# Glen Alpine Creek Watershed Restoration Project

March 12, 2024

## Introduction

Tahoe Resource Conservation District (Tahoe RCD), in partnership with the U.S. Forest Service, Lake Tahoe Basin Management Unit (LTBMU), is soliciting written proposals for professional services to conduct environmental planning activities to support an environmental analysis for restoration and enhancement of wildlife habitat, physical and biological functions, and public recreation opportunities in the Glen Alpine Creek Watershed. Planning activities will include, but not be limited to, field assessments, data analysis and modeling, feasibility assessments, and reporting.

The Glen Alpine Creek Watershed encompasses approximately 9500 acres and is located directly upstream of Fallen Leaf Lake southwest of Lake Tahoe (see map). The Glen Alpine Creek Watershed has been identified as a priority area for restoration, is under threat from both terrestrial and aquatic invasive species, impacts from historic land management activities, and changes resultant from the effects of climate change. It is also potential and currently occupied habitat for several threatened and endangered species and hosts a number of unique and valuable recreational opportunities in both a front country and federal designated Wilderness setting.

Tahoe RCD is a non-regulatory special district dedicated to promoting the conservation, stewardship, and knowledge of the Lake Tahoe regions' natural resources by providing leadership and innovative environmental services to all stakeholders. Tahoe RCD is committed to working with a variety of stakeholders including the LTBMU, who owns and manages the Glen Alpine Watershed and surrounding environments to plan and implement innovative restoration projects.

## Project Summary

The goal of the Glen Alpine Creek Watershed Restoration Project is to gather and synthesize data and conduct assessments on existing and historic habitat conditions. The data and associated reports will support a future environmental review for the restoration of physical and biological processes and functions in the project area to better provide habitat for native species and enhance recreational opportunities. Proposed assessments and data collections (field surveys) as described in the project scope will provide a thorough understanding of the existing conditions (physical and biological), factors contributing to non-desired ecological conditions, and the pressures of a changing climate. This information will be used in a future contract to inform a series of restoration actions that will comprise a project proposal for NEPA review and eventual implementation. The selected contractor will work closely with Tahoe RCD and the LTBMU to implement the required assessments and identify certain restoration actions.

## Project Background

The Glen Alpine Creek Watershed is located on the south shore of Lake Tahoe and flows into Fallen Leaf Lake. Fallen Leaf Lake then flows out Taylor Creek, which outlets into Lake Tahoe. A large portion of the Glen Alpine Creek Watershed is in Desolation Wilderness and contains numerous, large, cold-water lakes that are utilized for dispersed recreation and provide historic habitat for

Sierra Nevada yellow legged frog, Lahontan cutthroat trout, as well as a suite of other native species. Management actions, specifically in the wilderness, have been limited and past land-use coupled with minimal management could be impacting ecosystem function and processes. The hydrology of Glen Alpine affects Fallen Leaf Lake and conditions in Taylor Creek as these systems are hydrologically linked. All three systems are important to native species and recreational use. All three systems have also been identified as important habitat for both Lahontan cutthroat trout and Sierra Nevada yellow-legged frog, both federally listed species on the Endangered Species Act. Additionally, all three systems are occupied by various aquatic invasive species. The upper extent of these infestations is unknown, but of a concern. Long-term stream temperature monitoring shows that Glen Alpine Creek and Taylor Creek are reaching lethal temperatures for salmonids for extended periods throughout the summer. The project area also contains a variety of infrastructure that could be impacting ecological conditions and/or need improvements. Understanding existing conditions of both aquatic and terrestrial habitat based on historical and current use, understanding the current and future impacts of a changing climate, and determining restoration actions that could restore conditions, and making the project area more resilient, are key components of this project.

The LTBMU, and partners who manage and regulate land in the Tahoe Basin for species, recreation, and protection of water quality have identified the Glen Alpine Watershed (Glen Alpine Creek, Fallen Leaf Lake, and Taylor Creek) as an important watershed and in need of potential restoration actions that could include treatment of aquatic invasive species, stream restoration, fish management, trail/road upgrades, infrastructure improvements, and/or vegetation management.

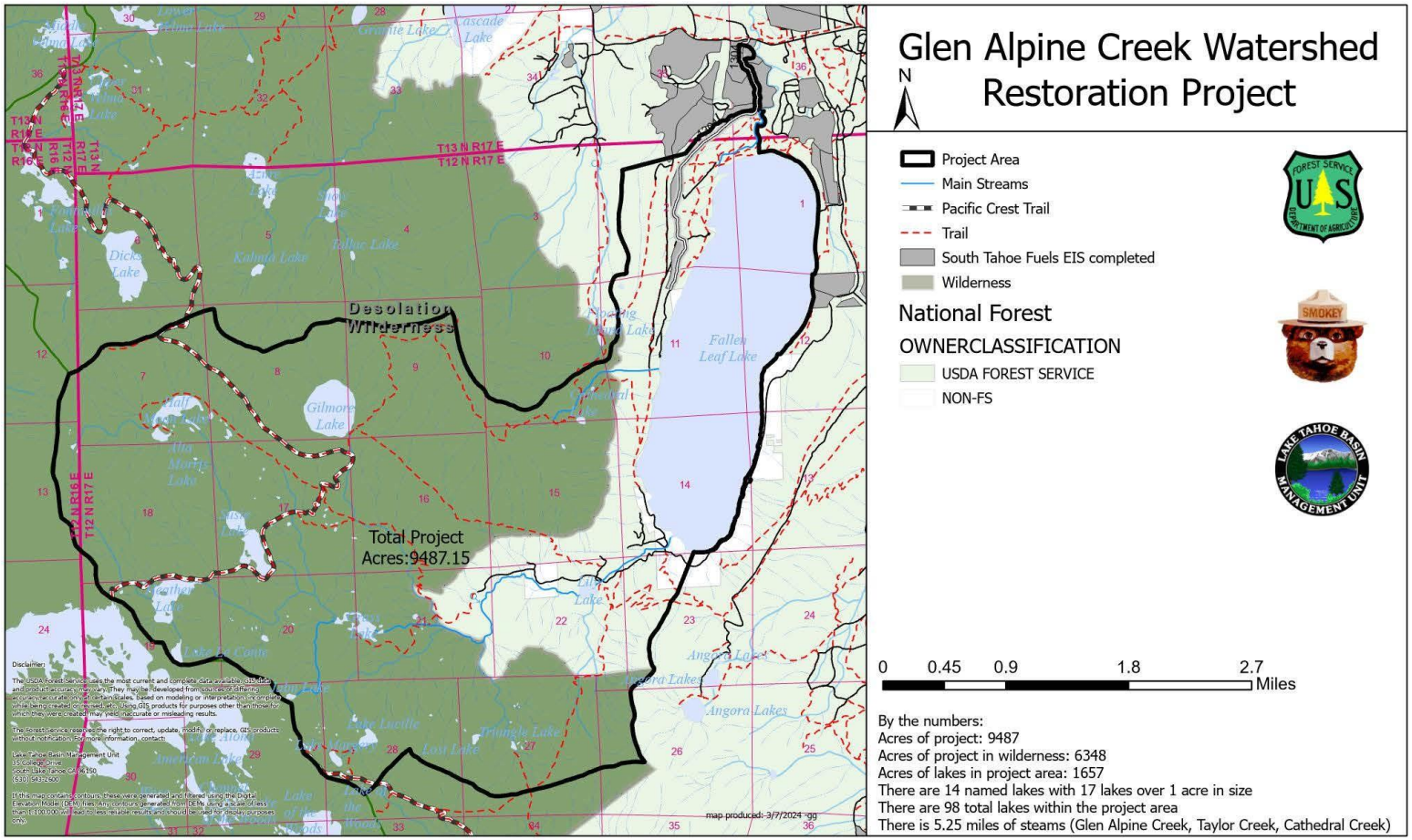
### Background and Reference Documents Available for Review:

Documents included (posted with RFP https://tahoercd.org/about-us/documents-links/) as relevant background reference:

- American Rivers Meadow Assessment Score Card and Comparison of Meadow Assessment Protocols Technical Paper.
- Trail Monitoring Form and Instructions Document
- Tahoe Basin Wide Fisheries Habitat Assessment
- 1981 Hydrological Assessment of the Fallen Leaf Lake Watershed and Fallen Leaf Lake Operating Plan
- 1981 Minimum Flow Needs for Taylor Creek Report
- Recovering the lost potential of meadows to help mitigate challenges facing California's Forests and water supply – Research Article, Pope, Cummings
- Using machine learning to find lost meadows – Research Article, Cummings, Pope, Mak
- Historic Small Dam Assessment
- Beaver Recovery Assessment Tool (BRAT) Fact Sheet
- Stream Conditions Inventory Technical Guide

Other relevant information and data including: spatial data and including lidar will be provided to the awarded consultant team.

Project Location



## Project Description Summary

This project will consist of all study/assessments, data collection, and field related tasks necessary to establish historic and current/existing conditions within the watershed as identified in the Scope of Work and develop a series of restoration actions compiled into a final report. The project will result in a report outlining both the historic and current conditions of the watershed based on modeling, field surveys, data analysis, and various assessments. This report will also explore the feasibility of some restoration actions for future NEPA analysis as part of a larger restoration effort and eventual implementation in future project phases.

## Scope of Work

The project has been divided into a series of Objectives and associated subtasks. Any proposal should describe how the objectives are to be met and tasks accomplished accompanied by a schedule. Any deliverable, product, or document produced in this process will be first submitted in draft format and is subject to at least one reasonable review period. These review periods should be incorporated into the project schedule.

### Objective 1: Compile existing information.

The selected contractor will conduct actions to compile, categorize, and present all existing relevant information. Some actions may be accomplished using existing historical, cadastral, monitoring, hydrological, or other collected data. These activities may or may not require additional research, field study, or other yet to be identified actions to verify or cross reference information to ensure accuracy.

#### Task 1.1: Assess Historic Land Use based on available Historic Documents

Historic land-use assessment – Use historic data, including but not limited to aerial photos, to identify and describe past land-uses in the watershed (grazing, mining, logging, roads, fire suppression, dam construction, etc.) and describe the impacts of these uses.

- A grazing assessment should include: How was this area grazed, and what are the impacts of historic grazing on current conditions?
- An assessment of historic logging and vegetation management (including cultural uses of fire on the landscape) that provide information on historic conditions and management (or lack of management) that contribute to current conditions.
- An assessment of infrastructure in the project area and associated impacts that contribute to current conditions.
- A small dam assessment, mapping existing dams within Desolation Wilderness and describing current conditions, impacts to the watershed and associated species. Details should include who built an individual dam, when was it built, for what purpose(s) it built for, to determine the historic significance.

### Task 1.2: Compile an Annotated Bibliography of available Existing Information.

The consultant will collect all available existing information required to inform existing and historical conditions assessment. This information should be compiled into an annotated bibliography that provides a short description of existing data/information and includes via citation and appendix those documents when possible. This task will require:

- A comprehensive search of information and data related to the Glen Alpine Watershed within the project boundary.
- A comprehensive review of existing studies, monitoring efforts, and previous baseline studies and data collection efforts.

### Objective 1 Deliverables:

Historic Land Use assessment report describing historic conditions and impacts of historic land-use. Annotated bibliography report document and associated categorized/organized appendix and reference documents.

### Objective 2: Current Conditions Assessment

Building on, and complimenting, the outcome of Task 1, the consultant will perform studies and assessments to establish the current conditions of the watershed. This will require both office-based work as well as field-based activities to verify information, assumptions, or assertions. Other field study needs may be required and will be determined by agreement between Tahoe RCD and the selected contractor in consultation with the LTBMU.

### Task 2.1: Existing Road and Trail inventory and assessment.

The contractor will analyze existing roads for crossing, surfacing, and drainage issues. The assessment should include the entire road prism for the entire system within the project area, assessing all channel crossings. Results will identify drainage issues, water capture within the roadway, whether roads are contributing sediment to streams and stream environment zones (SEZs), and if culverts are hydrologic impediments and/or contributing sediment. Results will provide quantified data on tons of sediment entering streams and/or SEZ by road segment. Roads that are negatively impacting watershed should be identified for decommissioning.

The trail assessment should include system and user created trails/use patterns. The contractor will conduct a rapid assessment, using an established protocol (such as a modified version of the GYR Trail Monitoring Protocol by Roger Poff) as identified by Tahoe RCD and the LTBMU, with field verification to identify existing trails that are eroding, degraded, contributing sediment to waterways or SEZs, and/or impacting resources. This could include a trail rating and should include a stream crossings/culvert assessment. Trails that are negatively impacting watershed should be identified for repair or decommissioning. Results should include a map/shapefile of all trail segments and associated ratings.

### Task 2.2: Dam Assessment

Use existing data from LTBMU and Objective 1 in combination with field verification to assess small and mid-sized dams within project area, including current and historic use. Complete an analysis determining stability/integrity of dams, aquatic organism passage (AOP) issues, downstream effects, and water rights. Analysis will also include mapped locations of all dams, discussion regarding removing or leaving (pros/cons), and existing condition (e.g. size, construction, etc.).

- Wilderness dams – Dams found within designated Wilderness should be assessed for their historic value, habitat impacts, stability/integrity, aquatic organism passage (AOP) issues, downstream effects, and water rights.

- Anita and Lucky Baldwin Dam Assessment – using existing information and field verification conduct a seismic sounding/stability assessment on the Anita Baldwin Dam. Assess the existing fish ladder on the Aniita Baldwin dam for function and identify actions needed to improve function if needed. Discuss whether and to what extent the Lucky Baldwin Dam is influencing lake level and downstream flows. Determine the historic status of both dams, impacts of keeping and/or removing; (i.e. describing what would the watershed look like without dams and associated impacts to piers and marinas). Determine if upgrades are needed to meet modern safety standards and identify upgrades

### Task 2.3: Meadow mapping and condition assessment :

Utilize existing models,  datasets, and Lidar to identify existing, potential, and historic meadow locations. Ground truth and complete assessment of existing meadow conditions using appropriate protocol  (e.g. American River Meadow Assessment Protocol) and extent of existing and historic meadow boundary. Results should identify existing impacts; conifer encroachment, channel incision, headcuts, hydrologic condition, infrastructure impacts (e.g. trails). Damaged or degraded meadows should be evaluated for restoration opportunities. Potential actions to restore meadow or hydrologic features, or ensure meadow are resilient to a changing climate should be proposed, based upon findings of the condition assessment. The pros and cons of each restoration action considered should be discussed, to help inform the range of options available for restoration actions.

- Beaver Dam Assessment using the results of the Beaver Restoration Assessment Tool (BRAT) GIS model to determine potential habitat for beavers to help guide decision-making related to stream restoration and/or meadow restoration actions.

- Milkweed/Monarch butterfly assessment in vicinity of Cathedral Road (west side Fallen Leaf Lake) using LTBMU existing data and survey locations to field verify and map the extent of existing milkweed habitat. Contractors should monitor for Monarch caterpillar and chrysalis

presence/absence in milkweed mapped locations. Results should provide locations and recommendation for enhancement/restoration opportunities to improve habitat for Monarch butterfly.

### Task 2.4: Hydrological assessment

Complete a hydrologic analysis to determine a suite of flow models under the past, current, and projected future climatic conditions, along with assessment and mapping of the current geomorphic and topographic conditions of Glen Alpine and Taylor Creeks. Work will include:

- Literature search and review of existing hydraulic, hydrologic, geomorphic, and meteorological data and reporting, including the Hanes 1981 *Hydrologic Analysis of the Fallen Leaf Lake Watershed*.
- Identify available LiDAR dataset(s) and determine the most appropriate for use in flow model and stream delineation.
- Flow Model - Utilize meteorology, topography, soils, current and projected climate regimes, and associated field verification to describe current and projected 2050 hydrographs. Results should provide a range of flow conditions (e.g. 2, 5, 10, 20 and 100-year flows) under current and projected climates).
    - The hydrograph should be used in conjunction with known water uses within the project area to determine the water budget.
    - The report should discuss impacts to downstream water uses or availability based on hydrograph results.
    - Discuss impacts of upstream dams on flows in lower Glen Alpine Creek/to Fallen Leaf Lake, including impacts from potential dam removals.
- Stream delineation
    - Using a hydrologic model (such as the hydrology tools in GIS) develop a new stream layer using the available LiDAR data.
    - Stream layer should include any streams that are within or flow within the project area.
    - Field validate the accuracy of stream modeling work and calibrate accordingly.

**Deliverables:** Report should include description of the flow regimes of Glen Alpine and Taylor Creek under the assessed conditions, DEM, REM, and high-resolution map identifying key geomorphic features. Data should include metadata and be provided in appropriate raster and/or shapefile format. This report will constitute a chapter in the final report but should be able to stand alone as a separate document.

### Task 2.5: Fire model/current condition

Utilize Interagency Fuel Treatment Decision Support System (IFTDSS) to complete fire behavior modeling under different conditions and different acceptable outcome ranges (e.g. different fire weather behavior scenarios). Modeling should be informed and/or validated with field visits. Results should inform project managers on how fire would move through the watershed, the current deviation from natural fire return interval, and treatment design.

### Task 2.6: Detailed habitat assessment of Glen Alpine Creek

Complete an assessment of habitat quality in selected portions of Glen Alpine Creek. Assessment should include the establishment of three Stream Condition Inventory (SCI) reaches on Glen Alpine Creek using established protocol. Specific locations will be chosen in coordination with LTBMU. Results should identify existing habitat conditions and restoration actions to improve habitat, specifically spawning habitat for Lahontan cutthroat trout. Specifically in the lower reaches (below Lily Lake), results should inform where habitat enhancement activities (e.g. placement of large woody debris, substrate enhancement) would be successful based on stream characteristics.

Fish Management Structure Feasibility Study. Complete a feasibility study of possible in-lake permanent fish management structure in Fallen Leaf Lake that could be managed in high and low flow conditions from Glen Alpine Creek. Identify an upstream structure location near the outflow of Lily Lake that could operate year around, as needed, and prevent downstream fish movement. Results should include two to three different options with conceptual designs to 30%.

### Objective 2 Deliverables:

Technical report describing results of each task. Each task should constitute a chapter of the final report. Chapters should include a description of methods, results, discussion, and collected data incorporated by reference and included in an appendix. The results of Task 2.4 should also be included as a chapter in the final Objective 2 report but should be able to act as a standalone document.

## Objective 3: Project Coordination and Administration

The selected contractor will coordinate with Tahoe RCD to ensure all aspects of the project are completed as scheduled, any delays are mitigated, and all products, including invoices, are delivered.

### Task 3.1: Project Coordination and Facilitation

Tahoe RCD will provide overall project direction for the selected consultant and associated stakeholders. Project coordination conducted by the consultant will consist of oversight of any sub consultants, field personnel, meeting facilitation between technical advisors and the public, and associated tasks. Actions will be conducted in coordination with Tahoe RCD. Regular project team meetings, with a minimum of a project kick off and a review meeting for all draft deliverables, will be held and led by the selected consultant. A schedule with a minimum six meetings, including project kick off, draft product review, and pre and post field season, should be included with any proposals.

### Task 3.2: Administration and reporting

The selected consultant will prepare interim progress reports to be submitted to Tahoe RCD semi-annually. The consultant will provide copies of all documents, data, notes, meeting minutes, and

materials generated during the project. The consultant will prepare a final project report with a comprehensive summary of findings, accomplishments, and products.

### Task 3.3: Billing and Invoicing

The selected consultant will provide Tahoe RCD with monthly invoices (the consultant will be paid for services on a quarterly basis) detailing all activities conducted and charged for during the previous month, including; sub-consultant activities, required travel, all other relevant activities.

### Objective 3 deliverables:

Meeting materials, notes, agendas, copies of all documents, data, and materials generated during the project, required reports, invoices.

### Project Schedule

| Milestone | Planned Start Date | Planned Completion Date |
|---|---|---|
| Project initiation/completion | May/June 2024 | October 2025 |
| Objective 1 | May/June 2024 | October 2024 |
| Objective 2 | May/June 2024 | August 2025 |
| Objective 3 | May 2025 | October 2025 |
| Interim Reports | October 2024, May 2025 | October 2025 |

## Instructions for Submission

Proposals should be clear and concise including appendices and attachments. Resumes, insurance declarations, schedule, cost, and references should be included in the appendix. Tahoe RCD reserves the right to amend the RFP schedule, issue amendments, cancel, or reissue the RFP at any time.

Proposals shall include, at a minimum, the following content:

1. Scope of Work: Describe the proposed project approach, specifically describing subtasks necessary to complete each of the primary tasks identified in the RFP. Include important strategic considerations, potential decision points and alternatives, and explain the advantages of the proposed approach. If proposing changes to tasks outlined in the RFP, include an explanation of why they should be considered.

2. Qualifications: State project team qualifications, including those of any named subcontractors. Describe relevant projects and clients and the experience and professional certifications/credentials of key personnel. Although prior work experience in the Lake Tahoe Basin is not required, applicants should describe prior work experience in the Basin and their familiarity with restoration projects, project planning, and the stakeholders and regulatory context in the Lake Tahoe Basin.

3. Project Management: Describe your management structure and the approach you would use to manage the Professional Services Agreement and associated work orders with a dedicated project manager and associated team. Describe who in management and on the project team will have direct interface with Tahoe RCD staff during the Project.

4. Readiness and Ability: Describe your readiness and ability to complete the outlined tasks in a timely basis.

5. Schedule and Cost: Provide cost as a not to exceed fee estimate, broken down by task, for completing all work as described in the proposal “Project Tasks and Deliverables”, including materials and outside services. Include a schedule of billing rates for key management, technical personnel, subcontractors, and support staff and a cost schedule for any anticipated direct expenses (e.g., mileage, field equipment, etc.). If applicable, please provide separate staff billing rates for travel. The total value of the project is not to exceed $450,000 and completion date is prior to December 31, 2025.

6. References: Provide the names and contact information of at least three individuals or organizations that can provide feedback on past project performance.

7. Proof of Insurance: Submit proof of insurance and W-9.

## Terms and Conditions

- Tahoe RCD reserves the right to amend, modify, or otherwise change the RFP schedule or issue amendments/modifications at any time. Including but not limited to: cancellation or reissuance of the RFP, rejection of any or all proposals, waiver of any irregularities in the selection process, or the acceptance of any combination of items.
- Tahoe RCD reserves the right to request clarification or additional information from any bidder or to request supplemental information or material.
- Tahoe RCD reserves the right, in good faith, to determine the contracting process with any bidder to whom any services are awarded including the length of time required for contract execution following Tahoe RCD approval.
- Tahoe RCD will not reimburse any bidder for any costs incurred or involved in the preparation and submission of any bd or response or in the preparation and attendance of any subsequent interview.
- Selected consultants/contractors will be expected to sign the Tahoe RCD Professional Services Agreement (see supporting documents, https://tahoercd.org/about-us/documents-links/) and should be familiar with such. Any desired edits may or may not be accepted by Tahoe RCD and bidder failure to familiarize oneself with the agreement language is not the responsibility of Tahoe RCD.
- Any and all subcontractors used by the selected consultant/contractor will require consent of Tahoe RCD and will be subject to all provisions stipulated in the Tahoe RCD Professional Services Agreement.
- This project and associated contract is funded by a federal grant and is subject to all federal award requirements as stipulated by the superseding funding agreement with Tahoe RCD. As such any selected consultant/contractor must adhere to federal award requirements including but not limited to: cost principals and administrative regulations, per diem rates, milage rates, travel expenses, allowable costs, etc. A copy of the Federal Funding Agreement will be included with the Tahoe RCD Professional Services Agreement during the contracting process for the selected bidder.

## Schedule:

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| Date of Announcement: | March 12, 2024 |
| Deadline for Questions/Inquiries: | March 29, 2024 COB |
| Deadline for Proposal Submissions: | April 9, 2024 COB |
| Applicant Interviews: | Mid April, 2024 |
| Notification of Award(s): | May, 2024 |

## Proposal Submittal:

Please submit one copy, either in hard copy or electronic format (PDF preferred), of the RFP response and associated documents in a sealed envelope (hard copy) plainly marked *"Glen Alpine Creek Watershed Restoration Project – DO NOT OPEN – Sealed Bid Enclosed. [Name of Bidder]".* Electronic submission may come via e-mail to *bids@tahoercd.*org with the subject line *"Glen Alpine Creek Watershed Restoration Project – DO NOT OPEN – Sealed Bid Enclosed. [Name of Bidder]".* Bids should be contained in an attached PDF document. Bidder contact information should be included in the body of the e-mail. Do not include bid information within the body of the e-mail. All bid information should be contained in the attached PDF file.

Late proposal submissions will not be considered. All proposals, whether selected or rejected, shall become the property of Tahoe RCD. Tahoe RCD will not reimburse any bidder for any cost incurred in the preparation and submission of responses to this RFP or in the preparation and attendance of any subsequent interview. Transmittal/Cover letters for the proposals shall be signed by an authorized employee or officer in order to receive consideration. Tahoe RCD shall not be responsible for proposals delivered to a location other than those specified below.

## Hard Copy Delivery Address:

Tahoe Resource Conservation District
Attention: Andrew Schurr, Restoration Program Manager
870 Emerald Bay Road, Suite #108
South Lake Tahoe, CA 96150

## Electronic Submittal:

bids@tahoercd.org
Subject line*: "Glen Alpine Creek Watershed Restoration Project – DO NOT OPEN – Sealed Bid Enclosed. [Name of Bidder]"*
Include Bidder name and contact information in the e-mail. All bid information should be contained in an attached PDF document. Attachments will not be opened until after the submission deadline. Do not include bid information in the body of the e-mail.

## Selection Process:

The following steps will be used to select consultants:
1. Initial Screening: Tahoe RCD and project partners will review and evaluate proposals using the following criteria:

- Proposal content, project approach, qualifications, quality, references, cost, and timing. Demonstrated professional qualifications and credentials (as applicable), relevancy of listed project experience, and demonstrated ability to complete work tasks listed in the RFP.

2. Interviews: Applicants that meet the initial screening criteria may be invited to interview with Tahoe RCD and project partners in person or digitally (at Tahoe RCD's discretion). It is possible that the selection of a Consultant will be based solely on the written RFP response.

## Questions:

All questions should be submitted via e-amil to Tahoe RCD Restoration Program Manager, Andrew Schurr. All e-mailed questions must include *"Glen Alpine Creek Watershed Restoration Project RFP Questions"* in the subject line. All substantive questions regarding the project or project materials must be submitted by COB March 29th. General questions regarding the submission process may be submitted up until the submission deadline.

Andrew Schurr
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