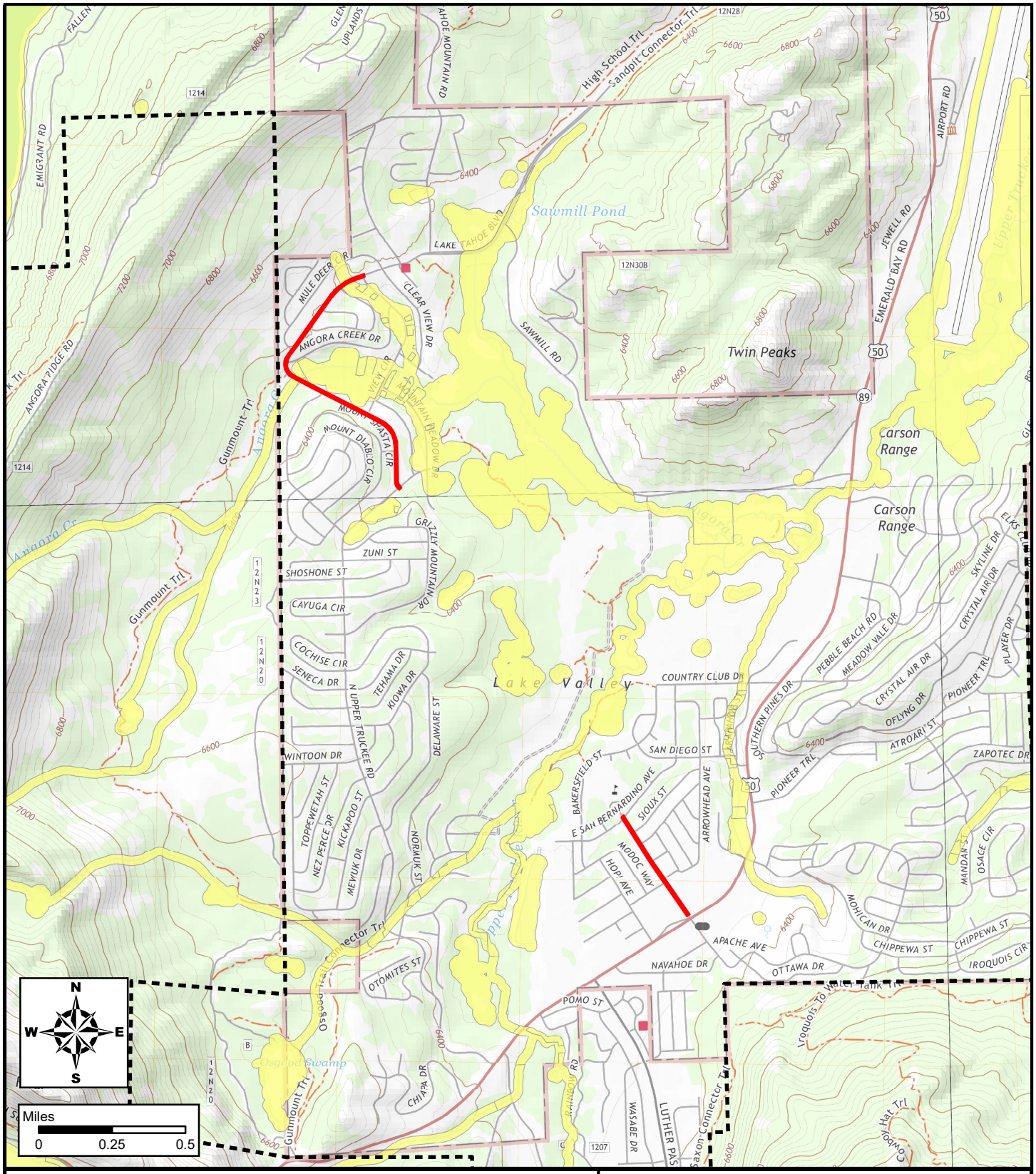

Legend

- STPUD Service Area
- Project Area
- Sierra Nevada Yellow-Legged Frog Suitable Habitat

Lake Tahoe Blvd & Apache Facilities Upgrade Project

Figure 6. Sierra Nevada Yellow-Legged Frog Habitat

SIERRA ECOTONE SOLUTIONS

Sources: STPUD, TRPA, USGS. Map date: March 8, 2022

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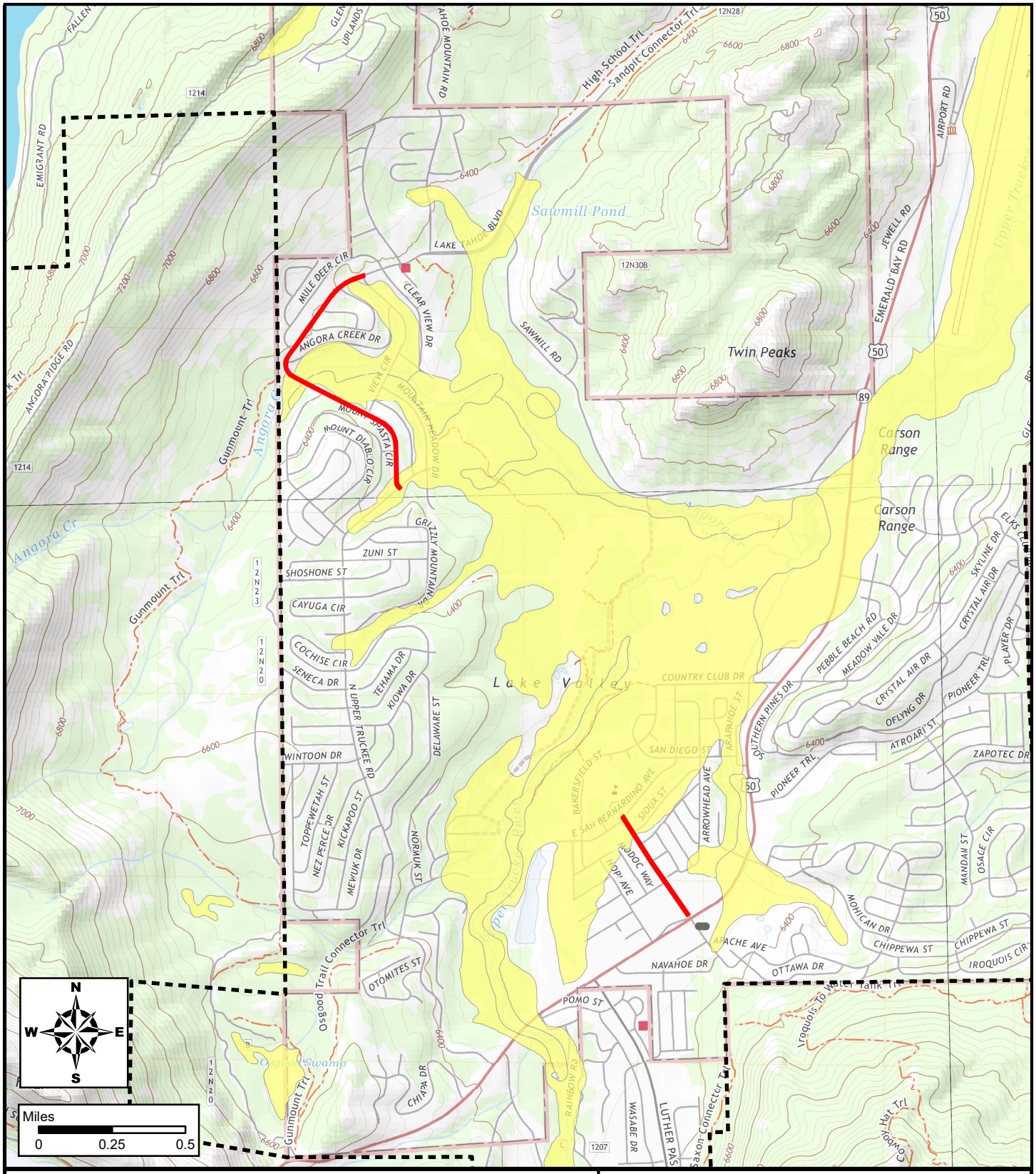

Legend

- STPUD Service Area
- Project Area
- Stream Environment Zone

Lake Tahoe Blvd & Apache Facilities Upgrade Project

Figure 7.
Stream Environment Zones

SIERRA ECOTONE SOLUTIONS

Sources: STPUD, TRPA, USGS. Map date: March 8, 2022

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2.2 CULTURAL RESOURCES

2.5.A Environmental and Regulatory Settings

The National Historic Preservation Act (NHPA) of 1966, as amended (16 USC§ 470 et seq.), is the primary federal legislation that outlines the federal government's responsibility to cultural resources. A cultural resource is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. Section 106 of the NHPA requires the federal government to take into consideration the effects of an undertaking on cultural resources listed on or eligible for inclusion in the National Register of Historic Places. Those resources that are on or eligible for inclusion on the National Register are referred to as historic properties. The Section 106 process is outlined in the federal regulations at 36 Code of Federal Regulations (CFR) Part 800. If the District utilizes federal funding for the Project, the environmental review must comply with Section 106 of the National Historic Preservation Act.

The applicable CEQA process is outlined in CEQA Guidelines Section 15060-15065. For the purposes of CEQA, significant "historical resources" and "unique archaeological resources" are defined as (Section 15064.5[a]):

1. A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4850 et seq.).
2. A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3. Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

The cultural resource report must comply with El Dorado County cultural resources guidelines under the California Environmental Quality Act (CEQA Section 5024, Public Resource Code) and Tahoe Regional Planning Agency procedures (Chapter 67 of the TRPA Code of Ordinances).

To complete the cultural study for the Project, the District contracted with Susan Lindström, Ph.D., a Consulting Archaeologist who meets the Secretary of Interior's Professional Qualifications Standards (48 FR 44738-44739). She has over four decades of professional experience in regional prehistory and history, holds a doctoral degree in anthropology/archaeology and has maintained certification by the Register of Professional

Archaeologists (RPA, former Society of Professional Archaeologists) since 1982. The tasks completed include:

- Historical and archaeological background research of the project APE;
- Review of a prior records search by the California Historical Resources Information System, North Central Information Center (NCIC) at California State University, Sacramento, and a record search of the US Forest Service cultural resource files; and
- The presentation of findings in a technical report.

The cultural contextual background for the current study (Phase 1A) draws heavily from comprehensive cultural studies conducted in 2015 and 2016 when the District embarked on a District- wide program to install water meters and fire hydrants throughout their service area. This work has now been updated in 2020 with a new records search by the North Central Information Center. This report also outlines a set of cultural resource management protocols to be implemented as part of the necessary agency permitting process.

The 2020 NCIC results disclosed that portions of the current project APE have been subject to at least one prior archaeological study, the 2020 STPUD Water Line Replacement initial study. Eleven other projects have been conducted within the 1/16-mile search area radius. No cultural resources occur have been inventoried within or adjoining the project APE.

Archaeological field surveys (Phase 1B) were performed in the project areas. An archaeological field survey was conducted by Dr. Lindström on October 15, 2021. The field survey employed a mixed archaeological reconnaissance strategy, incorporating intensive, general and cursory coverage.

No cultural resources were discovered within the project APE. Residences within the Lake Tahoe Boulevard neighborhood are modern, and construction is ongoing. Some residences over 50 years old with construction dates ca. 1960s-1970s occur within the Apache Avenue neighborhood and viewshed of the project APE, however, and they are treated as historic properties for the purposes of this project. Since these historical buildings are outside the direct project APE, they will not be physically impacted. Nor will the project introduce any indirect visual elements that will have an adverse effect on the setting or viewshed of these historic properties. Infrastructure development is part of the historic context of these residential neighborhoods and replacement of an existing buried pipeline will not alter the current neighborhood landscape character. Other potential indirect impacts associated with project activities (e.g., audible, air quality, etc.) will be temporary and limited to the duration of construction activities.

Native American outreach initiated by the STPUD involved mailed certified letters and follow-up phone calls/emails/fax. No response was received. Since the overall project may receive funding from the federal government, any additional consultation with Native

American groups would be accomplished by the appropriate federal agency and in coordination with the STPUD.

In terms federal Section 106 guidelines, the study concludes there will be no impacts to cultural resources within the direct project APE or its viewshed and a finding of "no historic properties affected" is recommended. In terms of state CEQA and regional TRPA guidelines, the project will not alter or adversely affect the physical or aesthetic properties of any cultural structure, site, feature, or object. The project will not have the potential to cause a physical change that would affect unique ethnic (including Native American) cultural values or restrict religious or sacred uses. The potential effects of this project on cultural resources are not considered to be a significant effect on the environment (Lindstrom 2021).

The archival research methods and archaeological techniques employed during this investigation have been comprehensive such that existing cultural materials in the project area visible to surface examination would have been identified. Given the project's prior subsurface disturbance, it is doubtful that intact buried cultural deposits would be present. No further study or special operational constraints need be imposed upon the project sponsor. However, consultant's statements regarding potential project impacts on cultural resources (i.e., "finding of effect") are considered provisional pending concurrence by the state reviewing agency(s) (Lindstrom 2021).

In the event of unanticipated discoveries, project activities should cease near the find and a qualified archaeologist should be consulted to evaluate the cultural resource in accordance with federal, state and TRPA guidelines. Measures to mitigate project impacts (if appropriate) should be implemented before ground-disturbing work near the resource continues. In the unlikely event that human remains are encountered, all project activities should be stopped immediately, and the County Coroner's Office should be contacted. If the remains are determined to be of Native American origin, the designated Most Likely Descendants should be notified and provide recommendations for the proper treatment of the burial remains within 24 hours (Lindstrom 2021).

2.5.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
A) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
B) Cause a substantial adverse change in the significance of an archeological resource as defined in §15064.5?	☐	☐	☒	☐

C) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

2.5.C Discussion

A) Less than Significant Impact

As reported in Lindstrom 2021, there are/are not historical resources as defined in PRC section 15064.5. The study concludes there will be no impacts to cultural resources as defined in federal Section 106 guidelines, within the direct project APE or its viewshed and a finding of “no historic properties affected” is recommended. In terms of state CEQA and regional TRPA guidelines, the project will not alter or adversely affect the physical or aesthetic properties of any cultural structure, site, feature, or object. The project will not have the potential to cause a physical change that would affect unique ethnic (including Native American) cultural values or restrict religious or sacred uses. The potential effects of this project on cultural resources are not considered to be a significant effect on the environment (Lindstrom 2021).

The Project Area has been disturbed by past road installation and associated service connections. If historic resources are discovered during installation of the project, construction activity will be immediately stopped and a qualified archeologist will be contacted. Therefore, the Project will not result in a negative impact on historical resources in the Project Area, and the impact is less than significant.

B) Less than Significant Impact

As reported in Lindstrom 2021, there are/are not archeological resources as defined in PRC section 15064.5

C) Less than Significant Impact

No known burial sites exist within the Project Area, and during prior projects performed by STPUD, no human remains were encountered. If human remains are unearthed, the El Eldorado County Coroner will be contacted in compliance with CEQA Guidelines Section 15064.5(e) and 43 CFR 10, Native American Graves Protection and Repatriation Regulations.

2.6 GEOLOGY, SOILS, SEISMIC & LAND COVERAGE

2.6.A Environmental and Regulatory Settings

The Lake Tahoe basin is bounded by the Sierra Nevada Mountain Range to the west and the Carson Mountain Range to the east and is part of the Walker Lane fault complex that includes many normal and strike-slip faults (Seitz 2015). The Lake Tahoe basin was formed by the same normal faulting that created the Basin and Range physiographic province to the east of the Tahoe Basin in Nevada. The region is seismically complex containing three major faults within the area: the West Tahoe Fault; the Stateline Fault;

and the Incline Village Fault. There are no active faults within the Project Area, but the West Tahoe Fault lies several miles to the west.

The topography of the Lake Tahoe Basin is varied with at times complex terrain and elevations ranging from 6,220 feet at lake level to 10,000 feet at Monument and Freel Peaks outside of South Lake Tahoe, California. The Project Area consists of relatively flat slopes within the El Dorado County ROW.

The Alquist-Priolo Earthquake Fault Zoning Act (1972; PRC Section 2621-2630) regulates construction in active fault corridors and prohibits the location of most types of structures intended for human occupancy across the traces of active faults. The act defines criteria for identifying active faults, giving legal support to terms such as active and inactive and establishes a process for reviewing building proposals in Earthquake Fault Zones. An active fault is one that has had surface displacement within Holocene time or the last 11,000 years, as defined by the Alquist-Priolo Earthquake Fault Zoning Act.

The Seismic Hazards Mapping Act (1990 PRC Section 2690-2699.6) directs the State Geologist to delineate "Zones of Required Investigation". A Seismic Hazard Zone is a regulatory zone that encompasses areas prone to ground failure and other earthquake-related hazards including soil liquefaction, earthquake-induced landslides, surface fault rupture, and tsunami inundation. Cities and Counties located within the zones must regulate certain projects for purposes of reducing the risk to life and property from surface fault rupture during earthquakes. The California Geological Survey produces official maps that delineate the required zones. The official maps for the Emerald Bay and Echo Lake quadrangles depict the West Tahoe Fault approximately 4 miles to the east of the Project Area. The California Earthquake Hazards Zone Application ("EQ Zapp") shows this same information (https://maps.conservation.ca.gov/cgs/EQZApp/app/; accessed December 6, 2021)

According to the California Division of Mines and Geology and California Geological Survey mapping, the District's service area overlies Quaternary period non-marine alluvium, lake, playa and terrace deposits, both unconsolidated and semi- consolidated. Results from the NRCS Web Soils Survey of the Project Area may be found in Appendix 6. (NRCS 2007; http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm, Accessed 6 August 2022). A total of six soil map units from the Tahoe Soil Survey are contained within the Project Area in the vicinity of Lake Tahoe Boulevard. The predominant soil types in the Area of Interest (AOI) include the Cagwin rock outcrop complex (5-15% slopes) and the Tahoe Complex (0-2% slopes). There are only two soil units along Apache Ave. The predominant soil type is Meeks gravelly loamy coarse sand (0-5% slopes) and the secondary type is Celio loamy coarse sand (0-5% slopes).

2.6.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
A) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
B) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
C) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
D) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
E) Have soils incapable of adequately supporting the use?	☐	☐	☐	☒

2.6.C Discussion

A i-iv) No Impact

The West Tahoe Fault stretches from Dollar Point south to Emerald Bay and then skirts the southwestern edges of both Cascade and Fallen Leaf Lakes. The Project Area is approximately 1 mile to the east of the West Tahoe Fault, as delineated on the 2016 map for the Emerald Bay Quadrangle issued by the State Geologist, (https://www.edcgov.us/government/planning/public%20notices/2016/documents/20160610_ReleaseofOfficialMapsTahoeEarthquakeFaultZones.pdf; accessed 28 June 2022.)

Although the Seismic Hazard Zones for soil liquefaction and earthquake induces landslides have not been officially evaluated for the Project Area, the Project components would be installed within the existing ROWs that are highly disturbed. Therefore, the Project would not result in exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving the i) rupture of the existing fault, ii) seismic ground shaking, iii) seismic-related ground failure, including liquefaction, or iv) landslides.

B) No Impact

The Project will not result in substantial soil erosion or the loss of topsoil because all Project components will result in temporary impacts within the existing disturbed ROW. After completion of the Project, the ROW will be re-paved. Therefore, the Project has no impact on soil erosion or topsoil.

C) Less than Significant Impact

The Project would have no impact on the potential for on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse because the Project Area within the ROW is primarily flat and no unstable soil conditions exist that would lead to these events.

D) No Impact

The Project will not be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), and therefore, would not pose substantial risks to life or property from unstable soil conditions.

E) No Impact

The Project will not require the use of new septic tanks or alternative on-site wastewater disposal systems. Therefore, no impacts from the installation and use of septic tanks or alternative wastewater disposal systems would occur as a result of the Project.

2.9 HYDROLOGY AND WATER QUALITY

2.9.A Environmental and Regulatory Settings

The Lake Tahoe watershed (USGS HUC 18100200) is 505 sq. miles (1,310 km^2) and includes the land area of the Lake Tahoe Basin in California and Nevada that drains to the lake. A total of 63 tributaries drain an area about the same size as the lake and produce half its water, with the balance entering as rain or snow falling directly on it. The Truckee River is the lake's only outlet, flowing northeast through Reno, Nevada, into Pyramid Lake. The river carries one third of the water that leaves the lake, with the balance evaporating

from the lake's surface. The flow of the Truckee River and the height of the lake are controlled by the Lake Tahoe Dam at the outlet in Tahoe City. The natural rim of the lake is at 6,223 ft. above sea level. A spillway at the dam controls overflow and allows the lake to fill with an additional 6 feet of water storage to a maximum legal limit of 6,229.1 ft.

Lake Tahoe is oligotrophic, meaning it is nutrient limited, largely because of the high proportion of nutrient poor granitic rock in the basin. This nutrient limitation is what gives the lake its famed clarity. However, the lake is becoming increasingly eutrophic (having an excessive richness of nutrients), with primary productivity increasing every year and clarity decreasing. Suspended particulate matter from urban stormwater runoff is the dominant cause of the loss of clarity. Historic clarity was around 100 feet in depth. Clarity depth in 2019 averaged only 62.7 feet. The lowest average value recorded was 60 feet in 2017. February 2020 measurements were recorded at 80 feet but averaged 62.9 feet through 2020.

The State of California Lahontan Regional Water Quality Control Board (Lahontan) is directed by the federal Clean Water Act, the Porter-Cologne Water Quality Control Act, and other federal and state laws to set water quality standards and to regulate activities in the Lahontan Region of California, which includes the California portion of the Lake Tahoe Basin. Water quality management plans are required for certain areas under Section 208 of the Clean Water Act. The Lake Tahoe (208) Water Quality Management Plan outlines water quality standards and non-point source management and control in the Lake Tahoe Basin in both the California and Nevada.

In California, Regional Water Quality Control Boards maintain Water Quality Control Plans (Basin Plans) for each major hydrologic basin within the state. Lake Tahoe is within the North Lahontan Basin which includes parts of Modoc County in the north and south to Bridgeport in Mono County. The Lahontan Basin Plan outlines water quality conditions, designates beneficial uses for water bodies, identifies water quality problems associated with human activities, and establishes water quality objectives and measures to protect beneficial uses. The Basin Plan sets forth water quality standards, waste discharge prohibitions and control measures for surface and ground waters of the entire Lahontan Region. Chapter 5 of the plan is specific to the Lake Tahoe Basin and specifies water quality standards and control measures.

The TRPA Regional Plan establishes a number of goals and policies that address water quality in the Lake Tahoe Region, as implemented through the Code of Ordinances Chapter 33, Grading and Construction, Chapter 35, Natural Hazard Standards, Chapter 36, Design Standards, and Chapter 60, Water Quality, which detail the requirements for soil and water protection, water quality controls, and BMPs. The District’s MOU with TRPA for Public Works Providers allows for repair and maintenance of underground facilities without TRPA’s review.

2.9.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
A) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
B) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
C) Substantially alter the existing drainage pattern of the area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
D) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	☐	☐	☐	☒
E) Create or contribute runoff water which would exceed the capability of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
F) Otherwise substantially degrade water quality?	☐	☐	☐	☒
G) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
H) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	☐	☐	☐	☒
I) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
J) Cause inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

2.9.C Discussion

A) Less than Significant Impact

A violation of any federal, regional or State of California water quality standards or waste discharge requirements would constitute a significant impact. Project activities are limited to the ROW within El Dorado County. Project operation would not result in direct or indirect impacts to surface water quality that would violate standards because the waterlines are located underground and the hydrants are very small structures located in the ROW.

During construction, storm water runoff could occur through existing storm water drainage systems, including curb and gutter systems and drop inlets along the road ROW. Best Management Practices (BMPs) to limit storm water runoff (1.3.D BMPs to Protect Surface and Ground Water/Sediment and Erosion Control Plan) will be installed and maintained throughout the construction period. The Project design also includes measures to limit emissions (1.3.B Construction Emission Control Plan) and control dust (1.3.C Fugitive Dust Control Plan) from construction. In addition, the Project contractor will be required to identify methods and techniques to minimize the potential for spill and implement approved containment and spill-control practices (1.3. I Hazard and Safety Control Plan spill control) during construction. Following excavation and trenching, paved areas will be returned to existing grade and repaved. Unpaved areas will be revegetated to minimize the potential for erosion from wind and surface water.

The District will require the selected contractor to comply with all federal, State, and local water quality regulations and implement specified Project design measures. Therefore, Project construction would not result in a violation of water quality standards or waste discharge requirements and the risk to water quality is less than significant.

B) No Impact

Project activities that substantially deplete groundwater supplies or interfere with aquifer recharge or existing hydrologic conditions would constitute a significant impact. The proposed Project does not involve new extraction of groundwater and would not create new or additional impervious surfaces that could significantly alter groundwater recharge. Therefore, the Project has no impact on groundwater supplies.

C) No Impact

If a project substantially alters the existing drainage pattern of an area in a manner that results in substantial erosion or siltation on or off-site, the impacts would be considered significant.

Project activities are limited to the ROW and construction will not result in new or additional disturbance outside of the ROW. Project operation would not alter existing drainage patterns or alter the course of a stream or river because the waterlines are below ground

and the hydrants are in the road shoulder Therefore, the Project will not that would result in substantial erosion or siltation on-or off-site and the Project has no impact.

D) No Impact

If a project substantially alters the existing drainage pattern of an area or alters the course of a stream or river that would result in substantial flooding on-or off-site, the impacts would be considered significant.

Project activities are limited to the ROW and construction will not result in new or additional disturbance outside of the ROW. Project operation would not alter existing drainage patterns or alter the course of a stream or river because the components are primarily below ground. Therefore, the Project would not result in substantial flooding on-or off-site and the Project has no impact.

E) Less than Significant Impact

If a project creates or contributes runoff water that would exceed the capability of existing or planned stormwater drainage systems or substantially increases polluted runoff, the impacts would be considered significant.

Storm water runoff could occur through existing storm water drainage systems, including curb and gutter systems and drop inlets along the road ROW. The Project design includes Best Management Practices (BMPs) to limit storm water runoff (1.3.D BMPs to Protect Surface and Ground Water/Sediment and Erosion Control Plan) that will be installed and maintained throughout the construction period. The District will require the selected contractor to implement specified Project design measures to limit storm water runoff during construction. Following excavation and trenching, paved areas will be returned to existing grade and repaved. Unpaved areas will be revegetated to minimize the potential for erosion from wind and surface water. Project operation would not result in storm runoff because the components are primarily below ground or are very small (fire hydrants and PRVs). Therefore, the Project would have a less than significant impact on source of polluted runoff.

F) No Impact

Project activities are limited to the ROW within El Dorado County. Other than potential storm runoff, construction activities in paved areas would not be expected to result in substantial direct or indirect other impacts that degrade water quality because Project components are below ground. Therefore, the Project would have no impact on water quality.

G) No Impact

Significant impacts may result if the Project would place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. **Figure 8** depicts the Project Area FEMA floodplains. The Project does not involve the installation of housing and therefore, no impacts to property flood risk would result.

H) No Impact

Significant impacts may result if the Project would place structures within a 100-year flood hazard area that would impede or redirect flood flows. The Project does not involve any structure that could impede flows because the pipelines are below ground surface. Therefore, no impacts to flood risk would result.

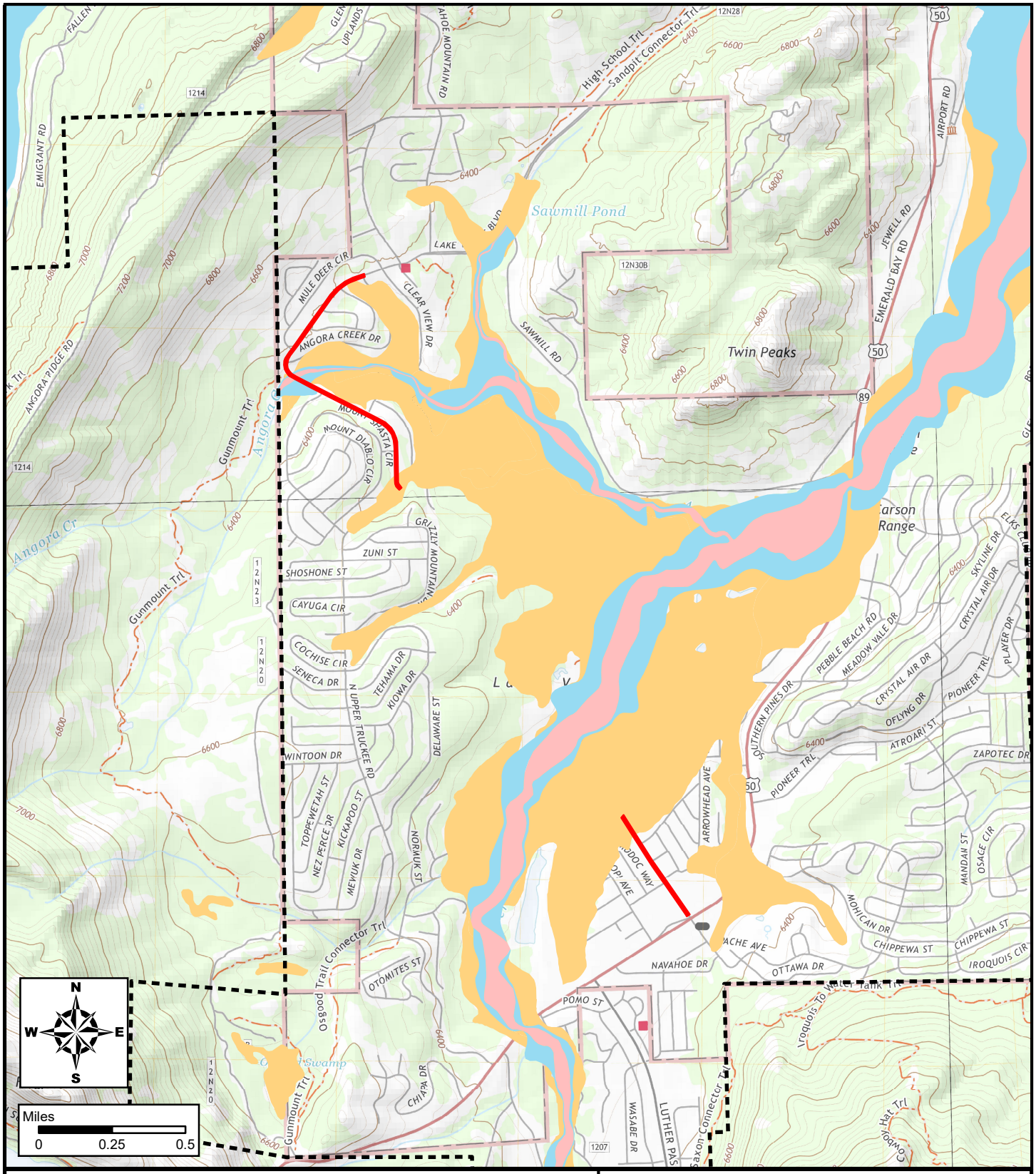
I) No Impact

A project that would expose people or structures to a new significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam, would result in significant impacts.

The installation of water pipelines would have no impact on flood risk because the Project components are located below ground or have an insignificant footprint. No Project activities would occur in the vicinity of a levee or dam. Therefore, the Project has no impact on flood risk.

J) No Impact

A Project that would cause inundation by seiche, tsunami, or mudflow would constitute a significant impact. The installation of water pipelines and fire hydrants would not increase the risk of large waves occurring on Lake Tahoe or increase the potential for mudflows because the Project components are located below ground. Therefore, the Project would have no impact on the inundation risk from these natural disasters.



Legend

- STPUD Service Area
- Project Area
- 100-year Floodplain
- 500-year Floodplain
- Regulatory Floodway

Lake Tahoe Blvd & Apache Facilities Upgrade Project

Figure 8.
FEMA Floodplains

SIERRA ECOTONE SOLUTIONS

Sources: STPUD, FEMA, USGS, TRPA. Map date: March 8, 2022

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2.18 MANDATORY FINDINGS OF SIGNIFICANCE

2.18.A Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Does the project:				
a) 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?	☐	☐	☐	☒
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☐	☒
c) Have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

2.18.B Discussion

A) No Impact

The Project is very small scale and of short duration and the construction impacts are temporary and limited to the existing ROW. The Project will not substantially degrade the quality of the environment. The Project proposal does not have the potential to degrade the quality of the environment substantially; reduce the habitat of 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.

B) No Impact

The Project will not result in impacts that are individually limited but would be cumulatively considerable when viewed in connection with the effects of past projects, the effects of other current projects and the effects of probable future projects in the vicinity of the project site. Other projects may occur in City of South Lake Tahoe and El Dorado County; however, impacts would not be cumulatively considerable when evaluated in the context of the proposed Project's negligible environmental effects and the short duration of construction activities within the ROW.

C) No Impact

The Project will not result in environmental effects, that will cause substantial adverse direct or indirect effects on human beings. The Project will result in benefits to humans through the conservation of water resources, reduced energy consumption, hazard mitigation, and improved water supply for firefighting and suppression.

Chapter 3. Determination

CEQA Determination

On the basis of the evaluation presented in this document, the South Tahoe Public Utility District concludes that:

X The proposed project is exempt from CEQA pursuant to the general exemption, a statutory exemption, and/or a categorical exemption. If the project is categorically exempt, none of the exceptions to the exemption apply. A NOTICE OF EXEMPTION will be prepared.

____ On the basis of the Initial Study, there is no substantial evidence that the project will have a significant effect on the environment. A NEGATIVE DECLARATION will be prepared.

____ On the basis of the Initial Study and implementation of all proposed mitigation measures, there is no substantial evidence that the project as mitigated may have a significant effect on the environment. A MITIGATED NEGATIVE DECLARATION will be prepared.

____ There is substantial evidence that the project may result in a significant environmental impact. An ENVIRONMENTAL IMPACT REPORT will be prepared.

Chapter 4 List of Preparers

Garth Alling – Principal, Sierra Ecotone Solutions LLC

Alison E Stanton – Sierra Ecotone Solutions LLC

Aaron Souza – 3dfx Design

Adrian Combes – South Tahoe Public Utility District

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Chapter 6. Appendices

Appendix A: Relevant Plan and Specification Sheets


N
South Tahoe Public Utility District
Waterline Replacement Projects
SOUTH TAHOE
Sewer · 1950 · Water
PUBLIC UTILITY DISTRICT
Apache Ave
Arrowhead Ave
Pueblo St
Washoe St
Hopi Ave
Emerald Bay Rd
0
150
300
600
Feet
Apache Waterline
Map Created 7/16/2021


N
South Tahoe Public Utility District
Waterline Replacement Projects
SOUTH TAHOE
Sewer · 1950 · Water
PUBLIC UTILITY DISTRICT
0
500
1,000
2,000
Feet
Pioneer Trail Waterline
Map Created 7/16/2021

Appendix B: STPUD – TRPA Memorandum of Understanding

TAHOE REGIONAL PLANNING AGENCY

Mail
PO Box 5310
Stateline, NV 89449-5310

Location
128 Market Street
Stateline, NV 89449

Contact
Phone: 775-588-4547
Fax: 775-588-4527
www.trpa.org

MEMORANDUM OF UNDERSTANDING
for
PUBLIC WORKS PROVIDERS

This Memorandum of Understanding (MOU) is entered between the Tahoe Regional Planning Agency (TRPA) and the public works provider(s) listed in Attachment "A," herein referred to as "MOU Partner." TRPA's authority to enter into this MOU with local governmental authorities rests in Article VI (m) of the TRPA Compact (Public Law 96-551) and Section 2.6 of the TRPA Code of Ordinances ("Code"). The authority of the MOU Partner to enter into this MOU is described in Attachment "A." This MOU shall become part of the TRPA Code under Section 2.6 upon signing by TRPA and the MOU Partner.

PART 1 – GENERAL PROVISIONS

COMMON OBJECTIVES	TRPA and the MOU Partner (the "Parties) have a common objective to wisely use and conserve the waters and resources in the Lake Tahoe Region, and enhance the effectiveness of government through the efficient implementation of the TRPA Regional Plan.
TERM OF AGREEMENT	This MOU is effective upon the signing of Attachment "A" by the Parties and shall remain in effect until terminated by either party following a 60-day notice in writing.
DEFINITION OF TERMS	Terms in this MOU shall be defined in accordance with the TRPA Code.
INTERPRETATION AND SEVERABILITY	The provisions of this MOU are subject to the interpretation and severability provisions of Section 1.6 of the TRPA Code.
DISTRIBUTION OF FUNCTIONS	Activities authorized by TRPA under this MOU are described in Attachment B (Table of Exempt (E) and Qualified Exempt (QE) Activities). These activities are designated as either "Exempt" or "Qualified Exempt." Attachment B modifies the scope of Exempt and Qualified Exempt activities otherwise allowed in Section 2.3 of the TRPA Code. Activities that are not Exempt or Qualified Exempt are subject to the project review requirements of Section 2.2 of the Code and are subject to TRPA review and approval.
LOSS OF EXEMPTION	Any "exempt" or "qualified exempt" activity set forth herein shall be considered a "project" outside the scope and authorities granted under this MOU if the TRPA Executive Director, or his/her designee, determines that the activity may have a substantial effect on natural resources in the TRPA Region as defined in the TRPA Code.

COMMUNICATION	The Parties shall each designate a liaison for direct communication of matters related to this MOU. The MOU Partner liaison and the TRPA MOU Coordinator shall meet at least once per year to review this MOU and to establish policy directives, training needs, and renew communications.
TRAINING	TRPA shall provide initial training to the MOU Partner regarding the provisions of this MOU. Subsequent training shall be provided for matters affecting this MOU, including but not limited to: changes to the TRPA Code or other provisions of the Regional Plan; policy or procedural changes; and training needed for corrective actions or to clarify MOU provisions.
EXAMINATION OF RECORDS	Every record of activity under this MOU shall be open for examination in accordance with Article VI (o) of the TRPA Compact.
PROCEDURES FOR RESOLVING DISPUTES	In the event of a dispute, difference of interpretation, or appeal of a decision regarding the terms or conditions of this MOU, settlement shall first be pursued by the MOU liaisons, and if the liaisons are unable to resolve the dispute then by the executive officers of the Parties. If the executive officers are unable to resolve a dispute, the TRPA Executive Director may terminate the MOU or recommend that the matter be heard by the TRPA Governing Board.
EMERGENCIES	TRPA may issue an emergency permit for a situation or circumstance which poses immediate danger to life, property or the environment and demands immediate action in order to comply with the Compact, Regional Plan, Code and/or Rules of Procedure. Emergency permit requests may be made by letter, if time allows, or by telephone or in person, if time does not allow. Requests shall include a description of the nature and location of the emergency and the work to be performed. Upon TRPA determination that an emergency does exist, initial permit approval may be given orally. In the event an emergency exists and the TRPA offices are closed, or a means of communication is not readily available, the MOU Partner may proceed to take necessary action while diligently continuing to contact TRPA.
ENVIRONMENTAL DOCUMENTATION	The MOU Partner shall certify that a Qualified Exempt Activity allowed under this MOU shall not have a negative impact on the environment by completing a TRPA Initial Environmental Checklist (IEC) for the activity. Activities requiring a TRPA Environmental Assessment (EA) or Environmental Impact Statement (EIS) are not covered by this MOU.
RECORD KEEPING AND REPORTING	The MOU Partner shall keep records of Exempt activities commenced pursuant to this MOU for a period of thirteen months following the cessation of the activity. The MOU Partner shall also report Qualified Exempt (QE) activities to the TRPA MOU Coordinator on a TRPA reporting form at least three business days prior to commencement of the activity. Activities allowed under this MOU may be subject to an annual audit by TRPA.

AMENDMENT	This MOU may be amended from time to time by mutual agreement of the Parties in writing. Proposed amendments shall be presented to the liaisons (for approval by their respective agencies) as soon as possible to facilitate timely consideration of proposed amendments.
ASSIGNMENT	None of the authorities, duties or responsibilities set forth in this MOU shall be assigned, transferred or subcontracted to a party other than that named in Attachment A, without written consent by TRPA.

PART 2 – PERFORMANCE STANDARDS

The following standards shall apply to activities authorized under this MOU. The Parties shall consult with each other regarding any uncertainties about these standards. Alternative standards may be approved by the TRPA MOU Coordinator when the results are determined to be equal or superior to these standards.

GENERAL STANDARDS

1. Project Area

   Project area shall be calculated for Qualified Exempt activities in accordance with Subparagraph 30.4.1.C.2 of the TRPA Code. Project areas shall not overlap except for activities that do not involve land coverage or land use.

2. Land Coverage

   The following land coverage calculations shall be made for Qualified Exempt activities subject to the land coverage provisions of Chapter 30 of the TRPA Code:

   - Project Area
   - Allowable land coverage by project area and land capability district
   - Existing land coverage by project area and land capability district
   - Existing excess land coverage by project area and land capability district
   - Relocated land coverage by project area and land capability district
   - New land coverage by project area and land capability district
   - Transferred land coverage by project area and land capability district

3. Findings

   The MOU Partner shall keep, as part of their Exempt Activity records, all written findings required in the TRPA Code for the activities allowed under this MOU.

4. Work in State and Federal Highways

Activities requiring the closure of a traffic lane or intersection of a state or federal highway for more than one hour, or the closure of U.S. Highway 50 at any point between the South Wye and Kingsbury Grade for any period of time are not exempt under this MOU.

CONSTRUCTION AND GRADING STANDARDS

1. Sediment and Erosion Control

Appropriate measures shall be taken to control sediment and prevent erosion from graded or unstable ground. Erosion control structures shall be installed and maintained in an operable condition for ground disturbing activities. Sediment and erosion control measures shall, at minimum, conform to the following provisions of the TRPA Code of Ordinances:

- Chapter 33, Grading and Construction
- Section 60.1, Water Quality Control
- Section 60.3, Source Water Protection
- Section 60.4 , Best Management Practice Requirements

Erosion control structures shall be installed before activities commence and shall remain in place until disturbed sites are stabilized or winterized (see Subparagraph 33.3.1D of the TRPA Code for winterization requirements). Erosion control measures shall include revegetation with TRPA approved plant species and soil mulching with composted organic materials when necessary to increase soil moisture holding capacity of soils. Revegetated areas shall be protected from future disturbance and irrigated as necessary to ensure plant growth during the first growing season.

2. Vegetation Protection

Vegetation within, or adjacent to, construction areas shall be protected in accordance with Chapter 61 and other applicable provisions of the TRPA Code. All trees and native vegetation to remain on or adjacent to a construction site shall be fenced for protection in accordance with all applicable provisions of the TRPA Regional Plan, including but not limited to Section 33.8 of the TRPA Code. No equipment shall enter into, and no materials shall be placed within, areas protected by fencing.

3. Dust Control

Appropriate measures shall be taken to prevent the transport of fugitive dust from ground disturbing activities in accordance with all applicable provisions of the TRPA Regional Plan, including but not limited to Subsection 33.3.3 of the TRPA Code. These measures shall be employed when activities commence and shall continue until disturbed sites are stabilized.

4. Noise and Hours of Operation

Construction, maintenance, and demolition activities creating noise in excess of the TRPA single event noise or community noise level standards in Section 68.9 of the TRPA Code shall be considered exempt provided that such work is conducted between the hours of 8:00 a.m. and 6:30 p.m. Emergency work to protect life or property is also exempt from the TRPA noise standards.

MEMORANDUM OF UNDERSTANDING
for
PUBLIC WORKS PROVIDERS

ATTACHMENT "A"

Between Tahoe Regional Planning Agency
and South Tahoe Public Utility District

TRPA's authority to enter into this Memorandum of Understanding (MOU) with local entities rests in Article VI (m) of the TRPA Compact (Public Law 96-551) and Section 2.6 of the TRPA Code of Ordinances. The authority of the MOU Partner to enter into this MOU rests in Section 9g the Public Utility District Act of 1921.

This MOU shall become effective when signed by the parties listed below.

TAHOE REGIONAL PLANNING AGENCY

Date: 3/6/2012

By: Joanne Marchetta
Executive Director

SOUTH TAHOE PUBLIC UTILITY DISTRICT

Date: 3/23/2012

By: Richard Solbrig
District Manager

MEMORANDUM OF UNDERSTANDING

for

PUBLIC UTILITY DISTRICTS

ATTACHMENT "B"

Table of Exempt (E) and Qualified Exempt (QE) Activities

Note: The activities described in this table expand upon the Exempt (E) and Qualified Exempt (QE) activities otherwise allowed in Subsection 2.3 and Subparagraph 2.3.7 of the TRPA Code of Ordinances, provided the activities are consistent with Part 1 (General Provisions) and Part 2 (Performance Standards) of this Memorandum of Understanding.

Line No.	Activity Level	Activity
		Roadways, Trails, Sidewalks & Parking Facilities
1	E	**Routine non-structural maintenance** provided the activities do not modify the shape or location of the facility, create or relocate land coverage, add new structural appurtenances or modify existing drainage.
2	E	**Structural maintenance, repair and replacement** of existing facilities (such as pavement, curb and gutter, compacted shoulders, culverts, pipes, vaults, and similar structures), provided no new land coverage is created and any relocated land coverage and/or disturbance is limited to 120 square feet in low capability land (Classes 1a, 1b, 1c, 2, and 3) and 500 square feet in high capability land (Classes 4, 5, 6 and 7).
3	E	**Installation of vehicle barriers** (such as bollards, fencing and boulders) along travel ways provided the barriers conform to applicable highway standards and boulders are placed partially in the ground to prevent rolling and to give a natural appearance.
4	QE	**Modifications** to existing facilities to improve public safety and/or environmental protection provided any new or relocated land coverage or disturbance is limited to 240 square feet in low capability land (Classes 1a, 1b, 1c, 2, and 3) and 1,000 square feet in high capability land (Classes 4, 5, 6 and 7).

		Erosion Control & Water Quality Protection Facilities
5	E	**Routine non-structural maintenance** of existing storm water treatment facilities (such as dry wells, infiltration trenches, drop inlets, and vaults), including removal of sediment, vegetative overgrowth and organic material, without limit on material volume or land capability, provided removed materials are deposited outside of the Tahoe Basin or at a TRPA-approved disposal site.
6	E	**Structural maintenance, repair, and in-kind replacement** of existing facilities, provided no new land coverage is created and relocated land coverage or disturbance is limited to 120 square feet in low capability land (Classes 1a, 1b, 1c, 2, and 3)and 500 square feet in high capability land (Classes 4, 5, 6 and 7).
7	QE	**Modifications to existing facilities** to improve effectiveness, meet new regulatory standards, or correct system inefficiencies, provided new structures such as rock slope protection and retaining walls are not visible from any TRPA-designated scenic roadway or shorezone travel unit, Class I bicycle paths, or recreation areas designated in the TRPA Scenic Quality Improvement Program (SQIP).
		Water Distribution and Wastewater Collection & Treatment Facilities
8	E	**Testing, locating, and maintenance** of existing facilities (such as mechanical and electrical equipment, piping and plumbing, pumps and similar devices).
9	E	**Structural maintenance, repair, in-kind replacement** of facilities, provided excavation is limited to areas under existing pavement, road shoulder, or compacted soil; no new land coverage is created, and relocated land coverage or disturbance is limited to 120 square feet in low capability land (Classes 1a, 1b, 1c, 2, and 3) and 500 square feet in high capability land (Classes 4, 5, 6 and 7).
10	QE	**Modifications to existing facilities** provided the modifications do not result in any increases in water or sewer treatment capacity or growth inducing activity, and any new or relocated land coverage or disturbance is limited to 240 square feet in low capability land (Classes 1a, 1b, 1c, 2 or 3) and 1,000 square feet in high capability land (Classes 4, 5, 6 and 7).
		Public Service and Recreation Buildings
11	E	**Interior remodeling** of existing buildings in accordance with Subparagraph 2.3.2.A of the TRPA Code, except that the allowable structural cost of the remodel allowed is increased to $80,000.
12	E	**Demolition** of structures, improvements or facilities **less than 50 years of age** in accordance with Subparagraph 2.3.2.G of the TRPA Code, except that the excavation and backfill limits are increased to the grading limits in this MOU.
13	QE	**Demolition** of structures, improvements or facilities **greater than 50 years of age** that are not designated, or pending designation, on the TRPA Historic Resource Map in accordance with Subparagraph 2.3.7.A.6 of the TRPA Code if the MOU Partner determines that the structure does not qualify for historic protection in accordance with Chapter 67 based on a report prepared by a qualified professional acceptable to the appropriate State Historic Preservation Officer (SHPO).
		Public Service and Recreation Buildings (continued)

14	QE	**Structural repair** to existing buildings in accordance with Subparagraph 2.3.7.A of the TRPA Code, except that the structural repair cost in 2.3.7.A.1 is increased to $42,000 per year and excavation and backfilling limits in 2.3.7.A.1.a are increased to the grading limits in this MOU.
15	QE	**Structural modifications** to existing buildings in accordance with Subparagraph 2.3.7.A.2 of the TRPA Code, except that the grading limits in 2.3.7.A.2.c (i) are increased to the grading limits of this MOU.
16	QE	**Structural remodeling or additions** to existing buildings in accordance with Subparagraph 2.3.7.A.3 of the TRPA Code, except that the grading limits in 2.3.7.A.3.a (i) are increased to the limits of this MOU, and the BMP retrofit plan required in 2.3.7.A.a (b) is consistent with the requirements of this MOU.
		Vegetation Management and Soil Preparation for Vegetation Planting
17	E	**Pruning of vegetation**, including hazardous tree limb removal, beyond the limits allowed in Subparagraph 2.3.2.H of the TRPA Code to maintain adequate sight distance along roadways and other travel routes.
18	QE	**Scarification of disturbed high capability soils** (Classes 4, 5, 6 and 7) as preparation for revegetation with native plant species in accordance with Subparagraph 2.3.2.H of the TRPA Code provided the scarification is less than one acre in area and does not exceed six inches in depth.
19	QE	**Hazardous tree removal** around MOU Partner facilities in accordance with Subparagraph 61.1.7.A of the TRPA Code, except that TRPA approval is not required unless the tree was planted as a scenic mitigation measure pursuant to a TRPA permit (including permits issued by local government in accordance with Section 2.5).
		Grading (Including Grading in Combination with Other Activities)
20	E	**Excavations under existing hard land coverage** to an amount that can be backfilled, stabilized and swept clean within a 24-hour period.
21	E	**Excavations otherwise allowed in Subparagraph 2.3.2.D of the TRPA Code**, except that the volume limit of the excavation is increased to 15 cubic yards in all land capability districts.
22	QE	**Excavations otherwise allowed in Subparagraph 2.3.7.A.5 of the TRPA Code**, except that the volume limit of the excavation is increased to 50 cubic yards.

Appendix C: Biological Species Lists (CNDDB, CNPS, USFWS) and Biological Assessment and Evaluation

BIOLOGICAL EVALUATION/BIOLOGICAL ASSESSMENT

for the

South Lake Tahoe Public Utility District
Apache and Lake Tahoe Boulevard Waterline Replacement Projects

South Lake Tahoe Public Utility District

Lahontan Regional Water Quality Control Board

PREPARED BY_ DATE: 5 October 2022

Garth Alling
WILDLIFE BIOLOGIST, Sierra Ecotone Solutions LLC

I. INTRODUCTION

This Biological Evaluation (BE) and Biological Assessment (BA) has been prepared to evaluate potential effects of the South Tahoe Public Utility District (District) Apache and Lake Tahoe Boulevard Waterline Replacement Projects on animals and plants listed as threatened or endangered by the U.S. Fish and Wildlife Service (Endangered Species Act of 1973 (ESA; 16 U.S.C. § 1531 et seq.) or designated as sensitive, threatened or endangered by the State of California under the California Endangered Species Act (Fish and Game Code Sections 2050-2098) and designated as sensitive on the 2013 United States Forest Service Region 5 Sensitive Species List (USDA 2013). The Biological Evaluation (BE) portion specifically addresses whether the project may result in a loss of viability of Forest sensitive species, general wildlife species, or cause a sensitive species to trend toward federal listing. The Biological Assessment (BA) portion of this document has been prepared to document analysis of the potential direct and indirect effects of the proposed project on federally listed threatened, endangered, proposed, and candidate species known or expected to occur within the project area. This BE/BA was prepared in accordance with Appendix G of the California Environmental Quality Act (CEQA) and Forest Service Manual (FSM) direction 2672.42 and meets legal requirements set forth under section 7 of the Endangered Species Act of 1973, as amended and implementing regulations [19 U.S.C. 1536 (c, 50 CFR 402.12 (f) and 402.14 (c)].

II. PROJECT DESCRIPTION

Purpose

The South Tahoe Public Utility District (District) owns and operates the water distribution system and waste water collection and treatment system within its Service Area in the City of South Lake Tahoe (Figure 1). The District regularly conducts condition assessments of existing water facilities to identify opportunities to optimize the system to better provide reliable water services safely, efficiently and cost effectively. The Apache Avenue and Lake Tahoe Blvd Waterline Replacement Projects (Project) would replace and upgrade waterlines and install new fire hydrants to improve capacity and reliability, enhance fire protection, and provide an increased level of service within the surrounding community.

For the Apache Avenue area, the Project would replace approximately 2,100 linear feet (LF) of 4-in and 6-in asbestos-cement (AC) water main on Apache Ave from Hwy 50 to East San Bernardino. This water main replacement is elevated in priority because numerous valves along the existing waterline have failed. In addition, the main waterline at storm drain crossings needs to be relocated in order to coordinate with the County of El Dorado Complete Streets Project that is occurring in the project area.

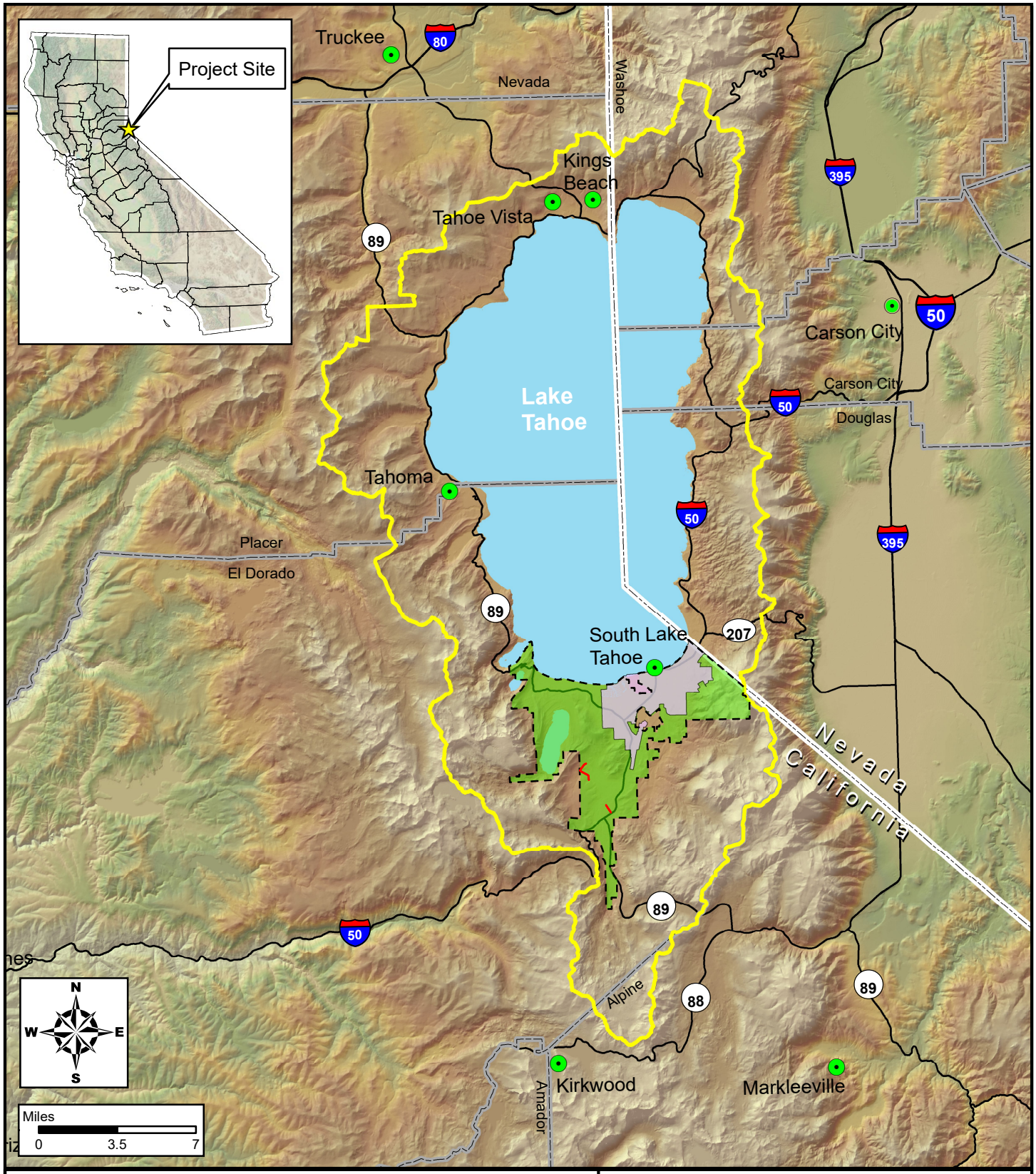
On Lake Tahoe Blvd, the Project would replace approximately 6,300 LF of existing poor condition steel waterline from North Upper Truckee Road to Boulder Mountain Drive.

Both neighborhoods are deficient in fire hydrants and the proposed project includes installation of new water services, valves and fire hydrants spaced at approximately 500- foot spacing. The

hydrants are necessary to meet fire standards that require developed properties to be no more than 250 feet from a fire hydrant and undeveloped properties to be no more than 500 feet from a fire hydrant.
The Project Area is located in two neighborhoods; Apache Avenue is one of the main streets that crosses Highway 50 within the unincorporated community of Meyers and Lake Tahoe Blvd begins at North Upper Truckee Road within the City of South Lake Tahoe (Figure 2).

Location

The Project is located within the District's Service Area in the City of South Lake Tahoe and the unincorporated community of Meyers (Figure 1). The Project Area is located in two neighborhoods; Lake Tahoe Blvd begins at North Upper Truckee Road within the City of South Lake Tahoe and Apache Avenue is Avenue is one of the main streets that crosses Highway 50 within the unincorporated community of Meyers (Figure 2).
The Project Area is contained within the South Lake Tahoe United State Geological Society (USGS) 7.5 Minute Quadrangle Topographic Map and occurs within Township 12N Range 18E, Section 29 and Township 12N Range 18E in Section 2 on the Mt Diablo Meridian.



Legend

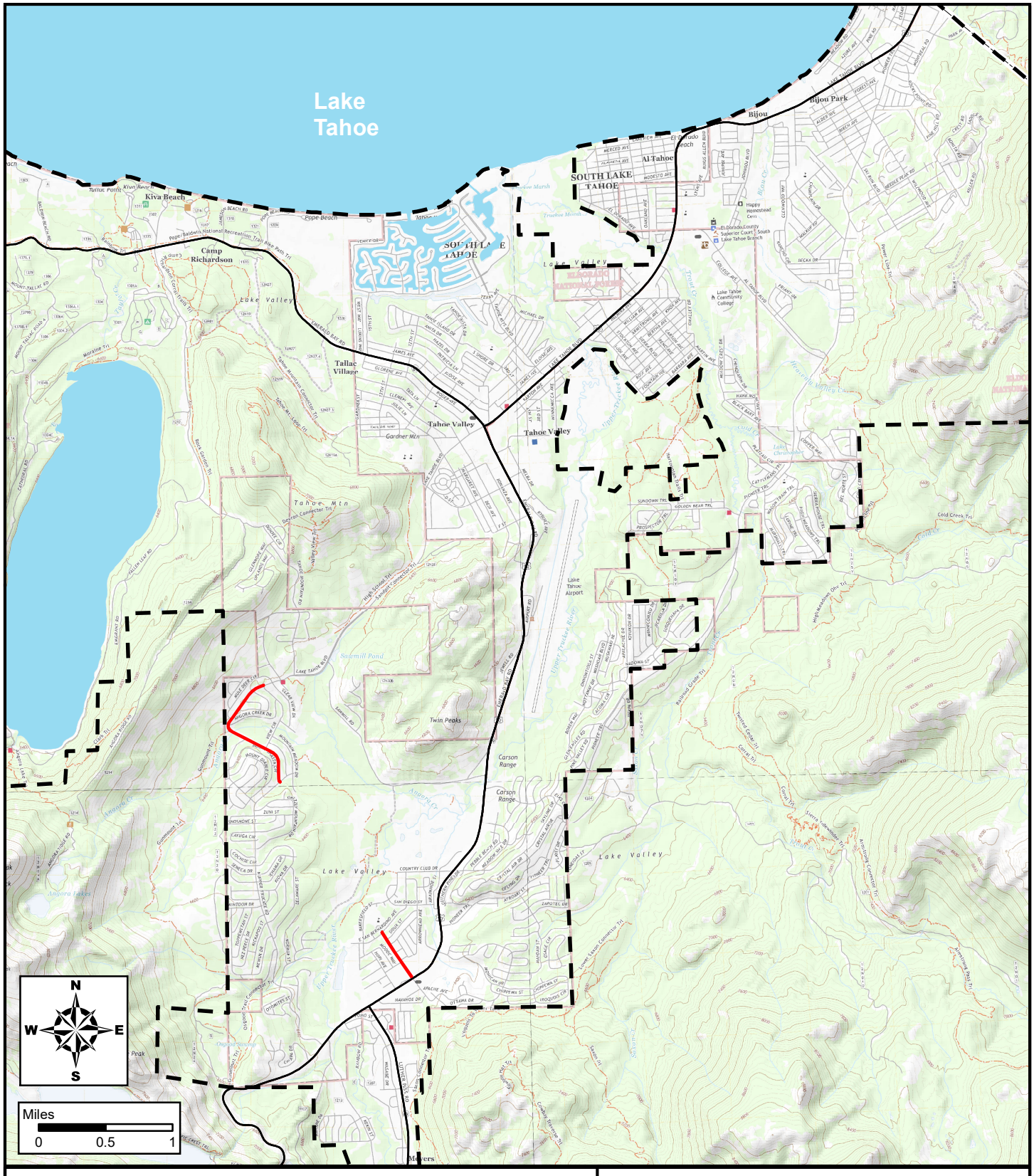
- STPUD Service Area
- Project Area
- City of South Lake Tahoe
- TRPA Boundary
- State Boundry
- County Boundary

Lake Tahoe Blvd & Apache Facilities Upgrade Project

Figure 1.
Project Vicinity

SIERRA ECOTONE SOLUTIONS

Sources: STPUD, TRPA, USGS. Map date: March 8, 2022



Legend

- STPUD Service Area
- Project Area

Lake Tahoe Blvd & Apache Facilities Upgrade Project

Figure 2.
Project Area

SIERRA ECOTONE SOLUTIONS

Sources: STPUD, TRPA, USGS. Map date: March 8, 2022

Project Overview

The purpose of the Apache Avenue and Lake Tahoe Blvd Waterline Replacement Projects (Project) is to mitigate existing deficiencies within the water system to provide an increased level of service and enhanced fire protection capability. The District proposes to replace aging and small diameter water pipelines to increase water system efficiency and improve fire flows. The installation of new water services, valves and fire hydrants are necessary to meet fire standards that require developed properties to be no more than 250 feet from a fire hydrant and undeveloped properties to be no more than 500 feet from a fire hydrant. Each of these components are described in further detail below.

Project Components

Waterline Replacement

The District has conducted hydraulic capacity and condition assessments of existing waterlines, primarily based on diameter and pressure, but also age, or piping material. Existing water pipelines have been identified on Apache Avenue and Lake Tahoe Blvd that are nearing the end of their useful life (excessive leaking) and/or poor connections from the water main to the water services. The steel waterline in Lake Tahoe Blvd is in very poor condition and has excessive leaks in the recent past (N=18 in the last 12 years). The replacement of these lines would improve water supply by upsizing small diameter pipes and increase water efficiency by replacing aging pipelines that leak.

Waterlines that would be replaced include mains and service laterals. The replacement would begin with pipeline trenching and excavation within the road. A section of new mainline would be installed along with “in line” appurtenances and might include fittings (bends), tees, crosses and valves. Each completed section would be tested for leakage and disinfected. After testing, the new mainline would be tied into the existing system and the new services would be tied to the existing services at the property. The portion of the system being replaced would generally remain in service until the new system has been tied in. Then the old system would be abandoned in place. Upon completion of the install, the trenches would be backfilled and the roadway replaced. Existing guardrail and signage would be protected throughout construction along with any existing curb and gutter

In Lake Tahoe Blvd, approximately 6,300 LF of steel waterlines 8-inches in diameter would be replaced with new 8- or 12-inch waterline made of ductile iron or C900 (to be determined during design). Within Apache Avenue, approximately 2,100 LF of material? waterlines 4 to 6 inches in diameter would be replaced with new 12 inch waterline. The section of waterline begins at Highway 50 and ends at East San Bernardino Avenue. A sliver of SEZ that has been ditched is located adjacent to Apache Avenue. The historic ditch runs between the homes located on East San Bernardino and Sioux Street.

New Fire Hydrant Installation

Fire hydrants within the Service Area will be replaced as necessary. The current fire hydrants meet the spacing requirements so no new hydrants will be installed. Each hydrant would be connected to the new waterline via a 6-inch fire hydrant lateral and gate valve off of the hydrant tee.

Construction Phasing, Schedule and Equipment

Construction is planned for the Apache Avenue portion to commence in 2023 and is anticipated to occur within one TRPA grading season between May 1st to October 15th. The Lake Tahoe Boulevard portion will take place in 2025. The new fire hydrants would be installed in conjunction with the water pipeline replacement and all new components would be pressure tested and disinfected at the same time. When testing is complete, the new components would be tied in with the existing system.

The contractor shall comply with the TRPA standard conditions of approval. Construction that is not completed during the TRPA construction season for earth moving activities between May 1st and October 15th would require a TRPA Grading Season Exception. On-site work would be performed from 8 am to 6 pm Monday through Friday. Work outside these hours would be approved by the District a minimum of 48-hours before the abnormal working hours are scheduled to begin.

General construction equipment that would be utilized for waterline projects include excavator, mini-excavator, loader, water truck, service vehicles, small remote sheep's-foot compactor, vacuum truck, sweeper, milling machine, smooth drum compactor, and a paving machine. All but the paving equipment (the last 3 on the list) are used every day.

Earthwork and Excavations

Earthwork and excavations that result in temporary disturbance will be necessary for Project implementation. Excavation is defined as being 18 or more inches of depth below the existing surface. Water pipeline trenches are expected to be 3 to 5 feet wide and generally require excavations of 5 feet deep. Excavations will primarily occur within the City of South Lake Tahoe ROW. A TRPA pre-grade inspection shall be completed prior to any excavation or saw-cutting activities.

Pipeline and Utility Trenching and Excavations

The contractor shall be responsible for contacting all utility companies, local agencies and/or utility districts as to the location of all underground facilities. Location and depth of existing utilities where shown on plans are based on best available information. No guarantee is made as to the accuracy of this information or that all utilities are shown. It shall be the contractor's responsibility to locate, protect, and maintain all existing utilities. The contractor or any subcontractor for this contractor shall notify members of underground service alert 48 hours in advance of performing excavation work by calling underground service alert #811. Excavation is

defined as being 18 or more inches of depth below the existing surface.
The contractor shall pothole all utility and storm drain crossings along the pipeline alignment in advance of installation. The contractor shall report the results of the pothole in writing to the engineer 48 hours (not to include weekends or holidays) prior to undertaking any corrective action. Should any corrective work be done prior to notification, the District assumes no liability for the costs incurred for this work.
All interties between new water mains and the existing water system, including new water service connections, and fire hydrant installations and transfers, shall only be made after all pressure testing and disinfection requirements are satisfactorily met. The contractor shall be responsible to provide all blow offs necessary for flushing and sampling of all new water mains as required by the California State Water Resources Control Board and project specifications.
Where new water mains are being installed in paved sections the maximum width for asphalt replacement the contractor shall be compensated for is the maximum clear trench width for the pipeline size being installed plus twelve inches (12") in County of El Dorado right of way, twenty-four inches (24") in City of South Lake Tahoe right of way, as provided in the contract specifications. The contractor shall replace all traffic striping that is disturbed during construction.
The thickness of replacement pavement is 3 inches in the ROW as specified in the project plans. Trench pavement replacement exceeding this shall be completed at no additional expense to the District.
The contractor shall protect and be responsible for any disturbance or contamination to any dry wells, storm water collection or retainage systems including storm drain pipe, curb & gutter, valley gutters and horizontal drains through-out the project area. Any damage shall be repaired at no additional cost to District. The contractor shall not stock pile any material upon any drainage facilities. All sewer pipes damaged during the execution of the project shall be repaired per plan details.

Fill Materials and Placement

All excavations shall be backfilled or trench plated at the end of each day's work per the plan specifications. Within paved areas, trenches will be backfilled with a combination of sand, native material, Class II aggregate base and slurry. Excavations within existing paved areas shall be cold patched or covered with steel plates as required per specifications to match the existing pavement at the end of each day’s work. All trench plates shall be non- skid type and have cold patch applied to the edge for traffic approach and departure.

After the new main is placed into service, the existing water mains, where shown on the project drawings, are to be abandoned in place by cutting out a section of pipe and installing a cap or plug on the end of the pipeline. Existing fire hydrants to be abandoned will be removed and capped below grade.

Only new water service connections where shown on the project plans shall be installed per the Districts standard details and project drawings. After Project completion, the locations of all existing water services shall be verified and marked in the field.

Disposal of Excess Excavated Materials

All excess material from the project is to be removed from the site and disposed of at a site approved by the TRPA. For this Project, excess spoil may be temporarily stored at the Contractor staging area at the District Wastewater Treatment Plant. No material shall be stored in any stream environment zone or wet area. The contractor shall not stock pile any material upon any drainage facilities. Contractor shall remove all material generated by any asphalt saw cutting operation during or immediately after saw cutting by using adequately sized vacuuming equipment to accommodate the removal process.

Site Cleanup and Restoration

All disturbed areas shall be restored to match pre-existing conditions. Unimproved areas and areas not landscaped shall be revegetated with native species in accordance with the TRPA handbook of best management practices. Existing vegetation removed during construction shall be chipped and mulched on site and stored for use during revegetation. Application of a mulch may enhance vegetative establishment. Any disturbance of private property shall be restored by the contractor at their expense. All traffic striping that is disturbed during construction shall be replaced by the contractor.

Site Access, Staging Areas, and Parking

The District would likely provide a Contractor staging area at the Wastewater Treatment Facility located off of Al Tahoe Blvd. Additional staging may occur within compacted shoulder areas of Pioneer Trail if allowed by El Dorado County. Contractors' equipment and employee vehicles shall park on existing paved surfaces or existing compacted road shoulders. Contractor shall provide crushed rock in areas of temporary construction access to minimize migration of sediment.

Project Design Features and Best Management Practices

A. Best Management Practices to Protect Surface and Ground Water/Sediment and Erosion Control Plan

A pre-grade inspection shall be completed prior to any saw cutting or excavation activities. The Contractor shall comply with the State Water Resource Control Board waste water discharge requirements for the project and the City of South Lake Tahoe's encroachment permit. To ensure that potential impacts to surface water and ground water are avoided, reduced and minimized, the following measures and BMPs will be implemented as necessary based on site conditions at individual work sites:

- During construction, environmental protection devices, such as erosion control, dust control and vegetation protection devices shall be maintained at all times.

- Soil and construction material shall not be tracked off the construction site. Grading operations shall cease in the event that this condition is in danger of being violated.

- Loose soil mounds or surface shall be protection from wind or water erosion by being appropriately covered at the end of each work day or when required by TRPA.

- The contractor shall not stock pile any material upon any drainage facilities. Excavated material shall be stored upgrade from the excavated area whenever possible. No material shall be stored in any stream environment zone or wet area.

- All excess material from the project is to be removed from the site and disposed of at a site approved by the TRPA. No excess material shall be stored on site after hours. Contractor shall remove all material generated by any asphalt saw cutting operation during or immediately after saw cutting by using adequately sized vacuuming equipment to accommodate the removal process.

- No equipment or vehicles shall be placed outside the state, city, or county right of way. Contractor shall provide crushed rock in areas of temporary construction access to minimize migration of sediment.

- The contractor shall protect and be responsible for any disturbance or contamination to any dry wells, storm water collection or retainage systems including storm drain pipe, curb & gutter, valley gutters and horizontal drains throughout the project area. Any damage shall be repaired at no additional cost to the District.

- If groundwater is intercepted during some excavations, dewatering may need to be implemented onsite. The contractor shall be responsible for the handling and proper disposal of distribution system water encountered during system tie-ins in accordance with the plan specifications.

B. Construction Noise Reduction

To reduce construction related noise, the following measures will be implemented:

- Noise shall be reduced by mandatory use of mufflers on all construction vehicles and equipment. Where feasible solenoid pavement breakers will be used in lieu of air powered jack hammers.
- Construction activities will be limited to the hours of 8:00 AM and 6:00 PM, pursuant to TRPA Code of Ordinances Chapter 68, Noise Limitations.

C. Migratory Bird Nest Site Protection Program

For construction activities proposed to occur during the nesting season (March 15 through August 15), and outside of paved areas, the contractor and District shall review the Project Area to identify any migratory bird nest sites that may be present. If a nest is present in the immediate vicinity, a qualified biological monitor shall be contacted to evaluate whether any migratory birds are impacted by the project. The biological monitor shall have the authority to stop construction near occupied sites if it appears to be having a negative impact on nesting migratory birds or their young. If construction must be stopped, the monitor must consult with USFWS and CDFW staff within 24 hours to determine appropriate actions to restart construction while reducing impacts to identified migratory bird nests.

D. Prevent and Control Invasive Species

To prevent the spread of invasive plant species, the following measures and BMPs will be implemented:

- Construction vehicles, including off-road vehicles, will be cleaned when they come into the Basin or come from a known invasive plant infested area. Equipment will be considered clean when visual inspection does not reveal soil, seeds, plant material, or other such debris.

- Equipment will be staged in weed-free areas to prevent vehicles from introducing or spreading invasive species.

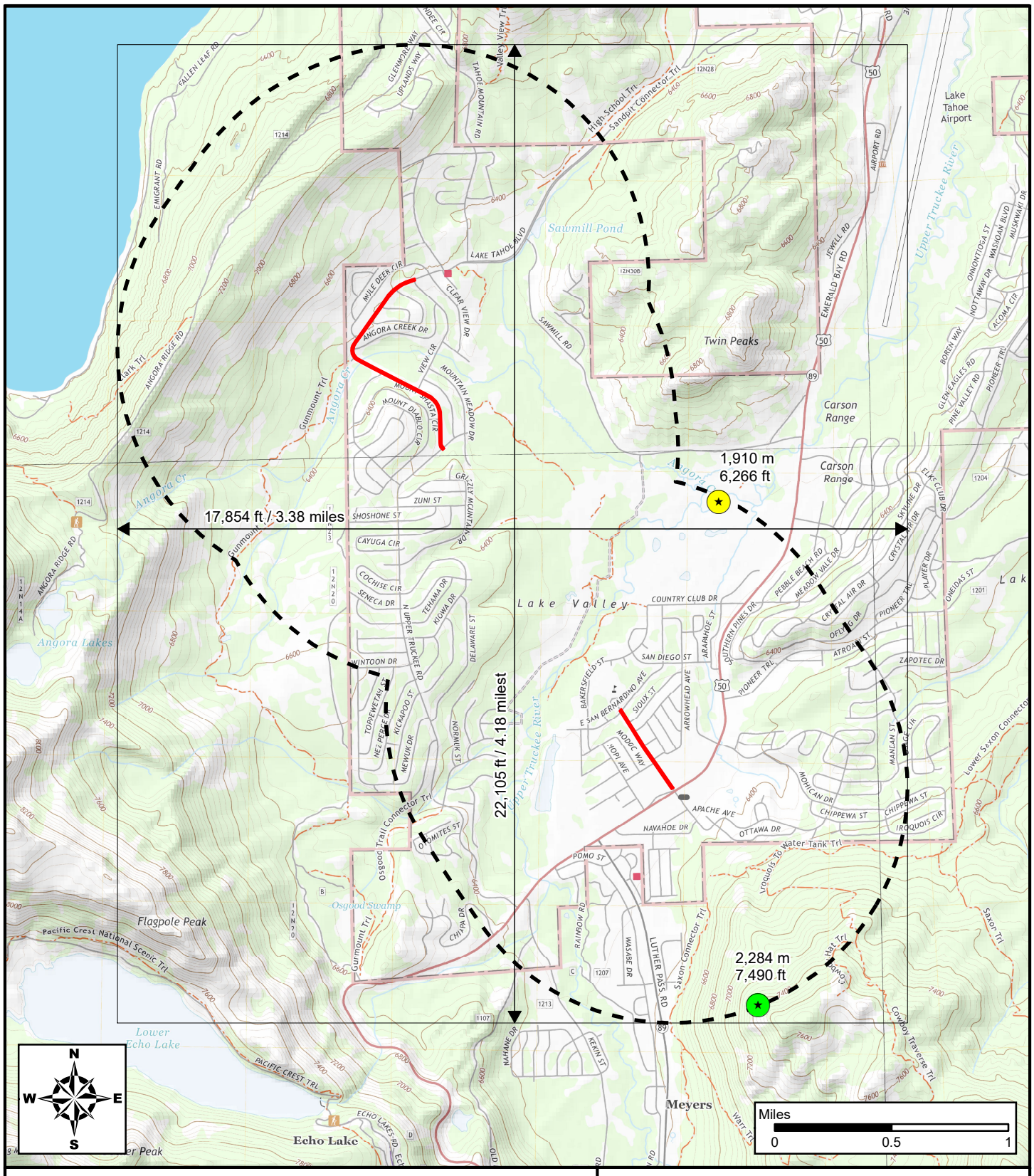
- Earth-moving equipment, gravel, fills, or other materials are required to be weed-free. Onsite sand, gravel, rock, or organic matter will be used when possible or weed-free materials from gravel pits and fill sources that have been surveyed and approved will be used.

- Minimize the amount of ground and vegetation disturbance in the construction areas. Upon completion of construction, vegetation will be reestablished in the footprint to minimize weed establishment after the removal.

III. ACTION AREA

The Project is located in California on the south shore of Lake Tahoe in and around the City of South Lake Tahoe within the District's Service Area (**Figure 1)**. The Project Area (**Figure 2**) shows the location of the project in relation to the South Lake Tahoe Area. The Project Area is contained within the South Lake Tahoe United State Geological Society (USGS) 7.5 Minute Quadrangle Topographic Map and occurs within Township 12N Range 18E, Section 29 and Township 12N Range 18E in Section 2 on the Mt Diablo Meridian.

For this Project, the Action Area or Area of Potential Effect was delineated by a one-mile radius from the Project Area, as shown in **Figure 3**. The Action area is defined as all areas that may be affected directly or indirectly by the Project and not merely the immediate area involved in the action. It encompasses the geographic extent of environmental changes (i.e., the physical, chemical and biotic effects) that may result directly and indirectly from the action. The Action area is larger than the area directly affected by the action. The nature of the project results in impacts occurring within the Project Area itself and not within the Action Area.



Legend

- Action Area (±5,329 acres)
- Project Area
- Highest Elevation within the Action Area
- Lowest Elevation within the Action Area

Lake Tahoe Blvd & Apache Facilities Upgrade Project

Figure 3.
Action Area

SIERRA ECOTONE SOLUTIONS

Sources: STPUD, USGS. Map date: March 14, 2022

Project Area Description

Regional land uses within the District's Service Area include commercial, residential, mixed use, recreation, resort recreation, open space, conservation, and the tourist core area in California. A large number of Area Plans, Community Plans, and Plan Area Statements are in effect within the Service Area. Zoning designations within the Service Area are also comprehensive. However, the Project Area only includes the easement area of the ROW within the streets and roads in the unincorporated parts of El Dorado County within the Service Area. The majority of the ROW within the Project Area is located in residential neighborhoods and mixed use commercial areas. The Project Area was visited in person August 2022.

Topography and Soils

As shown in **Figure 3**, the elevations within the Action Area range from a low point of 6,226-feet to a high point of 7,490 feet. The dimension of the Action area is 22,105 feet long in a north-south direction and 17,854 feet wide from the west to the east for a total area of 5,329 acres.

The topography of the Lake Tahoe Basin is varied with at times complex terrain and elevations ranging from 6,220 feet at lake level to 10,000 feet at Monument and Freel Peaks outside of South Lake Tahoe, California. The City of South Lake Tahoe is relatively flat at its center and the Project Area consists of gentle to flat slopes within the ROW.

According to the California Division of Mines and Geology and California Geological Survey mapping, the District's service area overlies Quaternary period non-marine alluvium, lake, playa and terrace deposits, both unconsolidated and semi- consolidated. Results from the NRCS Web Soils Survey of the Project Area may be found in Appendix 6. (NRCS 2007; http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm, Accessed 6 August 2022). A total of six soil map units from the Tahoe Soil Survey are contained within the Project Area in the vicinity of Lake Tahoe Boulevard. The predominant soil types in the Area of Interest (AOI) include the Cagwin rock outcrop complex (5-15% slopes) and the Tahoe Complex (0-2% slopes). There are only two soil units along Apache Ave. The predominant soil type is Meeks gravelly loamy coarse sand (0-5% slopes) and the secondary type is Celio loamy coarse sand (0-5% slopes).

Hydrology

The Project Area crosses Angora Creek. Within the road rights-of-way where Project work will occur, existing stormwater drainage systems include curb and gutter systems and drop inlets that are maintained by the El Dorado county. The stormwater conveyances are ultimately connected to Lake Tahoe, via Angora Creek and the Upper Truckee River.

Vegetation

The proposed Project Areas are within the road right-of-way in the unincorporated areas of El Dorado County. The proposed Project Areas contain existing disturbance in the form of road shoulder, road base, existing compacted dirt, gravel, landscaping, pavement, existing facilities or a combination of the above. Vegetation within the Action Area is primarily Jeffrey Pine (*Pinus jeffreyi*) forest (Keeler-Wolf 2013) with an open canopy including some white fir (*Abies concolor*). The shrub layer is sparse and comprised of white leaf manzanita (*Arctostaphylos patula*), antelope bitterbrush (*Purshia tridentata*), and chinquapin (*Chrysolepis sempervirens*). The herbaceous layer is very minimal and includes common species like sulfur buckwheat (*Eriogonum ovalifolium var. ovalifolium*), groundsmoke (*Gayophytum diffusum*), and tansy mustard (*Descurania incisa*).

IV. PROJECT REVIEW AND PERMITTING

For work performed on the valves within the right-of-way, the District is allowed access for maintenance and construction based on the Service Agreement Contracts they hold with each individual customer and El Dorado County. Each property owner/customer will be notified prior to work that may interrupt water service for their respective property. Minor periods of water shut-off will occur during the installation process, which is anticipated to last less than four hours each day during instillation.

Tahoe Regional Planning Agency

The Tahoe Regional Planning Agency (TRPA) enters into agreements with local agencies to streamline the permitting process. These agreements allow local agencies to perform environmental review on projects for conformance with TRPA standards. The agreements are in the form of Memorandum of Understanding (MOU) that are signed by each partner. The District currently has a Memorandum of Understanding with the Tahoe Regional Planning Agency dated 23 March 2012. The District's MOU with TRPA is an MOU for Public Works Providers that allows for repair and maintenance of underground facilities without TRPA's review. This allows for increased efficiency and provides for increased protection of local and natural resources as agreed to in the MOU. The Memorandum of Understanding between Tahoe Regional Planning Agency and South Tahoe Public Utility District can be located here:

http://www.trpa.org/wp-content/uploads/FINAL_Public_Works_MOU.pdf

Attachment A, identifying STPUD on page 5 of 9 can be found here:

http://www.trpa.org/wp-content/uploads/FINAL-Public-Works-MOU-Attachment-A.pdf

The listing of Exempt and Qualified Exempt Activities can be found here:

http://www.trpa.org/wp-content/uploads/FINAL_Public_Works_MOU_Attachment_B.pdf

Lahontan Regional Water Quality Control Board

The District must comply with General Waste Discharge Requirements specified by the Regional Water Quality Control Board and the Water Quality Control Plan for the Lahontan Region (Basin Plan). Board Order R6T-2016-0010 outlines the requirements for project coverage under what is commonly referred to as the Tahoe General Construction Permit. This General Permit regulates discharges of pollutants in storm water associated with construction activity (storm water discharges) to waters of the United States within the Lake Tahoe Hydrologic Unit from construction sites that disturb one or more acres of land surface, or that are part of a common plan of development or sale that disturbs one or more acres of land surface. However, activities associated with municipal facilities under an approved NPDES Storm Water Management Program for routine maintenance on existing facilities are not required or eligible to be covered under this permit.

US Forest Service

No Project activities will occur on National Forest System lands.

V. USFWS CONSULTATION HISTORY

The District requested consultation with the Reno Office of the US Fish and Wildlife Service (Service) for the Project through IPaC. The Service provided a species list on dated 28 June 2022. (see Appendix B Consultation Code: 2022-0058767). A total of five species were identified to have the potential to occur within the Action Area: Sierra Nevada yellow-legged frog (*Rana sierrae*), Sierra Nevad Red Fox (*Vulpes vulpes necator*) North American wolverine (*Gulo gulo luscus*), and Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*) and Monarch butterfly (*Danaus plexippus*).

According to the letter: "A Biological Assessment is required for construction projects 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. Guidelines for preparing a Biological Assessment can be found at: http://www.fws.gov/midwest/endangered/section7/ba_guide.html."

This BA has been prepared in response to the above referenced Consultation Code and at the request of the California State Water Resources Control Board.

VI. SPECIES/CRITICAL HABITAT CONSIDERED FOR THE BIOLOGICAL ASSESSMENT

The Biological Assessment (BA) portion of this document has been prepared to document analysis of the potential direct, indirect, and cumulative effects of the proposed project on federally listed threatened, endangered, proposed, and candidate species known or expected to occur within the project area. The USFWS identified the following species for evaluation in this BA; no critical habitat is present:

Monarch butterfly (*Danaus plexippus*) – *Condidate*
Lahontan cutthroat trout (*Oncorynchus clarki henshawi*)- *Threatened*
Sierra Nevada yellow-legged frog (*Rana sierrae*) – *Endangered*
Sierra Nevad red fox (*Vulpes vulpes necator*) – *Endangered*
North American wolverine (*Gulo gulo luscus*) – *Proposed Threatened*

VII. SPECIES/CRITICAL HABITAT CONSIDERED FOR THE BIOLOGICAL EVALUATION

The Biological Evaluation (BE) portion specifically addresses whether the project may result in a loss of viability of State-listed species or cause a sensitive species to trend toward federal listing. The list of CA Endangered, Threatened, Candidate Endangered, Candidate Threatened, Sensitive, Delisted or Rare species is provided by the California Natural Diversity Database (CNDDB) RareFind 5. A CNDDB occurrence report was generated for the 7.5 min. map- South Lake Tahoe Quad (Appendix B; accessed June 2022) as well as the CNPS Rare and Endangered Plant Database (June 2022). The occurrence reports identified two State-listed wildlife species with occurrences in those quadrangles willow flycatcher, *Empidonax traillii;* Sierra Nevada yellow-legged frog, *Rana sierrae*; and the following (Rare, Threatened or Endangered) plant species *Arabis rigidissima var. demote* (Carson Range rockcress), *Asragalus austiniae (*Austin's milkvetch), *Botrychium ascendens* (upswept moonwort), *Botrychium crenulatum (*scalloped moonwort), *Botrychium minganense* (Mingan moonwort), *Bruchia bolanderii* (Bolander's bruchia moss), *Carex limosa* (Mud sedge), *Draba asterophora var. asterophora* (Tahoe draba), *Meesia uliginosa* (broad-nerved hump moss), *Rorippa subumbellata* (Tahoe yellow cress), *Scutellaria galericulata* (marsh skullcap)(as noted in Table 4 below).

The proposed Project Areas were then imported into GIS and a one-mile radius surrounding the Project Areas delineating the Action Area was searched for recorded occurrences in the BIOS database (CNDDB 2022; accessed June 2022). **Figure 4** represents the locations of the proposed project in relation to known occurrences of sensitive species within 1-mile of the Project Areas.

FIGURE 4. CNDDB OCCURRENCES WITHIN THE ACTION AREA

Table 3 Wildlife Species						
Scientific Name	**Common Name**	**FESA**	**CESA**	**Habitats**	**General Habitat**	**Suitable Habitat in Project Area?**
Danaus plexippus	Monarch butterfly	Candidate		Lay eggs on milkweed host plants (Asclepias spp).	Inhabits variety of habitats that contain flowering plants for adults to obtain nectar. Larva feed on milkweed plants.	No flowering plants in right of way or road side suitable for this species.
Empidonax traillii	willow flycatcher	None	Endangered	Meadow & seep | Riparian scrub | Riparian woodland | Wetland	Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters; 2000-8000 ft elevation.	Suitable habitat not present along Angora Creek at Lake Tahoe Boulevard Crossing as no dense willow habitat exists in the location.
Vulpes vulpes necator	Sierra Nevada red fox	Federally Endangered		Alpine | Alpine dwarf scrub | Scree slopes | Subalpine coniferous forest	Suitable habitat is characterized by a mosaic of high-elevation meadows, rocky areas, scrub vegetation, and conifer forest (*Tsuga mertensiana, Pinus albicaulus,* and *P. contorta*). Forested areas are typically relatively open and patchy and trees may be stunted and bent (krumholtzed) by the wind and low temperatures. (USFWS 2021)	No suitable habitat within the project area, as sightings have consistenly occurred in subalpine habitat at elevations ranging from 8,100 to 11,600 feet.
Gulo gulo	California wolverine	Proposed Threatened	Threatened	Alpine | Alpine dwarf scrub | Meadow & seep | Montane dwarf scrub | North coast coniferous forest | Riparian forest | Subalpine coniferous forest | Upper montane coniferous forest | Wetland	Found in the north coast mountains and the Sierra Nevada. Found in a wide variety of high elevation habitats. Prefers habitats away from human habitation.	No suitable habitat present within project area as project is within developed area and high human habitation.
Oncorhynchus clarkii henshawi	Lahontan cutthroat trout	Threatened	None	Aquatic | Great Basin flowing waters	Historically in all accessible cold waters of the Lahontan Basin in a wide variety of water temps and conditions.	No SEZ, creeks, rivers or lake areas within project area.

Table 3 Wildlife Species						
Scientific Name	**Common Name**	**FESA**	**CESA**	**Habitats**	**General Habitat**	**Suitable Habitat in Project Area?**
Rana sierrae	Sierra Nevada yellow-legged frog	Endangered	Threatened	Aquatic	Always encountered within a few feet of water. Tadpoles may require 2 - 4 years to complete their aquatic development. (Jennings and Hayes 1994)	No suitable habitat within project area as all riparian and SEZ habitats are outside work project area.

Source: Sierra Ecotone Solutions LLC 2022, CNDDB 2022, Zeiner et al 1988

Table 4 Plant Species of Concern								
Scientific Name	**Common Name**	**CA Rare Plant Rank**	**CESA**	**FESA**	**Blooming Period**	**Habitat**	**Micro Habitat**	**Suitable Habitat in Project Area?**
Arabis rigidissima var. demota	Carson Range rockcress	1B.2	None	None	August	Known from Trinity and Placer County and in Nevada in open, rocky areas and slopes at 7,500 ft. & above.	Found along forest edges of conifer and/or aspen stands often on north aspects.	No. The Project Area is outside the elevation range.
Asragalus austiniae	Austin's milkvetch	1B.3	None	None	Jul-Sep	Alpine fell fields, subalpine conifer forest	Ridges	No. The Project Area is outside the elevation range.
Botrychium ascendens	upswept moonwort	2B.3	None	None	Jul-Aug	On the LTBMU, this species has been found on shady streams with dense cover among incense cedar (*Calocedrus decurrens*).	Wet edges of streams.	Yes; Angora Creek provides marginal habitat with few shady areas but no cedar.
Botrychium crenulatum	scalloped moonwort	2B.2	None	None	Jun-Sep	Meadows, bogs, fens, marshes, swamps, and seeps in upper and lower montane coniferous forest from 4,100 to 10,800 ft.		Yes; Angora Creek provides wet meadow habitat.

Table 4 Plant Species of Concern								
Scientific Name	**Common Name**	**CA Rare Plant Rank**	**CESA**	**FESA**	**Blooming Period**	**Habitat**	**Micro Habitat**	**Suitable Habitat in Project Area?**
Botrychium minganense	Mingan moonwort	2B.2	None	None	Jul-Sep	Meadows, bogs, fens, marshes, swamps, and seeps in upper and lower montane coniferous forest from 5,100 to 10,300 ft.		Yes; Angora Creek provides wet meadow habitat.
Bruchia bolanderii	Bolander's bruchia moss	4.2	None	None		Occurs in disturbed areas and openings on the edges of meadows and stream banks; 5,500 to 9,200 ft.	Found on bare, slightly eroding soil where competition is minimal.	Yes; Angora Creek provides wet meadow habitat, but there is little disturbance or opening areas.
Carex limosa	Mud sedge	2B.2	None	None	June-Aug	Wetlands, bogs and fens in yellow pine and red fir forest.	In the LTBMU, this species is found only in fens.	Yes; there are known occurrences in fen habitat in Washoe SP.
Draba asterophora var. asterophora	Tahoe draba	1B.1	None	None	July-Aug	Known from the Lake Tahoe Basin on Mt. Rose, Freel Peak, Relay Peak, and Heavenly Resort at 8,000-10,200 ft.	Rock crevices, open granite, volcanic soils on north-east slopes.	No. The Project Area is outside the elevation range.
Meesia uliginosa	broad-nerved hump moss	2B.2	None	None		Bogs and fens, but also very wet meadows.	Often occurs with sphagnum moss.	Yes; there is a known occurrence in Angora meadow near the Project off View Circle drive.
Rorippa subumbellata	Tahoe yellow cress	1B.1	CE	None	May-Sep	TYC is only found on the beaches of Lake Tahoe (Stanton et. al 2015).	Optimal TYC habitat occurs in the dynamic mouths of	Project area does not include Lake Tahoe.

Table 4 Plant Species of Concern								
Scientific Name	**Common Name**	**CA Rare Plant Rank**	**CESA**	**FESA**	**Blooming Period**	**Habitat**	**Micro Habitat**	**Suitable Habitat in Project Area?**
							creeks that enter Lake Tahoe.	
Scutellaria galericulata	marsh skullcap	2B.2	None	None	Jun-Sep	Very wet meadows and marsh.	Found in the wettest parts of Angora meadow with *Carex utriculata*.	Yes; there are known occurrences near the Project Area and in Washoe SP.

CE: CA Endangered
PT: Proposed Threatened

Source: SES 2022, CNPS 2022

As noted in Table 3 and Table 4 above, there are a number of wildlife and plant species that have known occurrences within the Action Area but no suitable habitat within the Project Area. The proposed Project Area is within the road right-of-way in the unincorporated area of El Dorado County. The proposed Project Areas contain existing disturbance in the form of road shoulder, road base, existing compacted dirt, gravel, landscaping, pavement, existing facilities or a combination of the above. This heavily human dominated and modified environment present within the project area is not suitable for many of the wildlife and plant species noted above.

VIII. SPECIES ACCOUNTS AND EFFECTS ANALYSIS

A. Federally Listed Species (Biological Assessment)

LAHONTAN CUTTHROAT TROUT

Range, Distribution, and Status*:* The Lahontan cutthroat trout (*Oncorynchus clarki henshawi*)*;* LCT) was listed as an endangered species in 1970. In 1975, under the Endangered Species Act of 1973, the LCT was reclassified as threatened to facilitate management and to allow for regulated angling. In 1995, the U.S. Fish and Wildlife Service (FWS) released its recovery plan for LCT, encompassing six river basins within LCT historic range.

Historically, the Lahontan cutthroat trout was endemic to the physiographic Lahontan basin of northern Nevada, eastern California, and southern Oregon (USDI 1995). In California, the subspecies historically occurred in the streams and lakes of the Lahontan system, on the east side of the Sierra Nevada. The current distribution is a fraction of the historic distribution. Lake Tahoe's population was extinct by 1930. In the summer of 2011, the Nevada Department of Wildlife NDOW planted LCT on Lake Tahoe's Nevada shore where they are presumed to occur in the lake waters and tributary creeks. However, competition and inbreeding with introduced trout species, predation by introduced species, and disease decrease the likelihood that this fish species occupies these streams (NNHP 2019).

Habitat Requirements and Natural History: Lahontan cutthroat trout are obligatory stream spawners and spawn from April to July, with eggs being deposited in one fourth to one half inch gravels within riffles, pocket water, or pool crests (USDI 1995). In the Sierra Nevada, native Lahontan habitat primarily consists of eastern high mountain meadow streams (over 6,000 feet elevation). Optimal habitat for Lahontan cutthroat trout is characterized by: clear cold water and relatively stable summer water temperatures, with an average maximum summer temperature of less than 43 deg F to 72 deg F. and variations of no more than 37 deg F.; one to one pool to riffle ratios and a relatively silt free, rocky substrate in the riffle run area; well vegetated, stable stream banks; approximately 25 percent of the stream area providing cover; and relatively stable water flow regimes, with daily fluctuations less than 50 percent of the average annual daily flow (Hickman and Raleigh 1982).

Potential for Occurrence: Occupied habitat for LCT is present outside the Action Area within the waters of Lake Tahoe, where LCT is presumed to occur. Lake Tahoe is outside of the defined work areas surrounding the Project Area. Angora Creek that runs under the project area does not provide suitable habitat for LCT, due to unsuitable aquatic organism passage downstream. Furthermore, the Project would be constructed within existing paved public roads and no activities will occur within any drainages or have an effect on waters flowing into Angora Creek due to implementation of BMPs.

Determination: Based on the above assessment, it is my determination there will be **no effect** to Lahontan cutthroat trout from Project activities and no further analysis for this species will be conducted.

SIERRA NEVADA YELLOW-LEGGED FROG

Range, Distribution, and Status*:* The federal listed endangered Sierra Nevada yellow-legged frogs (*Rana sierrae*; SNYLF) historically inhabited ponds, tarns, lakes, and streams from 4,500 to over 12,000 ft. (1370 to over 3650 m) (Stebbins 1985) and was once the most common amphibian in high elevation aquatic ecosystems of the Sierra Nevada (Bradford et. al. 1993). This species is endemic to California and a small area of western Nevada and occurs in two distinct regions – the Sierra Nevada and several mountain ranges of coastal southern California. Large groups of populations in the northern Sierra Nevada and local populations elsewhere have since become extinct and have disappeared from 70-90% of its historic range in the bioregion (Jennings 1994). The Sierra Nevada yellow-legged frog was listed as an Endangered species under the Endangered Species Act on April 29, 2014.

Habitat Requirements and Natural History: The SNYLF is strongly associated with montane riparian habitats in lodgepole pine, yellow pine sugar pine, white fir whitebark pine and wet meadow vegetation types (Zeiner et al. 1988). Typically, SNYLFs prefer well illuminated, sloping banks of meadow streams, riverbanks, isolated pools, and lake borders with vegetation that is continuous to the water's edge. In high elevations, breeding occurs between May and August as soon as the meadows and lakes are free of snow and ice. Sierra Nevada yellow-legged frogs usually lay their eggs in clusters submerged along stream banks or on emergent vegetation. Tadpoles and adults of this species overwinter in deep pools with undercut banks that provide cover. Adults are highly aquatic and are typically associated with near shore areas for reproduction, cover, foraging, and over-wintering. They are most abundant along lake shores and low gradient streams with irregular shores and rocks (Mullaly and Cunningham 1956). It is believed that adult frogs use the deepest sections of lakes for overwintering (Bradford et al. 1993).

Potential for Occurrence: The current distribution of SNYLFs is well documented and does not include the Action Area. The nearest known occurrence is approximately 3.25 miles to the south west at Echo Lake. Furthermore, the Project would be constructed within existing paved public roads and no activities will occur within any drainages. Angora Creek that runs under the project area contains marginally suitable habitat for SNYLF but is outside the project work area. Furthermore, the Project would be constructed within existing paved public roads and no activities will occur within any drainages or have an effect on waters flowing into Angora Creek due to implementation of BMPs. There are no known occurrences of SNYLF in the vicinity of the project.

Determination: Based on the above assessment, it is my determination there will be **no effect** to Sierra Nevada yellow-legged frogs or their habitat from Project activities and no further analysis for this species will be conducted.

Monarch Butterfly

Range, Distribution, and Status: The Monarch butterfly (*Danaus plexippus*) is a Candidate species under the ESA (listed 17 December 2020).

The monarch butterfly is a candidate species and not yet listed or proposed for listing. There are no section 7 requirements for candidate species however a discussion has been provided for this species below.

Habitat Requirements and Natural History:

Adult monarch butterflies are large and conspicuous, with bright orange wings surrounded by a black border and covered with black veins. The black border has a double row of white spots, present on the upper side of the wings. Adult monarchs are sexually dimorphic, with males having narrower wing venation and scent patches. The bright coloring of a monarch serves as a warning to predators that eating them can be toxic. (USFWS 2021)

During the breeding season, monarchs lay their eggs on their obligate milkweed host plant (primarily Asclepias spp.), and larvae emerge after two to five days. Larvae develop through five larval instars (intervals between molts) over a period of 9 to 18 days, feeding on milkweed and sequestering toxic chemicals (cardenolides) as a defense against predators. The larva then pupates into a chrysalis before emerging 6 to 14 days later as an adult butterfly. There are multiple generations of monarchs produced during the breeding season, with most adult butterflies living approximately two to five weeks; overwintering adults enter into reproductive diapause (suspended reproduction) and live six to nine months. (USFWS 2021)

Potential for Occurrence: There is no potential habitat for monarch within the project area as work will be performed in the road right-of-way and will not impact any milkweed or flowering plants.

Determination: Based on the above assessment, it is my determination there will be **no effect** to monarch butterflies or their habitat as a result of Project activities and no further analysis will be conducted for this species.

B. State Sensitive Species (Biological Evaluation)

WILLOW FLYCATCHER

Range, Distribution, and Status*:* Three subspecies of willow flycatcher occur in the Sierra Nevada: *Empidonax traillii brewsteri*, *E. t. adastus*, and *E. t. extimus*. The willow flycatcher (all subspecies) is listed as endangered under the CESA; additionally, *E. t. extimus* (southwestern willow flycatcher) is listed as endangered under the ESA. The willow flycatcher was identified in the notice of intent for the Sierra Nevada Forest Plan Amendment as one of seven aquatic, riparian, and meadow–dependent vertebrate species to have the highest likelihood of being extirpated from the Sierra Nevada in the near future (USDA 2001, 2004).

Habitat Requirements and Natural History: Willow flycatchers are migratory songbirds that nest in shrubby, wet habitats. In the Sierra Nevada, willow flycatchers tend to prefer willow stands interspersed with open meadow and near standing or running water, often associated with beaver meadows (Sedgwick 2000). Although willow flycatchers have nested in meadows less than one acre in size, most nest in much larger meadows. In a study of 125 meadows in the Sierra Nevada, more than 80 percent of occurrences were in meadows larger than about 20 acres (Harris, Sanders, and Flett 1987, 1988). In a review of occurrence data for the Sierra Nevada, occupied meadows averaging approximately 80 acres (USFS 2001).

Important characteristics of meadows suitable for breeding willow flycatchers are a high water table that results in standing or slow-moving water, or saturated soils (e.g., “swampy” conditions); abundant cover of riparian deciduous shrubs (particularly willow); and riparian shrub structure with moderate to high foliar density that is uniform from the ground to the shrub canopy (Sanders and Flett 1989; Bombay 1999; Green, Bombay, and Morrison 2003). One study in the Sierra Nevada documented that nests are typically located in willows with about 70 percent foliage cover. Nests are also typically found about 3– 4 feet above the ground and within about 7 feet from the edge of the clump (Sanders and Flett 1989).

Riparian habitat along streams can also function as suitable habitat for the willow flycatcher, although this is less common in the Sierra Nevada. Stream channels that are high-gradient, deeply incised, and lacking a floodplain with a sparse or narrow riparian vegetation corridor are not suitable for breeding willow flycatchers.

Potential for Occurrence: Willow flycatchers have been known to nest along the Upper Truckee River at very low densities and with limited reproductive success (CNDDB 2021). The nearest known CNDDB location is an historic occurrence (1910, 1935) from Trout Creek. In Nevada, there is only one documented occurrence of Great Basin willow flycatcher from Edgewood Creek (NNHP 2019). Willow flycatchers have not been identified in the Action Area, and the Project Areas do not contain suitable nesting habitat.

Determination: Based on the above assessment, it is my determination there will be **no effect** on willow flycatchers or their habitat from Project activities and no further analysis will be conducted for this species.

TAHOE YELLOW CRESS

***Range, Distribution and Status*:** Tahoe yellow cress (*Rorippa subumbellata*; TYC) is Endangered in California, Critically Endangered in Nevada, and is a TRPA Sensitive species. It is a perennial plant in the mustard family (Brassicaceae) that grows low to the ground and has yellow flowers and fleshy leaves. TYC is found only on the shoreline of Lake Tahoe in California and Nevada, and is the only species in the Sierra Nevada that is restricted to a single lake (CDFW 2019). There are 50 known occurrences around Lake Tahoe, some of which have been tracked since 1979 (Stanton *et al.* 2015).

Habitat Requirements and Natural History: TYC is found only on the shoreline of Lake Tahoe below the high waterline of 6,229 feet (CDFW 2019). TYC site occupancy fluctuates with lake water levels, which are related to long-term climate trends and regulation of Tahoe's dam at Tahoe City (Stanton *et al.* 2015). During high lake levels, the number of occupied sites is lower because less beach habitat is available due to the geometry of the filling basin (Stanton *et al.* 2015).

Potential for Occurrence: The shoreline of Lake Tahoe is outside of the defined workzones of the Project Area.

Determination: Based on the above assessment, it is my determination there will be **no effect** on Tahoe yellow cress or their habitat from Project activities and no further analysis will be conducted for this species.

Based on the information provided in Table 3 and Table 4 above the following are the State listed species that have the potential to occur within the Action Area but do not have suitable habitat with the Project Area: *Arabis rigidissima var. demote* (Carson Range rockcress), *Asragalus austiniae (*Austin's milkvetch), *Botrychium ascendens* (upswept moonwort), *Botrychium crenulatum (*scalloped moonwort), *Botrychium minganense* (Mingan moonwort), *Bruchia bolanderii* (Bolander's bruchia moss), *Carex limosa* (Mud sedge), *Draba asterophora*

var. asterophora (Tahoe draba), *Meesia uliginosa* (broad-nerved hump moss), *Rorippa subumbellata* (Tahoe yellow cress), *Scutellaria galericulata* (marsh skullcap)
The proposed project will not result in any impacts to these species as none are known to occur within the Project Area, nor will the project impact habitat or individual of these species.
It is my determination there will be **no effect** to the following State listed species as a result of project implementation: *Arabis rigidissima var. demote* (Carson Range rockcress), *Asragalus austiniae (*Austin's milkvetch), *Botrychium ascendens* (upswept moonwort), *Botrychium crenulatum (*scalloped moonwort), *Botrychium minganense* (Mingan moonwort), *Bruchia bolanderii* (Bolander's bruchia moss), *Carex limosa* (Mud sedge), *Draba asterophora var. asterophora* (Tahoe draba), *Meesia uliginosa* (broad-nerved hump moss), *Rorippa subumbellata* (Tahoe yellow cress), *Scutellaria galericulata* (marsh skullcap).

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Appendix A – Preliminary Design Plan Details


N
South Tahoe Public Utility District
Waterline Replacement Projects
SOUTH TAHOE
Sewer · 1950 · Water
PUBLIC UTILITY DISTRICT
Apache Ave
Arrowhead Ave
Pueblo St
Washoe St
Hopi Ave
Emerald Bay Rd
0
150
300
600
Feet
Apache Waterline
Map Created 7/16/2021


N
South Tahoe Public Utility District
Waterline Replacement Projects
SOUTH TAHOE
Sewer · 1950 · Water
PUBLIC UTILITY DISTRICT
0
500
1,000
2,000
Feet
Pioneer Trail Waterline
Map Created 7/16/2021

Appendix B – USFWS Species List and CNDDB Database Search Results

Multiple Occurrences per Page

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (South Lake Tahoe (3811988))
 AND CNPS List IS (1A OR 1B OR 1B.1 OR 1B.2 OR 1B.3 OR 2A OR 2B OR 2B.1 OR 2B.2 OR 2B.3 OR 3 OR 3.1 OR 3.2 OR 3.3 OR 4 OR 4.1 OR 4.2 OR 4.3)

Bruchia bolanderi **Element Code:** NBMUS13010

Bolander's bruchia

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3
	State:	None		**State:**	S3
	Other:	Rare Plant Rank - 4.2, USFS_S-Sensitive			
Habitat:	**General:**	LOWER MONTANE CONIFEROUS FOREST, MEADOWS AND SEEPS, UPPER MONTANE CONIFEROUS FOREST.			
	Micro:	MOSS WHICH GROWS ON DAMP CLAY SOILS. SEEMS TO COLONIZE BARE SOIL ALONG STREAMBANKS, MEADOWS, FENS AND SPRINGS. THIS SPECIES HAS AN EPHEMERAL NATURE AND IS DISTURBANCE ADAPTED. 1610-3340 M.			

Occurrence No.	15	**Map Index:** 73118	**EO Index:**	74049	**Element Last Seen:** 2009-07-27
Occ. Rank:	Good		**Presence:**	Presumed Extant	**Site Last Seen:** 2009-07-27
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown	**Record Last Updated:** 2010-04-27

Quad Summary: South Lake Tahoe (3811988)

County Summary: El Dorado

Lat/Long:	38.90058 / -119.90247	**Accuracy:**	80 meters
UTM:	Zone-11 N4309750 E248294	**Elevation (ft):**	7800
PLSS:	T12N, R18E, Sec. 12, SE (M)	**Acres:**	0.0

Location: NE END OF HIGH MEADOWS, APPROXIMATELY 5 MILES SE OF SOUTH LAKE TAHOE.

Detailed Location: MAPPED BY CNDDB IN THE NE1/4 OF THE SE1/4 OF SECTION 12 ACCORDING TO 2006 GPS COORDINATES PROVIDED BY LEVY. DIRECTLY ACROSS FROM ROAD ON EAST SIDE OF MEADOW.

Ecological: HIGH OPEN MEADOW HABITAT. WOODED AREA SURROUNDING MEADOW HAS AN OVERSTORY DOMINATED BY PINUS CONTORTA. POPULATION FOUND HIDDEN IN CAREX SP. AT THE BASE OF A SMALL PINUS CONTORTA THAT HAS ENCROACHED INTO THE MEADOW.

General: 5 CLUMPS OF PLANTS SEEN IN 2006. A SAMPLE WAS COLLECTED IN 2007 AND ID OF PLANTS WAS VERIFIED AS BRUCHIA BOLANDERI. 5 CLUMPS OF PLANTS SEEN IN JULY OF 2009; SITE WAS VERY DRY AND SHOULD BE VISITED EARLIER NEXT TIME.

Owner/Manager: USFS-LAKE TAHOE BMU

Meesia uliginosa **Element Code:** NBMUS4L030

broad-nerved hump moss

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5
	State:	None		**State:**	S3
	Other:	Rare Plant Rank - 2B.2, USFS_S-Sensitive			
Habitat:	**General:**	MEADOWS AND SEEPS, BOGS AND FENS, UPPER MONTANE CONIFEROUS FOREST, SUBALPINE CONIFEROUS FOREST.			
	Micro:	MOSS ON DAMP SOIL. OFTEN FOUND ON THE EDGE OF FENS OR RAISED ABOVE THE FEN ON HUMMOCKS/SHRUB BASES. 1095-2805 M.			

Occurrence No.	10	**Map Index:**	66664	**EO Index:**	66812	**Element Last Seen:**	2014-09-16
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2014-09-16
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-09-22

Quad Summary: South Lake Tahoe (3811988)

County Summary: El Dorado

Lat/Long:	38.8927 / -119.98782	**Accuracy:**	specific area
UTM:	Zone-11 N4309114 E240864	**Elevation (ft):**	6335
PLSS:	T12N, R18E, Sec. 16, NE (M)	**Acres:**	1.0

Location: JUST EAST OF THE LAKE TAHOE AIRPORT AND THE UPPER TRUCKEE RIVER, SOUTH LAKE TAHOE.

Detailed Location: FOUND AT THE BASE OF A SALIX IN THE NE SECTION OF THE MEADOW AREA. MAPPED ACCORDING TO 2014 MCKNIGHT COORDINATES. WITHIN THE NE 1/4 OF THE NE 1/4 OF SECTION 16. THIS SITE IS LTBMU POPULATION MEUL2.

Ecological: SALIX IS THE DOMINANT SHRUB WITH SCATTERED JUNCUS AND EQUISETUM AS THE DOMINANT GROUND COVER. SLIGHTLY RAISED ABOVE WATER, SURROUNDED BY CIRSIUM VULGARE. MEESIA TRIQUETRA IS ALSO FOUND IN THE AREA.

General: UNKNOWN NUMBER OF INDIVIDUALS OBSERVED IN 2005. 5% COVER OF THIS SPECIES OBSERVED IN 2009 & 2014; GROSS AREA WAS 5 X 5 FT. THE AREA APPEARED VERY DRY IN 2009 (POSSIBLY RESULTING FROM WATER DIVERSION?).

Owner/Manager: USFS-TAHOE NF

Arabis rigidissima var. demota **Element Code:** PDBRA061R1

Galena Creek rockcress

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3T3Q
	State:	None		**State:**	S1
	Other:	Rare Plant Rank - 1B.2, USFS_S-Sensitive			
Habitat:	**General:**	BROADLEAFED UPLAND FOREST, UPPER MONTANE CONIFEROUS FOREST.			
	Micro:	WELL-DRAINED, STONY SOIL UNDERLAIN BY BASIC VOLCANIC ROCK. 2270-2805 M.			

Occurrence No.	3	**Map Index:**	95692	**EO Index:**	96831	**Element Last Seen:**	2012-XX-XX
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2015-09-24
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2018-03-22

Quad Summary: South Lake Tahoe (3811988)

County Summary: El Dorado

Lat/Long:	38.93407 / -119.91226	**Accuracy:**	specific area
UTM:	Zone-11 N4313494 E247565	**Elevation (ft):**	9200
PLSS:	T12N, R18E, Sec. 1, NE (M)	**Acres:**	17.0

Location: HEAVENLY SKI RESORT; VICINITY OF GONDOLA JUST NORTH AND SOUTH OF ROAD 12N40, JUST WEST OF THE CA/NV STATE LINE.

Detailed Location: LTBMU POP ARRID 3A-C. MAPPED BY CNDDB AS 3 POLYGONS ACCORDING TO 2009 HEARD AND JENNINGS COORDINATES/MAP AND 2012 COORDINATES. N POLYGON NEEDS CONFIRMATION; COORDINATES DO NOT MATCH WRITTEN DESCRIPTION FOR THIS SITE ACC TO HEARD & JENNINGS.

Ecological: FORB AND GRAMINOID COVER IS SPARSE. GRANITE-SAND OPEN AREA SURROUNDED BY PINUS ALBICAULIS, P. CONTORTA, P. MONTICOLA, ERIOGONUM SP., ARABIS PLATYSPERMA, PHLOX SP., AND PERENNIAL GRASSES. PLANTS FOUND AT LOWER EDGE OF ARCTOSTAPHYLOS STAND.

General: N POLY: 2 PLANTS IN 2005, 0 IN 2009, 2012, 2014, & 2015; KEY TO B. LYALLII, B. SPARSIFLORA, & B. PINETORUM. MIDDLE POLY: 2 PLANTS IN 2009, 0 IN 2012 & 2015; KEY TO A. HOWELLII & A. PINETORUM. S POLY: 5 ARRID/ARPL HYBRIDS SEEN IN 2012.

Owner/Manager: USFS-LAKE TAHOE BMU

Occurrence No.	4	**Map Index:**	95693	**EO Index:**	96832	**Element Last Seen:**	2009-08-07
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2014-08-15
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2018-03-29

Quad Summary: South Lake Tahoe (3811988)

County Summary: El Dorado

Lat/Long:	38.92050 / -119.92196	**Accuracy:**	specific area
UTM:	Zone-11 N4312015 E246675	**Elevation (ft):**	8800
PLSS:	T12N, R18E, Sec. 01, SE (M)	**Acres:**	9.0

Location: HEAVENLY SKI RESORT; ALONG POWDERBOWL LIFT LINE NEAR END OF ROAD 13N52L, ABOUT 2 MILES WEST OF THE CA/NV STATE LINE.

Detailed Location: LTBMU POPULATION ARRID 4A & 4B. MAPPED BY CNDDB ACCORDING TO 2009 HEARD COORDINATES, IN THE NW 1/4 OF THE SE 1/4 OF SECTION 1.

Ecological: ASSOCIATED WITH PINUS MONTICOLA, ARCTOSTAPHYLOS NEVADENSIS (DOMINANT SHRUB), PENSTEMON SP., CERCOCARPUS LEDIFOLIUS, AND BROMUS SP. SEVERAL LARGE BOULDERS IN AREA. BOECHERA ELKOENSIS IS ABUNDANT IN THE AREA.

General: E PORTION OF POLYGON: 1 PLANT SEEN IN 2005, 0 PLANTS IN 2009. W PORTION OF POLYGON: 2 PLANTS SEEN IN 2009; LIKELY HYBRIDS SINCE THERE IS A. PLATYSPERMA AROUND. ALL PLANTS KEY TO A. PLATYSPERMA COMPLEX IN 2012 & 2014; POSSIBLE MIS-ID.

Owner/Manager: USFS-LAKE TAHOE BMU

Draba asterophora var. asterophora

Element Code: PDBRA110D1

Tahoe draba

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2T2?
	State:	None		**State:**	S2?
	Other:	Rare Plant Rank - 1B.2, USFS_S-Sensitive			
Habitat:	**General:**	ALPINE BOULDER AND ROCK FIELD, SUBALPINE CONIFEROUS FOREST.			
	Micro:	ON OPEN TALUS SLOPES, ROCK OUTCROPS, AND CREVICES. ON DECOMPOSED GRANITE. 2770-3505 M.			

Occurrence No.	10	**Map Index:** 51164	**EO Index:** 51164	**Element Last Seen:**	2015-09-24
Occ. Rank:	Good		**Presence:** Presumed Extant	**Site Last Seen:**	2015-09-24
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2016-08-26

Quad Summary: South Lake Tahoe (3811988)

County Summary: Alpine, El Dorado

Lat/Long:	38.92414 / -119.90311	**Accuracy:**	specific area
UTM:	Zone-11 N4312367 E248324	**Elevation (ft):**	9800
PLSS:	T12N, R18E, Sec. 1, E (M)	**Acres:**	111.0

Location: SOUTH AND EAST OF HEAVENLY SKI RESORT, CARSON RANGE, SE OF LAKE TAHOE.

Detailed Location: MAPPED AS 12 POLYGONS ACC TO 2002 MILLER MAP, 2004 GROSS MAP, AND 2003, 2005, 2009, 2010, 2013, 2014 & 2015 COORDINATE INFO/DIGITAL DATA. SITE CONTAINS FS POP DRASA2 (SUB-POP A-F, H-K, N-P). PLANTS THRIVE ON AREAS OF DISTURBANCE.

Ecological: WHITEBARK PINE ZONE DOMINATED BY PINUS ALBICAULIS AND POLYGONUM SHASTENSE BUT MORE COMMON ON EXPOSED, UNFORESTED, SLIDING GRANITIC SAND, OFTEN WITH NO ASSOCIATED SPECIES ON NORTH TO NORTHEAST-FACING SLOPES WHERE SNOW ACCUMULATES.

General: 1000 PLANTS OBSERVED IN 2002 BY MILLER. >980 IN 2003, >2600 IN 2004, 502 IN 2005, ~3140-5290 IN 2009. 780 IN S-MOST POLYGON IN 2010. 183 PLANTS IN 3 SUBPOPULATIONS IN 2013. 16,342+ PLANTS ESTIMATED IN 2014, ~6,628 IN 2015.

Owner/Manager: USFS-LAKE TAHOE BMU,TOIYABE NF

Rorippa subumbellata

Element Code: PDBRA270M0

Tahoe yellow cress

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G1
	State:	Endangered		**State:**	S1
	Other:	Rare Plant Rank - 1B.1, SB_BerrySB-Berry Seed Bank, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive			
Habitat:	**General:**	LOWER MONTANE CONIFEROUS FOREST, MEADOWS AND SEEPS.			
	Micro:	SANDY BEACHES, ON LAKESIDE MARGINS AND IN RIPARIAN COMMUNITIES; ON DECOMPOSED GRANITE SAND. 1895-2410 M.			

Occurrence No.	1	**Map Index:**	14462	**EO Index:**	8257	**Element Last Seen:**	2017-09-28
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2017-09-28
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2021-04-08

Quad Summary:	South Lake Tahoe (3811988)
County Summary:	El Dorado

Lat/Long:	38.95461 / -119.95451	**Accuracy:**	specific area
UTM:	Zone-11 N4315892 E243976	**Elevation (ft):**	6232
PLSS:	T13N, R18E, Sec. 28, SE (M)	**Acres:**	19.0

Location:	FROM STATELINE SW TO BIJOU PARK, LAKE TAHOE.
Detailed Location:	OCCURRENCE EXTENDS UP INTO NV. INCLUDES EDGEWOOD SITE (PORTIONS OF THIS SITE IN NEVADA NOT MAPPED), TAHOE MEADOES SITE, AND BIJOU PARK SITE. MAPPED AS 3 POLYGONS ACCORDING TO A 1979 KNAPP MAP, 1981 FERREIRA MAP, AND 2017 TYC DIGITAL DATA.
Ecological:	IN BEACH SAND WITH PHACELIA FRIGIDA AND PHLOX SP. ALONG BEACH AND IN BANKS OF DITCH ENTERING LAKE. LAKE INUNDATED IN 1979 AND 1982.
General:	DETAILED POP INFO AVAILABLE AT CNDDB. PORTIONS OF SITE WERE SEEN IN 1979-1981, NO PLANTS IN 1982, SEEN IN 1990 & 1993, NO PLANTS IN 1994-1997, SEEN IN 1998-2009 AND 2017. INCLUDES FORMER EO #2 & #3.
Owner/Manager:	PVT

Occurrence No.	4	**Map Index:**	14433	**EO Index:**	8255	**Element Last Seen:**	2015-06-09
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2015-06-09
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-09-21

Quad Summary:	South Lake Tahoe (3811988)
County Summary:	El Dorado

Lat/Long:	38.94771 / -119.96571	**Accuracy:**	specific area
UTM:	Zone-11 N4315157 E242981	**Elevation (ft):**	6230
PLSS:	T13N, R18E, Sec. 33, NW (M)	**Acres:**	6.0

Location:	TAHOE LAKESHORE LODGE, BETWEEN TIMBER COVE MARINA AND THE TAHOE MARINA INN, SOUTH LAKE TAHOE.
Detailed Location:	TIMBER COVE SITE. ON THE PROPERTY OF TAHOE LAKESHORE LODGE AND SPA, 930 BALBIJOU RD. 2013 OBSERVATION AT ELEVATION 6242' IS HIGHER THAN PREVIOUS POPULATIONS FOUND BETWEEN 6223' & 6230'; PLANTS TRANSPLANTED TO TYC MITIGATION SITE.
Ecological:	ON DECOMPOSED GRANITE BEACH WITH SCATTERING OF GRASSES AND FORBS. COARSE SAND. ASSOCIATED WITH ACHILLEA MILLEFOLIUM, CAREX DOUGLASII, CHAMOMILLA SUAVEOLENS, ERIOGONUM NUDUM, GAYOPHYTUM DIFFUSUM, LEYMUS TRITICOIDES, LUPINUS LEPIDUS, ETC.
General:	PLANTS SEEN IN 1981-1988 AND 1990, NO PLANTS FOUND IN 1993-2001, PLANTS SEEN IN 2002-2005, NO PLANTS IN 2006, PLANTS SEEN IN 2007-2009, 2013 (214 PLANTS) & 2015 (304 PLANTS). ADDITIONAL POPULATION INFORMATION IS AVAILABLE AT CNDDB.
Owner/Manager:	PVT

Occurrence No.	5	**Map Index:**	14397	**EO Index:**	8251	**Element Last Seen:**	2019-06-12
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2019-06-12
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2021-04-08

Quad Summary: South Lake Tahoe (3811988), Emerald Bay (3812081)

County Summary: El Dorado

Lat/Long:	38.94022 / -120.00389	**Accuracy:**	specific area
UTM:	Zone-10 N4314412 E759682	**Elevation (ft):**	6233
PLSS:	T12N, R18E, Sec. 5, N (M)	**Acres:**	42.0

Location: FROM REGAN BEACH WEST TO THE EAST END OF POPE BEACH, SOUTH LAKE TAHOE.

Detailed Location: INCLUDES THE FOLLOWING SITE NAMES: TAHOE KEYS, UPPER TRUCKEE WEST, UPPER TRUCKEE EAST, REGAN/AL TAHOE, POPE BEACH, LIGHTHOUSE. PORTIONS OF OCCURRENCE MAY BE EXTIRPATED. MAPPED AS SEVERAL POLYGONS BY CNDDB.

Ecological: ON DECOMPOSED GRANITE BEACH, DENSE GROWTH OF RUSHES/GRASSES ABOVE BEACH, AND IN MOIST BACKSHORE AREAS. WITH PHACELIA FRIGIDA, LEPIDIUM, SALIX, LUPINUS, AND GRASSES.

General: DETAILED POP INFO AVAILABLE AT CNDDB. PORTIONS OF SITE WERE SEEN IN 1979-1983, 1985, 1986, 1988, 1990-2010, 2017, 2019. INCLUDES FORMER EO #7, 8, 9, & 23.

Owner/Manager: PVT, CTC, USFS

Occurrence No.	6	**Map Index:**	14422	**EO Index:**	8254	**Element Last Seen:**	1979-XX-XX
Occ. Rank:	None			**Presence:**	Extirpated	**Site Last Seen:**	2009-09-10
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2021-04-08

Quad Summary: South Lake Tahoe (3811988)

County Summary: El Dorado

Lat/Long:	38.94545 / -119.97324	**Accuracy:**	80 meters
UTM:	Zone-11 N4314928 E242319	**Elevation (ft):**	6229
PLSS:	T13N, R18E, Sec. 32, SE (M)	**Acres:**	0.0

Location: EL DORADO BEACH, BETWEEN BIJOU AND AL TAHOE, LAKE TAHOE.

Detailed Location: FOUND IN A HEAVILY USED PORTION OF THE BEACH, NEAR THE SECTION LINE BETWEEN SECTIONS 32 AND 33, APPROXIMATELY 50 FT EAST OF A DRAINAGE CULVERT DISCHARGE ON THE BEACH. PLANT WAS WEDGED BETWEEN TWO ROCKS IN AN AREA OF HEAVY FOOT TRAFFIC.

Ecological: ON BEACH WEDGED BETWEEN ROCKS.

General: 1 PLANT SEEN IN 1979. NO PLANTS FOUND DURING SURVEYS IN 1980-1983, 1985, 1986, 1988, 1990, 1993-2009. SITE WAS EXTENSIVELY DISTURBED IN THE EARLY 1980'S BY A BANK STABILIZATION PROJECT.

Owner/Manager: PVT, CITY OF SOUTH LAKE TAHOE

Astragalus austiniae **Element Code:** PDFAB0F120

Austin's astragalus

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2G3
	State:	None		**State:**	S2S3
	Other:	Rare Plant Rank - 1B.3			
Habitat:	**General:**	ALPINE BOULDER AND ROCK FIELD, SUBALPINE CONIFEROUS FOREST.			
	Micro:	ROCKY. 2440-2965 M.			

Occurrence No.	11	**Map Index:** B6922	**EO Index:** 119989	**Element Last Seen:**	2019-09-12
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	2019-09-12
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2021-02-11

Quad Summary: South Lake Tahoe (3811988)

County Summary: Alpine, El Dorado

Lat/Long:	38.93142 / -119.90517	**Accuracy:**	specific area
UTM:	Zone-11 N4313180 E248171	**Elevation (ft):**	9500
PLSS:	T12N, R18E, Sec. 1, NE (M)	**Acres:**	11.0

Location: RIDGE NNW OF MONUMENT PEAK, JUST WEST OF THE CA/NV BORDER, HEAVENLY SKI RESORT AREA.

Detailed Location: MAPPED AS 3 POLYGONS ACCORDING TO USFS DIGITAL DATA.

Ecological: SANDY DECOMPOSED GRANITE AND LARGE BOULDERS SURROUNDED BY PINUS ALBICAULIS BUT OTHERWISE FULL SUN AND DRY. ALSO ASSOCIATED WITH GRANITE GILIA, BOECHERA PLATYSPERMA, AND ERIOGONUM INCANUM.

General: SOUTHERN POLYGON: 300 PLANTS OBSERVED IN 2016, 900 PLANTS IN 2019. MIDDLE POLYGON: 290 PLANTS IN 2016, 1000 PLANTS IN 2019. NORTHERN POLYGON: 300 PLANTS IN 2019.

Owner/Manager: USFS-LAKE TAHOE BMU

Botrychium crenulatum

Element Code: PPOPH010L0

scalloped moonwort

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G4
	State:	None		**State:**	S3
	Other:	Rare Plant Rank - 2B.2, USFS_S-Sensitive			
Habitat:	**General:**	BOGS AND FENS, MEADOWS AND SEEPS, UPPER MONTANE CONIFEROUS FOREST, LOWER MONTANE CONIFEROUS FOREST, MARSHES AND SWAMPS.			
	Micro:	MOIST MEADOWS, FRESHWATER MARSH, AND NEAR CREEKS. 1185-3110 M.			

Occurrence No.	49	**Map Index:** 84445	**EO Index:** 85474	**Element Last Seen:**	2019-06-13
Occ. Rank:	Excellent		**Presence:** Presumed Extant	**Site Last Seen:**	2019-06-13
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2021-03-02

Quad Summary: South Lake Tahoe (3811988)

County Summary: El Dorado

Lat/Long:	38.92496 / -119.94742	**Accuracy:**	specific area
UTM:	Zone-11 N4312580 E244484	**Elevation (ft):**	6500
PLSS:	T12N, R18E, Sec. 1, W (M)	**Acres:**	14.0

Location: BIJOU CREEK AT POWERLINE TRAIL, APPROXIMATELY 1.25 AIR MILES EAST OF LAKE TAHOE COMMUNITY COLLEGE, SOUTH LAKE TAHOE.

Detailed Location: DIRECTIONS TO SITE: "TOP OF SKI RUN BLVD AND TURN RIGHT ON DEAD END ROAD. FOLLOW POWERLINE TRAIL SOUTH UNTIL IT MEETS BIJOU CREEK." ALONG CREEK ABOVE AND BELOW TRAIL. MAPPED AS A SINGLE POLYGON FROM 2015 LTBMU DIGITAL DATA.

Ecological: SMALL INTERMITTENT STREAM IN WHITE FIR, JEFFREY PINE, CALOCEDRUS FOREST. PLANTS EMERGING ON OPEN BARE SOIL AND THROUGH LITTER LAYER. ASSOC W/ ALNUS INCANA, SALIX, LISTERA, CAREX SP., RIBES SP., LILIUM, LUPINUS, GALIUM, STELLARIA, ETC.

General: 800-1000 PLANTS SEEN IN 2009. 169 PLANTS IN EASTERN PART OF POPULATION IN 2010; ENTIRE POPULATION PROBABLY NOT SURVEYED. 2011: 800-900 PLANTS IN W PART OF POPULATION, SEVERAL HUNDRED IN E PART. 127 PLANTS IN 2015, 870 IN 2016, 500 IN 2019.

Owner/Manager: USFS-LAKE TAHOE BMU

Botrychium minganense

Element Code: PPOPH010R0

Mingan moonwort

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G4G5
	State:	None		**State:**	S3
	Other:	Rare Plant Rank - 2B.2, USFS_S-Sensitive			
Habitat:	**General:**	LOWER MONTANE CONIFEROUS FOREST, UPPER MONTANE CONIFEROUS FOREST, BOGS AND FENS, MEADOWS AND SEEPS.			
	Micro:	CREEKBANKS IN MIXED CONIFER FOREST. 1190-3295 M.			

Occurrence No.	38	**Map Index:**	73117	**EO Index:**	92466	**Element Last Seen:**	2010-07-14
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2010-07-14
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2014-01-30

Quad Summary:	South Lake Tahoe (3811988)
County Summary:	El Dorado

Lat/Long:	38.93158 / -119.94737	**Accuracy:**	80 meters
UTM:	Zone-11 N4313316 E244511	**Elevation (ft):**	6580
PLSS:	T12N, R18E, Sec. 01, NW (M)	**Acres:**	0.0

Location:	TRAIL OFF OF SKI RUN BLVD, ~0.15 AIR MI SSW OF ITS INTERSECTION WITH LUPINE WAY, SOUTHWEST OF HEAVENLY VALLEY SKI LODGE.
Detailed Location:	AT THE END OF SKI RUN BLVD THROUGH THE GATES THERE IS A TRAIL TO THE SOUTH; POPULATION IS TO THE SOUTHEAST. MAPPED IN THE SW 1/4 OF THE NW 1/4 OF SECTION 1 ACCORDING TO 2010 ENGELHARDT COORDINATES.
Ecological:	LEFT SIDE OF SEEP, AT BASE OF ALNINC IN LITTER, WITH CIRCAEA ALPINA AND RIBNEV ABOVE. THE RARE BOTRYCHIUM ASCENDENS IS LOCATED ~5-6 M DOWNSTREAM.
General:	8 PLANTS REPORTED ON A 2010 SURVEY FORM FOR B. ASCENDENS & B. MINGANENSE; POPULATION NUMBER PRESUMED TO BE FOR B. ASCENDENS ONLY, THOUGH IT MAY REPRESENT A COMBINED TOTAL FOR BOTH SPECIES.
Owner/Manager:	USFS-LAKE TAHOE BMU

Occurrence No.	39	**Map Index:**	91355	**EO Index:**	92468	**Element Last Seen:**	2019-06-06
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2019-06-06
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2021-02-19

Quad Summary:	South Lake Tahoe (3811988)
County Summary:	El Dorado

Lat/Long:	38.89321 / -119.94913	**Accuracy:**	specific area
UTM:	Zone-11 N4309061 E244222	**Elevation (ft):**	6640
PLSS:	T12N, R18E, Sec. 14, NE (M)	**Acres:**	2.0

Location:	SOUTHEAST OF SIERRA HOUSE; APPROXIMATELY 2.3 AIR MILES WEST OF HIGH MEADOWS AND 2 AIR MILES NORTHWEST OF TRIMMER PEAK.
Detailed Location:	TAKE HIGH MEADOWS ROAD AND PARK AT THE 2ND FOREST SERVICE GATE PARKING LOT. TAKE THE FOOT TRAIL TO POWERLINES (BEARING 194 DEGREES) TO POST 651/652. MAPPED IN THE NE 1/4 OF THE NE 1/4 OF SECTION 14 BASED ON LTBMU DIGITAL DATA.
Ecological:	FOUND ON BOTH SIDES OF A SMALL MOSSY STREAMBANK IN PLAGIOMNIUM MOSS WITHIN A POPULUS TREMULOIDES AND MIXED CONIFER STAND. OVERSTORY COMPOSED OF POPULUS TREMULOIDES, CALOCEDRUS DECURRENS, AND ABIES CONCOLOR.
General:	1 PLANT OBSERVED IN 2009. 4 PLANTS OBSERVED IN 2010. 42 PLANTS OBSERVED IN 2015. ONLY 1 PLANT FOUND IN 2017; HEAVY SNOWPACK AND WET SPRING, NOTICEABLE DELAY IN PHENOLOGY THIS SEASON. 3 PLANTS IN 2019. LTBMU POPULATION #BOMI2.
Owner/Manager:	USFS-LAKE TAHOE BMU

Occurrence No.	151	**Map Index:**	B7037	**EO Index:**	120103	**Element Last Seen:**	2019-07-11
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2019-07-11
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2021-02-24

Quad Summary: South Lake Tahoe (3811988)

County Summary: El Dorado

Lat/Long:	38.88725 / -119.96546	**Accuracy:**	specific area
UTM:	Zone-11 N4308446 E242784	**Elevation (ft):**	6470
PLSS:	T12N, R18E, Sec. 14, W (M)	**Acres:**	2.0

Location: ALONG A TRIBUTARY TO TROUT CREEK, ~1.3 AIR MILES SOUTH OF SIERRA HOUSE, EAST OF LAKE TAHOE AIRPORT.

Detailed Location: MAPPED ACCORDING TO USFS DIGITAL DATA, ON THE CENTER OF THE WESTERN EDGE OF SECTION 14.

Ecological: ON THE NORTH MOSSY BANK OF A SMALL CHANNEL IN RIPARIAN VEGETATION TYPE. PARTIAL SHADE. ASSOCIATED WITH ABIES CONCOLOR, ALNUS INCANA, AND EQUISETUM ARVENSE.

General: 1 PLANT OBSERVED IN 2019; PLANT DID NOT SHOW ENOUGH PHENOLOGICAL TRAITS FOR FULL ID, BUT USING ALL AVAILABLE TRAITS, IDED AS BOTRYCHIUM MINGANENSE.

Owner/Manager: USFS-LAKE TAHOE BMU

Botrychium ascendens

Element Code: PPOPH010S0

upswept moonwort

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3G4
	State:	None		**State:**	S2
	Other:	Rare Plant Rank - 2B.3, USFS_S-Sensitive			
Habitat:	**General:**	LOWER MONTANE CONIFEROUS FOREST, MEADOWS AND SEEPS.			
	Micro:	GRASSY FIELDS, CONIFEROUS WOODS NEAR SPRINGS AND CREEKS. 1115-3265 M.			

Occurrence No.	21	**Map Index:**	73117	**EO Index:**	74048	**Element Last Seen:**	2010-07-14
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2010-07-14
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2018-11-05

Quad Summary: South Lake Tahoe (3811988)

County Summary: El Dorado

Lat/Long:	38.93158 / -119.94737	**Accuracy:**	80 meters
UTM:	Zone-11 N4313316 E244511	**Elevation (ft):**	6560
PLSS:	T12N, R18E, Sec. 01, NW (M)	**Acres:**	0.0

Location: APPROXIMATELY 0.15 AIR MI SSW OF THE INTERSECTION OF LUPINE WAY AND SKI RUN BLVD, E OF PIONEER TRAIL, SOUTH LAKE TAHOE.

Detailed Location: MAPPED BY CNDDB ACCORDING TO 2007 GPS COORDINATES PROVIDED BY DILLEY IN THE SW 1/4 OF THE NW 1/4 OF SECTION 1.

Ecological: GROWING IN BARE, WET SOIL ON RIGHT SIDE OF MUDDY SEEP (LOOKING DOWNHILL) UNDER ALNUS INCANA AND RIBES NEVADENSIS BY A STREAM IN PINUS JEFFREYI FOREST. SOME PYROLA ASARIFOLIA, GEUM MACROPHYLLUM, AND MOSS SPECIES NEARBY.

General: 4 PLANTS SEEN IN 2007. 1 PLANT SEEN IN 2009 (TWO ADDITIONAL STEMS MAY HAVE ALSO BEEN BOTRYCHIUM ASCENDENS BUT TOP HAD BEEN EATEN). 1 PLANT SEEN IN 2010. WITH THE RARE B. MINGANENSE.

Owner/Manager: USFS-LAKE TAHOE BMU

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (South Lake Tahoe (3811988))
 AND (Federal Listing Status IS (Endangered OR Threatened OR Proposed Endangered OR Proposed Threatened OR Candidate OR Delisted) OR State Listing Status IS (Endangered OR Threatened OR Rare OR Delisted OR Candidate Endangered OR Candidate Threatened))

Map Index Number: 70205
EO Index: 71086
Key Quad: South Lake Tahoe (3811988)
Element Code: AAABH01340
Occurrence Number: 243
Occurrence Last Updated: 2014-12-18

Scientific Name: *Rana sierrae*
Common Name: Sierra Nevada yellow-legged frog

Listing Status: **Federal:** Endangered
State: Threatened
Rare Plant Rank:

CNDDB Element Ranks: **Global:** G1
State: S1
Other Lists: CDFW_WL-Watch List
IUCN_EN-Endangered
USFS_S-Sensitive

General Habitat:

ALWAYS ENCOUNTERED WITHIN A FEW FEET OF WATER. TADPOLES MAY REQUIRE 2 - 4 YRS TO COMPLETE THEIR AQUATIC DEVELOPMENT.

Micro Habitat:

Last Date Observed: 1935-08-18
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1935-08-18
Occurrence Rank: Unknown
Owner/Manager: USFS-TOIYABE NF
Trend: Unknown
Presence: Presumed Extant

Location:

0.5 MILE NE OF STAR LAKE, SE OF LAKE TAHOE.

Detailed Location:

COLLECTION LOCALITY DESCRIBED AS "0.5 MI NE STAR LAKE" IN EL DORADO COUNTY. THE DRAINAGE NEAREST TO 0.5 MILE NE OF STAR LAKE IS THE HEAD OF STUTLER CANYON, JUST OVER THE COUNTY LINE INTO ALPINE COUNTY. UNCERTAIN IF NW WAS MEANT.

Ecological:

Threats:

General:

COLLECTION MADE BY R. SMITH ON 18 AUG 1935.

PLSS: T12N, R19E, Sec. 29 (M)
Accuracy: 4/5 mile
Area (acres): 0
UTM: Zone-11 N4307401 E250044
Latitude/Longitude: 38.87994 / -119.88147
Elevation (feet): 9,000

County Summary:

Alpine, El Dorado

Quad Summary:

Woodfords (3811977), Freel Peak (3811978), Minden (3811987), South Lake Tahoe (3811988)

Sources:

SMI35S0001 SMITH, R. - SMITH SN MVZ #18192 1935-08-18

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 59165
EO Index: 59201
Key Quad: South Lake Tahoe (3811988)
Element Code: ABPAE33040
Occurrence Number: 124
Occurrence Last Updated: 2005-01-07

Scientific Name: *Empidonax traillii*
Common Name: willow flycatcher

Listing Status: **Federal:** None
State: Endangered
Rare Plant Rank:
Other Lists: IUCN_LC-Least Concern
USFS_S-Sensitive

CNDDB Element Ranks: **Global:** G5
State: S1S2

General Habitat:

INHABITS EXTENSIVE THICKETS OF LOW, DENSE WILLOWS ON EDGE OF WET MEADOWS, PONDS, OR BACKWATERS; 2000-8000 FT ELEVATION.

Micro Habitat:

REQUIRES DENSE WILLOW THICKETS FOR NESTING/ROOSTING. LOW, EXPOSED BRANCHES ARE USED FOR SINGING POSTS/HUNTING PERCHES.

Last Date Observed: 1935-06-29
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1935-06-29
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

VICINITY OF TROUT CREEK IN LAKE VALLEY NEAR SIERRA HOUSE.

Detailed Location:

11 EGG SET COLLECTIONS FROM "LAKE VALLEY, NEAR SIERRA HOUSE" AND 1 EGG SET COLLECTION FROM "TROUT CREEK, NEAR SIERRA HOUSE".

Ecological:

Threats:

General:

MVZ #9088 - #9099. ALL COLLECTIONS BY MILTON RAY. 3 COLLECTIONS FROM 30 JUN 1910, 3 FROM 1 JUL 1910. 4 COLLECTIONS FROM 26-28 JUN 1912. 1 COLLECTION FROM 5 JUL 1922 & 1 COLLECTION FROM 29 JUN 1935.

PLSS: T12N, R18E, Sec. 03 (M)
Accuracy: non-specific area
Area (acres): 135
UTM: Zone-11 N4311493 E242276
Latitude/Longitude: 38.91453 / -119.97244
Elevation (feet): 6,250

County Summary:

El Dorado

Quad Summary:

South Lake Tahoe (3811988)

Sources:

MVZ05S0003 MUSEUM OF VERTEBRATE ZOOLOGY (UNIVERSITY OF CALIFORNIA, BERKELEY) - PRINTOUT OF EMPIDONAX TRAILLII SSP. EGG SET RECORDS FOR CALIFORNIA. 2005-01-07

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 14462
EO Index: 8257
Key Quad: South Lake Tahoe (3811988)
Element Code: PDBRA270M0
Occurrence Number: 1
Occurrence Last Updated: 2021-04-08

Scientific Name: *Rorippa subumbellata*
Common Name: Tahoe yellow cress

Listing Status: **Federal:** None
State: Endangered
Rare Plant Rank: 1B.1

CNDDB Element Ranks: **Global:** G1
State: S1
Other Lists: SB_BerrySB-Berry Seed Bank
SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden
USFS_S-Sensitive

General Habitat:
LOWER MONTANE CONIFEROUS FOREST, MEADOWS AND SEEPS.

Micro Habitat:
SANDY BEACHES, ON LAKESIDE MARGINS AND IN RIPARIAN COMMUNITIES; ON DECOMPOSED GRANITE SAND. 1895-2410 M.

Last Date Observed: 2017-09-28
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-09-28
Occurrence Rank: Unknown
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
FROM STATELINE SW TO BIJOU PARK, LAKE TAHOE.

Detailed Location:
OCCURRENCE EXTENDS UP INTO NV. INCLUDES EDGEWOOD SITE (PORTIONS OF THIS SITE IN NEVADA NOT MAPPED), TAHOE MEADOES SITE, AND BIJOU PARK SITE. MAPPED AS 3 POLYGONS ACCORDING TO A 1979 KNAPP MAP, 1981 FERREIRA MAP, AND 2017 TYC DIGITAL DATA.

Ecological:
IN BEACH SAND WITH PHACELIA FRIGIDA AND PHLOX SP. ALONG BEACH AND IN BANKS OF DITCH ENTERING LAKE. LAKE INUNDATED IN 1979 AND 1982.

Threats:
RECREATIONAL USE, TRAMPLING, EROSION, POSSIBLE DITCH DREDGING, RISING WATER LEVELS, GROWTH OF OTHER VEGETATION NEARBY.

General:
DETAILED POP INFO AVAILABLE AT CNDDB. PORTIONS OF SITE WERE SEEN IN 1979-1981, NO PLANTS IN 1982, SEEN IN 1990 & 1993, NO PLANTS IN 1994-1997, SEEN IN 1998-2009 AND 2017. INCLUDES FORMER EO #2 & #3.

PLSS: T13N, R18E, Sec. 28, SE (M)
Accuracy: specific area
Area (acres): 19
UTM: Zone-11 N4315892 E243976
Latitude/Longitude: 38.95461 / -119.95451
Elevation (feet): 6,232

County Summary:
El Dorado

Quad Summary:
South Lake Tahoe (3811988)

Sources:

CAL98R0001	CALIFORNIA STATE LANDS COMMISSION - TAHOE YELLOW CRESS DRAFT BIOLOGICAL ASSESSMENT. 1998-09-01
FAL00U0001	FALKNER, M. - SUMMARY OF RORIPPA SUBUMBELLATA SURVEY DATA FOR 1980-2000. 2000-XX-XX
FER81F0013	FERREIRA, J. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1981-08-29
FER81F0024	FERREIRA, J. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1981-06-20
FER81F0025	FERREIRA, J. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1981-10-23
FER86U0001	FERREIRA, J. - RECORD OF PHONE CONVERSATION WITH R. BITTMAN REGARDING RORIPPA SUBUMBELLATA 1986-12-15
GRI96U0002	GRIGGS, M. - ADMINISTRATIVE FINAL DRAFT TAHOE YELLOW CRESS BIOLOGICAL ASSESSMENT 1996-05-31
HIP00R0001	HIPKINS, V. - EVALUATION OF GENETIC DIVERSITY IN TAHOE YELLOW CRESS (RORIPPA SUBUMBELLATA) 2000-01-04
KNA79M0001	KNAPP, C. - LOCATIONS OF RORIPPA SUBUMBELLATA IN THE TAHOE BASIN. 1979-06-XX
KNA79R0001	KNAPP, C. - SENSITIVE PLANT INVESTIGATION - LAKE TAHOE MANAGEMENT UNIT II, RORIPPA SUBUMBELLATA - ITS STATUS ON HISTORICAL AND POTENTIALLY NEW SITES. 1979-XX-XX
KNA80R0001	KNAPP, C. - STATUS OF RORIPPA SUBUMBELLATA IN THE LAKE TAHOE BASIN. 1980-11-XX
KNA81F0001	KNAPP, C. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1981-09-27
PEI25S0013	PEIRSON, F. - PEIRSON #6187 JEPS #53871, RSA #66063 1925-07-01
STA10R0001	STANTON, A. & B. PAVLIK - IMPLEMENTATION OF THE CONSERVATION STRATEGY FOR TAHOE YELLOW CRESS (RORIPPA SUBUMBELLATA) 2009 ANNUAL REPORT 2010-03-XX
TRP95U0001	TAHOE REGIONAL PLANNING AGENCY - NOTES ON RARE PLANTS IN THE TAHOE AREA. 1995-XX-XX
TYC17D0001	TAHOE YELLOWCRESS WORKING GROUP - 2017 DATA FROM THE TAHOE YELLOWCRESS WORKING GROUP 2017-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	14433	**EO Index:**	8255
Key Quad:	South Lake Tahoe (3811988)	**Element Code:**	PDBRA270M0
Occurrence Number:	4	**Occurrence Last Updated:**	2017-09-21

Scientific Name: *Rorippa subumbellata*

Common Name: Tahoe yellow cress

Listing Status: **Federal:** None
State: Endangered

Rare Plant Rank: 1B.1

Other Lists: SB_BerrySB-Berry Seed Bank
SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden
USFS_S-Sensitive

CNDDB Element Ranks: **Global:** G1
State: S1

General Habitat:

LOWER MONTANE CONIFEROUS FOREST, MEADOWS AND SEEPS.

Micro Habitat:

SANDY BEACHES, ON LAKESIDE MARGINS AND IN RIPARIAN COMMUNITIES; ON DECOMPOSED GRANITE SAND. 1895-2410 M.

Last Date Observed:	2015-06-09	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2015-06-09	**Occurrence Rank:**	Good
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

TAHOE LAKESHORE LODGE, BETWEEN TIMBER COVE MARINA AND THE TAHOE MARINA INN, SOUTH LAKE TAHOE.

Detailed Location:

TIMBER COVE SITE. ON THE PROPERTY OF TAHOE LAKESHORE LODGE AND SPA, 930 BALBIJOU RD. 2013 OBSERVATION AT ELEVATION 6242' IS HIGHER THAN PREVIOUS POPULATIONS FOUND BETWEEN 6223' & 6230'; PLANTS TRANSPLANTED TO TYC MITIGATION SITE.

Ecological:

ON DECOMPOSED GRANITE BEACH WITH SCATTERING OF GRASSES AND FORBS. COARSE SAND. ASSOCIATED WITH ACHILLEA MILLEFOLIUM, CAREX DOUGLASII, CHAMOMILLA SUAVEOLENS, ERIOGONUM NUDUM, GAYOPHYTUM DIFFUSUM, LEYMUS TRITICOIDES, LUPINUS LEPIDUS, ETC.

Threats:

BEACH HEAVILY DISTURBED BY VEHICLE AND FOOT TRAFFIC. THREATENED BY CONSTRUCTION.

General:

PLANTS SEEN IN 1981-1988 AND 1990, NO PLANTS FOUND IN 1993-2001, PLANTS SEEN IN 2002-2005, NO PLANTS IN 2006, PLANTS SEEN IN 2007-2009, 2013 (214 PLANTS) & 2015 (304 PLANTS). ADDITIONAL POPULATION INFORMATION IS AVAILABLE AT CNDDB.

PLSS:	T13N, R18E, Sec. 33, NW (M)	**Accuracy:**	specific area	**Area (acres):**	6
UTM:	Zone-11 N4315157 E242981	**Latitude/Longitude:**	38.94771 / -119.96571	**Elevation (feet):**	6,230

County Summary:	**Quad Summary:**
El Dorado	South Lake Tahoe (3811988)

Sources:

BIT86U0003	BITTMAN, R. - ELEMENT CONSERVATION PLAN FOR RORIPPA SUBUMBELLATA 1986-12-XX
CAL98R0001	CALIFORNIA STATE LANDS COMMISSION - TAHOE YELLOW CRESS DRAFT BIOLOGICAL ASSESSMENT. 1998-09-01
ETR13F0001	ETRA, J. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 2013-07-19
ETR15F0001	ETRA, J. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 2015-06-09
ETR17U0001	ETRA, J. - EMAIL REGARDING RORIPPA SUBUMBELLATA OCCURRENCE AT LAKESHORE LODGE 2017-08-24
FAL00U0001	FALKNER, M. - SUMMARY OF RORIPPA SUBUMBELLATA SURVEY DATA FOR 1980-2000. 2000-XX-XX
FAL99F0002	FALKNER, M. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1999-08-31
FAL99U0001	FALKNER, M. - SUMMARY OF 1999 RORIPPA SUBUMBELLATA SURVEYS. 1999-10-04
FER81F0012	FERREIRA, J. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1981-08-29
FER86F0004	FERREIRA, J. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1986-10-16
FER86U0001	FERREIRA, J. - RECORD OF PHONE CONVERSATION WITH R. BITTMAN REGARDING RORIPPA SUBUMBELLATA 1986-12-15
GRI96U0002	GRIGGS, M. - ADMINISTRATIVE FINAL DRAFT TAHOE YELLOW CRESS BIOLOGICAL ASSESSMENT 1996-05-31
STA10R0001	STANTON, A. & B. PAVLIK - IMPLEMENTATION OF THE CONSERVATION STRATEGY FOR TAHOE YELLOW CRESS (RORIPPA SUBUMBELLATA) 2009 ANNUAL REPORT 2010-03-XX
TRP95U0001	TAHOE REGIONAL PLANNING AGENCY - NOTES ON RARE PLANTS IN THE TAHOE AREA. 1995-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 14397
Key Quad: Emerald Bay (3812081)
Occurrence Number: 5
EO Index: 8251
Element Code: PDBRA270M0
Occurrence Last Updated: 2021-04-08

Scientific Name: *Rorippa subumbellata*
Common Name: Tahoe yellow cress

Listing Status: **Federal:** None
State: Endangered
CNDDB Element Ranks: **Global:** G1
State: S1
Rare Plant Rank: 1B.1
Other Lists: SB_BerrySB-Berry Seed Bank
SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden
USFS_S-Sensitive

General Habitat:
LOWER MONTANE CONIFEROUS FOREST, MEADOWS AND SEEPS.

Micro Habitat:
SANDY BEACHES, ON LAKESIDE MARGINS AND IN RIPARIAN COMMUNITIES; ON DECOMPOSED GRANITE SAND. 1895-2410 M.

Last Date Observed: 2019-06-12
Last Survey Date: 2019-06-12
Owner/Manager: PVT, CTC, USFS
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Good
Trend: Unknown

Location:
FROM REGAN BEACH WEST TO THE EAST END OF POPE BEACH, SOUTH LAKE TAHOE.

Detailed Location:
INCLUDES THE FOLLOWING SITE NAMES: TAHOE KEYS, UPPER TRUCKEE WEST, UPPER TRUCKEE EAST, REGAN/AL TAHOE, POPE BEACH, LIGHTHOUSE. PORTIONS OF OCCURRENCE MAY BE EXTIRPATED. MAPPED AS SEVERAL POLYGONS BY CNDDB.

Ecological:
ON DECOMPOSED GRANITE BEACH, DENSE GROWTH OF RUSHES/GRASSES ABOVE BEACH, AND IN MOIST BACKSHORE AREAS. WITH PHACELIA FRIGIDA, LEPIDIUM, SALIX, LUPINUS, AND GRASSES.

Threats:
AQUATIC VEGETATION COMPETITION, DEVELOPMENT, GRAZING, EROSION, EXOTIC PLANTS, RISING WATER AND HEAVY RECREATIONAL USE.

General:
DETAILED POP INFO AVAILABLE AT CNDDB. PORTIONS OF SITE WERE SEEN IN 1979-1983, 1985, 1986, 1988, 1990-2010, 2017, 2019. INCLUDES FORMER EO #7, 8, 9, & 23.

PLSS: T12N, R18E, Sec. 5, N (M)
UTM: Zone-10 N4314412 E759682
Accuracy: specific area
Latitude/Longitude: 38.94022 / -120.00389
Area (acres): 42
Elevation (feet): 6,233

County Summary:
El Dorado

Quad Summary:
South Lake Tahoe (3811988), Emerald Bay (3812081)

Sources:

BAI96F0001	BAIR, J. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1996-07-24
BIS91F0001	BISH, N. & T. KUNDERT - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1991-08-08
BIT86U0003	BITTMAN, R. - ELEMENT CONSERVATION PLAN FOR RORIPPA SUBUMBELLATA 1986-12-XX
CAL98R0001	CALIFORNIA STATE LANDS COMMISSION - TAHOE YELLOW CRESS DRAFT BIOLOGICAL ASSESSMENT. 1998-09-01
COC85F0014	COCHRANE, S. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1985-07-27
COC92F0001	COCHRANE, S. ET AL. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1992-08-27
CPR19U0001	CALIFORNIA PLANT RESCUE - SEED BANK DATA FOR THE CALIFORNIA PLANT RESCUE PROJECT 2019-07-24
FAL00U0001	FALKNER, M. - SUMMARY OF RORIPPA SUBUMBELLATA SURVEY DATA FOR 1980-2000. 2000-XX-XX
FAL99F0003	FALKNER, M. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1999-08-31
FAL99F0005	FALKNER, M. & C. SHADE - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1999-08-31
FAL99F0006	FALKNER, M. & C. SHADE - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1999-08-31
FAL99F0007	FALKNER, M. & C. SHADE - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1999-08-31

FAL99F0008	FALKNER, M. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1999-08-31
FAL99U0001	FALKNER, M. - SUMMARY OF 1999 RORIPPA SUBUMBELLATA SURVEYS. 1999-10-04
FER81F0017	FERREIRA, J. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1981-06-20
FER81F0021	FERREIRA, J. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1981-06-06
FER81F0027	FERREIRA, J. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1981-10-23
FER81F0028	FERREIRA, J. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1981-06-07
FER86F0005	FERREIRA, J. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1986-10-16
FER86F0006	FERREIRA, J. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1986-09-08
FER86U0001	FERREIRA, J. - RECORD OF PHONE CONVERSATION WITH R. BITTMAN REGARDING RORIPPA SUBUMBELLATA 1986-12-15
GIB97F0012	GIBBS, S. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1997-08-19
GRE10U0011	GREENHOUSE, J. - OBSERVATION RECORD FOR RORIPPA SUBUMBELLATA, CALFLORA ID: JGR31741 2010-08-22
GRI96U0002	GRIGGS, M. - ADMINISTRATIVE FINAL DRAFT TAHOE YELLOW CRESS BIOLOGICAL ASSESSMENT 1996-05-31
HIP00R0001	HIPKINS, V. - EVALUATION OF GENETIC DIVERSITY IN TAHOE YELLOW CRESS (RORIPPA SUBUMBELLATA) 2000-01-04
INA20U0192	INATURALIST - INATURALIST OBSERVATIONS OF RORIPPA SUBUMBELLATA, FROM HTTP://WWW.INATURALIST.ORG. ACCESSED 2021-03-23. 2020-09-20
ING04F0003	INGOLIA, M. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 2004-08-14
IRI93F0002	IRIBARNE, D. & T. KUNDERT - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1993-07-15
KER88F0001	KERBAVAZ, J. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1988-09-07
KER88F0002	KERBAVAZ, J. & T. MCCANDLESS - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1988-09-21
KER88F0003	KERBAVAZ, J. & T. MCCANDLESS - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1988-06-21
KER93F0012	KERBAVAZ, J. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1993-08-09
KNA79M0001	KNAPP, C. - LOCATIONS OF RORIPPA SUBUMBELLATA IN THE TAHOE BASIN. 1979-06-XX
KNA79R0001	KNAPP, C. - SENSITIVE PLANT INVESTIGATION - LAKE TAHOE MANAGEMENT UNIT II, RORIPPA SUBUMBELLATA - ITS STATUS ON HISTORICAL AND POTENTIALLY NEW SITES. 1979-XX-XX
KNA79S0002	KNAPP, C. - KNAPP SN DAV #115385 1979-06-06
KNA80R0001	KNAPP, C. - STATUS OF RORIPPA SUBUMBELLATA IN THE LAKE TAHOE BASIN. 1980-11-XX
KNA81F0001	KNAPP, C. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1981-09-27
KNA82S0001	KNAPP, C. - KNAPP SN DAV #115388 1982-06-07
MAS39S0001	MASON, H. - MASON #12197 JEPS #19652, UC #1077122 1939-08-02
MAT05I0001	MATSON, S. - PHOTO OF RORIPPA SUBUMBELLATA, CALPHOTOS ID #0000 0000 0705 0336 2005-07-02
PRI00S0001	PRICE, W. - PRICE SN GH #379834 1900-07-28
STA10R0001	STANTON, A. & B. PAVLIK - IMPLEMENTATION OF THE CONSERVATION STRATEGY FOR TAHOE YELLOW CRESS (RORIPPA SUBUMBELLATA) 2009 ANNUAL REPORT 2010-03-XX
SWE19U0003	SWEATT, B. - OBSERVATION RECORD FOR RORIPPA SUBUMBELLATA, CALFLORA ID: MU542 2019-06-12
TRP95U0001	TAHOE REGIONAL PLANNING AGENCY - NOTES ON RARE PLANTS IN THE TAHOE AREA. 1995-XX-XX
TYC17D0001	TAHOE YELLOWCRESS WORKING GROUP - 2017 DATA FROM THE TAHOE YELLOWCRESS WORKING GROUP 2017-XX-XX
USF16D0019	U.S. FOREST SERVICE-LAKE TAHOE BASIN MANAGEMENT UNIT - 2016 NRIS BOTANY DATA FOR THE LAKE TAHOE BASIN MANAGEMENT UNIT 2016-XX-XX
WIL84R0001	WILLIAMS, J. - DRAFT EIS: DILLINGHAM DEVELOPMENT COMPANY COVE EAST. PREPARED FOR LAKE TAHOE REGIONAL PLANNING AGENCY 1984-09-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 14422
EO Index: 8254
Key Quad: South Lake Tahoe (3811988)
Element Code: PDBRA270M0
Occurrence Number: 6
Occurrence Last Updated: 2021-04-08

Scientific Name: *Rorippa subumbellata*
Common Name: Tahoe yellow cress

Listing Status: **Federal:** None
State: Endangered
Rare Plant Rank: 1B.1

CNDDB Element Ranks: **Global:** G1
State: S1
Other Lists: SB_BerrySB-Berry Seed Bank
SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden
USFS_S-Sensitive

General Habitat:
LOWER MONTANE CONIFEROUS FOREST, MEADOWS AND SEEPS.

Micro Habitat:
SANDY BEACHES, ON LAKESIDE MARGINS AND IN RIPARIAN COMMUNITIES; ON DECOMPOSED GRANITE SAND. 1895-2410 M.

Last Date Observed: 1979-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2009-09-10
Occurrence Rank: None
Owner/Manager: PVT, CITY OF SOUTH LAKE TAHOE
Trend: Unknown
Presence: Extirpated

Location:
EL DORADO BEACH, BETWEEN BIJOU AND AL TAHOE, LAKE TAHOE.

Detailed Location:
FOUND IN A HEAVILY USED PORTION OF THE BEACH, NEAR THE SECTION LINE BETWEEN SECTIONS 32 AND 33, APPROXIMATELY 50 FT EAST OF A DRAINAGE CULVERT DISCHARGE ON THE BEACH. PLANT WAS WEDGED BETWEEN TWO ROCKS IN AN AREA OF HEAVY FOOT TRAFFIC.

Ecological:
ON BEACH WEDGED BETWEEN ROCKS.

Threats:
HABITAT HAS BEEN REMOVED BY HIGH WATER, RIPRAP, AND RECREATIONAL USE. HEAVY FOOT TRAFFIC IN AREA.

General:
1 PLANT SEEN IN 1979. NO PLANTS FOUND DURING SURVEYS IN 1980-1983, 1985, 1986, 1988, 1990, 1993-2009. SITE WAS EXTENSIVELY DISTURBED IN THE EARLY 1980'S BY A BANK STABILIZATION PROJECT.

PLSS: T13N, R18E, Sec. 32, SE (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4314928 E242319
Latitude/Longitude: 38.94545 / -119.97324
Elevation (feet): 6,229

County Summary:	Quad Summary:
El Dorado	South Lake Tahoe (3811988)

Sources:

CAL98R0001	CALIFORNIA STATE LANDS COMMISSION - TAHOE YELLOW CRESS DRAFT BIOLOGICAL ASSESSMENT. 1998-09-01
COC85F0013	COCHRANE, S. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1985-07-23
FAL00U0001	FALKNER, M. - SUMMARY OF RORIPPA SUBUMBELLATA SURVEY DATA FOR 1980-2000. 2000-XX-XX
FAL99F0004	FALKNER, M. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1999-08-31
FAL99U0001	FALKNER, M. - SUMMARY OF 1999 RORIPPA SUBUMBELLATA SURVEYS. 1999-10-04
FER81F0016	FERREIRA, J. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1981-06-XX
GRI96U0002	GRIGGS, M. - ADMINISTRATIVE FINAL DRAFT TAHOE YELLOW CRESS BIOLOGICAL ASSESSMENT 1996-05-31
KNA79M0001	KNAPP, C. - LOCATIONS OF RORIPPA SUBUMBELLATA IN THE TAHOE BASIN. 1979-06-XX
KNA79R0001	KNAPP, C. - SENSITIVE PLANT INVESTIGATION - LAKE TAHOE MANAGEMENT UNIT II, RORIPPA SUBUMBELLATA - ITS STATUS ON HISTORICAL AND POTENTIALLY NEW SITES. 1979-XX-XX
KNA80R0001	KNAPP, C. - STATUS OF RORIPPA SUBUMBELLATA IN THE LAKE TAHOE BASIN. 1980-11-XX
KNA81F0001	KNAPP, C. - FIELD SURVEY FORM FOR RORIPPA SUBUMBELLATA 1981-09-27
STA10R0001	STANTON, A. & B. PAVLIK - IMPLEMENTATION OF THE CONSERVATION STRATEGY FOR TAHOE YELLOW CRESS (RORIPPA SUBUMBELLATA) 2009 ANNUAL REPORT 2010-03-XX
TRP95U0001	TAHOE REGIONAL PLANNING AGENCY - NOTES ON RARE PLANTS IN THE TAHOE AREA. 1995-XX-XX

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Reno Fish And Wildlife Office
1340 Financial Boulevard, Suite 234
Reno, NV 89502-7147
Phone: (775) 861-6300 Fax: (775) 861-6301

In Reply Refer To: June 28, 2022
Project Code: 2022-0058767
Project Name: South Tahoe Public Utility District - Waterline Replacement Apache and Lake Tahoe Blvd.

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
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

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:

Reno Fish And Wildlife Office
1340 Financial Boulevard, Suite 234
Reno, NV 89502-7147
(775) 861-6300

Project Summary

Project Code: 2022-0058767
Event Code: None
Project Name: South Tahoe Public Utility District - Waterline Replacement Apache and Lake Tahoe Blvd.
Project Type: Water Supply Pipeline - Maintenance/Modification - Below Ground
Project Description: replace existing waterlines in roadways associated with Apache Blvd and Lake Tahoe Blvd within STPUD's service area.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.87075245,-120.02989693913071,14z

Counties: El Dorado County, California

Endangered Species Act Species

There is a total of 5 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
North American Wolverine *Gulo gulo luscus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5123	Proposed Threatened
Sierra Nevada Red Fox *Vulpes vulpes necator* Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4252	Endangered

Amphibians

NAME	STATUS
Sierra Nevada Yellow-legged Frog *Rana sierrae* 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/9529	Endangered

Fishes

NAME	STATUS
Lahontan Cutthroat Trout *Oncorhynchus clarkii henshawi* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3964	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Critical habitats

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

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Black-throated Gray Warbler *Dendroica nigrescens* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Jul 20

NAME	BREEDING SEASON
Cassin's Finch *Carpodacus cassinii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9462	Breeds May 15 to Jul 15
Evening Grosbeak *Coccothraustes vespertinus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Dec 1 to Aug 31
Lawrence's Goldfinch *Carduelis lawrencei* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Lewis's Woodpecker *Melanerpes lewis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9408	Breeds Apr 20 to Sep 30
Oak Titmouse *Baeolophus inornatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Olive-sided Flycatcher *Contopus cooperi* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see

below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

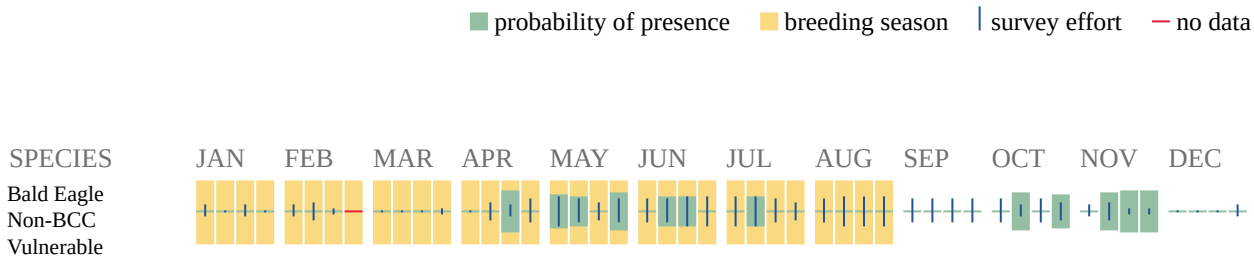
1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

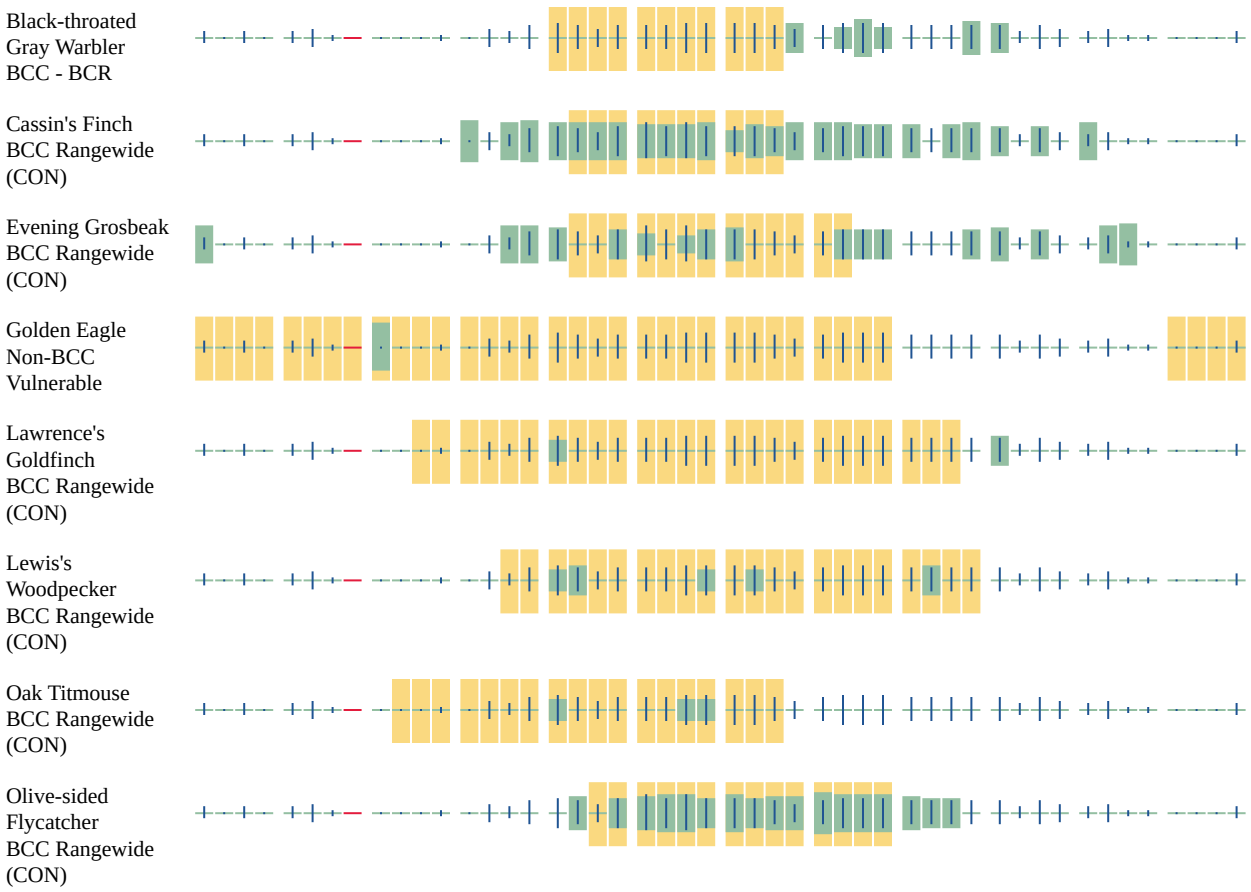
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and

3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell

me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER EMERGENT WETLAND

- Palustrine

RIVERINE

- Riverine

IPaC User Contact Information

Agency: Sierra Ecotone Solutions LLC
Name: Garth Alling
Address: PO Box 1297
City: Zephyr Cove
State: NV
Zip: 89448
Email galling@sierraecotonesolutions.com
Phone: 5304162440