TRUCKEE RIVER WATERSHED COUNCIL

PO Box 8568
Truckee, CA 96162
530-550-8760
www.truckeeriverwc.org

Addendum No. 1

Date: July 10, 2018

RE: Sardine Meadow Restoration Project: Vegetation Monitoring and Wetland Delineation

To: Prospective Proposers

This Addendum modifies the original Request for Proposals Documents dated June 28, 2018.

This addendum addresses:

- Clarification of Scope of Work
- Updated Project Schedule
- Availability of Hydrologic Data

Clarification of Scope of Work

Additional sub-task:
Task 1.3 Complete pre-project vegetation monitoring. One year of pre-project vegetation monitoring shall be completed, following the final vegetation monitoring plan (Task 1.2). Contractor may elect to complete vegetation monitoring in 2018 or in 2019.

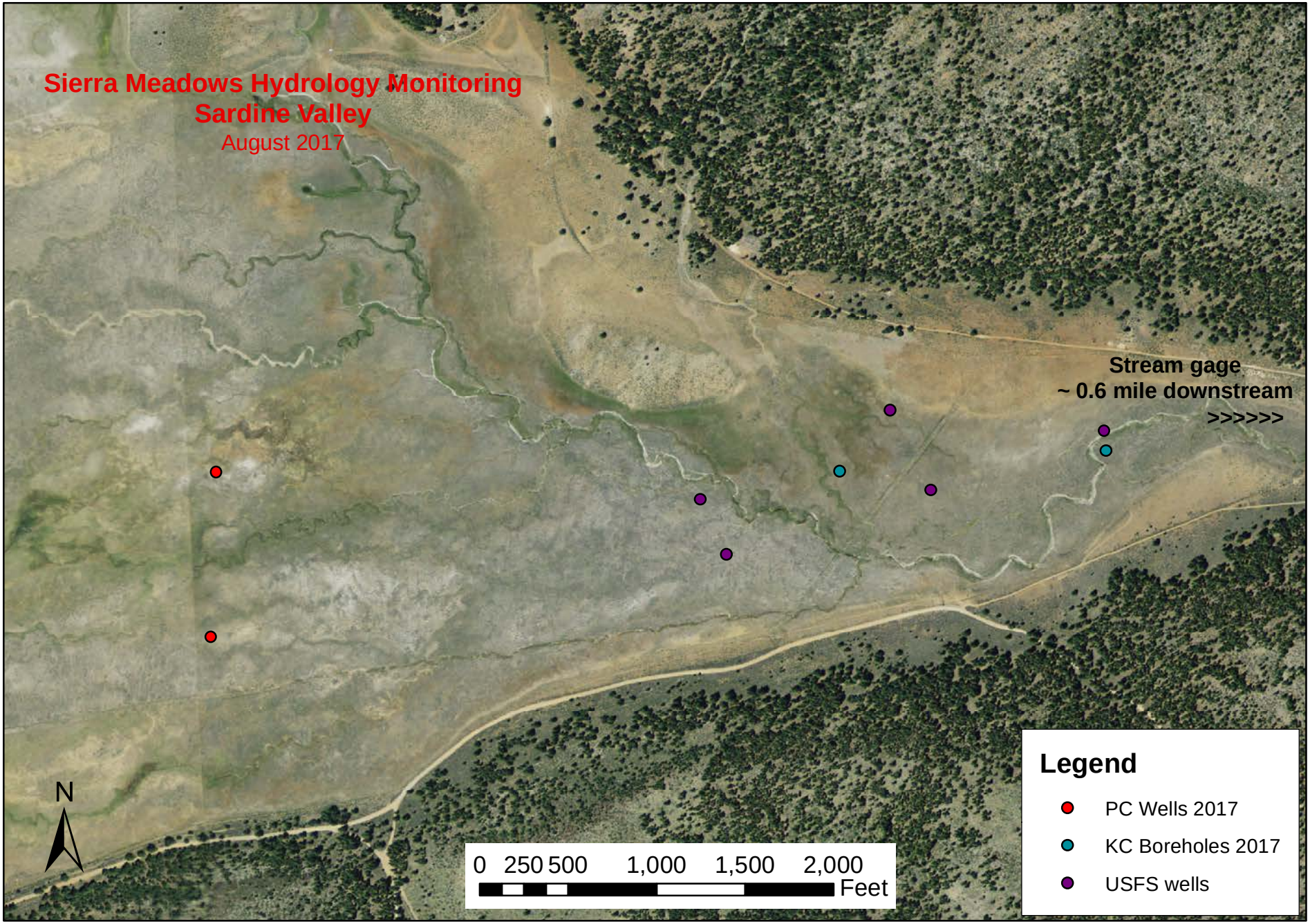
Updated Project Schedule

See highlighted rows. Contractor may elect to complete pre-project vegetation monitoring in 2018 or 2019.

Activity	Completion Date
Proposals Due	July 25, 2018
Interviews	August 1, 2018
Scope of Work and Contracting	August 10, 2018
Launch Meeting	August 15, 2018
Vegetation monitoring plan	October 15, 2018
Wetland delineation	September 30, 2018
Pre-project vegetation monitoring results	August 30, 2019
Quarterly Progress Reports & Invoices	March 25, June 25, September 25, December 15 through length of contract

Availability of Hydrologic Data

Seven shallow groundwater wells are located in the project area, installed in 2017 (USFS wells and PC Wells 2017 on Figure 1). Water levels are read monthly as site access allows. A stream gage is located approximately 0.6 miles downstream of the project area, and manual flow measurements are taken approximately monthly as site access allows. The data will be made available once the contract is awarded.


Sierra Meadows Hydrology Monitoring
Sardine Valley
August 2017
Stream gage
~ 0.6 mile downstream
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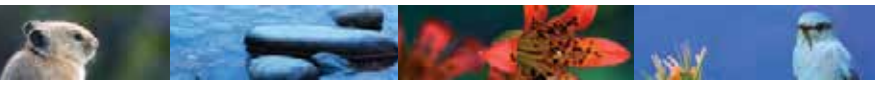
0 250 500 1,000 1,500 2,000
Feet
Legend
PC Wells 2017
KC Boreholes 2017
USFS wells



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TRUCKEE RIVER WATERSHED COUNCIL

June 28, 2018

REQUEST FOR PROPOSAL

SARDINE MEADOW RESTORATION PROJECT: VEGETATION MONITORING AND WETLAND DELINEATION

Consulting services to encompass all labor, materials, equipment, facilities, and incidentals required to:

- Design vegetation monitoring plan for Sardine Meadow Restoration Project;
- Complete pre-project vegetation monitoring; and
- Complete wetland delineation for project area

The consulting team shall have demonstrated experience in vegetation monitoring and completing wetland delineations. Experience with meadow and stream restoration and working with stakeholder groups are also desired. The team must be willing to work with the Truckee River Watershed Council (TRWC) – project lead, the Trust for Public Land (TPL) - landowner, the U.S. Forest Service Tahoe National Forest (USFS) – project designer, and adjacent landowners.

RESPONDING TO MULTIPLE RFPs

In 2018, TRWC will release several Requests For Proposals (RFP) and Requests For Bids (RFB) for restoration design, construction, environmental compliance, permit assistance, and the like. We appreciate that some firms may wish to respond to multiple RFPs & RFBs. To help with proposal and bid preparation, we offer the following:

1. Responding to Multiple RFPs/RFBs. Firms may respond to multiple RFPs and RFBs. In the vast majority of our projects, a firm will not be prevented from bidding on future work if they participate in current work. In the rare case where this prohibition exists, we will state the prohibition in the current RFP/RFB.

2. Lead Firm vs. Subcontracted Firm. We understand and accept a given firm may be the lead in one response and a subcontractor in another response.

3. Respond Uniquely to Each RFP/RFB. Each of our projects has a unique combination of partners, stakeholders, funders, constraints, opportunities, and timelines. Due to the characteristics of each project, we purposely release separate RFPs/RFBs. Firms must submit a response to each RFP or RFB to be considered. While we appreciate that a firm might be able to offer efficiencies if we combined projects, the unique blend of

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characteristics of each project prevent us from combining projects more than has already been done.

4. Repeating Information Across Multiple Responses. We understand and accept that information about the firm, its staff, past work, references, work approach, and the like may be repeated, perhaps even word for word, across multiple responses.

PROPOSAL DEADLINE

Proposals must be received electronically (.pdf format) by 5:00PM on July 25, 2018.

SUBMISSION

Submit proposals electronically (.pdf format) to: bchristman@truckeeriverwc.org.

REQUESTS FOR ADDITIONAL INFORMATION

Please direct all questions to Beth Christman, bchristman@truckeeriverwc.org, (530) 550-8760 x1#. If formal responses are needed, these will be published in our e-newsletter and posted to www.truckeeriverwc.org in the "News" section. Please sign up for the e-newsletter and/or check the website for updates.

TIMELINE

Activity	Completion Date
Proposals Due	July 25, 2018
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INTRODUCTION AND BACKGROUND

Location

The work requested here is located in Sardine Valley, north of Stampede Reservoir in Sierra County. The work is limited to a parcel owned by the Trust for Public Land (Figure 1).

Site Access

Site access prior to contract award must be coordinated through Beth Christman at TRWC: bchristman@truckeeriverwc.org, (530) 550-8760 x1#.

Sardine Meadow Restoration

Sardine Meadow is a 900-acre meadow located in the Davies Creek watershed. The meadow is under private ownership. The stream channel has been substantially diverted through railroad construction, road construction, and diversions related to grazing. As a result, the stream channel has downcut and is dewatering the adjacent meadow. Much of the valley has converted to sagebrush upland habitat. The existing stream channel is actively eroding. Restoration has been successfully completed on adjacent USFS land upstream and downstream of the project area.

This current phase of restoration planning will be completed on the eastern side of Sardine Meadow, on property owned by the Trust for Public Land (Figure 1). The project area is approximately 350 acres. Restoration activities include filling the existing stream channel, removing some of the abandoned road materials on the meadow surface, and constructing grade controls at the upper and lower ends of the project site. Fill material in excess of that derived on site is projected to come from work on Boca dam.

Existing Studies and Previous Work

- Completed IS/MND - attached

WORK TO BE COMPLETED

Task 1. Preparation of Vegetation Monitoring Plan

Task 1.1. Project launch meeting. Meet with project team to refine monitoring plan and finalize exact methods to be used.

Task 1.2. Design vegetation monitoring plan. Establish a vegetation monitoring plan to monitor project success. The vegetation monitoring plan must be formally written up so that it could be implemented by any qualified botanist. The data collected during annual vegetation monitoring must be quantitative and comparable between years in order to track revegetation success and wetland development of the project area.

The monitoring plan should include clear maps and graphics showing monitoring locations, and clearly defined monitoring techniques. The monitoring plan should include field data templates. A draft of the monitoring plan will be submitted for approval prior to completing 2018 pre-project vegetation monitoring.

Task 2. Wetland delineation

Complete wetland delineation for restoration project area (Figure 1 & Attachment 1, Fig 2.3-1). Perform field work needed to complete the delineation, prepare delineation report, and submit delineation for verification by the U.S. Army Corps of Engineers. The Western Mountains, Valleys, and Coast Regional Supplement should be used. Figures must conform to U.S. Army Corps standards for wetland delineations.

Task 3: Project Management, Coordination, and Reporting

Coordinate with TRWC staff regarding the status of the project.

Consultant will produce quarterly invoices and progress reports and submit to TRWC by the 25th of the last month of the calendar quarter (with the exception of December, March 25th, June 25th, September 25th, and December 15th).

Copies of all survey, data collection, and analysis will be provided to TRWC in electronic form (Word, Excel, or Adobe pdf). GIS shapefiles will be provided to TRWC including locations of monitoring plots or transects and wetland delineation layers.

Deliverables

- Project launch meeting
- Draft vegetation monitoring plan
- Final vegetation monitoring plan
- Draft wetland delineation
- Final wetland delineation
- Digital copies of all data collection and analysis
- Quarterly progress reports and invoices

PROPOSAL FORMAT

There is no page limit, but ***20 pages or less is preferred***. Concise writing and graphics are greatly appreciated.

Detailed Work Plan & Schedule

Objectives: Identify and discuss briefly the specific objectives you will achieve through the conduct of the services within the project, as defined and specified above.

Scope: Define specifically the scope of services to be provided to complete the above described project tasks. The consultant may elect to suggest modifications to the scope above. Include estimated time schedule of the major tasks to be accomplished.

Detailed Work Approach: Discuss in detail each of the activities you will conduct to achieve the scope and objectives defined and identified above. Please specifically address work components outlined above and elaborate as needed. Discussion of appropriate vegetation monitoring methods should be included, recognizing that the final monitoring plan will be refined during the project launch meeting.

Include a timeline or schedule. Modifications to the components listed in the work statement can be included. Technical merit and details of work proposed will be heavily weighted in proposal evaluation.

Cost Estimate

Personnel Costs: Itemize by task to show the following (include subcontractors):

- Name and title
- Estimated hours per staff person, per task
- Rate per hour
- Total cost per task

Support costs: supplies, printing, postage, etc.

Transportation: Travel expenses directly related to the contract services. Mileage must be charged at the current IRS rate.

Other costs: Show costs and expenses that do not fall within the other categories.

General overhead and administrative charges not allowed.

Qualifications and References

If you have completed work or submitted proposals to work with TRWC before, please list the most recent project or proposal.

Include experience with vegetation monitoring plan preparation and implementation and with completion of verified wetland delineations. List at least three (3) specific projects that demonstrate this experience.

Include a duty statement and resume of each key person to be assigned to the project, by name and title, with experience in pertinent fields. If subcontractors will be used, include a description of those persons or firms including a description of their qualifications.

Provide a minimum of three references for similar projects, with name and phone number.

CONTRACT TERMS AND AGREEMENT

Once a contractor is selected, TRWC will negotiate a satisfactory contract and reasonable fee for the services needed. In the event a satisfactory agreement cannot be negotiated with the top ranked qualified firm, the negotiations shall be terminated with the firm and the negotiations continued with the remaining qualified firms in order of their ranking.

When the contract is awarded, these terms will apply.

Payments

Progress payments for services performed shall be made in arrears upon receipt and approval of contractor's detailed invoices indicating costs and obligations incurred and services rendered to date. Payments will be made quarterly.

Changes in Personnel

Contractor's key personnel as indicated in contractor's response to this RFP may not be substituted without the written consent of the TRWC Project Manager. This will be monitored and enforced by TRWC.

Termination for Convenience

TRWC may, at its option, terminate the contract at any time upon thirty (30) day written notice to contractor. Contractor may submit written request to terminate only if TRWC should substantially fail to perform its responsibilities as provided in the contract. If terminated, contractor will be compensated for costs incurred up to the time of the termination notice for work satisfactorily completed. In no event shall payment of such costs exceed the contract price.

Unique Billing of Work

All work produced for the project will be original for TRWC, and will not have been billed to other clients previously. Work produced under the contract with TRWC will be billed only to the contract with TRWC and not to other clients or funders.

Liability Insurance

Contractor shall provide before entering the premises and shall maintain in force during the term of this contract the following liability insurance:

- General Liability
- Motor Vehicle Liability

Each policy of liability insurance described above shall be in an amount of not less than one million dollars ($1,000,000) per occurrence for bodily injury and property damages combined.

Quarterly Progress Reports

Contractor to provide quarterly progress reports and meet with TRWC representatives upon reasonable notice to allow TRWC to determine if the contract is on the right track, whether the project is on schedule, provide communication of interim findings, and afford occasions for airing difficulties or special problems encountered so that remedies can be developed. All reports will be in Microsoft Word or Adobe pdf format. Data shall be provided in Microsoft Excel files as appropriate.

Quarterly Invoicing will include detail of task, delineated staff by name, hours, rate, total for the period, and remaining amount. Reports will be submitted in Microsoft Word/Excel or Adobe.

Attachment 1. Sardine Meadow Restoration Project IS/MND

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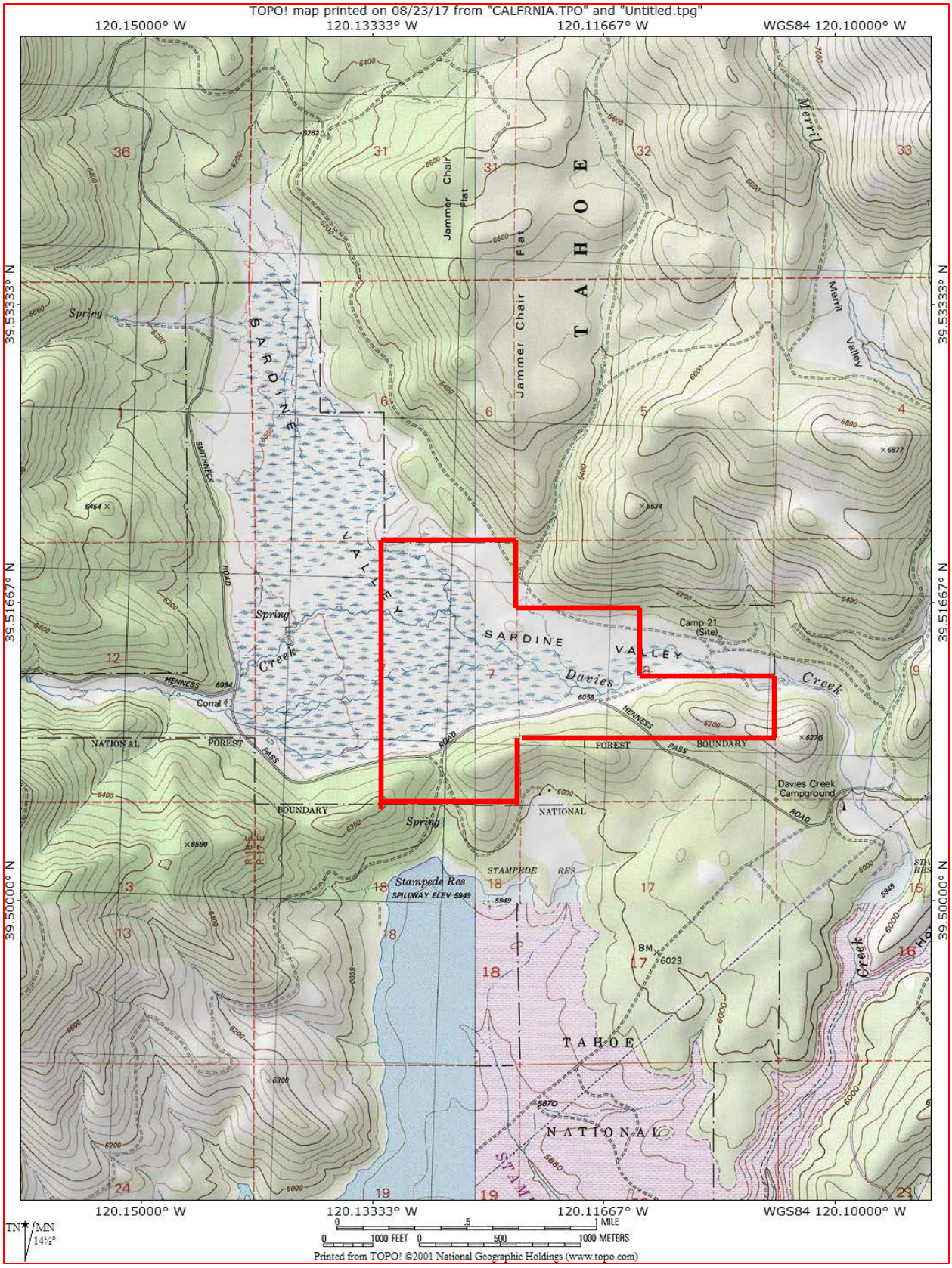

Figure 1. Sardine Meadow Restoration Project Area, outlined in red.

Sardine Meadow Restoration Project

Public Review Draft
Initial Study/Mitigated Negative Declaration

Prepared for:
Truckee River Watershed Council
P.O. Box 8568, Truckee CA 96162

AND

California Regional Water Quality Control Board, Lahontan Region
2501 Lake Tahoe Boulevard
South Lake Tahoe, California 96150

Prepared by:
Stantec Consulting Services Inc.
3875 Atherton Road,
Rocklin, CA 95765

State Clearinghouse (SCH) No.
2017112062

December 22, 2017

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PHOTOS

LIST OF APPENDICES

Abbreviations

Term/Abbreviation	Definition
A	
APCDs	Air Pollution Control Districts
APN	Assessor's Parcel Number
ATCM	Asbestos Airborne Toxic Control Measures
B	
BAGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practices
C	
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emission Estimator Model
CESA	California Endangered Species Act
CalEPA	California Environmental Protection Agency
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
Cal Fire	California Department of Forestry and Fire Protection
Cal OSHA	California Occupational Safety and Health Administration
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CH_4	methane
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Ranking
CO	carbon monoxide
CO_2	carbon dioxide

Term/Abbreviation	Definition
CWA	Clean Water Act
D	
dB	decibels
DPR	Department of Parks and Recreation
DOT	Department of Transportation
DTSC	Department of Toxic Substances Control
DPM	Diesel Particulate Matter
E	
ESA	Endangered Species Act
F	
FAC	Facultative
FAA	Federal Aviation Administration
FCAA	Federal Clean Air Act
Federal	United States of America Federal Government
FEMA	Federal Emergency Management Agency
FPPA	Farmland Protection Policy Act
FIRMs	Flood Insurance Rate Maps
FPPA	Farmland Protection Policy Act
G	
GCSD	General Construction Stormwater Discharge
GHGs	Greenhouse Gases
GWP	global warming potential
H	
HUC	Hydrologic Unit Code
I	
IS/MND	Initial Study/Mitigated Negative Declaration
IWMP	Integrated Waste Management Plan
L	
Leq	equivalent sound level
LOS	Level of Service
LRWQCB	California Regional Water Quality Control Board, Lahontan Region
M	
MCV	Manual of California Vegetation

Term/Abbreviation	Definition
MBTA	Migratory Bird Treaty Act
MMRP	Mitigation Monitoring and Reporting Program
MRZ	Mineral Resource Zones
N	
NEHRP	National Earthquake Hazards Reduction Program
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NVC	National Vegetation Classification
NWI	National Wetlands Inventory
NAHC	Native American Heritage Commission
NO_x	nitrogen oxides
NO_2	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NSAQMD	Northern Sierra Air Quality Management District
N_2O	nitrous oxide
NEIC	Northeast Information Center
O	
OHWM	ordinary high water mark
OSHA	Occupational Safety and Health Administration
O_3	ozone
P	
Pb	lead
PFL	Professional Forester's Law
PG&E	Pacific Gas & Electric Company
PM	particulate matter
Porter-Cologne	Porter-Cologne Water Quality Control Act
PRC	Public Resources Code
R	
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
S	

Term/Abbreviation	Definition
SFPD	Sierra County Fire Protection District
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide
SPCCP	Spill Prevention Control and Countermeasure Plan
SRA	State Responsibility Area
SSC	Species of Special Concern
State	State of California
SWRCB	State Water Resources Control Board
SWPPP	Stormwater Pollution Prevention Plan
T	
TAC	Toxic Air Contaminant
TPL	Trust for Public Land
TRWC	Truckee River Watershed Council
U	
UAIC	United Auburn Indian Community
USACE	United States Army Corps of Engineers
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
W	
WDR	Waste Discharge Requirement
WQC	Water Quality Certification

Glossary of Project and CEQA Analysis Terms

Term	Definition
Project site	The Project's immediate footprint (from project components and construction activities) and immediately adjacent features.
Project area	The general broader area surrounding the Project site within Sardine Valley.
National	Effects occur on a multi-state or national basis, or to resources with national importance, as identified in laws, regulations, policies.
Regional	Effects occur on a regional basis (e.g. Sierra County).
Area-wide	Effect occurs throughout the Project area.
Localized	Effect occurs at a specific site or within a relatively small area.
Short-term	Effects that occur during the construction phase or for less than a year.
Long-term	Effects caused during the construction phase that remains substantially longer than the construction phase (greater than one-year). All impacts related to the operational phase would be long-term impacts, as they would occur over the life of the project, but may be intermittent.
Direct impacts	Impacts that are caused by an aspect of an alternative or an alternative, and occur at the same time and place.
Indirect impacts	Impacts that are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems.

ENVIRONMENTAL CHECKLIST FORM

1. **Project Title:** Sardine Meadow Restoration Project

2. **Lead Agency Name and Address:**

   California Regional Water Quality Control Board, Lahontan Region
   2501 Lake Tahoe Blvd. South Lake Tahoe, CA 96150

3. **Contact Person and Phone Number:**

   Contact: Anne Holden
   Phone: (530)542-5450

4. **Project Location:**

   Henness Pass Road, 13 miles north of Interstate 80, Sardine Valley, Sierra County, California. See Section 2.1 of IS/MND for location specifics.

5. **Project Sponsor's Name and Address:**

   Truckee River Watershed Council, Beth Christman
   P.O. Box 8568, Truckee CA 96162
   Phone: (530) 550-8760 x1#

6/7. **General Plan Designation and Zoning:**

   Sierra County Land Use Designations: Open Space (OS)

   Sierra County Zoning Designations: Agriculture (A1)

8. **Description of Project:**

   To restore wet meadow function of Davies Creek within the Sardine Meadow in Sardine Valley. See IS/MND Chapter 2.0 for more details.

9. **Surrounding Land Uses and Setting:**

   Surrounding land uses and setting to the Project site are generally designated as rural area, and include grazing agricultural uses and United States Forest Service Tahoe National Forest property.

10. **Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement:**

    Army Corps of Engineers, California Department of Fish and Wildlife, State Water Resources Control Board, State Office of Historic Preservation, Sierra County.

Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that requires mitigation to reduce the impact from "Potentially Significant" to "Less than Significant" as indicated by the checklist on the following pages.

☐ Aesthetics	☒ Hazards and Hazardous Materials	☐ Population and Housing
☐ Agricultural and Forestry Resources	☒ Hydrology and Water Quality	☐ Public Services and Utilities
☒ Air Quality and Greenhouse Gas Emissions	☐ Land Use and Planning	☐ Recreation
☒ Biological Resources	☐ Mineral Resources	☐ Transportation and Traffic
☒ Cultural and Tribal Cultural Resources	☐ Noise	☒ Mandatory Findings of Significance
☒ Geology and Soils		

Determination:

On the basis of this initial evaluation:

☐ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed Project MAY have a significant effect on the environment, and an environmental impact report is required.

☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

Signature	Date
	California Regional Water Quality Control Board, Lahontan Region
Printed Name	On Behalf of

Stantec

1.0 INTRODUCTION

1.1 PROJECT INTRODUCTION

Within Sardine Valley, portions of Davies Creek have been diverted from its historic location due to human influences. On the eastern side of the valley, there is an abandoned railroad grade running from the southwest to the northeast (Photo 1.1-1) that has captured and diverted the stream flows from its historic channel causing incisions and erosion (Photo 1.1-2). The historic channels on the south side of the meadow are in relatively good condition with only few areas of minor incisions, with the exception being a remnant road or railroad grade alignment that has captured historic flows causing the erosion of a straightened channel down the meadow.

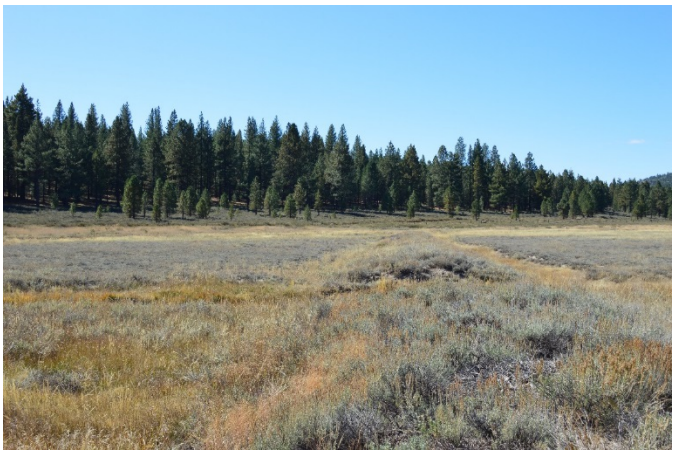


Photo 1.1-1 Abandoned railroad grade looking southwest across meadow

Photo 1.1-2 Representative incision along Davies Creek looking northeast

These combined influences have caused Davies Creek to divert from its course on the southern side of the meadow within Sardine Valley to the northern side where it is currently flowing. The proposed Sardine Meadow Restoration Project (proposed Project) aims to restore the currently incised, down-cut, and widened channel to return historic flows to the current channels improving the meadow's alluvial fan.

1.2 PROJECT BACKGROUND

In 2003, the U.S. Forest Service – Tahoe National Forest (USFS) completed a watershed assessment and restoration plan for USFS lands within Merrill and Davies watersheds. In 2004, the Truckee River Watershed Council (TRWC) prepared a Coordinated Watershed Management Strategy for the Middle Truckee River (Management Strategy, 2004) holistically looking at the larger Middle Truckee Watershed in which Davies Creek and Merrill Creek are tributary. Further coordination and partnership between USFS and TRWC resulted in the identification of the Davies Creek Watershed as a targeted area for restoration of riparian, aquatic, and wetland habitat with the goal of reducing non-point source sedimentation.

The Management Strategy identified restoration opportunities on Davies Creek within Sardine Valley. Sardine Valley is the heart of Davies Creek Watershed and encompasses over 350 acres of degraded montane meadow system and over 15,000 feet of degraded stream. Davies Creek Watershed drains approximately 20 square miles of watershed through the meadow. Elevation of the watershed ranges from 6,045 feet to 8,129 feet and has a mean annual precipitation of approximately 35 inches per year with much of the annual precipitation as snow.

Historic uses of Sardine Valley and within the watershed have contributed to the degradation of Davies Creek leaving the creek with eroded gullies and incised channels. Historic uses including logging camps, construction of railroad grades, roads, and logging itself have resulted in the diversion and channelization of Davies Creek. Additional uses such as grazing and recent-era logging may have further contributed to the watershed degradation.

Beginning in 2005, TRWC partnered with the USFS to implement 13 separate meadow and stream restoration projects identified by the Management Strategy on public lands managed by USFS. However, the Sardine Meadow Project was left untouched because the valley is within private ownership. Even at the time, USFS and TRWC considered Sardine Meadow to be a missing link in the otherwise highly successful restoration effort.

In 2014, the Trust for Public Land (TPL) acquired a significant portion of Sardine Meadow – a 569 acre parcel. The acquisition was prompted by a desire to protect an outstanding Sierra Nevada meadow. Sardine Meadow still maintains important resource value, even though the stream channel through the meadow has been degraded and the meadow habitat has transitioned to upland sagebrush habitat.

In 2014, National Fish and Wildlife Foundation (NFWF) awarded funding to TPL for the development of conceptual restoration plans. TPL partnered with TRWC and USFS to complete the conceptual design, install six piezometer-type shallow groundwater monitoring wells and a stream gage, and collect one year of pre-project hydrologic data. NFWF provided additional funding to TRWC in 2017 to complete the final creek restoration design, as well as California Environmental Quality Act (CEQA) documentation. The Bella Vista Foundation recently provided funding to complete required permitting and assist with project implementation.

1.3 PROJECT OBJECTIVES

1.3.1 Project Purpose

The purpose of the proposed Project is to restore the historic riparian, aquatic, and wetland function of the Sardine Valley meadow system by eliminating incisions in the current channels and returning flows to their historic channels. The proposed Project would improve habitat for a range of large mammals, raptors, and other important bird species, including willow flycatcher. The proposed Project would provide hydrologic benefits such as reduced sedimentation, improved late season baseflow, and elevated groundwater tables. Restoration would maintain the lands' grazing past and anticipated grazing future, allowing the Project to be a model for sustainable grazing practices in other Sierra meadows.

1.3.2 Project Objectives

Successful implementation of the proposed Project would accomplish the following objectives:

- Restore Davies Creek to its historic channels on the south side of Sardine Valley;
- Improve downstream water quality and limit sediment transport;
- Incorporate native plant revegetation;
- Protect and enhance the ecological value of Sardine Meadow; and
- Be a model for sustainable grazing.

More specifically, the objectives of the proposed Project are based on restoring function to this Sierra Nevada Meadow and include the following:

1. Restore approximately 350 acres of meadow. Restoration actions include reconnecting the historic channel system to the adjacent meadow by removing flow impediments to historic drainage patterns (railroad grade), and filling portions of the existing degraded channel.
2. Attract native willow flycatchers to the meadow. Restoration of the current channel system would promote willow growth. The project area is within a reasonable dispersal distance of existing and historic willow flycatcher territories. A meadow of this size could hold several willow flycatcher territories, providing the source population is available.

3. Increase groundwater levels to within plant rooting zone during the growing season. Under current conditions, the water table is four or more feet below the meadow surface for most of the growing season. This hydrologic regime does not support riparian or wet meadow vegetation and sagebrush encroachment is prevalent. Restoring flow to historic channels that are not incised could substantially elevate the water table to within the rooting zone of meadow plants.

4. Improve late season stream flow. Increased groundwater storage in the meadow soils would allow for water to move more slowly through the system. At present, spring runoff is likely contained in the incised channels and moves quickly out of the system. Eliminating the incised channels would improve water retention and allow water to flow into the stream channel for a longer duration during the dry season.

5. Improve grazing forage across Sardine Meadow. Meadow restoration would result in conversion of sagebrush scrub habitat to meadow grasses, sedges, and rushes. These meadow species provide better food quality for wildlife and livestock. The root structure of grasses and sedges is more resistant to erosion, which would also help maintain the forage quality.

1.4 CEQA PROCESS

The California Environmental Quality Act (CEQA) is the State of California's (State) environmental law that requires project proponents to disclose the significant impacts to the environment from proposed development projects. The intent of CEQA is to foster good planning and to inform agencies and the public about environmental issues during the planning process. The California Regional Water Quality Control Board, Lahontan Region (LRWCQB) is the Lead Agency and the TRWC is the project proponent under CEQA for the preparation of this Initial Study/Mitigated Negative Declaration.

The CEQA Guidelines (Section 21067) define the Lead Agency as "the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment". The approval of Clean Water Act Section 401 regulatory permit for the proposed Project is considered a public agency discretionary action, and therefore the proposed Project is subject to compliance with CEQA. As the Project proponent, the TRWC is responsible for implementing and monitoring all project components and providing documentation of compliance for the Lead Agency's files. The public, Sierra County, the California Department of Fish and Wildlife (CDFW) and other local and State resource agencies will be given the opportunity to review and comment on this document, during the 30-day Public review period. Comments received during the 30-day review period will be considered by the LRWQCB prior to the certification of the CEQA disclosure document, and Project approval.

1.5 SCOPE OF THIS STUDY

As the lead agency, LRWQCB, in coordination with the Project proponent, TRWC, and the landowner TPL, requested input on scoping of this Initial Study/Mitigated Negative Declaration (IS/MND) document through early coordination with nearby land owners, potentially interested parties/agencies, and Native American Tribes. Scoping correspondence is included in Appendix A and Native American Correspondence is included in Appendix D. Early feedback has been incorporated into this document where appropriate. In accordance with CEQA guidelines, the IS/MND will be circulated for thirty days for public and agency review. In the IS/MND, the potential environmental impacts are assessed with respect to resource sections identified in Appendix G of the CEQA guidelines and aims to identify potentially significant impacts. A complete project description is included in Chapter 2.0. Environmental resource areas are analyzed in Chapter 3.0. A list of preparers is included in Chapter 4.0 and references are included in Chapter 5.0.

Resources of concern include water quality and hydrology, sensitive plant and animal species, and historic and prehistoric uses of Sardine Valley. Field surveys to support evaluation of these areas of concern were conducted by Stantec scientists, biologists, and an archaeologist and architectural historian. Reconnaissance-level biological surveys were conducted on October 3, 2017 and reconnaissance-level cultural surveys were conducted on October 10, 2017. A Mitigation Monitoring and Reporting Program (MMRP) is included in Chapter 6.0 of this document summarizing proposed mitigation within this IS/MND.

1.5.1 Potentially Significant Impacts and Mitigation Measures

Under CEQA guidelines, a significant effect on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the Project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance (Guidelines Section 15382). Based on the Chapter 3.0 analysis and the field surveys, the proposed Project has the potential to result in significant impacts on certain resources, but these potentially significant impacts would be reduced to a less-than-significant level with the implementation of mitigation identified in Chapter 3.0 of this IS/MND. The mitigation measures presented in this IS/MND will form the basis of the MMRP, which is included in Chapter 6.0.

2.0 PROJECT DESCRIPTION

2.1 OVERVIEW

This document was prepared by Stantec Consulting Inc. on behalf of the TRWC and LRWQCB for the proposed Project. The Project proposes to restore eroded incised channel conditions within TPL's property boundaries consistent with the Merrill Davies watershed restoration approach identified in the USFS 2003 Watershed Assessment and subsequently in the TRWC Coordinated Watershed Management Strategy for the Middle Truckee River (TRWC 2004). The proposed meadow restoration involves returning Davies Creek to its historic channels on the meadow surface and filling the current degraded channels on the north side and in the lower portion of the valley.

2.2 PROJECT LOCATION

The proposed Project is in the south-eastern portion of Sierra County, and is approximately 12.5 miles north of Truckee, California and six miles west of the Nevada border in the Davies Creek Watershed and tributary to the Truckee River Watershed. The proposed Project site is approximately 13 miles north of Interstate 80 at the Hirschdale Exit on Stampede Meadows Road, and includes approximately 569 acres of land that is owned by the TPL. Stampede and Boca Reservoirs are located to the south of the proposed Project site and are the downstream features connecting Davies Creek to the Truckee River. Figure 2.2-1 below shows the vicinity and the location of the proposed Project. The privately-held meadow within Sardine Valley is surrounded by Tahoe National Forest.

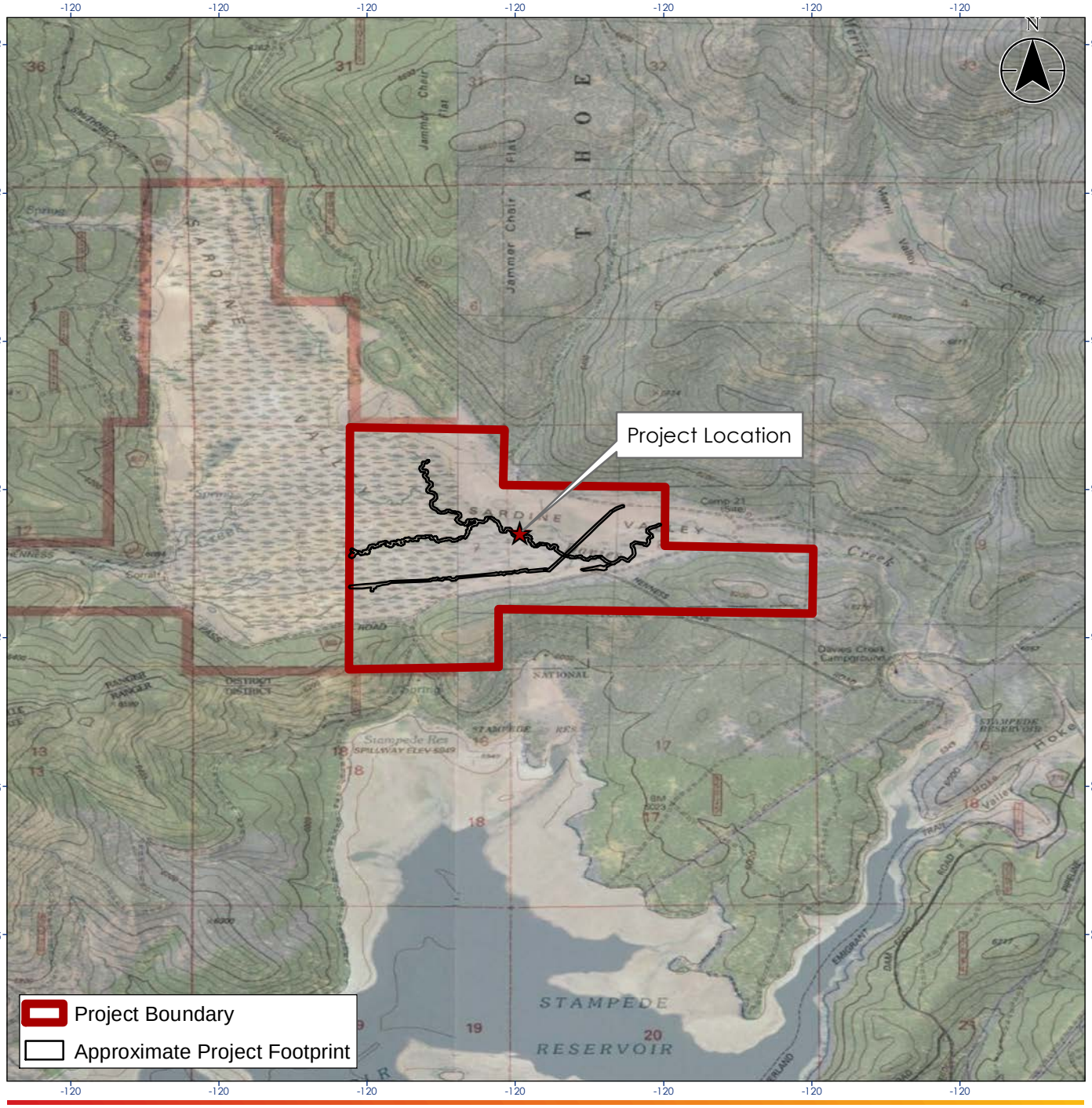


Figure No.
2.2-1

Title

Project Vicinity and Location

Client/Project

Truckee River Watershed Council
Sardine Meadow Restoration Project
185703836

0 0.5 1 Miles

foriver
TRUCKEE RIVER WATERSHED COUNCIL

Stantec

Notes

Coordinate System: GCS WGS 1984

V:\1857\active\185703836\gis\mxd\fig2_2-1_sardine_vicinity_8_5-11.mxd Revised: 2017-12-04 By: kclyma

2.3 PROPOSED PROJECT

The Project would result in the restoration of this degraded Sierra Nevada meadow system in the northeastern Truckee River watershed. The Project would improve habitat for a range of large mammals, raptors, and other important bird species, including willow flycatcher. The Project would provide hydrologic benefits such as reduced sedimentation, improved late season baseflow, and elevated groundwater tables. Restoration would be completed in relation to the lands' grazing past and anticipated grazing future, allowing the Project to be a model for sustainable grazing practices in other Sierra meadows.

The proposed Project can best be explained by discussing the differing elements individually to make up the whole of the proposed Project. As shown on Figure 2.3-1, the Project has a maximum footprint of 25 acres and would involve:

1) Filling the current degraded channels on the northern and southern sides of the meadow, and removing and re-contouring the railroad grade that crosses the meadow to restore natural hydrologic function and return flows to their historic channels.

2) Placing approximately 50,000 cubic yards of fill using borrow material stockpiled at Boca Reservoir.

3) Preparing all sites by installing appropriate best management practices and undertaking vegetation salvaging efforts.

4) Revegetating and stabilizing the disturbed areas with native and local plant species to stabilize the site and ensure long term success.

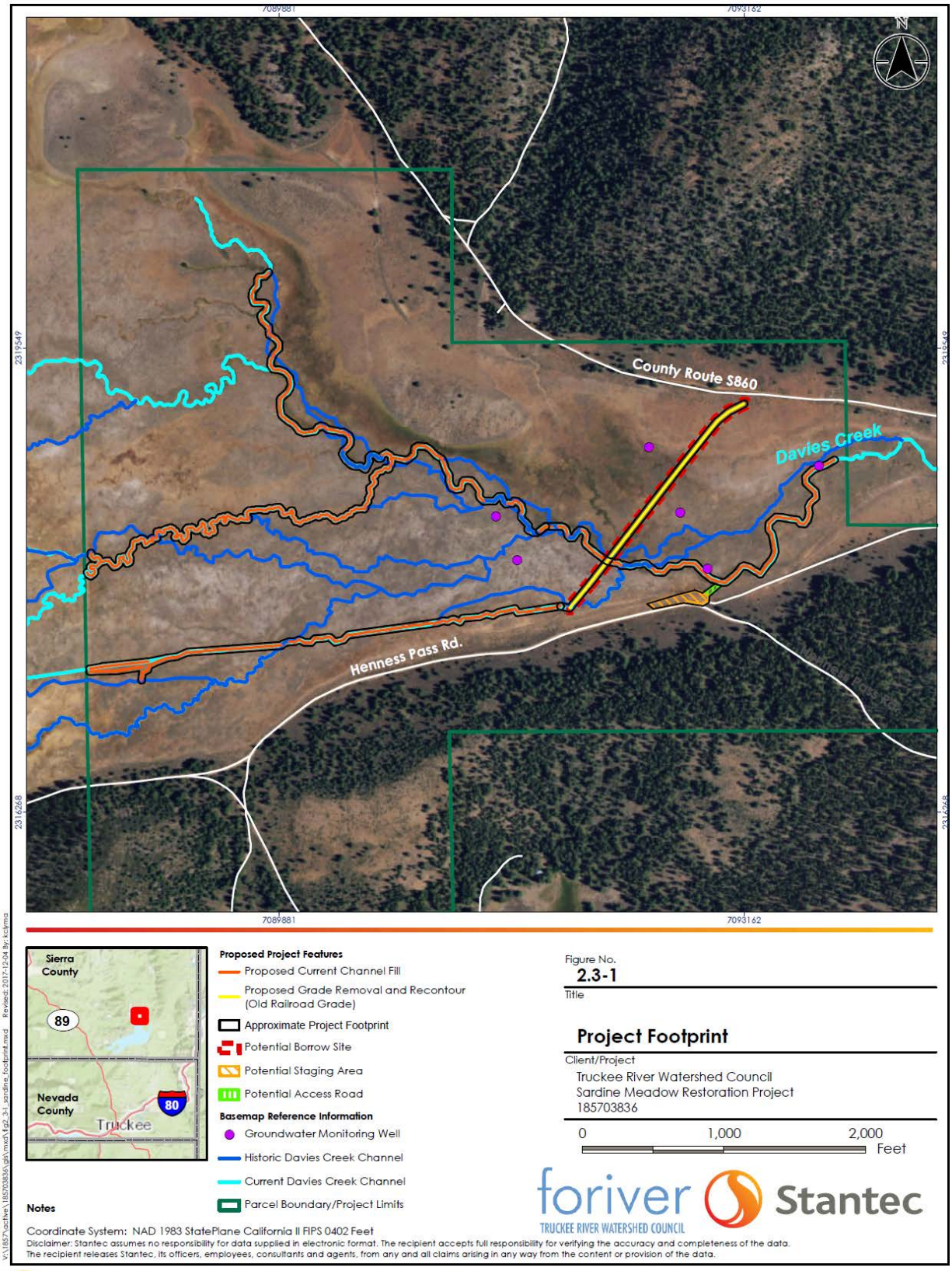
2.3.1 Reconnecting the Historic Channel System to Flows on the Meadow Surface

2.3.1.1 Filling the Current Degraded Channel

The current channels within the Project area (Figure 2.3-1) would be filled with approximately 50,000 cubic yards of fill. The Project would fill some sections completely and some sections intermittently, leaving voids that would fill seasonally with ground and surface water. Construction would start at the upstream end of the channel and work systematically downstream restoring the removed vegetation (see vegetation salvaging subsection below) as work progresses. Fill would be placed and compacted in accordance with BMP specifications and graded to match the surrounding meadow topography.

2.3.1.2 Removal and Regrading of Railroad Grade Crossing

The abandoned railroad grade runs from southwest to northeast across the meadow channelizing Davies Creek and interfering with the meadow's historic function. The Project would remove and recontour this feature using the excavated materials to help meet the fill requirements of the degraded channels. The railroad grade would be graded to match adjacent meadow topography and would be seeded with native plant material and mulched.


7089881
7093162
N
2319549
2316268
County Route S860
Davies Creek
Henness Pass Rd.
Sierra County
89
Nevada County
80
Truckee
Proposed Project Features
Proposed Current Channel Fill
Proposed Grade Removal and Recontour (Old Railroad Grade)
Approximate Project Footprint
Potential Borrow Site
Potential Staging Area
Potential Access Road
Basemap Reference Information
Groundwater Monitoring Well
Historic Davies Creek Channel
Current Davies Creek Channel
Parcel Boundary/Project Limits
Notes
Figure No.
2.3-1
Title
Project Footprint
Client/Project
Truckee River Watershed Council
Sardine Meadow Restoration Project
185703836
0
1,000
2,000
Feet
foriver
TRUCKEE RIVER WATERSHED COUNCIL
Stantec
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
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Stantec

2.3.2 Borrow Material

Borrow material would be required to complete the objectives of the project for filling the existing project channels to restore creek function to the historic channels. Requirements for fill material include:

- Similar in soil characteristics to that found in the meadow system;
- From a clean source free of contaminants; and
- That the timing of obtaining it coincides with construction of the proposed Project.

The U.S. Bureau of Reclamation's Boca Dam Safety of Dams Modification Project which is located approximately 10.5 miles south of the Project site has been identified as the most favorable source for fill material (Figure 2.3-2). Additional fill on-site from the grading and recontouring activities within the current channel well as from the railroad grade may be used as potential fill material.

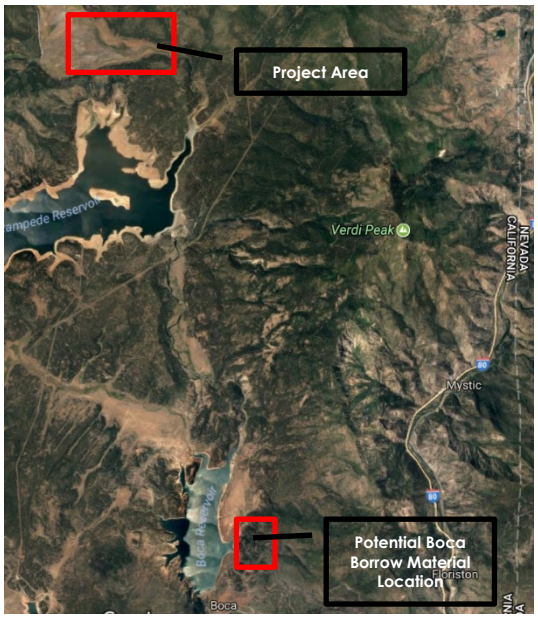


Figure 2.3-2 Proposed Boca Reservoir Borrow Site Location

2.3.3 Vegetation Salvaging

One of the main goals of the proposed restoration Project is to restore the historic meadow function while limiting impacts to the greatest extent possible. To achieve this goal, the proposed Project plans to minimize disturbance to the meadow surface by preserving as much native plant material as possible. During construction, approximately the top eight to twelve inches of topsoil organic matter and plant cover with their root systems would be stock piled as feasible with loader construction activities until it can be replanted on the fill material for revegetation. The salvaged vegetation would be placed adjacent to the work area and would be watered as needed to allow for maximum survival and reintroduction. As described further in the construction methodology section below, it is anticipated that vegetation would be replaced as construction work is completed (i.e. as the channel is filled). Additionally, native plant seeds would be collected or commercially sourced to support revegetation efforts once construction is complete.

2.3.4 Revegetation and/or Restoration of Disturbed Sites

To complete construction activities the Project site would be reshaped and revegetated (seeded and mulched) to allow for native plant flora to become a natural part of the meadow system. The salvaged vegetation from the initial site preparations would be placed on top of the fill in the filled channel and native seed mix would also be spread throughout the area. Willows

will be incorporated into the revegetation plan as appropriate, using transplants, stakes, and wattles where propagation is likely to be successful.

2.4 CONSTRUCTION

2.4.1 Construction Activities

Construction activities would generally occur within the current channels, railroad grade, and potential borrow sites and would be limited to an approximately 25-acre footprint including a buffer of 25 feet from proposed Project features to allow for access. The construction activities for the proposed Project are listed below in Table 2.4-1. The proposed Project would be constructed over the course of six to eight weeks.

Table 2.4-1 Project Construction Overview and Proposed Schedule

Project Component	Specific Activities	Location	Area of impact	Estimated Schedule
Filling current channels	• Site preparation, such as sensitive resource flagging, preconstruction surveys, etc. • Salvage top eight inches of native plant material • Excavate/truck in borrow material • Fill current degraded channels with borrow material • Recontour filled material to existing bank grade and topography • Return salvaged plants and stockpiled soils • Revegetate	Along current channels	• Within 25 feet of the channel • Approximately 10 acres • 50,000 cubic yards of fill material from Boca Reservoir • Possible wetted stream channel	Six to eight weeks August 2019 to October 2019
Removal and Recontour of Railroad Grade Crossing	• Site preparation such as sensitive resource flagging, preconstruction surveys, etc. • Salvage top eight inches of native plant material to the extent feasible • Remove existing railroad grade • Move borrow material to fill current degraded channels • Recontour to historic meadow contours • Return salvage plant cover as feasible • Revegetate with native plants	Along existing railroad grade alignment	• Within 25 feet of raised grade • Approximately 2.5 acres • Approximately 12,000 cubic yards of borrow material • Possible wetted stream channel	

Project Component	Specific Activities	Location	Area of impact	Estimated Schedule
Offsite Borrow Material	• Haul borrow material to restoration site • Borrow material stored at Boca Reservoir storage site • Potential equipment maintenance, refueling, and/or staging site	Boca Reservoir storage site	• 50,000 cubic yards of borrow material • Truck trips to and from Boca Reservoir site	
Revegetation / Restoration of Disturbed Sites	• Collecting or commercially sourcing native seeds and plants • Replacing the salvaged vegetation from disturbed areas • Restoring area from construction activities • Planting native plants and seeding • Mulching/seeding- likely only willow planting	Project Footprint	• Impacted areas	
Dewatering / hydraulic controls	• Establish a dewatering plan during final design • Potentially sandbag coffer dam to isolate the work area with any flows directed into the remnant channel system around the work area • Pumping of water into historic meadow channel • Any turbid water would be dispersed away from the active flow path • Potential use of generator	Wetted stream channel	• Meadow system	
Access Roads	• Connecting borrow sites to current channels • Shortest distance possible avoiding sensitive resources • Primarily on existing roads • In dry channel	Project Footprint	• Meadow • Stampede Meadow Road	

2.4.2 Construction Equipment

It is anticipated that construction would operate with two crews consisting of an excavator, front-end loader, water truck, and delivery dump truck that would operate in tandem working from one end of a project feature to another restoring and cleaning up the site as they go to minimize the construction footprint. Depending on the source of fill material equipment would

transport fill material from the borrow site to the current stream channel to be filled or from the Boca Reservoir staging area near the Boca shooting range.

Additional ancillary construction equipment may be required for sporadic use and could include, a delivery truck and trailer, pickup trucks, and fuel/oil service trucks.

2.4.3 Construction Schedule

Construction of the proposed Project would occur over the course of a six- to eight-week period beginning in August of 2019. Construction activities would be completed in one construction season.

2.5 OPERATION

The proposed restoration Project would require no ongoing operation following Project completion; however, restoration success monitoring would occur. As such, adaptive management and/or corrective actions would be taken as necessary in accordance with permit requirements.

2.6 PERMITS AND OTHER AGENCY APPROVALS

Compliance with the following regulations would likely be required for construction of the proposed Project:

- Clean Water Act (CWA) Section 404 Nationwide 27 Permit;
- CWA Section 401Water Quality Certification;
- CWA Section 402 General Construction Stormwater Permit;
- National Historic Preservation Act Section 106 Concurrence;
- California Department of Fish and Wildlife Code Section 1602; and
- Sierra County Grading Permit.

3.0 ENVIRONMENTAL IMPACTS ASSESSMENT

To determine whether an impact is significant, a "baseline" set of environmental conditions is required against which agencies can assess the significance of Project impacts. The physical environmental setting existing at the time of preparation of this document constitutes the baseline physical conditions by which the lead agency determines if the Project would cause a significant impact.

The following sections summarize (1) the environmental setting, including a description of baseline conditions, (2) impacts, and (3) proposed mitigation measures associated with impacts resulting from the proposed Project. Additional topics such as the methodology and/or regulatory setting were also included where applicable. In all cases the proposed Project activities described in the Project Description were analyzed for potential impacts. In each section, all proposed Project activities are referred to either explicitly by name, or implicitly as "the Project" or "the proposed Project."

3.1 Aesthetics

3.1.1 Regulatory Setting

3.1.1.1 Federal

There are no Federal regulations that pertain to the proposed Project regarding Aesthetics.

3.1.1.2 State

The State of California Department of Transportation (DOT) administers State scenic route designations within Sierra County. State scenic route designations include:

- Route 49 (Yuba County Line to Yuba Pass Summit and Yuba Summit to Plumas County line);
- Highway 89 throughout the entire County (Eligible State Scenic Highway- Not Officially Designated).

Additionally, Interstate 80 is a California DOT Eligible State Scenic Highway located south of the proposed Project site in Nevada County. Interstate 80 is used as the main access point to reach the proposed Project site.

3.1.1.3 Local

3.1.1.3.1 Sierra County General Plan

Goal 1. Protect and preserve important scenic resources in the County.

Goal 2. Protect visually sensitive areas by promoting and providing for aesthetic design in new development which reflects the customs and culture of the County.

Policy 1. Protect the visual quality of the County's scenic corridors (local and State).

Policy 2. Limit encroachments onto scenic highways to maintain safety and quality of driving and viewing experience through scenic corridors.

Policy 3. Coordinate scenic highway systems between other jurisdictions including Tahoe, Plumas and Toiyabe National Forests, Plumas, Nevada and Yuba Counties, Sierra Planning Organization, and the City of Loyalton.

Policy 8. Protect important scenic resources.

Policy 9. Promote the protection of the visual integrity of streams and rivers.

Policy 10. Limit visual impacts of resource extraction activities.

Sierra County also designates and proposes scenic corridors along certain routes and highways within the County as follows:

- Gold Lake Road;
- Henness Pass Road (Candidate County Scenic Highway);
- Smithneck Road (Candidate County Scenic Highway);
- Mountain House Road (Proposed County Scenic Road); and
- Pliocene Ridge Road (Proposed County Scenic Road).

3.1.2 Environmental Setting

The 569-acre proposed Project site is located in the Sierra Nevada Mountain Range east of Highway 89 and north and west of Interstate 80. Although Highway 89 and Interstate 80 are not officially designated 'State Scenic Highways' they are both on the DOT list as Eligible State Scenic Highways (California DOT 2011) and are the closest highways to the Project. Additionally, Henness Pass Road and Smithneck Road are designated as Candidate County Scenic Highways and are immediately adjacent to the proposed Project site to the south and west respectively.

The aesthetic character of Sardine Meadow surrounding the Project site is typical of a Sierra meadow environment with heavily forested regions surrounding the vast open meadow area. Typical Sierra mountain and meadow systems characterize the surrounding character with Stampede Reservoir located in the valley to the south. Sardine Valley is relatively untouched with primary uses for cattle ranching, recreation in the surrounding national forest, and transportation along Henness Pass Road and Smithneck Road serving as access to and from the community of Loyalton.

Sardine Meadow is privately held, limiting public access and viewers to surrounding properties. The Project site and surrounding meadow properties are private property primarily used for grazing purposes. The surrounding hillside and mountain landscapes are primarily USFS lands within the Tahoe National Forest providing public recreation uses as well as forest management uses such as harvestable timber functions. Photos 3.1-1 through 3.1-4 illustrate the common viewsheds within the Project site.

Photo 3.1-2 View looking east from Henness Pass Road towards the eastern end of the proposed Project

Photo 3.1-1 View looking northwest along the railroad grade proposed for removal

Photo 3.1-3 View of the incised Davies Creek channel looking northeast at mid-section of the Project

Photo 3.1-4 View of Davies Creek channel looking west at the western end of the proposed Project

3.1.3 Impact Analysis

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

a) Would the Project have a substantial adverse effect on a scenic vista?

Finding: Less than Significant

Based on a review of the Sierra County General Plan, Henness Pass Road and Smithneck Road, which pass immediately adjacent to the Project site, are candidate roadways to be designated as County Scenic Highways (Sierra County 2012a) indicating they have potential scenic vistas. The Project site runs parallel to the portion of Henness Pass Road in Sardine Valley and is clearly visible from the roadway. Smithneck Road runs north-south on the western end of the Valley with tempered views of the Project area but no clear direct views of Project site. Despite the scenic nature of Sardine Valley, the proposed Project would not substantially affect the vista since restoration efforts would maintain the general form and function of the creek and meadow system. The proposed Project would alter vegetative types within the meadow shifting from dry meadow upland sage brush species to those more typical to a wet meadow environment such as willows and riparian species. These changes in vegetation are considered minor and would not be substantially noticeable to anyone passing by on nearby Henness Pass Road nor significantly different to the existing meadow and valley views that are currently available. As such, the proposed Project would not have a substantial adverse effect on any scenic vista. Therefore, the Project would have a less than significant impact.

b) Would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a State scenic highway?

Finding: No Impact

Based on review of the California DOT State Scenic Highway List and the Sierra County General Plan, the Project site is not adjacent to or visible from a designated State scenic highway (California DOT 2011; Sierra County 2012a). Henness Pass Road and Smithneck Road are both candidate County Scenic Highways. Viewers on Henness Pass Road adjacent to the Project site would have a clear view of the Project and viewers on Smithneck Road would have a more limited distant view of the Project. However, views of construction activities would be temporary in nature for the approximately two-month duration and would be similar to existing conditions once construction is complete. Slight landscape scarring may be noticeable in the short-term post construction while revegetation plantings and seeding take root; however, the revegetation of the Project footprint would ensure that impacts are short-term and less than significant. Slight alternations to meadow topography would occur; however, the visual character of the meadow environment would remain intact. Since there are no designated State scenic highways in the Project area; the Project's minor alterations to the meadow are temporary; views of the Project from Henness Pass Road and Smithneck Road are limited; and since the Project would not substantially or adversely damage the scenic nature of Sardine Valley, the Project, as proposed, would not have an impact to scenic resources within a State scenic highway. Therefore, no impact to scenic resources within a State scenic highway would occur.

c) Would the Project substantially degrade the existing visual character or quality of the site and its surroundings?

Finding: Less than Significant

The restoration activities would slightly alter the current visual character of the site and its surroundings by removing and contouring the railroad grades and filling the current incised creek channels. Additionally, the temporary presence of construction equipment would temporarily alter the character of the site; however, the alteration would not be significant since the activities would only last approximately two months. The Project site would be restored to similar conditions when complete, and revegetation with native plants and seedlings would limit the potential long-term impacts from ground disturbing activities. Once vegetation, wintertime stormwater flows, and native wildlife have assimilated back into the region, the area would be restored back to historic riparian, aquatic, and wetland functions, ensuring the visual character would not be degraded. Therefore, the proposed Project would not substantially degrade the existing visual character or quality of the site and its surroundings and any impact would be less than significant.

d) Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Finding: Less than Significant

Construction activities would temporarily introduce equipment and vehicles to the Project site. To the extent that construction activities would occur in the evening hours (up to 7:00 pm) after sunset, impacts from construction lighting may occur. However, these construction-related impacts would be temporary, lasting approximately six to eight weeks. The proposed Project does not include any new operational lighting and would not create any new permanent sources of light or glare once in operation. Additionally, there are no residences within the Project site or immediately adjacent to the Project site, thus any potential temporary lighting or glare from the proposed Project construction would have a minimal effect on nearby by sensitive receptors. Therefore, there would not be any new sources of permanent light or glare and there would be minimal temporary lighting from construction activities thus, impacts would be considered less than significant.

3.1.4 Mitigation Measures

No mitigation is required.

3.2 Agricultural and Forestry Resources

3.2.1 Regulatory Setting

3.2.1.1 Federal

3.2.1.1.1 Farmland Protection Policy Act (FPPA)

The Farmland Protection Policy Act (FPPA) of 1981 [Sections 1539-1549 P.L. 97-98, Dec 22, 1981], requires the Secretary of Agriculture to establish and carry out a program to "minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to the extent practicable, will be compatible with State, units of local government, and private programs and policies to protect farmland." [7 USC 4201-4209 & 7 USC 658] (Farmland Protection Policy Act 1981).

3.2.1.2 State

3.2.1.2.1 Williamson Act

The California Land Conservation Act (Williamson Act) of 1965 is the State's principal policy for the "preservation of a maximum amount of the limited supply of agricultural land in the State" (Cal. Government Code Section 51220(a)). The purpose of the Williamson Act is to preserve agricultural and open space lands by discouraging premature and unnecessary conversion to urban uses. The Williamson Act enables private landowners to contract with counties and cities to voluntarily restrict their land to agricultural and compatible open-space uses. In return for this

guarantee by landowners the government jurisdiction assesses taxes based on the agricultural value of the land rather than the market value, which typically results in a substantial reduction in property taxes (California Land Conservation Act 1965).

3.2.1.2.2 California Public Resources Code

The following California Public Resources Code sections are discussed in the impact analysis Section 3.2.3 below.

California Public Resources Code Section 12220(g): "Forest land" is land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including: timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits (California Public Resources Code 2012).

California Public Resources Code Section 4526: "Timberland" means land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis (California Law 2012).

California Public Resources Code Section 51104(g): "Timberland Production Zone" or "TPZ" means an area which has been zoned pursuant to Section 51112 or 51113, and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h). With respect to the general plans of cities and counties, "timberland preserve zone" means "timberland production zone" (California Public Resources Code 2012).

3.2.1.2.3 California Open Space Subvention Act

The California Open Space Subvention Act (California Government Code Section 16143) states that land shall be deemed to be devoted to open-space uses of Statewide significance if it:

a) Could be developed as prime agricultural land, or

b) Is open-space land as defined in Section 65560 which constitutes a resource whose preservation is of more than local importance for ecological, economic, educational, or other purposes. The Secretary of the Resources Agency shall be the final judge of whether the land is in fact devoted to open-space use of Statewide significance.

3.2.1.3 Local

3.2.1.3.1 Sierra County General Plan (Sierra County 2012a)

Goal 1. Protect and defend agriculture as a priority land use, one of those which give the County its essential character.

Goal 2. Provide a strong, local agriculture economy.

Goal 3. Provide for and protect agriculture water supplies.

Policy 1. Maintain minimum lot sizes of 640 acres or greater to avoid use compatibility conflicts, nuisance complaints, and aesthetic degradation in agricultural areas.

Policy 3. Utilize zoning, Williamson Act contracts, and Transfer of Development Rights in exchange for permanent conservation easements to protect agriculture. (Note: The Transfer of Development Rights would also allow consolidation of farm houses in one location.)

Policy4. Uses allowed upon Williamson Act contracted lands should be consistent with Land Use Element Policy 13 (Agricultural Land Use District) (Policy includes agricultural uses).

Policy 14a. Maintain a strong groundwater management policy in the County.

Policy 15. Support the ongoing efforts to conserve and restore soil.

Policy 16. Encourage cooperative efforts, such as those by the Antelope Valley Coordinated Resources Management Committee, to safeguard important habitats.

Policy 17. Continue to encourage grazing uses of federal lands in the County.

3.2.2 Environmental Setting

The zoning designation for the proposed Project area is Agriculture (A1) and is located on Assessor's Parcel Number (APN) 023-010-006. Pursuant to the Sierra County Zoning Regulations, the Agricultural District is intended to protect and preserve land that is most suited to agricultural use and other uses compatible therewith. It is intended that this Agriculture District be utilized in conjunction with appropriate State and Federal legislation to preserve and protect agricultural pursuits from encroachment by industrial, commercial, and residential use (Sierra County 2012b).

The parcel that the proposed Project area is located on is a designated Williamson Act Contract. The parcel is designated as a non-prime agricultural land. Non-prime agricultural land is defined as land which is enrolled under California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime Land is defined as Open Space Land of Statewide Significance under the California Open Space Subvention Act (California Government Code Section 16143). Most Non-Prime Land is in agricultural uses such as grazing or non-irrigated crops (DOC 2014).

The proposed Project area is located outside of the survey area for the Farmland Mapping and Monitoring Program (FMMP) (FMMP 2014).

3.2.3 Impact Analysis

II. AGRICULTURAL AND FORESTRY RESOURCES Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

a) Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Finding: No Impact

The proposed Project lies outside of the survey boundary of the Farmland Mapping and Monitoring Program (FMMP 2014). Because of this, the proposed activities would not convert any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Despite being outside of the survey area pursuant to FMMP, the activities of the proposed Project would not permanently impact the area of grazing land in the meadow or convert the land to non-grazing uses, thus not converting from the current agricultural uses to non-agricultural uses. As such, there would be no impact.

b) Would the Project conflict with existing zoning for agricultural use or a Williamson Act contract?

Finding: No Impact

The proposed Project area is located on land designated as a Williamson Act Contract. The parcel is located on a contract that is designated as non-prime agricultural land. Non-prime agricultural land is defined as land which is enrolled under California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime Land is defined as Open Space Land of Statewide Significance under the California Open Space Subvention Act (California Government Code Section 16143). Most Non-Prime Land is in agricultural uses such as grazing or non-irrigated crops (DOC 2014).

Additionally, pursuant to Sierra County General Plan Goal 3, Policy 3, the County shall utilize zoning, Williamson Act contracts, and Transferable Development Rights in exchange for permanent conservation easements to protect agriculture. The proposed Project does not conflict with the zoning or Williamson Act contract on the property. The proposed Project does not include a conservation easement; however, the TPL property has been identified as a potential location for establishing a conservation easement. However, an established conservation easement would not impact the zoning or Williamson Act contract on the Project site and as such, does not conflict with the Agricultural Zoning designation or the Williamson Act contract.

The restoration nature of the proposed Project does not conflict with existing zoning and is not converting land or taking land out of the Williamson Act contract. Instead, the proposed Project is restoring creek function and raising the water table which would improve cattle grazing and foraging habitat as well as raising groundwater levels which in turn improves water supply all of which are consistent with the Agricultural zoning and the Williamson Act contract on the land. Therefore, there would be no impact to the existing agricultural zoning or Williamson Act contract.

c) Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

Finding: No Impact

The proposed Project area is currently zoned as Agriculture (A1) by Sierra County (Sierra County 2012b). The proposed Project is not located on land zoned as forest or timberland and would not conflict with existing zoning for forestry or timberland resources. Therefore, no impacts would occur.

d) Would the Project result in the loss of forest land or conversion of forest land to non-forest use?

Finding: No Impact

The proposed Project area is currently zoned as Agriculture (A1) by Sierra County (Sierra County 2012b), and is not located on forest land. The proposed Project does not involve tree removal. Therefore, no impacts would occur.

e) Would the Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

Finding: No Impact

The proposed Project area is currently zoned as Agriculture (A1) by Sierra County (Sierra County 2012b), lies outside of the survey boundary of the Farmland Mapping and Monitoring Program (FMMP 2014, and is located on land designated as a Williamson Act Contract. The parcel is also located on a contract that is designated as non-prime agricultural land. However, the nature of the proposed Project is such that it would not involve any changes in the existing environment that would result in conversion of farmland or forestland to non-agricultural or non-forest use. Therefore, no impact would occur.

3.2.4 Mitigation Measures

No mitigation is required.

3.3 Air Quality and Greenhouse Gas Emissions

3.3.1 Regulatory Setting

The Project site is located in Sierra County, which is within the Mountain Counties Air Basin and is under the jurisdiction of the Northern Sierra Air Quality Management District (NSAQMD), California Air Resources Board (CARB), and United States Environmental Protection Agency (USEPA).

3.3.1.1 Federal

3.3.1.1.1 Federal Clean Air Act (FCAA)

The FCAA establishes the framework for modern air pollution control. The FCAA, enacted in 1970 and amended in 1990, directs the USEPA to establish ambient air quality standards for six pollutants: ozone (O_3), carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), particulate matter (PM_{10}, $PM_{2.5}$), and sulfur dioxide (SO_2). These standards are divided into primary and secondary standards; the former are set to protect human health, the latter are set to protect environmental values, such as plant and animal life.

3.3.1.1.2 United States Environmental Protection Agency

On April 2, 2007, in Massachusetts v. EPA, 549 U.S. 497 (2007), the Supreme Court found that GHGs are air pollutants covered by the FCAA. The Court held that the USEPA must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the USEPA was required to follow the language of Section 202(a) of the FCAA. This is because the Supreme Court decision resulted from a petition for rulemaking under Section 202(a) filed by more than a dozen environmental, renewable energy, and other organizations.

On April 17, 2009, the USEPA Administrator signed proposed "endangerment and cause or contributes findings" for GHGs under Section 202(a) of the FCAA. Finding that six GHGs taken in combination endanger both the public health and the public welfare of current and future generations. The USEPA also found that the combined emissions of these GHGs from new motor vehicle engines contribute to the greenhouse as air pollution that endangers public health and welfare under FCAA section 202(a). These Findings were based on careful consideration of the full weight of scientific evidence and a thorough review of the numerous public comments received. These Findings went into effect on January 14, 2010.

3.3.1.2 State

3.3.1.2.1 California Clean Air Act (CAA)

The California CAA focuses on attainment of the California Ambient Air Quality Standards (CAAQS). These standards are more stringent than federal regulations with respect to certain Criteria Pollutants and averaging periods. Responsibility for monitoring the CAAQS is placed on the CARB and local air pollution control districts. Table 3.3-1 below shows the Sierra County area designations for State and National ambient air quality standards.

Table 3.3-1 Sierra County Area Designations for State and National Ambient Air Quality

Criteria Pollutants	State Designation	National Designation
Ozone	Unclassified	Unclassified/Attainment
PM_{10}	Non-attainment	Unclassified
$PM_{2.5}$	Unclassified	Unclassified/Attainment
Carbon Monoxide	Unclassified	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	-
Lead	Attainment	Unclassified/Attainment
Hydrogen Sulfide	Unclassified	-
Visibility Reducing Particles	Unclassified	-

Source: CARB 2017

3.3.1.2.2 Greenhouse Gas State Regulations

There are a variety of Statewide rules and regulations which have been implemented or are in development in California which mandates the quantification or reduction of GHGs. Under CEQA, an analysis and mitigation of emissions of GHGs and climate change in relation to a proposed project is required where it has been determined that a project would result in a significant addition of GHGs. Certain Air Pollution Control Districts (APCDs) have proposed their own levels of significance. The NSAQMD, which has regulatory authority over the air emissions from this Project, has not established a significance threshold for GHG emissions.

Executive Order S-3-05: Executive Order S-3-05 was established by Governor Arnold Schwarzenegger in June 2006 and establishes the following Statewide emission reduction targets through the year 2050:

- by 2010, reduce GHG emissions to 2000 levels;
- by 2020, reduce GHG emissions to 1990 levels; and
- by 2050, reduce GHG emissions to 80 percent below 1990 levels.

This Executive Order does not include any specific requirements that would pertain directly to the proposed Project. However, actions taken by the State to implement these goals may affect the proposed Project, depending on the specific implementation measures that are developed.

Assembly Bill 32: AB 32, also known as the California Global Warming Solutions Act of 2006, was established in 2006 to mandate the quantification and reduction of GHGs to 1990 levels by 2020. The law establishes periodic targets for reductions, and requires certain facilities to report emissions of GHGs annually. The bill also reserves the ability to reduce emissions targets lower than those proposed in certain sectors which contribute the most to emissions of GHGs, including transportation. Additionally, the bill requires:

- GHG emission standards to be implemented by 2012;
- CARB to develop an implementation program and adopt GHG control measures "to achieve the maximum technologically feasible and cost-effective GHG emission reductions from sources or categories of sources." CARB issued a draft Climate Change Scoping Plan in December 2008.

The Assembly Bill 32 Scoping Plan contains the main strategies California will use to reduce the GHGs that cause climate change. The scoping plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 cost of implementation fee regulation to fund the program.

3.3.1.3 Northern Sierra Air Quality Management District

NSAQMD adopted Rules 202 and 226to improve air quality in the district. Below is a summary of these rules as they apply to the proposed Project:

Rule 202 - Visible Emission limitations: During site preparation, alternatives to open burning of vegetative material shall be used unless otherwise deemed infeasible by NSAQMD. Among suitable alternatives is chipping, mulching, or conversion to biomass fuel. Construction equipment exhaust emissions shall not exceed NSAQMD Rule 202 Visible Emission limitations.

Rule 226 – Dust Control: The purpose of this rule is to reduce and control fugitive dust emissions to the atmosphere. This rule shall apply to any person engaged in: Dismantling or demolition of buildings; Public or private construction; Processing of solid bulk materials (i.e., sand, gravel, rock, dirt, sawdust, ash, etc.); Operation of machines or equipment; and Operation and use of unpaved parking facilities. Any person shall take all reasonable precautions to prevent dust emissions. Reasonable precautions may include, but are not limited to, cessation of operations, cleanup, sweeping, sprinkling, compacting, enclosure, chemical or asphalt sealing, and use of wind screens or snow fences.

No person may disturb the topsoil or remove ground cover on any real property and thereafter allow the property to remain unoccupied, unused, vacant, or undeveloped unless reasonable precautions are taken to prevent generation of dust. A dust control plan must be submitted to and approved by the Air Pollution Control Officer before topsoil is disturbed on any project where more than one (1) acre of natural surface area is to be altered or where the natural ground cover is removed. In the dust control plan, the Air Pollution Control Officer may require use of palliatives, reseeding, or other means to minimize windblown dust.

No person shall cause or allow the handling or storage of any materials on a manner which results, or may result in the generation of dust.

Any vehicle operation on a paved roadway with a load of any bulk material susceptible to being dropped, spilled, leaked, or otherwise escaping there from and being entrained in the air, must take one of the following control measures:

1. Six (6) inches of freeboard is maintained within the bed of the vehicle. For the purposes of this regulation, "freeboard" means the vertical distance from the highest portion of the edge of the load to the lowest part of the rim of the truck bed.

2. Materials contain enough moisture to control dust emissions from the point of origin to their final destination. Whenever possible, the use of dust suppressants must be applied in conjunction with the water.

3. In the event that measures 1 or 2 are ineffective in preventing materials from escaping, tarps or other cargo covers shall be employed.

Rocked/paved entry aprons or other effective cleaning techniques (e.g., wheel washers), may be required by the Air Pollution Control Officer to prevent tracking onto paved roadways. Paved entry aprons may include road section or coarse aggregate or steel grate to "knock off" dirt which accumulates on the vehicle and/or vehicle wheels.

Any material which is tracked onto a paved roadway must be removed (swept or washed) as quickly and as safely as possible. Exceptions to this provision may be made by the Air Pollution Control Officer or the project manager for the construction, maintenance, and/or repair of paved roadways and for the application of de-icing and traction materials for wintertime driving safety.

Additionally, the NSAQMD has established tiered significance thresholds to determine a project's projected impacts and provide a basis from which to apply mitigation measures. This approach has been developed for NO_x, ROG (reactive organic gases), and PM_{10} and includes the following threshold levels:

- A project with emissions meeting Level A thresholds would require the most basic mitigations;
- Projects with project emissions in the Level B range would require more extensive mitigation; and
- Those projects which exceed Level C threshold would require the most extensive mitigations.

The NSAQMD significance thresholds emission limits are detailed in the Table 3.3-2 below.

Table 3.3-2 NSAQMD Tiered Significance Thresholds

NSAQMD Significance Thresholds	NO_x	ROG	PM_{10}
Level A (lbs/day)	<24	<24	<79
Level B (lbs/day)	24-136	24-136	79-136
Level C (lbs/day)	≥136	≥136	≥136

NO_x, ROG, and PM_{10} emissions must be mitigated to a level below significant. If emissions for NO_x, ROG, and PM_{10} exceeds 136 pounds per day (Level C), then there is a *significant* impact; below Level C is *potentially significant* (NSAQMD, 2016).

Ultramafic Rock, Serpentine or Naturally Occurring Asbestos Occurrence

The project is not located in an area mapped as having, or otherwise known to have, ultramafic rock, serpentine or naturally occurring asbestos. The nearest ultramafic mapping unit is approximately 26 miles to the west of the project. (California Geologic Survey 2011). Therefore, the Statewide Asbestos Airborne Toxic Control Measures (ATCM) will not apply unless ultramafic rock/serpentine is discovered during grading or trenching. If ultramafic rock is discovered, the NSAQMD must be notified no later than the following business day and the ATCMs will apply.

3.3.1.4 Local

3.3.1.4.1 Sierra County General Plan

Goal 1. Maintain and protect high standards of air quality.

Policy 1. Implement standards which minimize air quality impacts resulting from developments.

Policy 2. Cooperate with State and regional agencies including adjacent Counties to develop programs to reduce air quality impacts.

Policy 3. Work toward reduction of air quality violations in the County.

Policy 4. Encourage the Forest Service to mitigate air quality impacts of activities on federal lands.

Policy 6. Cooperate with other agencies to develop a consistent and effective approach to air quality planning.

3.3.2 Environmental Setting

Air Quality

The proposed Project is located in Sierra County within the Mountain Counties Air Basin. Air basin quality issues in Sierra County are primarily related to motor vehicle emissions generated from commuting to and from the Sacramento area, as well as, prevailing winds transporting pollutants from the San Francisco Bay Area and the Central Valley up against the western Sierra Foothills (NSAQMD 2017). According to the CARB, Sierra County violates State PM_{10} (particulate matter) standards; this can be attributed to the climate, topography, and the growing number of people, industries, businesses, and cars that collectively contribute to the formation of smog. (NSAQMD 2017).

The NSAQMD is responsible for the management of air quality in Sierra County. According to the NSAQMD, the pollutants of greatest concern are ozone and PM_{10}, as well as air toxins. Table 3.3-1 describes Sierra County Area designations for State and National Ambient Air Quality (CARB, 2016).

Greenhouse Gases (GHGs)

Many chemical compounds found in the Earth's atmosphere act as GHGs, which allow sunlight to enter the atmosphere freely. When sunlight strikes the Earth's surface, some of it is reflected back towards space as infrared radiation (heat). GHGs absorb this infrared radiation and trap the heat in the atmosphere. Over time, the amount of energy sent from the sun to the Earth's surface should be about the same as the amount of energy radiated back into space, leaving the temperature of the Earth's surface roughly constant. Many gases exhibit these "greenhouse" properties. Some of them occur in nature (water vapor, carbon dioxide, methane, and nitrous oxide), while others are exclusively human-made (like gases used for aerosols).

The principal climate change gases resulting from human activity that enter and accumulate in the atmosphere are listed below:

- Carbon Dioxide (CO_2): CO_2 enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and chemical reactions (e.g., the manufacture of cement). CO_2 is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

- Methane (CH_4): CH_4 is emitted during the production and transport of coal, natural gas, and oil. CH_4 emissions also result from livestock and agricultural practices and the decay of organic waste in municipal solid waste landfills.

- Nitrous Oxide (N_2O): N_2O is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.

- Fluorinated Gases: HFCs, PFCs, and SF_6 are synthetic, powerful climate-change gases that are emitted from a variety of industrial processes. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochloro fluorocarbons, and halons). These gases are typically emitted in smaller quantities, but because they are potent climate-change gases, they are sometimes referred to as high Global Warming Potential (GWP) gases.

3.3.3 Impact Analysis

The potential Project-related impacts and the mitigation to reduce such impacts to less than significant levels are discussed below. In order to assess potential Project-related impacts to air quality, a CalEEMod model was run using estimations of project construction activities. The model was run using the following assumptions/project details:

- The proposed Project construction activities would take approximately six to eight weeks to complete and would be completed primarily during the dry season starting in Mid-August or September;

- The Project, once constructed, should have no emissions from operations (similar to the existing conditions at the site). Therefore, operations emissions estimates were not included in this analysis for the project.

III. AIR QUALITY and GREENHOUSE GAS EMISSIONS Would the Project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less than Significant Impact**	**No Impact**
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒	☐	☐
b) Violate any air quality standard or contribute to an existing or Projected air quality violation?	☐	☒	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐
f) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
g) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

a) Would the Project conflict with or obstruct implementation of the applicable air quality plan?

Finding: Less than Significant with Mitigation Incorporated

The Sierra County General Plan and the NSAQMD have adopted goals and rules intended to improve air quality in Sierra County and the air basin as a whole. Sierra County is in non-attainment for State PM_{10} standards. The applicable goals and rules of Sierra County and the NSAQMD to the Project are listed above in the regulatory framework of this section and the assessment of this impact relies upon the Project's potential to conflict with or obstruct implementation of these goals.

To assess the proposed Project's potential to obstruct implementation of an air quality plan, localized criteria pollutant emissions were analyzed, as these are the pollutants with established

ambient air quality standards. Potential localized impacts would include exceedances of State standards for PM. Particulate matter emissions, primarily PM_{10}, are of concern during construction because of potential fugitive dust emissions during earth-disturbing activities. Ozone emissions are generated from increased hauling and the use of off-road heavy-duty diesel equipment for site grading during construction. It is anticipated that construction of the Project would generate approximately 5,000 haul trips (conservatively assuming trucks with a 10-cubic yard capacity are used to move the 50,000-cubic yards of fill material from offsite) to import material from the Boca Reservoir storage site.

During construction of the proposed Project, various types of equipment and vehicles, as described in the Project Description (Section 2.4.2), would temporarily operate on the proposed Project site. Construction exhaust emissions would be generated from construction equipment, earth movement activities, construction workers' commutes, construction material hauling, and hauling of borrow material from the Boca Reservoir storage site for the entire construction period. The aforementioned activities would involve the use of diesel- and gasoline-powered equipment that would generate emissions of criteria pollutants.

Air quality modeling was performed using Project-specific details in order to determine whether the proposed Project would result in criteria air pollutant emissions in excess of the applicable thresholds of significance. Presented in Table 3.3-3, the proposed Project's construction-related emissions have been estimated using CalEEMod (See Table 3.3-3 and Appendix B). The results of the unmitigated emissions modeling were compared to the NSAQMD significance thresholds, also summarized in Table 3.3-3, in order to determine the associated level of impact. Although the proposed Project construction would temporarily cause localized increases in emission levels, the Project would be in compliance with the NSAQMD level A significance thresholds for ROG and PM_{10} and level B significance thresholds for NO_x (Table 3.3-3, CalEEMod 2017).

Table 3.3-3 CalEEMod Predicted Maximum Daily Project Emissions Estimates

	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$
Project Unmitigated Construction Emissions (lbs/day)	6.3	100.2	43.9	20.4	12.0
NSAQMD Level A Significance Thresholds (lbs/day)	**<24**	**<24**	**n/a**	**<79**	**n/a**
NSAQMD Level B Significance Thresholds (lbs/day)	**24-136**	**24-136**	**n/a**	**79-136**	**n/a**
NSAQMD Level C Significance Thresholds (lbs/day)	**≥136**	**≥136**	**n/a**	**≥136**	**n/a**

Because the NSAQMD is in nonattainment for State PM_{10} (see Table 3.3-2), and because the Project impact area is greater than one acre, Mitigation Measure (MM) AIR-1: Dust Control Measures as described in Section 3.3.4 would be implemented to reduce the potential for

Project emissions to obstruct the implementation of an air quality plan or substantially contribute to an existing air quality violation by prescribing measures that limit dust particulate matter emissions in accordance with NSAQMD level A mitigation measures. Additionally, as shown in Table 3.3-3 above, PM_{10} emissions are well below the NSAQMD Level A threshold and would not have a significant impact.

Additionally, CARB has adopted regulations to control emissions from portable equipment as a component of the State's air quality plans. All applicable portable engines and off-road equipment must be registered with CARB's portable engine and off-road equipment programs. To control emissions from portable equipment, MM AIR-2: Implement BMPs to Reduce Impacts on Air Quality from Construction Equipment Emissions would be implemented to reduce equipment idling times and ensure properly maintained equipment and thus, would be in compliance with NSAQMD level A mitigation measures.

The proposed Project construction would take approximately six to eight weeks to complete and increases to criteria pollutants would be temporary. Additionally, because the Project would disturb more than one acre, the NSAQMD requires the preparation of a Dust Control Plan Pursuant to District Rule 226. As a result, MM AIR-1 would be implemented to reduce fugitive dust impacts by incorporating dust limiting measures to less than significant levels. In addition, MM AIR-2 would be implemented to reduce construction equipment emission during construction by, as discussed above, requiring proper maintenance of equipment and restrictions on idling times. Operations would be similar to existing conditions with no emissions occurring from the stream system; as such, the proposed Project does not represent a significant addition of long term impacts to air quality. Therefore, the proposed Project would be consistent with the goals of the NSAQMD through the implementation of MM AIR-1 and MM AIR-2 and impacts are considered less than significant with mitigation incorporated.

b) Would the Project violate any air quality standard or contribute to an existing or projected air quality violation?

Finding: Less than Significant with Mitigation Incorporated

Sierra County is currently in non-attainment for State PM_{10} standards. As a result, an incremental increase in background PM levels would be considered a significant impact. The proposed Project would be in compliance with the NSAQMD level A significance thresholds for ROG and PM_{10} and level B significance thresholds for NOx (Table 3.3-3, CalEEMod, 2017).

The proposed Project would take approximately six to eight weeks and all emissions would be temporary and would not constitute a significant impact. Construction of the Project would contribute to the existing exceedance of PM_{10} in the County; however, PM_{10} emissions estimates are well below the NSAQMD significance thresholds and would not pose a significant impact to the violation of an air quality standard. In addition, MM AIR-1 and MM AIR-2 would be implemented to further reduce any potential impacts from construction activities. These Mitigation Measures would decrease construction related emissions by including a Dust and

Emissions Control Plan and implementation of construction equipment BMPs. The Project would require no operation activities except monitoring success criteria of revegetation efforts and would be the same as existing conditions; therefore, no long-term impacts to air quality would occur. Potential impacts to air quality standards or contribution to an existing or projected air quality violation would be considered less than significant with MM AIR-1 and MM AIR-2 incorporated.

c) Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Finding: Less than Significant with Mitigation Incorporated

A cumulative impact analysis considers a project over time in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed. Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants, such as PM_{10}, is a result of past and present development, and, thus, cumulative impacts related to these pollutants could be considered cumulatively significant. Consequently, the NSAQMD's approach to cumulative thresholds of significance is relevant to whether local pollutants are cumulatively significant when modeling shows that combined emissions from the Project and other existing and planned projects would exceed air quality standards. Due to the rural nature of the Project site and the minimal PM_{10} emissions generated from construction of the proposed Project, it is not anticipated that combined emissions from the proposed Project and other potential projects would cause a cumulative impact. In addition, the TRWC, or contractor, would implement MM AIR-1 and MM AIR-2, which would include a Dust and Air Emissions Control Program and construction equipment BMPs, respectively, to effectively reduce the levels of dust and vehicle related emissions from construction to a less-than-significant level. Therefore, the potential for the Project to result in a cumulatively considerable impact would be considered less than significant with MM AIR-1 and MM AIR-2 incorporated.

d) Would the Project expose sensitive receptors to substantial pollutant concentrations?

Finding: Less than Significant with Mitigation Incorporated

The proposed Project construction involves operating heavy equipment and construction activities that would temporarily produce additional dust and air emissions. Although there are no nearby sensitive receptors to the proposed Project site, the adjacent land owner has grazing rights and periodically visits the area. Additionally, the nearby recreational users at Stampede Reservoir and within Tahoe National Forest would also be considered sensitive receptors in the surrounding area.

Toxic Air Contaminant (TAC) Emissions

Construction activities have the potential to generate Diesel Particulate Matter (DPM) emissions related to the number and types of equipment typically associated with construction. Off-road, heavy-duty diesel equipment used for site grading and other construction activities result in the generation of DPM. However, construction would be temporary and would occur over a relatively short duration, six to eight weeks. In addition, only portions of the site would be disturbed at a time, with operation of construction equipment regulated by federal, State, and local regulations, including NSAQMD rules and regulations, and occurring intermittently throughout the course of a day, the likelihood that any one sensitive receptor would be exposed to high concentrations of DPM for any extended period of time would be low. As described in Impact 'a' above, CARB has adopted regulations to control emissions from portable equipment as a component of the State's air quality plans. As a part of Project construction and MM AIR-1, all applicable portable engines and off-road equipment must be registered with CARB's portable engine and off-road equipment programs and would align with the requirements set forth in the attainment plans. In addition, MM AIR-1 and MM AIR-2 would be implemented to reduce fugitive dust emissions and emissions generated from construction equipment. Therefore, it is not anticipated the proposed Project would expose sensitive receptors to substantial pollutant concentrations and impacts would be considered less than significant with mitigation incorporated.

e) Would the Project create objectionable odors affecting a substantial number of people?

Finding: Less than Significant

While offensive odors rarely cause any physical harm, they can still be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the NSAQMD. The occurrence and severity of odor impacts depends on numerous factors, including nature, frequency, and intensity of the source, the wind speed and direction, and the sensitivity of the receptor. The nearest sensitive receptor in the vicinity of the proposed Project site would be the adjacent landowner to the west to the Project site and the surrounding recreational users at Stampede Reservoir and the Tahoe National Forest. The proposed Project construction and current and future operations would not omit or add to odors in the area. Given this is a restoration project and does not entail the application of foul smelling materials, the distance from sensitive receptors, and lack of current odor complaints from the public, the impacts from odor would be considered less than significant.

f) Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Finding: Less than Significant

The proposed Project could contribute to climate change impacts through its contribution of GHGs. The proposed Project would generate a variety of GHGs during construction, including

several defined by AB 32, such as CO_2, CH_4, and N_2O from the exhaust of equipment and the exhaust of construction hauling trips and worker commuter trips. The NSAQMD has not established GHG significance thresholds; therefore, the Project construction emissions were compared to the CARB's recommended threshold of significance of 7,000 metric tons of CO_{2e} (carbon dioxide equivalent) per year. Although these thresholds are not binding on the NSAQMD, they are useful for comparative purposes.

Construction emissions were computed for the Project using the CalEEMod model. The predicted proposed Project emissions are well below the CARB's significance thresholds for CO_{2e} emission levels (Table 3.3-4, CalEEMod 2017). It is not anticipated that the proposed Project would generate GHG emissions levels that either directly or indirectly have significant impacts on the environment due to the low Project CO_{2e} emission estimates, see Table 3.3-4. Therefore, since the total Project CO_{2e} emission estimates would be well below the CARB thresholds, potential GHG emission impacts would be considered less than significant.

Table 3.3-4 CalEEMod Predicted CO_{2e} Emissions Estimates

Total Construction Source CO_{2e} Emission Estimates (metric tons/year unmitigated)	352.1
CARB CO_{2e} GHG Screening Threshold (metric tons/year)	**7,000**

The primary sources of proposed Project-related GHG emissions are anticipated to be combustion of fossil fuels from the operation of internal combustion engines used during Project construction (portable equipment, off road equipment, and vehicles). CO_{2e} emissions during proposed Project operation are expected to be low to nil. Operations emissions would be similar to existing operations (nil) and would not result in a substantial amount of GHG emissions.

g) Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Finding: Less than Significant

The proposed Project would not generate additional GHG emissions that would conflict with an applicable plan, policy or regulation for the purposes of reducing the emissions of GHG. Total CO_{2e} levels predicted to be emitted from construction totaled 352.1metric tons/year. This CO_{2e} estimate is well below the CARB Screening Threshold of 7,000 metric tons of CO_{2e} per year. Therefore, with the total Project CO_{2e} emission estimates well below the CARB CO_{2e} thresholds, potential GHG emission impacts would be considered less than significant.

3.3.4 Mitigation Measures

3.3.4.1 Mitigation Measure AIR-1: Dust and Emissions Control Plan

The TRWC shall require that the selected contractor prepare and implement a Project Dust and Emissions Control Plan that is approved by the NSAQMD prior to construction. The following shall be included in the plan and shall be implemented throughout the construction period to limit and control dust and air emissions:

- All material excavated, stockpiled, or graded shall be sufficiently watered, treated, or covered to prevent fugitive dust from leaving the property boundaries and/or causing a public nuisance. Watering during construction activities shall occur at least three times daily, with application to all disturbed areas (excavated areas, stockpiles, and/or graded areas until stabilized).

- All areas with vehicle traffic shall be watered or have dust palliative applied as necessary to minimize dust emissions.

- All on-site vehicle traffic shall be limited to a speed of 15-mph on unpaved roads within the Project footprint.

- All land clearing, grading, earth moving, or excavation activities on the Project shall be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20-mph.

- All inactive portions of the Project site shall be covered, seeded, or watered or otherwise stabilized until a suitable cover is established.

- All material transported to or from off-site shall be either sufficiently watered or securely covered to prevent it from being entrained in the air and there must be a minimum of six-(6) inches of freeboard in the bed of the transport vehicle.

- The nearest paved street is approximately 0.5-miles to the south of the Project site. Any paved streets used for transport to the project shall be reasonably clean through methods such as sweeping or washing at the end of each day, or more frequently if necessary, to remove excessive accumulations or visibly raised areas of soil which may have resulted from activities transporting materials to or from the Project site.

- Prior to the end of construction, the applicant shall re-establish ground cover on the Project site through seeding and re-vegetation.

- The Project contractor shall ensure that all construction equipment is properly maintained; and

- All applicable portable engines and off-road equipment must be registered with CARB's portable engine and off-road equipment programs.

Mitigation Measure AIR-1 Implementation

Responsible Party: The TRWC shall require that the contractor prepare and implement a Construction Emissions and Dust Control Plan. The TRWC shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of project development and construction by the contractor.

Timing: An Emissions and Dust Control Plan shall be prepared and approved by the NSAQMD and the TRWC prior to construction and implemented during all phases of grading and activities that have the potential to generate dust.

Monitoring and Reporting Program: During construction, regular inspections shall be performed by a TRWC representative and reports shall be submitted by the TRWC to LRWQCB to be kept on file by LRWQCB for inspection by the NSAQMD or other interested parties.

Standards for Success: Visible emissions and dust are kept to the lowest practicable level during construction periods. The goal is to minimize dust and emissions during construction and to the extent feasible, complaints from the public.

3.3.4.2 Mitigation Measure AIR-2: Implement BMPs to Reduce Impacts on Air Quality from Construction Equipment Emissions

- Employ best management construction practices to avoid unnecessary emissions (e.g., trucks and vehicles in loading and unloading queues would turn their engines off when not in use). Vehicle and equipment idling shall not be allowed to exceed five minutes, unless extenuating circumstances are documented occur requiring additional idling time. Any idling time exceptions shall be documented by TRWC representatives and submitted to LRWQCB to be kept on file.

- Encourage construction worker commuters to carpool or employ other means to reduce trip generation.

- A minimum of 50 percent of off-road heavy-duty (i.e., 50 horsepower, or greater) diesel fueled construction equipment shall, at a minimum, meet CARB's Tier 3 certified engine standards. Cleaner off-road heavy-duty diesel engines (e.g., Tier 4) shall be used to the extent feasible and available.

Mitigation Measure AIR-2 Implementation

Responsible Party: The TRWC shall require that the contractor implement construction equipment BMPS during all phases of project development and construction by the contractor.

Timing: BMPs would be implemented during all phases of construction activities.

Monitoring and Reporting Program: Prior to construction, equipment inspections shall be performed by a TRWC representative and reports shall be submitted by the TRWC to the LRWQCB to be kept on file by LRWQCB for inspection by the NSAQMD or other interested parties. Reports documenting exceptions to idling time and off-road heavy-duty diesel engine compliance shall also be completed by the TRWC and a file copy submitted to for inspection or review by NSAQMD or interested parties.

Standards for Success: Construction emissions from operating equipment reduced by operating all Tier 3 equipment. Construction queues minimized and idling vehicle time limited to five-minute maximums, unless exceptions are documented. Workers encouraged to carpool.

3.4 BIOLOGICAL RESOURCES

The Biological Resources section addresses the regional and local biological environment of the proposed Project site by identifying and screening species that make up the natural environment and by establishing potential special-status species and their likelihood of occurrence on the Project site. The section then documents the applicable Federal, State, and local rules, regulations, and guidelines applicable to biological resources potentially impacted by the proposed Project. Next, specific Project-related impacts would be evaluated based on the thresholds of significance established in the CEQA guidelines. The section concludes by detailing mitigation measures, if necessary, required to reduce potential impacts to less than significant levels.

3.4.1 Regulatory Setting

3.4.1.1 Federal

3.4.1.1.1 Clean Water Act: Section 401

The USEPA regulates surface water quality in waters of the United States under Section 401 of the CWA and in California this authority is delegated to the State's Regional Water Quality Control Boards (RWQCB). CWA Section 401 Water Quality Certification provides states and authorized tribes with an effective tool to help protect the physical, chemical, and biological integrity of water quality, by providing them an opportunity to address the aquatic resource impacts of federally issued permits and licenses. CWA 401 states that no Federal permit or license can be issued if a proposed action may result in a discharge to waters of U.S., unless the RWQCB certifies that the discharge is consistent with standards and other water quality goals, or waives

certification (USEPA 2017a). CWA 401 compliance is required for any project that produces a federal action with construction that could have an impact to surface water quality.

3.4.1.1.2 Clean Water Act: Section 404

The USACE and the USEPA regulate the discharge of dredge or fill material into waters of the U.S. under Section 404 of the CWA. Waters of the U.S. include wetlands, lakes, rivers, streams, and their tributaries. Wetlands are defined, for regulatory purposes, as areas inundated or saturated by surface, or groundwater; at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated solid conditions (33 CFR 328.3, 40 CFR 230.3) (USEPA 2016). If a project discharges any fill materials into water of the U.S., including wetlands, before and after the proposed Project actions, then a permit must be obtained from the USACE.

3.4.1.1.3 Endangered Species Act of 1973

The Federal Endangered Species Act (ESA) was passed by Congress in 1973 to protect and recover imperiled species and the habitat upon which they depend. The Federal ESA is administered by the United States Fish and Wildlife Service (USFWS). Under the Federal ESA, protected species are either listed as "endangered", in danger of extinction throughout all or a significant region of the species range; or as "threatened", likely to become endangered within the foreseeable future (USFWS 2017a). "'Take' is to hunt, pursue, catch, capture, or kill; or attempt to hunt, pursue, catch, capture, or kill" an endangered or threatened species. The Federal ESA also designates "candidate" species as those plants and animals that the USFWS has sufficient data on their biological status to propose them to be listed under the Federal ESA (USFWS 2017a). The Federal ESA mandates the protection of federally listed species and the habitats which they depend (50 Code of Federal Regulations [CFR] 17.12 for listed plants, 50 CFR 17.11 for listed animals, and various notices in the Federal Register for proposed species).

Consultation with the USFWS would be necessary if a proposed action of a project has the potential to affect federally listed species, such as Sierra Nevada yellow-legged frog (*Rana sierrae*), as well as suitable habitat for those species. This consultation would proceed under Section 7 of the Federal ESA if a federal action is part of the proposed action, or proceed through Section 10 of the Federal ESA if no such nexus were available (USFWS 2017a).

3.4.1.1.4 Migratory Bird Treaty Act of 1918 and Bald and Gold Eagle Protection Act

The Migratory Bird Treaty Act (MBTA) (16 USC C Section 703-711) and the Bald and Golden Eagle Protection Act (BAGEPA) (16 USC Section 668) protect specific species of birds and prohibits "take" (i.e., harm or harassment). The MBTA protects migrant bird species from "take" through setting hunting limits and seasons, and protecting occupied nests and eggs (USFWS 2017b). BAGEPA prohibits the take or commerce of any part of the bald or golden eagle (USFWS 2017c). The USFWS administers both the MBTA and BAGEPA and reviews actions that may affect species protected under each act.

3.4.1.2 State

3.4.1.2.1 California Endangered Species Act

The California Department of Fish and Wildlife (CDFW) has jurisdiction over plant and wildlife species listed as threatened or endangered under Section 2080 of the California Department of Fish and Game (CDFG) Code. The California Endangered Species Act (CESA) prohibits "take" of State-listed threatened or endangered species. The State CESA differs from the Federal ESA in that it does not include habitat destruction in its definition of "take". CDFW defines "take" as- to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CDFW may authorize "take" under the CESA through Section 2081 of the CDFG Code. If the results of a biological survey indicate that a State-listed species could be affected by a proposed project, then under Section 2081, CDFW could authorize take of species listed as endangered, threatened, candidate, or a rare plant, if that take is incidental to otherwise lawful activities and if certain conditions are met. (CDFW 2017a).

The State of California designates Species of Special Concern (SSC) as wildlife and plant species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational and/or educational values. These species do not have the same legal protection as listed species, but may be added to official lists in the future (CDFW 2017b). Examples of SSCs that occur in the Sierra Nevada are yellow warbler (*Setophaga petechia*), Sierra Nevada snowshoe hare (*Lepus americanus tahoensis*), Sierra Nevada mountain beaver (*Aplodontia rufa californica*), and California spotted owl (*Strix occidentalis occidentalis*). In the 1960's California also created a designation to provide additional protection to rare species. This designation remains today and is referred to as "Fully Protected" species, and those listed "may not be taken or possessed at any time" (CDFW 2017b). An example of a "Fully Protected" species that may occur in the vicinity of the proposed Project is the bald eagle (*Haliaeetus leucocephalus*).

3.4.1.2.2 California Environmental Quality Act Guidelines Section 15380

The CEQA Guidelines provide protection for federal and/or State listed species, as well as species not listed federally or by the State that may be considered rare, threatened, or endangered. If the species can be shown to meet specific criteria for listing outlined in CEQA Guidelines subsection 15380 (b). Species that meet these criteria can include "candidate species", species "proposed for listing", and "species of special concern". Plants appearing on California Native Plant Society (CNPS) California Rare Plant Ranking (CRPR) System are considered to meet CEQA's Section 15380 criteria. Impacts to these species would therefore be considered "significant" requiring mitigation (CDFW 2017c).

Section 15380 was included to address a potential situation in which a public agency is to review a proposed project that may have a significant effect on, for example a "candidate species", which has not yet been listed by the USFWS or CDFW. Therefore, CEQA enables an agency to protect a species from significant project impacts until the respective government agencies have had an opportunity to list the species as protected, if warranted (CDFW 2017c).

3.4.1.2.3 California Fish and Game Code Sections 1600–1616: Streambed Alteration Agreement

To protect, manage, and conserve rivers, streams, lakes, wetlands, etc., CDFW has jurisdictional authority, under CDFG Code Sections 1600-1616, to regulate all work under the jurisdiction of the State of California. Such work includes those actions that would substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed. In practice, CDFW marks its jurisdictional limit at the top of the stream or lake bank, or the outer edge of the riparian vegetation (where present), and sometimes extends its jurisdiction to the edge of the 100-year floodplain (CDFW 2017d). Because riparian habitats do not always support wetland hydrology or hydric soils, wetland boundaries, as defined by CWA Section 404, sometimes include only portions of the riparian habitat adjacent to a river, stream, or lake. Therefore, jurisdictional boundaries under Section 1600 may encompass a greater area than those regulated under CWA Section 404.

3.4.1.2.4 Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act), Section 1601-1607 of the CDFG code, delegates responsibility to the State Water Resource Control Board (SWRCB) for water rights and water quality protection and directs the nine Statewide RWQCBs to develop and enforce water quality standards within their jurisdiction. The Porter-Cologne Act requires any entity discharging waste, or proposing to discharge waste, within any region that could affect the quality of the "waters of the State" to file a "report of waste discharge" with the appropriate RWQCB. The appropriate RWQCB then must issue a permit, referred to as a waste discharge requirement (WDR). WDRs implement water quality control plans and take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, and the need to prevent nuisances (California Water Code Section 13263) (SWRCB 2017).

3.4.1.2.5 California Fish and Game Code Sections 3503, 3503.5, and 3800

Nesting migratory birds and raptors are protected under CDFG Code Sections 3503, 3503.5 and 3800; which prohibit the "take", possession, or destruction of birds, their nests, or eggs. Implementation of "take" provisions require that proposed Project-related disturbance, within active nesting territories, be reduced or eliminated during critical phases of the nesting cycle (approximately March 1 – August 31). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young), or the loss of habitat upon which birds are dependent, is considered "taking", and is potentially punishable by fines and/or imprisonment (California Legislative Information 2017a). Such taking would also violate federal law protecting migratory birds under the MBTA.

3.4.1.2.6 California Fish and Game Code Section 1900 et seq.

The Native Plant Protection Act (NPPA) was enacted in 1977 and is administered by CDFW, CDFG Code Section 1900 et seq. The NPPA prohibits "take" of endangered, threatened, or rare plant species native to California, with the exception of special criteria identified in the CDFW Act Code. A "native plant" means a plant growing in a wild uncultivated state which is normally

found native to the plant life of the State. Under the CDFG Code, species become endangered, threatened, or rare when the plants' prospects of survival and reproduction are in immediate jeopardy for one or more causes (California Legislative Information 2017b). "Rare" species can be defined as species that are: broadly distributed but never abundant where found, narrowly distributed or clumped yet abundant where found, and/or narrowly distributed or clumped and not abundant where found. If potential impacts are identified for a proposed project activity, then consultation with CDFW, permitting, and/or other mitigation may be required. Endangered, threatened, and/or rare species can be identified through the CNPS CRPR (CNPS 2017a).

3.4.1.3 Local

3.4.1.3.1 Sierra County General Plan

Goal 1. It is the County's goal to protect and defend its abundant and diverse plant and animal species.

Policy 2. Within stream zones, control uses over which the County has jurisdiction to the extent necessary to prevent significant impacts on riparian and aquatic habitat.

Policy 3. Prohibit removal of native vegetation in lake and stream zones except when done in conjunction with the permitted uses as described under #2, above.

Policy 4. Protect bodies of water and their watersheds to prevent water degradation.

Policy 8. Protect and whenever possible enhance, threatened, endangered, and special plants and animals and their habitats, as defined by the California Department of Fish and Game, as well as migratory birds from proposed land uses.

Policy 9. Encourage and assist in efforts to sustain plant and animal populations for recreational and other values.

Policy 10. Encourage the protection of natural populations which are unique and representative of the habitats of Sierra County and which could provide for educational and research purposes. Identify and preserve heritage and landmark trees and groves where appropriate.

Policy 14. Encourage cattle owners to manage grazing to minimize adverse impacts on sensitive habitat types.

Policy 21. Protect all habitat types and the continuity of habitats.

Policy 29. To the extent possible based on current scientific knowledge, utilize mitigation guidelines which are specific to the species and habitats in the County.

Policy 30. Accept conservation easements protecting special species and natural communities as partial mitigation for projects over which the County has jurisdiction where complete or near-complete habitat species population avoidance is not feasible.

Policy 31. Require monitoring of projects with the potential of significantly impact biotic resources.

3.4.2 Environmental Setting

The Sardine Valley is located approximately 15 miles southeast of Sierraville, Sierra County, California. The proposed Project is characterized by a gently sloping Sierra meadow and surrounding mountains typical of eastern edge of the Sierra Nevada Mountain Range. The proposed Project site varies from 5,985 feet to 6,191 feet in elevation above mean sea level, depending on the location within the meadow. Sardine Valley is the heart of Davies Creek Watershed and encompasses over 350 acres of degraded montane meadow system and over 15,000 feet of degraded stream. Davies Creek Watershed drains approximately 20 square miles of watershed through the meadow. Elevation of the watershed ranges from 6,045 feet to 8,129 feet and has a mean annual precipitation of approximately 35-inches per year with much of the annual precipitation as snow.

The purpose of the proposed Project is to restore the historic riparian, aquatic, and wetland function of the meadow system within Sardine Valley to reduce non-point source sedimentation by eliminating incisions in the current channels and returning flows to their historic channels. The proposed Project would improve habitat for a range of large mammals, raptors, and other important bird species, including willow flycatcher. The proposed Project would provide hydrologic benefits such as reduced sedimentation, improved late season baseflow, and elevated groundwater tables. Davies Creek has diverted from its course on the southern side of the meadow within Sardine Valley to the northern side where it is currently flowing. The proposed Project aims to restore the currently incised, down cut, and widened over time channel to return historic flows to the current channels improving the meadow's alluvial fan.

3.4.2.1 Study Methods

3.4.2.1.1 Desktop Analysis Methodology

Prior to conducting reconnaissance-level biological field surveys in October 2017, Stantec completed a desktop analysis to identify sensitive biological resources (wildlife species, plant species, and their habitats) that may occur within the proposed Project area and region, as defined by the CDFW, USFWS, CNPS, and USFS. The following resources were used to identify those potentially occurring biological resources:

- CDFW CNDDB records search of special status species and habitat observations in the proposed Project area and in the three miles surrounding the proposed Project area (Figure 3.4-2), (CDFW 2017e);

- CNPS online Inventory of Rare and Endangered Plants of California for Antelope Valley, Loyalton, Evans Canyon, Sierraville, Sardine Peak, Dog Valley, Independence Lake, Hobart Mills, and Boca USGS 7.5-minute Quads (CNPS 2017b);

- USFWS list of endangered, threatened, and candidate species for Antelope Valley, Loyalton, Evans Canyon, Sierraville, Sardine Peak, Dog Valley, Independence Lake, Hobart Mills, and Boca USGS 7.5-minute Quads (USFWS 2017a);

- USFWS Critical Habitat data for federally threatened and endangered species (USFWS 2017b);

- USFS Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) system for Zone 3, North Sierran (USFS 2008) for habitat assessment of the potential for special status species to occur (Figure 3.4-1); and

- Calflora online database for Sierra County (Calflora 2017). Calflora was used as a secondary tool for the purpose of assessing rare plant species that have the potential to occur within Sierra County.

Endangered, threatened, rare, and/or special status species that were identified during the desktop analysis of the proposed Project are compiled in Table 3.4-1 below. For the purpose of this IS/MND, special status species are defined by the following parameters:

- Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (50 Code of Federal Regulations [CFR] 17.12 for listed plants, 50 CFR 17.11 for listed animals, and various notices in the Federal Register for proposed species);

- Species that are listed or proposed for listing by California as threatened or endangered under the CESA (14 CCR 670.5);

- Plants listed as rare under the California Native Plant Protection Act of 1977 (CDFG Code 1900 et seq.);

- Plants considered by the CNPS to be Rank 1- a) "plants presumed extirpated in California and either rare or extinct elsewhere, or b) "rare, threatened, or endangered in California and elsewhere";

- Plants considered by CNPS to be a Rank 2- a) Plants presumed extirpated in California, but common elsewhere, or b) "rare, threatened, or endangered in California and common elsewhere";

- Plants considered by CNPS to be a Rank 3- "plants about which more information is needed" and cannot be yet be excluded from review;

- Plants considered by CNPS to be a Rank 4- "plants with limited distribution";

- Species that meet the definitions of "rare" or "endangered" under CEQA Guidelines, Section 15380;

- Animal Species of Special Concern to CDFW; and
- Plant and animal species that are designated as "special animals" or "those of greatest conservation need", by CDFW through the CNDDB.

3.4.2.1.2 Field Study Methodology

On October 4, 2017, Stantec conducted a reconnaissance-level biological survey of the proposed Project area (Figure 2.3-1). Surveys were conducted within the proposed Project area, on foot walking meandering transects to identify the presence of rare plants, and the presence of and/or habitat of special status wildlife species mentioned above. A list of the plant and wildlife species observed during the field surveys are compiled in Appendix C.

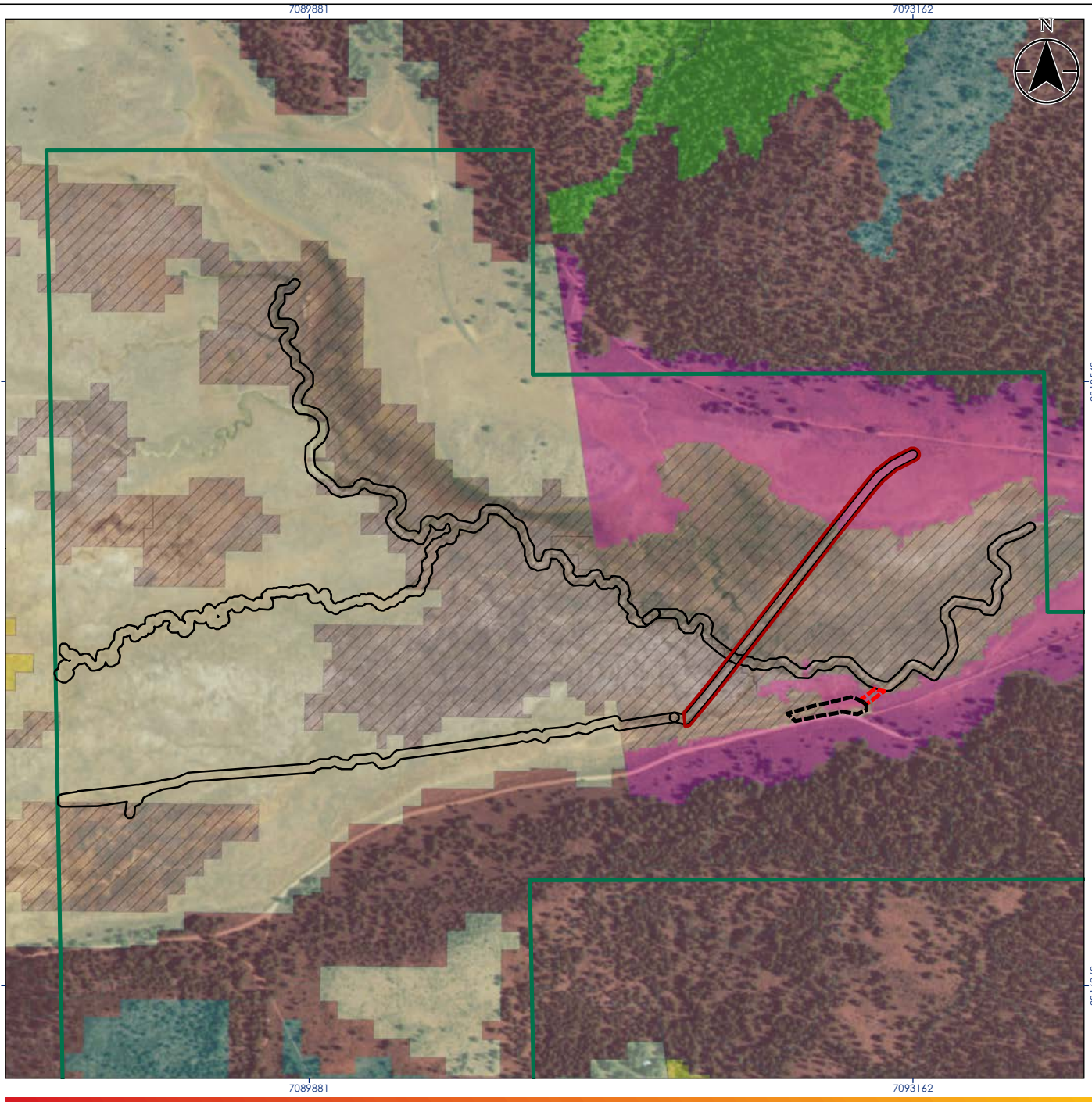
3.4.2.2 Study Results

3.4.2.2.1 Biological Communities

The October reconnaissance-level survey revealed a relatively dry meadow setting, which was a mosaic of a variety of vegetation communities. To classify some of the communities and further crosswalk to wildlife habitats, Stantec defined these using the following classification systems. However, these communities were not mapped in the field and all communities that define available habitat were classified.

The CDFW and the CNPS have developed a standard classification system for floristically describing vegetation communities Statewide; further translating to the National Vegetation Classification (NVC). The CDFW and CNPS system has been compiled in A Manual for California Vegetation, 2nd Edition (Sawyer et al. 2009), and has been accepted and adopted by State and Federal agencies. The Manual of California Vegetation (MCV) classifications assist in defining vegetation based on quantitative based rules to distinguish between vegetation community types, local variation, ecological land classification/composition, species rarity and significance, and historical and current land management practices (Sawyer et al. 2009). The MCV defines vegetation communities by dominant and/or co-dominant species present as: 1A) alliance- a broad unit of vegetation with discernible and related characteristics; 1B) provisional alliance- a temporary vegetation community and/or candidate alliance; and/or 2) association- a basic secondary unit of classification, not as broad as an alliance, with uniform composition and conditions. The MCV classifications replace lists of vegetation types developed for the CNDDB.

The biological communities in the proposed Project area have been classified using MCV standards (Sawyer et al. 2009) based on results of a preliminary baseline habitat desktop evaluation using USFS CALVEG data (Figure 3.4-1) and reconnaissance-level verification field survey. The MCV classification system relates to wildlife habitats by identifying unique characteristics; thus, distinguishing locales for threatened and endangered wildlife species. Furthermore, the MCV also identifies vegetation community/alliance State and global special status ranking, which are discussed for each alliance below. Wildlife habitats and hydrologic features are also discussed below in the subsequent sections.



Proposed Project Features

- Proposed Work Area
- Potential Borrow Site
- Potential Staging Area
- Potential Access Road
- Parcel Boundary

Vegetation Type

- Annual Grassland
- Bitterbrush
- Eastside Pine
- Montane Chaparral
- Sagebrush
- Sierran Mixed Conifer
- Wet Meadow

Figure No.
3.4-1
Title

Habitat Assessment

Client/Project
Truckee River Watershed Council
Sardine Meadow Restoration Project
185703836

0 510 1,020 Feet

Notes
1. Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
2. Source of Vegetation Classification and Mapping Data:
   United States Forest Service

foriver TRUCKEE RIVER WATERSHED COUNCIL
Stantec

V:\1857\active\185703836\gis\mxd\fig3_4-1_sardine_habitats.mxd Revised: 2017-12-04 By: kclyma

3.4.2.2.1.1 Purshia tridentata Shrubland Alliance- Bitter brush scrub

Bitter brush scrub (*Purshia tridentata*) Shrubland Alliance (Sawyer et al. 2009) consists of a shrub canopy with various shrubs, an open canopy, and a sparse or grassy herbaceous layer. It is generally found at elevations ranging from approximately 3,280 to 11,150 feet (1,000-3,400 meters). This biological community can be found in the Sierra Nevada and throughout mountains, deserts, and valleys in the west and southwest. The general habitats include varied topographies and soils that are highly permeable and well drained.

The indicator species specific to this herbaceous alliance that were identified within the proposed Project area include bitter brush (*Purshia tridentata*) and big sagebrush (*Artemisia tridentata*) as the co-dominant species. Bitter brush scrub is an important browse for livestock in the spring and is critical for wintering mule deer (*Odocoileus hemionus*) herds. This biological community is State listed as threatened and globally listed as apparently secure (CNPS 2017b).

3.4.2.2.1.2 Carex fillifolia Herbaceous Alliance- Shorthair sedge turf

Shorthair sedge (*Carex fillifolia*) Herbaceous Alliance (Sawyer et al. 2009) is a biological vegetation community of wet/perennial grasses and forbs (USFS 2008) that is generally found at elevations ranging from approximately 4,900 to 12,100 feet (1,500 to 3,700 meters). This biological community can be found in the Mono Basin, Mount Lassen area, Sierra Nevada, Southern California Mountains and Valleys, and southeastern Great Basin ranges of California. The general habitats include dry, well-drained meadows.

The indicator species specific to this herbaceous alliance that were identified within the proposed Project area include sedge species (*Carex* spp.), yarrow (*Achellea millefolium)*, Mount Hood pussypaws (*Calyptridium umbellatum)*, tufted hair grass (*Deschampsia cepitosa*), lupine species (*Lupinus* spp.), penstemon species (*Penstemon* spp.), cinquefoil (*Potentilla gracilis),* and buckwheat (*Eriogonum* spp.) as the co-dominant species (CNPS 1995). Threats to this biological community include frequent fire or heavy grazing. This biological community is State and globally listed as apparently secure (CNPS1995).

3.4.2.2.1.3 Deschampsia cespitosa Herbaceous Alliance- Tufted hair grass meadows

Tufted hair grass (*Deschampsia cespitosa*) meadow Herbaceous Alliance (Sawyer et al. 2009) biological vegetation community of wet/perennial grasses and forbs (USFS 2008) that is generally found at elevations ranging from approximately zero to 12,800 feet (3,900 meters). This biological community can be found in the Klamath Mountains, Mono Basin, Sierra Nevada, Southern Cascades, Modoc, and Great Mountains and Valleys, and Northern and Central Coasts of California. The general habitats include wet, seasonally flooded meadows.

The indicator species specific to this herbaceous alliance that were identified within the proposed Project area include tufted hair grass (*Deschampsia cepitosa*), oatgrass species (*Danthonia* sp.), sedge species (*Carex* spp.), Nebraska sedge (*Carex nebrascensis*), willowherb (*Epilobium cilatum)*, and clover species (*Trifolium* spp.) as the co-dominant species (CNPS 1995). Threats to this biological community include livestock grazing, road building, and adjacent

timber harvest. This biological community is State listed as apparently secure and globally listed as demonstrably secure (CNPS 1995).

3.4.2.2.1.4 Carex nebrascensis Herbaceous Alliance- Nebraska sedge meadows

Nebraska sedge (*Carex nebrascensis*) Herbaceous Alliance (Sawyer et al. 2009) is a wet grass and forb (USFS 2008) biological vegetation community that is generally found at elevations ranging from approximately 200 to 8,860 feet (60 to 2,700 meters). This biological community can be found in the Klamath Mountains, Modoc Plateau, Mono, North California Coast Range, and Sierra Nevada range of California. The general habitats include fens and wet meadows, yet are rarely along stream sides or lake basins. Soils are usually deep alluvium with organic surface layers.

The indicator species specific to this meadow alliance that were identified within the Project area include Nebraska sedge as the dominant species, and creeping spikerush (*Eleocharis macrostachya*), fringed willowherb (*Epilobium ciliatum*), inflated sedge (*Carex utricula*ta), Kentucky bluegrass (*Poa pratensis*), mat muhly (*Muhlenbergia richardsonis*), Nevada lewisia (*Lewisia nevadensis*), Parry's aster (*Symphyotrichum foliaceum var. parryi*), primrose monkeyflower (*Mimulus primuloides*), small wing sedge (*Carex microptera*), and tufted hairgrass (*Deschampsia cespitosa*) as the co-dominant species. This biological vegetation community can be found within and near hydrologic features within the proposed Project area. Nebraska sedge is an important forage species for livestock, as it typically resists grazing, trampling damage, and soil compaction. Baltic rush (*Juncus arcticus*) or Kentucky bluegrass may replace Nebraska sedge when grazed continuously (CNPS 1995). This biological community is State listed as apparently secure, and globally listed as secure (CNPS 1995).

3.4.2.2.2 Hydrologic Communities and Features

Hydrologic features are extensive within the proposed Project area and have the potential to be jurisdictional waters of the U.S. and/or waters of the State; as well as are associated with the aforementioned vegetation communities and potential habitat(s). Hydrologic features observed throughout the entirety of the proposed Project area during baseline biologic surveys include seasonal wetlands; wet meadows (i.e., Sardine Meadow); and ephemeral, intermittent, and perennial streams (i.e., Davies Creek). Vegetation communities specifically associated with these hydrologic features within the proposed Project area include Tufted Hair Grass Herbaceous Alliance, Bitter brush scrub Shrubland Alliance, Shorthair Sedge Herbaceous Alliance, Nebraska Sedge Herbaceous Alliance, and lodgepole pine Forest Alliance.

3.4.2.2.3 Wildlife Habitat

In addition to the observed biological vegetation communities within the proposed Project area providing suitable habitat for special status vegetation species, they also provide habitat to wildlife species. Riparian and wetland habitats are considered to be high value habitat for wildlife including birds, mammals, reptiles, amphibians, and invertebrates alike. Wildlife species use these habitats during all stages of their life cycles including breeding, feeding, nesting, and/or migration. Edge habitats, typically created by water features, are of significant importance for a variety of wildlife species such as mule deer, raccoon (*Procyon lotor*), and

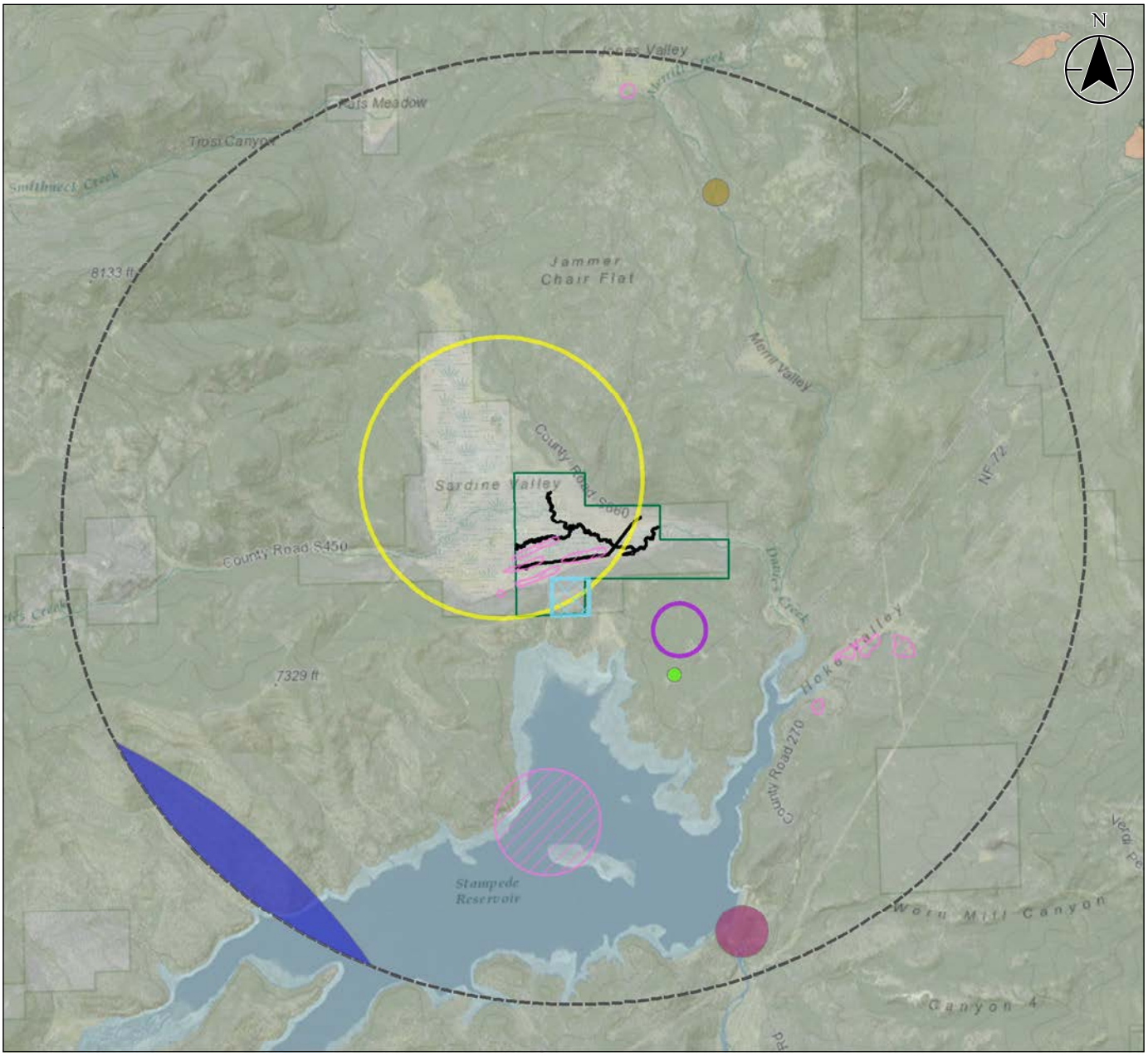
Sierra gartersnake (*Thamnophis couchii*), all of which are likely to occur in the proposed Project area.

3.4.2.2.3.1 Wildlife Corridors

Wildlife movement corridors have been recognized by federal agencies and the State of California as important habitats worthy of conservation. Wildlife corridors provide seasonal migration between winter and summer habitats, and provide non-migrant wildlife movement within their home range for food, cover, and reproduction. Data on the locations and value of wildlife movement corridors specific to the proposed Project region is lacking, however all of the aforementioned biological vegetation communities have the potential to support wildlife movement in the proposed Project region. Mixed vegetation covers (e.g., over- and understory) in association with wetland and/or stream channels are highly favored riparian habitats to a variety of wildlife species. This habitat type provides corridors for wildlife movement, specifically undisturbed and continuous expanses of land as opposed to areas with fragmentation (i.e., local highways such as Interstate 80 and Highway 89).

3.4.2.2.4 Special Status Species

Special status plant and wildlife species and designated critical habitat known to occur within three miles of the proposed Project area are shown below on Figure 3.4-2, Known Occurrences of Special Status Species.



Work Area

3 Mile Project Area Buffer

Project Parcel

USFWS Designated Critical Habitat

Sierra Nevada Yellow-legged Frog

Webber Ivesia

CNDDB Special Status Species

Common Name, Scientific Name, FESA Listing, CESA Listing

American badger, *Taxidea taxus*, None, None

North American porcupine, *Erethizon dorsatum*, None, None

Plumas ivesia, *Ivesia sericoleuca*, None, None

alkali hymenoxys, *Hymenoxys lemmonii*, None, None

bald eagle, *Haliaeetus leucocephalus*, Delisted, Endangered

broad-nerved hump moss, *Meesia uliginosa*, None, None

common moonwort, *Botrychium lunaria*, None, None

willow flycatcher, *Empidonax traillii*, None, Endangered

Figure No.

3.4-2

Title

Known Occurrences of Special Status Species

Client/Project

Truckee River Watershed Council
Sardine Meadow Restoration Project
185703836

0 0.5 1 Miles

foriver
TRUCKEE RIVER WATERSHED COUNCIL

Stantec

Notes

Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

V:\185703836\gis\mxd\fig3.4-2_sardine_cnddb.mxd Revised: 2017-12-04 By: kclyma

Based on the results of the background research listed above in Study Methods, 38 special status plant and twelve fish and wildlife species were defined as potentially occurring within the proposed Project region (e.g., in USGS 7.5-minute Quads for Antelope Valley, Loyalton, Evans Canyon, Sierraville, Sardine Peak, Dog Valley, Independence Lake, Hobart Mills, and Boca; and/or Sierra County). This includes special status plant and wildlife species that are known to occur within three miles of the proposed Project area or have the potential to occur based on background research data from the CDFW CNDDB, CNPS online inventory, Calflora, and USFWS list of Federal Endangered and Threatened Species (Table 3.4-1).

Conclusions in Table 3.4-1 regarding the habitat suitability and the potential for species occurrence were based on the background research, database searches, and local habitat suitability. For each special status species known to occur in the Project region, the "potential for occurrence" at the Project area has been evaluated and is defined as follows:

- **Very Low to Nil:** The proposed Project area and/or immediate area do not support suitable habitat for a particular species. Proposed Project is outside the species known range;

- **Low:** The proposed Project area and/or immediate area only provide limited habitat for a particular species. In addition, the known range for a particular species may be outside the immediate proposed Project area;

- **Moderate:** The proposed Project area and/or immediate area provide suitable habitat for a particular species, and habitat for the species may be impacted;

- **High:** The proposed Project area and/or immediate area provide ideal habitat conditions for a particular species, and/or known populations occur in the immediate area and within the potential area of impact; and

- **Present:** Recorded historically or observed on site during biological surveys for the proposed Project.

Species with a moderate potential, high potential, or known potential to occur in the proposed Project area are further described in the species accounts below Table 3.4-1 and are analyzed for potential impacts. Species identified in the database search but determined to have a very low or low potential to occur within the Project area are included in Appendix C and don't warrant further evaluation.

Table 3.4-1 Potential Special Status Species within the Project Area

Common Name Scientific Name	Legal Status			Geographic Distribution/ Floristic Province	Preferred Habitat	Identification Period	Level of Potential for Occurrence Within Project Sites
	Federal	State	CNPS				
Plants							
alkali hymenoxys *Hymenoxys lemmonii*	–	–	2B.2	785-11,120 feet (240-3,390 meters)	Great Basin scrub, lower montane coniferous forest, meadows and seeps (subalkaline).	June-August (September)	**Moderate.** Suitable habitat within Project area, known occurrence within the Sardine Peak USGS Quad. Specific occurrence estimated from a 1963 Thorp collection site in Sardine Valley.
Dog Valley ivesia *Ivesia aperta var. canina*	–	–	1B.1	5,249-6,561 feet (1,600-2,000 meters)	Volcanic and rocky environments; lower montane coniferous forest; meadows, seeps.	June-August	**Moderate.** Suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.
Donner Pass buckwheat *Eriogonum umbellatum* var. *torreyanum*	–	–	1B.2	6,085-8,595 feet (1,855-2,620 meters)	Volcanic and rocky environments; meadows, seeps; upper montane coniferous forest.	July-September	**Moderate.** Suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.
Plumas ivesia *Ivesia sericoleuca*	–	–	1B.2	4,297-7,217 feet (1,310-2,200 meters)	Vernally mesic and volcanic environments; Great Basin scrub; lower montane coniferous forest; meadows, seeps, vernal pools.	May-October	**Present.** Ideal habitat exists and species was observed during the October 2017 surveys in the proposed Project area. Known occurrences within the proposed Project area and in the Hobart Mills, Dog Valley, Boca, and Sardine Peak USGS Quads.

Common Name Scientific Name	Legal Status			Geographic Distribution/ Floristic Province	Preferred Habitat	Identification Period	Level of Potential for Occurrence Within Project Sites
	Federal	State	CNPS				
sticky pyrrocoma *Pyrrocoma lucida*	–	–	1B.2	2,295-6,400 feet (700-1,950 meters)	Great Basin scrub, lower montane coniferous forest, meadow and seeps; alkaline, clay environments.	July-October	**Moderate.** Suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.
Mammals							
American badger *Taxidea taxus*	–	SSC	N/A	Uncommon, permanent resident throughout the State, as well as most of western and central North America.	In California, drier open grasslands, forests, and shrub habitats, with friable soils.	Year-round	**Moderate.** Suitable habitat within the proposed Project area, and known, but a very limited occurrence within the proposed Project area. An individual was observed near the southern tip of the proposed Project area in August 1985 (CNDDB 2017).
Birds							
bald eagle *Haliaeetus leucocephalus*	D	E, FP	N/A	North America including all continuous U.S.	Near lakes or streams.	Year-round	**Low to Moderate** (nesting). No suitable nesting habitat exists in the proposed Project area, and limited suitable foraging habitat. One known occurrence of a nesting pair from 1997 approximately 0.5 miles south of the proposed Project area (CNDDB 2017).

Common Name Scientific Name	Legal Status			Geographic Distribution/ Floristic Province	Preferred Habitat	Identification Period	Level of Potential for Occurrence Within Project Sites
	Federal	State	CNPS				
short-eared owl *Asio flammeus*		SSC	N/A	Northwestern and western U.S., northern Rockies and Canada (breeding).	Treeless landscapes with meadows, marshes providing good cover during nesting and abundant prey such as voles.	Spring and summer	**Low to Moderate** (nesting). This ground nesting owl requires adequate cover for nesting, the Project area provides limited coverage. No known occurrences within three miles of the Project area.
nesting raptors and other migratory birds	MBTA	–	N/A	Migrants.	Tree, shrub, ground, and riparian vegetation (nesting).	March 1-August 30	**Moderate** (nesting). Project site provides suitable nesting habitat for ground nesting birds and limited suitable habitat for tree/cavity nesting birds.
willow flycatcher *Empidonax traillii*	–	E	N/A	United States, through Mexico south into the northern region of South America.	Nests in riparian areas, often marsh areas with shrubs and standing or running water.	Summer (nesting)	**Low to Moderate** (nesting). No suitable habitat in Project area. Known occurrence of pair nesting approximately 2.5 miles southeast of the Project area, near the Little Truckee inflow to Stampede Reservoir, as recently as 2004 (CNDDB 2017).
Reptiles and Amphibians							
Sierra Nevada yellow-legged frog *Rana sierrae*	E	T	N/A	Northern and central Sierra Nevada Mountains. 4,500-12,000 feet (1,371-3,658 meters)	High mountain lakes, meadow streams, and ponds about 2-3 inches (5-8 cm) deep; rarely found more than three feet from water.	Year-round	**Low to Moderate.** No suitable habitat in Project area. No known occurrences within three miles of the proposed Project area. There is not critical habitat within three miles of the proposed Project area.

Federal – U.S. Fish and Wildlife Service (USFWS)
E = Listed as endangered under the federal ESA
T = Listed as threatened under the federal ESA
D = Delisted under the federal ESA
PD = Proposed for delisting
C = Candidate to become a proposed species
MBTA = Migratory Bird Treaty Act
– = No listing.

State – California Department Fish and Wildlife (CDFW)
E = Listed as endangered under the California ESA
T = Listed as threatened under the California ESA
R = Listed as rare under the California Native Plant Protection Act. This category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation.
CE = Candidate species for listing as endangered under the California ESA
FP = Fully protected species
SSC = Species of special concern in California
– = No listing.

California Native Plant Society (CNPS)
1B = Rank 1B species: rare, threatened, or endangered in California and elsewhere.
2B = Rank 2B species: rare, threatened, or endangered in California but more common elsewhere.
3 = Rank 3 species: plants about which more information is needed to determine their status.
4 = Rank 4 species: plants of limited distribution.

3.4.2.2.4.1 Special Status Plant Species

Based on desktop research and a records search, 38 special-status plant species were identified as occurring within the general region of the Project area (Table 3.4-1). Of these species, four have been documented within three miles of the project site (CDFW CNDDB 2017), and the remaining 34 have been known to occur in a nearby USGS quad (CNPS 2017b). One special-status plant species, Plumas ivesia (*Ivesia sericoleuca*) was detected during the reconnaissance-level survey. Additional special-status plant species may not have been detected because the surveys were completed during October, which is outside of the blooming period for most species. Species accounts for special status plants with a CNPS Ranking of 1B and 2B and have a moderate to high potential to occur in the Project area are provided below. Potential to occur within the Project site was based on desktop research, records searches, elevation, evaluation of habitat, site assessment, and soils present on site.

3.4.2.2.4.1.1 Alkali hymenoxys (Hymenoxys lemmonii)

Alkali hymenoxys is a perennial herb that is native to California. It is part of the Asteraceae family, or Compositae (aster, daisy, or sunflower family). This species is fairly endangered where it occurs in Northern and Eastern California, however it is common in Arizona, Idaho, Nevada, Oregon, and Utah (CNPS 2017d). Alkali hymenoxys is threatened by development and agriculture. There is a moderate potential for alkali hymenoxys to occur within the proposed Project area, with suitable habitat known within the proposed Project area. There are known occurrences of alkali hymenoxys in the Sardine Peak USGS Quad (CNPS 2017c). This species was not observed during baseline botanical surveys conducted on October 4, 2017.

3.4.2.2.4.1.2 Dog Valley ivesia (Ivesia aperta var. canina)

Dog Valley ivesia is a perennial herbaceous plant that is part of the Rosaceae flowering plant family, and is endemic to meadows and openings in Dog Valley. This species is seriously endangered within its California (and Nevada) range due to reservoir and recreation development as well as vehicle use and grazing. (CNPS 2013a). There is a moderate potential for Dog Valley ivesia to occur within the proposed Project site, with suitable habitat known to occur in the proposed Project area. There are no known occurrences of Dog Valley ivesia within three miles of the proposed Project area (Calflora 2017, CNPS 2017c). This species was not observed during baseline botanical surveys conducted on October 4, 2017.

3.4.2.2.4.1.3 Donner Pass buckwheat (Eriogonum umbellatum var. Torreyanum)

Donner Pass buckwheat is a perennial herb that is endemic to California. It is part of the Polygonaceae, or buckwheat family. The species is known to occur in California by approximately 20 occurrences mostly occurring near the Lake Tahoe Basin (CNPS 2017c). Donner Pass buckwheat provides important habitat for many native bees, predatory or parasitoid insects, and butterflies (Calflora 2017). There is a moderate potential for Donner Pass buckwheat to occur within the proposed Project area, with suitable habitat known to occur in the proposed Project area. There are no known occurrences of Donner Pass buckwheat within three miles of the proposed Project area (Calflora 2017, CNPS 2017c). This species was not observed during baseline botanical surveys conducted on October 4, 2017.

3.4.2.2.4.1.4 Sticky pyrrocoma (Pyrrocoma lucida)

Sticky pyrrocoma is a perennial herb that is endemic to California and is part of the Asteraceae family, or Compositae (aster, daisy, or sunflower family). Sticky pyrrocoma is moderately threatened in California, however is common elsewhere. This species is threatened due to grazing, vehicle use, and water diversions in or near suitable habitat (CNPS 2017). There is a moderate potential for sticky pyrrocoma to occur within the proposed Project site, with suitable habitat known to occur in the proposed Project area. There are no known occurrences of sticky pyrrocoma within three miles of the proposed Project area (Calflora 2017, CNPS 2017c). This species was not observed during baseline botanical surveys conducted on October 4, 2017.

3.4.2.2.4.1.5 Plumas ivesia (Ivesia sericoleuca)

Plumas ivesia is a perennial herb that is endemic to California and is part of the Rosaceae flowering plant family. This species occurs in meadows within a small range of the Sierra Nevada mountains, from South Lake Tahoe to Elysian Valley. Plumas ivesia is fairly endangered in California and is threatened by development, grazing, and vehicles, as well as by recreational activities, timber harvest, fire suppression, road construction and maintenance, hydrological alterations, and erosion (CNPS 2017). There are known occurrences of Plumas ivesia in the Hobart Mills, Dog Valley, Boca, and Sardine Peak USGS Quads, and within the proposed Project area, though populations were reported to decline in 1994 and 1999 due to drought and heavy grazing (Calflora 2017, CNPS 2017c). This species was observed throughout the proposed Project area during reconnaissance-level botanical surveys conducted on October 4, 2017.

3.4.2.2.4.2 Special Status Wildlife Species

Twelve special status wildlife species were identified as potentially occurring in the Project area (Table 3.4-1) based on desktop research, records search, and habitat assessment completed on October 2, 2017 by a Stantec biologist. Of the 12 wildlife species identified, four have been documented within three miles of the project site, including the American badger, bald eagle, and willow flycatcher (CDFW 2013b). These three species were not detected; however, one special status wildlife species was noted. Sandhill cranes were heard and seen at a great distance. These were likely migrants as the Project area provides only foraging habitat for both subspecies of sandhill crane. Other special status wildlife species were not detected during the reconnaissance level survey and habitat assessment; however, due to the timing of the survey in October, additional surveys may be required to confirm. Species accounts for special status wildlife species with a low to moderate potential to occur in the Project area are provided below. In addition, Sierra Nevada yellow-legged frog is analyzed in detail below due to its high profile in the Sierra Nevada and LRWQCB's aim to be protective of this species.

3.4.2.2.4.2.1 American badger (Taxidea taxus)

American badger is a medium-sized, yellow-grey mammal with a white stripe running down the length of its body, black and white markings on its head, and black feet (CDFW 1986). Though observations of this species often occur during the day and in open areas, American badgers are commonly nocturnal and burrow for shelter and to prey upon small rodents. They are not migratory, and will often reuse old burrows.

Habitat exists in the proposed Project area, and an American badger was documented at southern tip of the proposed Project area in August 1985 (CNDDB 2017). Therefore, there is a moderate potential for the American badger to occur in the proposed Project area. However, neither sign, burrows nor badgers were observed during the field surveys in October 2017.

3.4.2.2.4.2.2 Bald eagle (Haliaeetus leucocephalus)

The bald eagle is a large raptor with a solid brown back, prominent white head and tail, and large yellow beak as an adult and mottled brown and white plumage as a juvenile. The bald eagle is most often found near lakes, rivers, and coasts with ample prey and large trees suitable for constructing their large stick nests (USFWS 2016). They prey mainly on fish and waterfowl, but will also scavenge opportunistically. Bald eagles are a migratory species with high fidelity to their nesting and wintering territories (USFWS 2016).

Suitable habitat exists near the proposed Project area, and there was previously an established territory near the Stampede Reservoir, with the pair nesting approximately half a mile south of the Project area. However, the last successful fledging event was in 1995 and the nest was recorded unoccupied/unsuccessful in 1997, and no recorded observations have been present since that date (CNDDB 2017). Therefore, a low potential for nesting exists for the bald eagle in the proposed Project area. Bald eagles were not seen during the field surveys in October 2017.

3.4.2.2.4.3 Nesting raptors and other migratory birds

There is a moderate potential for nesting raptors and other migratory bird species protected under the MBTA to occur in the proposed Project area. In addition to bald eagle, willow flycatcher, and five other bird species listed in Table 3.4-1, the proposed Project area may represent potential habitat for bird species protected under the MBTA, including shrub-nesting species such as song sparrow (*Melospiza melodia*), green-tailed towhee (*Pipilo chlorurus*), and ground nesting species such as western meadowlark (*Sturnella neglecta*) and dark-eyed junco (*Junco hyemalis*).

3.4.2.2.4.4 Sierra Nevada yellow-legged frog (Rana sierrae)

The Sierra Nevada yellow-legged frog is medium-sized frog found on gentle slopes on open stream and lake edges and sunny riverbanks (Stebbins and McGinnis 2012, USFWS 2017d). They tend to spend most of their time close to water and are most active during the day in the summer months. Mating and egg-laying occurs in still or slow-moving water from May to August after streams have slowed from winter runoff (Stebbins and McGinnis 2012). Reproduction sites must not completely freeze, leaving a thawed portion on the bottom throughout the winter to ensure tadpole survival; therefore, creeks must be connected to permanent ponds or lakes. Tadpoles may take three to four years to metamorphose into frogs.

There is very little potential for the Sierra Nevada yellow-legged frog due to very limited suitable habitat present within the proposed Project area. There are no known documented occurrences within three miles of the proposed Project area, although critical habitat has been delineated for the species within the Sierras in the Project vicinity (CNDDB 2017). Additionally, Sierra Nevada yellow-legged frogs or their suitable habitat were not observed during the

reconnaissance survey performed in October 2017. However, this species has been included for further evaluation due to recent discoveries of the species in the region.

3.4.2.2.4.5 Willow flycatcher (Empidonax traillii)

The willow flycatcher is a small passerine (perching bird) found in low dense vegetation, most frequently in the presence of water and willow species. When observed, the willow flycatcher is often found alone hawking for insects. They are difficult to distinguish from other *Empidonax* flycatchers; therefore, their song is the most reliable form of identification. Breeding season is the best time for detection due to the males' behavior of singing to defend their territory. However, willow flycatchers nesting within riparian areas of the Sierra Nevada tend to breed later than most in the west (May), and only frequent their breeding areas for 3-4 months, making them even more difficult to detect (Bombay et al. 2003).

Potentially suitable habitat for willow flycatchers within the project area was not present; however, the Project aims to develop habitat for this species through implementation of the Project. The habitat components of dense riparian shrubs did not exist and therefore, willow flycatcher is not expected to occur within the Project area. Therefore, there is a very low to nil potential for the willow flycatcher to occur on the proposed Project. No observations were made of willow flycatcher in the proposed Project area during the reconnaissance survey in October 2017; however, in 1991, CNDDB reports an observation of a possible nesting pair within the proposed Project area (Figure 3.0, CDFW 2017e).

3.4.3 Impact Analysis

IV. BIOLOGICAL RESOURCES **Would the Project:**	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less than Significant Impact**	**No Impact**
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species in local or regional plans, policies, or regulations, or regulated by the California Department of Fish and Wildlife 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 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?	☐	☒	☐	☐

IV. BIOLOGICAL RESOURCES Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
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?	☐	☐	☒	☐

a) Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species in local or regional plans, policies, or regulations, or regulated by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Finding: Less than Significant with Mitigation Incorporated

As described in Table 3.4-1 Special Status Species within the Project Area and Section 3.4.2.2.4 Special Status Species summarizes plant and wildlife special status species' potential to occur in the Project Area and the local or regional plans, policies, regulations, or rules, as discussed in Section 3.4.1 Regulatory Setting, that protect them. The following analysis discusses the proposed Project's potential to have a substantial adverse effect on these identified special status species with a potential to occur on the Project site.

Special Status Plant Species

As discussed in Section 3.4.2.2.4.1, there is a moderate potential for special status alakali hymenoxys (*Hymenoxys lemmonii*), Dog Valley ivesia (*Ivesia aperta var. canina*), Donner Pass buckwheat (*Erigonum embellatum* var. *torreyanum*), and sticky pyrrocoma (*Pyrrocoma lucida*) to occur at the proposed Project site, but, none of the species with a moderate potential to occur were identified during the October 2017 survey. It is anticipated that impacts to these species would be unlikely because the proposed Project would be within the stream channels or along the disturbed railroad grade, access roads, and/or staging area where these plants do not typically grow. However, due to the moderate chance of occurrence, pre-construction botanical surveys during the appropriate bloom period would be required to confirm absence of the species from the proposed Project. Additionally, Plumas ivesia (*Ivesia sericoleuca*), a CNPS list 1B.2 special status species, is known to occur in Sardine Valley and was observed in the proposed Project area during the biological surveys conducted in October 2017.

Potential impacts to these species when present within the Project footprint, could occur from excavation (i.e. species removal) and access (i.e. species compaction). As such, pre-construction botanical surveys would be conducted in the appropriate bloom period for each species to verify survey results and document any previously unidentified occurrences. MM BIO-1 Pre-Construction Special Status Botanical Surveys would be required to survey and accurately map specific occurrences or populations of special status plant species and ensure the Project does not inadvertently impact a special status species. Additionally, MM BIO-2 Special Status Plant Species Avoidance, Protection, Relocation, and Monitoring would be required to avoid, protect, relocate, or mitigate the population of Plumas ivesia and other special status-species, should they be detected. By implementing MM BIO-2, specific performance standards and success criteria are set forth to ensure that the Project would not have a substantial adverse effect to the species.

Further, impact to special status species could result from unknowing construction workers operating outside the Project footprint. To avoid this potential impact, MM BIO-3 would be required that workers on the site are appropriately trained for identification of and avoidance of special-status species and MM BIO-4 would be implemented to ensure that ground and vegetation disturbance would be minimized to the extent possible.

Construction related disturbance to vegetation communities would occur as a result of the Project, however, the footprint of disturbance would be minimized by limiting construction to the stream channel, railroad grade, and access work area buffer of 25 feet from either feature. The overall goal of improving meadow function and meadow habitat which would in turn improve sensitive species habitat over the long-term. As such, impacts from the proposed Project would not have a substantial adverse effect to any special status species. However, MM BiO-1 through BIO-4, have been incorporated to ensure any potential adverse impacts are less than significant. Therefore, potential impacts to special-status plant species are considered less than significant with mitigation.

Special Status Wildlife Species

American badger

Suitable habitat for American badger occurs within the proposed Project area, and a single observance of an American badger occurred in 1985. Construction activities have the potential to temporarily displace individual badgers; however, reconnaissance level surveys did not identify evidence of badgers using the site and displacement would be temporary allowing displaced badgers to return to the Project area post-construction. Since the site is scavenging habitat only temporary displacement is not considered significant as it is not likely to adversely affect badgers or their habitat long-term because surrounding foraging habitat would not be impacted. Therefore, any potential impact is considered less than significant.

Sierra Nevada yellow-legged frog

There is a very low potential for the Sierra Nevada yellow-legged frog to occur within the proposed Project area. Their habitat is generally slow moving, ponded areas with emergent vegetation, and individuals were not documented in the proposed Project area during the October 2017 visit. Impacts to Sierra Nevada yellow-legged frog or their habitat would not be anticipated from the proposed Project.

Nesting raptors and other migratory birds

There is very limited riparian habitat and trees in and around the proposed Project area to provide potential nesting sites for migratory birds or raptors. Additionally, no trees are proposed for removal. Therefore, the proposed Project does not have the potential to disturb protected raptor nests and other tree nesting migratory birds. The breeding season for most protected birds is generally from March 1 to August 30. Construction activities are anticipated to occur near the end of the typical breeding season and would occur in late August but before the wet season of late autumn. Impacts are not expected to occur to nesting birds. Construction activities may disturb birds but they would flush from the area and no significant adverse impacts are anticipated to raptors and migratory birds. Therefore, the impact would be less than significant.

b) Would the Project have a substantial adverse effect on any riparian habitat, sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish or U.S. Fish and Wildlife Service?

Finding: Less than Significant with Mitigation Incorporated

The proposed Project involves restoring the historic riparian, aquatic, and wetland function of the meadow system within Sardine Valley by eliminating incisions in the current channels and returning flows to their historic channels. This activity would not result in a substantial adverse effect on riparian habitat and wetlands, which are considered a sensitive natural community because the current hydrologic regime does not support riparian or wet meadow vegetation and sagebrush encroachment is prevalent.

However, construction activities are directly within the meadow and stream environments so MM BIO-4 and MM BIO-5 would be implemented to ensure that any vegetation disturbance is kept to a minimum within the proposed Project objectives, as well as be revegetated with native seed post-construction and constructed during the dry season ensuring impacts to riparian habitat would be properly restored and not impacted during wet season construction. In addition, MM GEO-1 would be implemented to ensure sediment control BMPs will be in place in any area where construction activities approach waters of the U.S. An assessment of erosion control and water quality impacts is addressed in the Geology and Soils (Section 3.6) and Water Quality and Hydrology (Section 3.8) of this IS/MND.

The riparian habitats, which primarily comprise of emergent vegetation, such as those along current water channels are considered sensitive by CDFW and Sierra County. However, ultimately the proposed Project would improve riparian habitat and the impacts due to construction will be very minimal. Potential direct impacts to wetlands and other waters of the US are assessed in the section below. The proposed Project would not entail the removal of trees.

The implementation of BIO-4 and MM GEO-1 (listed in Section 3.6 below) the potential impacts of the proposed Project would be minimized to less than significant levels.

c) Would the project 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?

Finding: Less than Significant with Mitigation Incorporated

Jurisdictional waters of the U.S. include jurisdictional wetlands as well as all other waters of the U.S. such as creeks, ponds, and intermittent drainages. Wetlands are defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The majority of jurisdictional wetlands in the United States meet three wetland assessment criteria: hydrophytic vegetation, hydric soils, and wetland hydrology. Jurisdictional waters of the U.S. can also be defined by exhibiting a defined bed and bank and an ordinary high-water mark (OHWM). Davies Creek has a defined bed and bank and is therefore a jurisdictional water of the U.S. During the October field survey, emergent vegetation (e.g. *Carex nebrascensis*, *Salix exigua*, *Salix lasiandra*, *Deschampsia cespitosa*, *Epilobium cilatum*, *Iomatium sp.*, *Oenothera* sp.) typical of saturated soils was also observed indicating a high potential for meeting the full definition of federally protected wetlands within the Project footprint.

Project activities would cause direct impacts to these features through the direct fill and hydrological interruption, however the overall goal of the project is to improve and restore the meadow system and associated wetland habitat. The current Davies Creek channels within the proposed Project area would be filled with approximately 50,000 cubic yards of fill. The proposed Project would fill some sections of channel completely and some sections intermittently, leaving voids that would fill seasonally with ground and surface water resulting in a net improvement to the meadow environment by increasing groundwater levels and providing improved saturated soil conditions for wetland communities. Construction activities would take place directly in and immediately adjacent to the creek channels; however, fill would be placed and compacted in accordance with BMPs required in MM GEO-1 (as described in Section 3.6), and graded to match the surrounding meadow contour reducing the potential for loss of topsoil to impact protected wetlands to a less than significant level.

Additionally, the placement of the fill and work within the creek channels would require a Clean Water Act 404 permit which requires completion of a wetland and/or waters delineation, a Corps verification of that delineation, and proof of compliance with the CWA Section 404. MM BIO-5 provides requirements for completing these components of the Section 404 permitting process and would ensure that potential impacts to protected wetlands are adequately quantified and mitigated through the Section 404 permitting process, reducing the potential for substantial adverse effects to a less than significant level. Furthermore, because the Project would require a CWA Section 404 permit, a section 401 Water Quality Certification (WQC) would also be obtained. A section 401 WQC would ensure that the activities of the proposed Project comply with all applicable water quality standards, limitations, and restrictions.

Therefore, with the implementation of MM GEO-1 (as listed in the Geology and Soils Section 3.6) and MM BIO-5, the potential impact to seasonal wetlands and drainages (as defined by Section 404 of the Clean Water Act) would be considered less than significant. Additionally, the proposed Project would have an overall net benefit on the meadow ecosystem, as it would improve wetland habitat and the wildlife and plants that depend on it.

d) Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Finding: Less than Significant

Wildlife movement corridors are important habitats that allow wildlife to travel, migrate, or disperse between significant habitats. Wildlife movement corridors have been recognized by federal agencies such as the USFWS and the State of California as important habitats worthy of conservation. In general, movement corridors are comprised of areas of undisturbed land cover that connects larger, contiguous habitats. The proposed Project site includes open grasslands, meadows, and adjacent forested areas. Additionally, the creek channels and adjacent tributaries are located in the proposed Project and provide potential water sources for native wildlife species.

Construction activities and/or removal of vegetation could cause temporary disturbance to common wildlife movements; however, the extent of the disturbance is limited as wildlife could move around the area, given the open nature of the site. Additionally, following construction activities, the proposed Project area would be reshaped and revegetated (seeded and mulched) to allow for native plant flora to become a natural part of the meadow system.

As a result, the proposed Project construction and operation is expected to have a less than significant impact on wildlife species movements. Thus, the potential impacts to native resident or migratory wildlife species are considered less than significant with no mitigation necessary.

e/f) Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? Would the Project conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan?

Finding: Less than Significant

The proposed Project would not conflict with local ordinances relative to biological resources because the proposed Project aims to improve biologic and hydrologic function in the valley improving the long-term function of valley with improved hydrological and habitat benefits.

Project activities do not include any tree removal. The proposed Project area is not currently subject to a habitat conservation plan, or other approved local, regional, or State habitat conservation plans. Additionally, in accordance with -Sierra County General Plan Goal 1, Policy 2, 4, and 30, the proposed Project is protective of Sierra County's steams, creeks, groundwater, wetland communities, riparian areas, fish and wildlife species, and their habitats, by avoiding, minimizing or mitigating for work in these areas. The proposed Project aims to restore the currently incised, down cut, and widened channel to return historic flows to the current channels improving the meadow's overall condition. In accordance with the aforementioned policies, the proposed Project minimizes impacts to, and ultimately improves, riparian habitat and open spaces. As such, the proposed Project would not conflict with any approved or planned local policies or ordinances protecting biological resources

The proposed Project area is not currently subject to an approved habitat conservation plan, or other approved local, regional, or State habitat conservation plans. Therefore, the proposed Project would not conflict with any approved or planed local policies or ordinances protecting biological resources. This potential impact would thus be considered less than significant and no mitigation would be required.

3.4.4 Mitigation Measures

3.4.4.1 Mitigation Measure BIO-1: Pre-Construction Special Status Botanical Surveys

A qualified botanist shall conduct surveys for sensitive plant species during the appropriate blooming period for each of those species (see Table 3.4-1). If special-status species are observed, Mitigation Measure BIO-2 shall be implemented.

Mitigation Measure BIO-1 Implementation

Responsible Party: TRWC shall ensure that a qualified biologist conducts pre-construction special-status plant surveys.

Timing: Surveys shall be conducted during the appropriate blooming period for each of the identified special status plant species.

Monitoring and Reporting Program: The survey shall be conducted by a qualified biologist and a brief survey report shall be completed by the TRWC and submitted to LRWQCB to be kept on file.

Standards for Success: The presence or absence of special status botanical species shall be documented and if found, they shall be handled according to Mitigation Measure BIO-2.

3.4.4.2 Mitigation Measure BIO-2: Special-Status Plant Species Avoidance, Protection, Relocation, and Monitoring

For the known and identified population of Plumas ivesia in the Project area, and in the event that other special-status species are identified through MM BIO-1 within the Project area, the TRWC shall develop a protection and implementation plan to undertake one or more of the following construction actions:

1. Route construction activity away from identified sensitive plants by avoiding completely or strategically designing unfilled areas of the stream channel to coincide with the identified population to ensure the species and/or population is avoided;

2. Protect occupied habitat for the species on-site by flagging or delineating the habitat with construction flagging or fencing where avoidance is feasible;

3. Implement construction methods such as access route padding (where appropriate protective mats are placed for temporary construction access in avoidance areas) or other construction methods designed to prevent impact to plants; or

4. Relocate plants to suitable habitat outside of the immediate Project work area, whether within the Project footprint or off-site. Relocation techniques may include propagule collection and preparation, seedling protection, and weed and invasive exotics control in the replanting area. The present knowledge of propagation requirements for some plants is so limited that all efforts to propagate and reintroduce them in the wild should be carried out under the direct supervision of a specialist well versed in the cultural requirements of the genus (CNPS 1998). If within the Project footprint, flagging and habitat protection shall be implemented as required above under 2.

Once the construction actions are determined, the TRWC shall incorporate the following into the protection and implementation plan and document execution of the plan:

5. A maintenance and monitoring program shall be designed and implemented for affected populations or relocated populations to document potential Project-related impacts. The monitoring program should utilize consistently documented data to further augment the existing knowledge of the species and to develop criteria for potential future restoration projects (CNPS 1998). Reporting requirements would be further defined after development of restoration and reclamation plan for rare plants is drafted.

Additionally, if any Federal or State listed threatened or endangered species are detected in the proposed Project area that may be impacted by the project work, a 25-foot area surrounding the species shall be established. Within such exclusion zones, no construction work shall be conducted until consultation with California Department of Fish and Wildlife or United States Fish and Wildlife Service personnel, as appropriate, have been made and their recommendation for protection is incorporated.

Mitigation Measure BIO-2 Implementation

Responsible Party: The TRWC shall ensure that a qualified biologist flags the populations to be avoided and/or conducts the propagule collection and/or relocation of the special status plant(s) and that a qualified biologist conducts the maintenance and monitoring program.

Timing: Plan development, relocation, and/or propagule collection shall occur pre-construction.

Monitoring and Reporting Program: The maintenance and monitoring program shall be conducted by a qualified biologist and a monitoring report shall be completed by the TRWC and kept on file with the LRWQCB. The monitoring report shall also be provided to CNPS to share implementation and success data on restoration projects.

Standards for Success: The avoidance and/or relocation of the special status botanical species shall be documented and shall be handled according to the performance standards outlined above.

3.4.4.3 Mitigation Measure BIO-3: Pre-Construction Environmental Awareness Training

Prior to construction, a qualified biologist shall conduct one Environmental Awareness Training for construction personnel. Environmental Awareness Training shall be given to construction personnel to brief them on how to recognize special status plant species, wildlife species, and sensitive habitats that could occur in the proposed Project area (i.e., special status plant identification, amphibian identification and habitat, wetland habitats, riparian habitats, relevant BMPs, mitigation, and regulations). Environmental Awareness Training reference pamphlets shall also be provided to keep onsite for use by an environmentally trained foreman for training new Project personnel in the absence of the biologist. If special status species are encountered in the work area, construction shall cease and the TRWC and qualified biologist shall be notified for guidance before any construction activities are resumed. Depending on the listing of the observed species and its persistence in the area, the TRWC shall notify the USFWS and/or CDFW for guidance.

Mitigation Measure BIO-3 Implementation:

Responsible Party: The TRWC shall ensure that a qualified biologist conducts one pre-construction Environmental Awareness Training.

Timing: Prior to the initiation of construction.

Monitoring and Reporting Program: The training shall be conducted by a qualified biologist, the environmental training reference pamphlets shall be kept on the construction site, and a sign-in sheet for all personnel required to attend the training shall be included in the MMRP report.

Standards for Success: Construction personnel are trained in the key characteristics for identifying and avoiding impacts to special status species and sensitive habitats.

3.4.4.4 Mitigation Measure BIO-4: Minimize Vegetation Disturbance and Revegetate all Disturbed areas

Ground and vegetation disturbance shall be minimized during project implementation. Activities shall be confined to designated marked access routes and well-marked project work sites. There shall be a project manager or representative on site at all times during work within the floodplain or stream channels. The contractor shall be instructed on the importance of avoiding disturbance of anything not necessary to meet project goals. All equipment shall use planned disturbance sites as access routes where possible and access routes shall be planned carefully.

All disturbed areas shall be mulched with native material or weed-free straw (e.g., rice straw) and seeded with native species. Where needed, excavation sites shall have perimeter containment installed around the site's lower perimeter to contain any eroded material. Native vegetation such as willows and sedges would be transplanted if they need to be removed as part of the project. All disturbed areas shall be revegetated with approved native vegetation.

Mitigation Measure BIO-4 Implementation:

Responsible Party: The TRWC shall ensure that a representative is onsite while work is occurring within the floodplain or creek and that ground and vegetation disturbance is being kept to a minimum. Additionally, the TRWC shall ensure that all sites are revegetated post-construction.

Timing: During construction; and revegetation post-construction.

Monitoring and Reporting Program: The TRWC shall document the when construction occurs, as well as how and where revegetation occurred. A brief technical memorandum documenting vegetation disturbance and revegetation shall be prepared by TRWC and kept on file with the LRWQCB.

Standards for Success: Vegetation disturbance is minimized and restored to pre-existing conditions within five years.

3.4.4.5 Mitigation Measure BIO-5: Compensation for Direct Impacts to Waters of the U.S.

Because avoidance of the wetlands/waters of the U.S./waters of the State or riparian areas is not practicable, TRWC shall apply for and obtain a CWA Section 404 Nationwide Permit and comply with the current Corps compensation schedule for any loss of waters of the U.S.. TRWC shall work with the Corps to ensure that the local and federal "no net loss" of wetlands is properly upheld. In addition, for work within a stream or lake bed, riparian zone, or floodplain, TRWC shall apply for, obtain and comply with a CDFW Streambed Alteration Agreement (SAA). For all activities that trigger the Corps CWA 404 permit, the TRWC shall also apply for, obtain and comply with a Clean Water Act Section 401 Water Quality Certification from LRWQCB.

Mitigation Measure BIO-5 Implementation

Responsible Party: The TRWC is responsible for applying for all permits and approvals needed to fill the wetlands, work in waters of the U.S./Waters of the State, and riparian zones.

Timing: If required, the CWA Section 404, CDFW Streambed Alteration Agreement, and CWA 401 Permits shall be obtained prior to construction.

Monitoring and Reporting Program: The TRWC shall ensure that environmental permits shall be obtained prior to construction and the appropriate fees paid to comply with the regulatory agency compensatory mitigation schedule for temporary and permanent impacts to waters of the U.S. and riparian areas. The TRWC shall prepare brief letter report on compliance with this mitigation measure and submit it to the LRWQCB for their files.

Standards of Success: Appropriate State and Federal permit compliance and compensation, including no net loss of waters of the U.S. from the proposed Project.

3.4.4.6 Mitigation Measure GEO-1: Sediment and Erosion Control Measures

See MM GEO-1, Section 3.6

3.5 CULTURAL AND TRIBAL CULTURAL RESOURCES

This section was developed by Stantec Consulting pursuant to Section 15064.5 of CEQA. The purposes were to (1) identify and record cultural and Tribal cultural resources in the Project area; (2) make preliminary evaluations of such resources' significance according to the criteria of the California Register of Historical Resources (CRHR); and (3) recommend procedures for avoidance or mitigation of adverse effects to CRHR-eligible resources.

3.5.1 Regulatory Setting

This regulatory setting lists cultural and Tribal cultural resources regulations relevant to the proposed Project.

3.5.1.1 Federal

3.5.1.1.1 National Historic Preservation Act

Most regulations at the federal level stem from the National Environmental Policy Act (NEPA) and historic preservation legislation such as the National Historic Preservation Act (NHPA) of 1966, as amended. NHPA established guidelines to "preserve important historic, cultural, and natural aspects of our national heritage, and to maintain, wherever possible, an environment that supports diversity and a variety of individual choice." The NHPA includes regulations (Section 106) which pertain to all projects (including the proposed Project) that are funded, permitted, or approved by any federal agency and which have the potential to affect cultural resources. Provisions of NHPA establish the NRHP maintained by the National Park Service, the Advisory Councils on Historic Preservation, State Historic Preservation Offices, and grants-in-aid programs.

3.5.1.1.2 American Indian Religious Freedom Act and Native American Graves and Repatriation Act

The American Indian Religious Freedom Act recognizes that Native American religious practices, sacred sites, and sacred objects have not been properly protected under other statutes. It establishes as national policy that traditional practices and beliefs, sites (including right of access), and the use of sacred objects shall be protected and preserved. Additionally, Native American remains are protected by the Native American Graves and Repatriation Act of 1990.

3.5.1.2 State

3.5.1.2.1 CEQA, PRC Section 21083.2, and CEQA Guidelines 15064.5

Includes provisions for significance criteria related to archaeological and historical resources. A significant archaeological or historical resource is defined as one that (a) meets the criteria of the California Register of Historical Resources (CRHR), (b) is included in a local register of historical resources, (c) or is determined by the Lead Agency to be historically significant. A significant impact is characterized as a "substantial adverse change in the significance of a historical resource." Public Resources Code (PRC) Section 5024.1 authorizes the establishment of the CRHR. Any identified cultural resources must therefore be evaluated against the CRHR criteria.

CEQA includes in its definition of historical resources "any object [or] site …that has yielded or may be likely to yield information important in prehistory" (14 CCR 15064.5[3]), which is typically interpreted as including fossil materials and other paleontological resources. More specifically, destruction of a "unique paleontological resource or site or unique geologic feature" constitutes a significant impact under CEQA per State CEQA Guidelines Appendix G.

Treatment of paleontological resources under CEQA is generally similar to treatment of cultural resources, requiring evaluation of resources in the project; assessment of potential impacts on significant or unique resources; and development of mitigation measures for potentially significant impacts, which may include monitoring, combined with data recovery excavation and/or avoidance.

3.5.1.2.2 PRC Section 5024.1 California Register of Historical Resources

In order to be determined eligible for listing in the CRHR, a property must be significant at the local, State, or National level under one or more of the following four criteria as defined in PRC 5024.1 and CEQA Guideline 15064.5(a).

- (1) It is associated with events or patterns of events that have made a significant contribution to the broad patterns of the history and cultural heritage of California and the United States. (2) It is associated with the lives of persons important to the nation or to California's past. (3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values. (4) It has yielded, or may be likely to yield, information important to the prehistory or history of the State and the nation;

- In addition to meeting one or more of the above criteria, a significant property must also retain integrity. Properties eligible for listing in the CRHR must retain enough of their historic character to convey the reason(s) for their significance. Integrity is judged in relation to location, design, setting, materials, workmanship, feeling, and association.

3.5.1.2.3 PRC Section 21083.2 Treatment of Unique Archaeological Resources

PRC Section 21083.2 governs the treatment of unique archaeological resources, defined as "an archaeological artifact, object, or site about which it can be clearly demonstrated" as meeting any of the following criteria:

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

- Has a special and particular quality such as being the oldest of its type or the best example of its type;

- Is directly associated with a scientifically recognized important prehistoric or historic event or person; or

- If it can be demonstrated that a project will cause damage to a unique archaeological resource, appropriate mitigation measures shall be required to preserve the resource in place and in an undisturbed state. Mitigation measures may include, but are not limited to, 1) planning construction to avoid the site, 2) deeding conservation easements, or 3) capping the site prior to construction. If a resource is determined to be a "non-unique archaeological resource", no further consideration of the resource by the Lead Agency is necessary.

3.5.1.2.4 PRC Section 7050.5 Encountering Human Remains

The possibility of encountering human remains cannot be entirely discounted. Pursuant to PRC Section 7050.5 if human graves are encountered, work should halt in the vicinity and theSierra County Coroner should be notified immediately. At the same time, an archaeologist should be

contacted to evaluate the situation. If human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification.

3.5.1.2.5 Assembly Bill 52 (Public Resources Code Section 21084.2)

AB 52 changes sections of the public resources code to add consideration of Native American culture within CEQA. The goal of AB 52 is to promote the involvement of California Native American Tribes in the decision-making process when it comes to identifying and developing mitigation for impacts to resources of importance to their culture. To reach this goal, the bill establishes a formal role for tribes in the CEQA process. CEQA lead agencies are required to consult with tribes about potential tribal cultural resources in the project area, the potential significance of project impacts, the development of project alternatives, and the type of environmental document that should be prepared. AB 52 specifically states that a project that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment.

3.5.1.3 Local

3.5.1.3.1 Sierra County General Plan

Goal 1. Identify and protect the cultural, historical, and archaeological resources of Sierra County recognizing that the historic structures, archaeological sites and cultural resources centered upon the County's agricultural, mineral, and forested setting is the link to the County's past and should continue to define the future.

Policy 2. Develop a project review procedure which will ensure a consistent analysis of projects which may impact cultural resources.

Policy 3. Aggressively pursue funding for historic preservation projects.

Policy 4. Actively protect cultural resources against vandalism.

Policy 5. Work toward establishment of National Register Districts in every "Community Living Historic Area" in the County as well as other areas appropriate for National Register designation.

Policy 5a. Encourage inclusion of significant sites or districts in the Federal, State, and Local Historic Register.

Policy 6. Assist in public awareness regarding importance of cultural resources to the County's economic well-being and aesthetics.

Policy 7. Consider destruction of prehistoric and historic sites with recordation or destruction during excavation as mitigation during individual project review as a last resort method and only if an economically feasible alternative does not exist, and

- A general plan amendment is not being requested, and
- If the project proposed has a fiscally positive impact on the County.

Policy 8. Create and continually update a County Cultural Resources Inventory.

Policy 9. Take feasible steps to ensure preservation of historic structures in their existing state.

Policy 10. Pursue viable economic activities for cultural resource areas (including rural vistas, historic mining areas, and traditional agricultural areas) and adaptive reuse of historic structures which do not destroy their historic/ aesthetic value related to their traditional use. Prohibit new activities, land uses, and adaptive reuse which would negatively impact the historic and aesthetic value of these areas, structures, and surroundings and encourage traditional activities.

Policy 15. Coordinate cultural resource preservation inventory activities with the Forest Service, tribal councils, and other public agencies.

3.5.2 Environmental Setting

The following section describes the regional and local cultural setting for the proposed Project. The section includes the methodology used for establishing the contextual setting along with a summary of the natural environment, prehistoric context, ethnographic context, historic context, and paleontological context. Supplemental setting information to support this summary can be found in Appendix D.

3.5.2.1 Methodology for Establishing Setting

3.5.2.1.1 Records Search

A records search of the California Historical Resources Information System at the Northeast Information Center (NEIC) was completed for the proposed Project on September 27, 2017. The study area for the records search consisted of the Project site and surrounding areas within 1/4-mile of the Project site. Previous surveys, studies, and cultural resources site records were reviewed. Records were also examined in the Historic Property Data File for Sierra County, which contains information on locations of recognized historical significance, including those evaluated for listing in the NRHP, the CRHR, the California Inventory of Historic Resources, California Historic Landmarks, and California Points of Historical Interest. The purpose of the records search was to: 1) determine whether known cultural resources have been recorded within or adjacent to the Project site; 2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby sites; and, 3) develop a context for the identification and evaluation of cultural resources.

The records at the NEIC indicate that five cultural resources studies have been previously completed within the records search area. However, no studies have been completed within the Project area. Table 3.5-1 summarizes these studies.

Twenty-four (24) cultural resources were identified within the records search area and one is within the Project area (CA-SIE-1852 - Sardine Valley Archaeological District). Table 3.5-2 summarizes these cultural resources. The proposed Project is within the Sardine Valley Archaeological District (CA-SIE-1852) which is listed on the National Register of Historic Places (NRHP) and is therefore automatically eligible for listing on the California Register of Historical Resources (CRHR). Please note, while the Project area is within the Sardine Valley Archaeological District, the Project has been designed to avoid known cultural resources sites associated and within the Sardine Valley Archaeological District.

Table 3.5-1 Cultural Resources Studies Conducted In or Adjacent to the Project Site

Study No.	Title	Author	Year	Findings	Within Project Area?
S-1156	Archaeological Investigations in Stampede Reservoir [CA-SIE-28 and -47), Sierra County, California	Louis A. Payen and William H. Olsen	1969	cultural resources identified	No
S-2718	National Register Evaluation of Four Sites (FS 05-17-56-421, 422, 423, and 425) Sierra County, Tahoe National Forest, California	Leslie Steidl and D. Randall Cooper	1998	cultural resources identified	No
S-5347	Archaeological Inventory for the Worn Mill Analysis Area, Sierra County, California	Eric Rischer and John Betts	1996	cultural resources identified	No
S-11274	Cultural Resources Inventory of NV Energy Transmission Line Assets of the Tahoe National Forest, Truckee and Sierraville Ranger Districts, California	Daron Duke, Sharon A. Waechter, and Albert Garner	2010	cultural resources identified	No
S-13239	Davies/Merril Watershed Restoration Project, Heritage Resources Inventory Report TNF01638/R2002-0517-00016, & the Evaluation Reports for The Sierra Nevada Wood and Lumber Company Railroad Grades, Report TNF01499/R2001-0517-00036 & the Boca and Loyalton Railroad Grade, Report TNF01763/R2003-0517-00023, Sierraville and Truckee Ranger Districts, Tahoe National Forest	Michael Baldrica, Carrie Smith, Denie McLemore, Carmel Barry-Schweyer, Jennifer Sigler, and John Oddy	2004	cultural resources identified	No

Table 3.5-2 Cultural Resources In or Within ½-Mile of the Project Site

Trinomial	Primary No.	Site type	Description	Recorded by/ Year	Within Project Area?
CA-SIE-21/H	P-46-21	Multicomponent	Prehistoric: Milling features and lithic scatter Historic: well, rock alignment, foundation, historic debris, carved aspens with two groves of trees	M. Moore, A Huberland/ 1994	No
CA-SIE-32	P-46-32	Prehistoric	campsite	E.R. Haines/ 1957	No
CA-SIE-33	P-46-33	Prehistoric	campsite	E.R. Haines/ 1957	No
CA-SIE-34	P-46-34	Prehistoric	campsite	E.R. Haines/ 1957	No
CA-SIE-54/H	P-46-54H	Multicomponent	Prehistoric: Lithic scatter; Historic: rock piles, abandoned railroad grades, rock dam, rock alignments, possible remains of a dairy barn	Carrie Smith and Juanita Allen/ 1999	No
CA-SIE-144H	P-46-144	Historic	Railroad Grade	D. Giambastiani, S. Mackowiak, J. Patterson/2011	No
CA-SIE-884	P-46-884	Prehistoric	Lithic scatter	M. Moore and S. Flint/ 1994	No
CA-SIE-885	P-46-885	Prehistoric	Lithic scatter	M. Moore, A. Huberland/ 1994	No
CA-SIE-893/H	P-46-893H	Multicomponent	Prehistoric: lithic scatter Historic: concentration of debris	M. Moore, S. Flint/ 1994	No
CA-SIE-900	P-46-900	Prehistoric	Lithic scatter	M. Moore, S. Flint/ 1994	No
CA-SIE-901H	P-46-901	Historic	concentration	S. Waechter, R. Kellawan, L.	No

Trinomial	Primary No.	Site type	Description	Recorded by/ Year	Within Project Area?
			of debris	Bennet, A. Camp, A. Leon Guerrero, and K. Ross/ 2011	
CA-SIE-903	P-46-903	Prehistoric	Lithic Scatter	M. Moore, S. Flint/ 1994	No
CA-SIE-904	P-46-904	Prehistoric	Lithic Scatter	M. Moore, S. Flint/ 1994	No
CA-SIE-908/H	P-46-908H	Multicomponent	Prehistoric: Lithic Scatter Historic: Road or old railroad grade	M. Moore, A. Huberland/ 1994	No
CA-SIE-913/H	P-46-913	Prehistoric	Lithic Scatter, burned bone, fire-affected rock	D. Duke/ 2011	No
CA-SIE-914	P-46-914	Prehistoric	Milling features and lithic scatter	K. Hull/ 1994	No
CA-SIE-916	P-46-916	Prehistoric	Lithic Scatter	K. Hull/ 1994	No
CA-SIE-985H	P-46-985	Historic	Collapsed skid shack on segment of abandoned railroad grade	S.A. Waechter	No
CA-SIE-1102/H	P-46-1102H	Multicomponent	Prehistoric: Lithic scatter Historic: Historic artifact scatter	M. Moore, A. Huberland/ 1994	No
CA-SIE-1109/H	P-46-1109	Multicomponent	Prehistoric: Lithic scatter Historic: Historic artifact scatter	S. Waechter, R. Kellawan, L. Bennett/ 2011	No
CA-SIE-1316/H	P-46-1316	Multicomponent	Prehistoric: Lithic scatter Historic: Logging dirt skid with 2-barrel	E. Rischer/ 1996	No

Trinomial	Primary No.	Site type	Description	Recorded by/ Year	Within Project Area?
			hoops		
CA-SIE-1665	P-46-1665	Prehistoric	Lithic scatter	E. Romanski, A. Gamer, K. O'Horo, and A. Losey/ 2009	No
CA-SIE-1668	P-46-1668	Prehistoric	Lithic scatter	Duke, Daron, Kasey O'Horo/ 2011	No
CA-SIE-1852	P-46-1852	Archaeological District	Sardine Valley Archaeological District	William E. Pritchard/ 1970	Yes

3.5.2.1.2 AB 52 Native American Consultation

Pursuant to the California Public Resources Code Section 5097.9, State and local agencies cooperate with and assist the Native American Heritage Commission (NAHC) in its efforts to preserve and protect locations of sacred or special cultural and spiritual significance to Native Americans. LRWQCB contacted those individuals and/or tribes listed by the NAHC on the Sacred Lands Search (SLS) response or those who requested consultation, to determine whether they have information on sacred or special sites in the Study Area. Those included on the list were contacted by letter, telephone, and/or e-mail to request information about the Project area on November 16, 2017. The United Auburn Indian Community responded on November 20, 2017 stating that no further consultation was requested and that AB 52 consultations were closed.

3.5.2.1.3 Field Survey

Stantec archaeologists and an architectural historian completed pedestrian surveys of the Project site on October 10, 2017, with a follow-up survey and field inventory on November 2, 2017 to complete recordation of the newly identified cultural resource (i.e., historic railroad logging camp) and associated features.

Periodic trowel scrapings were employed to clear small patches of vegetation in areas with poor ground visibility although most of the meadow and surrounding areas exhibited 50-percent or greater ground visibility. During the field survey, all accessible areas were examined closely for evidence of prehistoric archaeological site indicators such as stone flakes; grinding and mashing implements (such as groundstone, mortars, pestles, handstones, and millingslicks); bone, and discolored soils (which could contain lithics, bone, shell, other organics, and/or fire-affected rocks). All areas were also examined closely for evidence of historic period-site indicators such as glass and ceramic fragments; metal objects; milled and split lumber, and structure or feature remains such as building foundations, fence posts, and discrete trash deposits such as wells, privy pits, or dumps.

Cultural resources identified within the Project area were recorded or updated on the appropriate Department of Parks and Recreation (DPR) 523-series forms. Photographs were taken of the survey area, visible ground surface, and all identified cultural resources with a digital camera. A Geographic Positioning System (GPS) unit with sub-meter accuracy was used by the survey team to record artifacts, site features, site boundaries, and areas of site disturbance.

The survey consisted of walking parallel 15-meter-wide transects, oriented to a bearing that followed the long axis of each Project footprint area. Digital photographs were taken to document ground conditions, and all observations were recorded in the field. Weather varied throughout the fieldwork from sunny to overcast.

During the survey, historic-era artifacts and infrastructural elements were located throughout the east extent of the valley (both within and outside the project area) and identified as a historic railroad logging camp. The logging camp is comprised of a previously unrecorded segment of historic railroad grade associated with the former Davies Mill railroad spur, tent pads, a large-scale can dump of over 2,000 cans and associated residential and industrials artifacts including ceramics, glass condiment jars, and metal fragments, and historic-era residential, structural, and industrial debris. The features identified constitute an archaeological district associated with the timber harvest/logging camp of Merrill and the Davies Lumber Mill which operated from 1900-1915 and then subsequently became the Camp 21 logging camp operated by the Hobart Estate Railroad from 1930 to 1937. A Department of Parks and Recreation (DPR)-523 district site record was created for its contributing and non-contributing features/elements. Per the California Office of Historic Preservation's (OHP's) *Instructions for Recording Historical Resources* (1995) an archaeological district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development. Previously identified trinomials CA-SIE-985H for the Boca and Loyalton Railroad and/or Hobart Estate Railroad, CA-SIE-908H for a historic trash scatter and railroad grade, CA-SIE-1111H for the Boca Loyalton Railroad and/or Hobart Estate Railroad, and CA-144H for the Hobart Estate Railroad Grades have been combined and associated with the historic railroad logging camp district for the purposes of the district recordation.

The portion of the Sardine Valley Archaeological District within the Project area was visited during the initial site survey on October 10, 2017 and it was confirmed during this field effort that the Project would avoid previously identified and recorded cultural resource sites within the Sardine Valley Archaeological District. A DPR-523 continuation sheet site record was updated for the Sardine Valley Archaeological District.

3.5.2.2 Natural Environment

A brief overview of the natural environment setting is provided in Section 3.4, Biological Resources environmental setting, and provides context within which to interpret the cultural resources identified in the Project area.

3.5.2.3 Prehistoric Context for the Sierra Nevada

Interest in the archaeology and prehistory of the Sierra Nevada region of California began during the Gold Rush (1840s), as previously undisturbed gravel and mineral deposits were subject to increasing exploitation (Moratto 1984). Scholarly archaeological investigations throughout the region began in the 1870s, including at a burial site along the Stanislaus River in 1877 (Powers), within Yosemite National Park (Beatty 1933; Harden 1908), at petroglyph sites throughout the region (Steward 1929), and at high altitude lithic scatters north of Lake Tahoe (Avery 1873). Archaeological work during the 1940s and 1950s included large scale archaeological river basin surveys conducted by the Smithsonian Institution (Fenenga 1947; Fredrickson 1949) and comprehensive archaeological surveys, conducted by University of California Berkeley (Heizer 1948).

As archaeological survey and excavation within the region continued into the 1950s, more specific questions related to lifeways and subsistence practices began to be investigated. The northern Sierra prehistoric chronology was developed in part by Elsasser and Heizer and can be observed in two distinct material cultures: Martis (4,000 – 2,000 years BP) and Kings Beach (AD 1,000-Historic Period) (Heizer and Elsasser 1953). The chronology of the Northern Sierra Nevada region, and specifically, the Lake Tahoe region, was expanded upon by Davis and Elston in the late 1960s and 1970s, as a result of the excavation of four sites near Lake Tahoe. Elston et al. (1977) conducted a later study which further refined the Tahoe region chronology into seven phases: 1) Tahoe Reach (6,000 BC); 2) Spooner (2,000 – 5,000 BC); 3) Early Martis (1,500 – 2,000 BC); 4) Middle Martis (1,500 – 500 BC); 5) Late Martis (500 BC – AD 500); 6) Early Kings Beach (AD 500 – 1,200), and 7) Washo-Late Kings Beach (1,200 AD – Historic Period) (Elston et al. 1977; Hull 2007).

In the 1980s and 1990s, investigations within the Sierra Nevada regions broadened to include more work at mid to upper elevations. More recent efforts have identified features which contribute to our overall understanding of the prehistory of the Sierra Nevada region, including rock ring dwellings, stone game drive features located in central and southern Sierras, and stone-lined vegetable processing features, identified in the northern Sierra Nevada (Bloomer et al. 2002; Waechter and Andolina 2005).

3.5.2.4 Ethnographic Context

The Project area is located within the ancestral territory of the Washoe (D'Azevedo 1986), within a region known as *atabi wata detde yi*, or area of the fish dwellers (D'Azevedo 1986). Washoe ethnographic territory included the mountains between Honey Lake and the Walker River, but

their trade networks extended well beyond this core area, as far west as Sacramento (Moratto 1984).

Aboriginally, the Washoe, like other northern Sierran tribes, dwelt in mostly permanent settlements of 10 to 100 individuals in the upper Sonoran and lower transition zones of the Sierras. Village communities were typically placed near fresh water sources, such as streams, or along knolls with a southern exposure, and could be found in large valleys at 4,500 feet elevation and in small valleys at 5,500 feet elevation (D'Azevedo 1986; Moratto 1984). A typical village community would include family dwellings, acorn granaries, bedrock mortars, sweat houses, headman's house, and possibly a large communal dance house (Moratto 1984). Temporary summer houses could be a simple lean to, or a hut constructed of tule or brush, woven with willow branches.

The Washoe were hunter-gatherers and exploited a wide variety of resources, including game, fish, plants, roots, seeds, berries, and insects. Rabbits and fish were very important resources. Game included deer, pronghorn, porcupine, beaver, chipmunk, gopher, squirrel, woodchuck, badger, and rodents, such as mice, rats, shrews and voles (D'Azevedo 1986). The Washoe also caught or ensnared birds, such as valley and mountain quail, and sage and blue grouse. Fish, such as trout and suckers were fished using spears, nets, as well as poison, and could be eaten fresh, or dried and preserved for the winter months. Insects were also gathered, including locusts, grasshoppers, fly grubs and bee larvae. The fly grubs and grasshoppers were sometimes dried, ground, and formed into cakes to eat during the winter.

Any plant gathering, usually conducted by women, occurred from spring until fall. In the spring, bulbs, roots, Camas, bitterroot, sego lily, wild onions, "Indian potato," tule, cattail, and Indian balsam root (*Leptotaenia dissecta*) were gathered. The shells of nuts were cracked utilizing a mano and metate, then winnowed, and either eaten plain, or ground into a flour for a pine nut soup. Similarily, acorns were processed by using a mortar and pestle to remove the tough acorn skin, then pounded and ground into a flour using a mano and metate to make an acorn gruel (D'Azevedo 1986).

3.5.2.5 Historic Context

In 1844, the first group of American settlers crossed the Sierra Nevada arriving in California, passing through what is now eastern Sierra County before continuing to the fertile, Sacramento Valley. This pattern persisted for the next five years, with pioneers only passing through the Sierras and never stopping to settle there, until 1849 when miners began to move north up the Yuba River in their search for gold. In 1850, the Sierra Valley was discovered by miners and by the next year, the land had been settled as farmland with several ranches established in Sardine and Dog Valleys. (Kyle 2002: 474; Copren 2017; California State Association of Counties 2006). Settlers in Sierra County's southeastern region found the alpine valleys a perfect location for grazing cattle for both beef and dairies. (East Valley Chamber of Commerce 2017; Sierra Nevada 2017; Nevada State Journal 1879, 1883; Copren 2014: 1-2). By the 1870s several dairies were

established in Sardine Valley. It proved an ideal landscape for grazing and Davies Creek provided drinking water.

Timber harvesting was also a profitable industry that helped shape Sierra County. While ranching and dairying was profitable another industry began to shape Sierra County. Timber harvesting started as yearly as the 1850s, but did not become a dominant industry in southeastern Sierra County until 1886 when the Lewis and the Peck brothers joined forces creating Lewis Mill. In 1879, a Sardine Valley grasshopper infestation destroyed the hay crop needed to feed the cows, accelerating the decline of cattle ranching in the area. This calamity and rising timber and lumber demands led to a regional economic shift (East Sierra Valley Chamber of Commerce 2017; Nevada State Journal 1879, 1883; Copren 2014: 1-2). Starting in 1855, California became self-sufficient in timber harvesting and lumber milling. The timber industry in the larger Truckee River Basin catered largely to lumber mills, but also harvested timber as a fuel source for both California and Nevada mining camps. These demands spurred development of sawmills in Sierra, Nevada, Placer, and El Dorado Counties. By the 1860s Sierra County accounted for most sawmill operations with ten in operation. (Knowles 1942: 5-7; Whalley 2007: 3-4). Early sawmills were quickly eclipsed by larger operations developed to support the Central Pacific Railroad.

Construction of the Central Pacific Railroad resulted in a timber harvest explosion along the Truckee River and in the greater Truckee Basin. Encouraged by transcontinental railroad subsidies issued by the United States Government Railroad company executives took full-advantage choosing railroad alignments not for the best grade or easiest route through mountains, but through areas with the richest timberland such as the Truckee River Basin and near Donner Lake. The timber subsidy greatly offset the railroad company's costs as the timber was used for a variety of applications including construction of bridges, trestles, snow sheds, tunnel shoring, depots, and ties, in addition to thousands of cords burned to power their locomotives. (Knowles 1942: 12-15).

By October 1901, the railroad extended north to Beckwourth, with spurs connection a multitude of small mountainous regions. East of Beckwourth, the line reached Horton Junction and moved north toward Clover Valley. The final stretch to Portola was completed in 1905 (Whalley 2007: 1, 9-10; Myrick 2007: 139; Myrick 2006: 48). Timber and lumber were the primary industries in the Truckee River Basin, specifically in Sierra County, from the 1860s to the 1920s. One high producing area for timber harvesting was Boca. Settlements were established along the construction path of the Central Pacific tracks. As timber resources were depleted along the corridor, harvesting moved farther from the tracks, in 1868 Boca was established beyond the main line. It became increasingly laborious to transport distant felled trees to established mills in Truckee that the three Lewis brothers (and two Peck brothers) built Lewis Mill around 1886 in. Smithneck Canyon following the Little Truckee River to Sardine Valley and into the canyon. Following the success of Lewis Mill they opened a box factory in Verdi in 1887. Lumber was transferred from the mill near Boca, up the canyon into Sardine Valley, to Merrill and then over Dog Valley Summit and down into Verdi. In 1888, the brothers partnered with Captain John H. Roberts, to use the tractors to

transport lumber from their mill near Boca to their box factory in Verdi (Myrick 1962: 398-399; Copren 2014: 3).

In 1900, the Lewis Brothers constructed a new railroad north from Boca along the Little Truckee River to Lewis Mill, and through Smithneck Canyon to Loyalton on the south side of the Sierra Valley. This route bypassed Verdi and the box factory, but getting the lumber to Boca enabled the brothers to supply larger manufacturers with timber. The Boca-Loyalton Railroad incorporated on September 25, 1900 with construction commencing soon after. In 1901, the 17-mile line from Boca to Lewis Mill, was completed with the remaining 26-mile line finished in the summer of 1901. The populations of both Loyalton and Boca grew due to the influx of railroad and mill workers. By October 1901, the railroad extended north to Beckwourth, with spurs connecting a multitude of small mountainous regions. The final stretch to Portola was completed in 1905 (Whalley 2007: 1, 9-10; Myrick 2007: 139; Myrick 2006: 48).

There were three lumber companies operating in Sardine Valley during the height of the Boca-Loyalton Railroad's prominence. The Lewis Brothers operated a small mill operation in Sardine Valley. Additionally, Arthur Davies established a camp and operated the Davies Box and Lumber Company in Sardine Valley. The Davies Box and Lumber Company was connected to the greater Boca-Loyalton Railroad via the Davies Spur. In addition to the mill at Sardine, the Davies brothers had five mills around the area, including in Truckee and near Donner Lake. The mill remained in operation for ten years from 1905 to 1915. Stewart McKay also operated a mill in Sardine Valley, beginning in 1897. As the years progressed, timber in the region became scarce due to overharvesting and by 1915, most of the mills were nonoperational. With the decline of the lumber industry in the region, the decline of the Boca-Loyalton Railroad soon followed movement of the Authur Davies mill and camp to western Sierra County (Whalley 2007: 12; West 2017; Wilson 1992: 68, 75; Myrick 2006: 229).

3.5.2.6 Paleontological Context

The paleontological database at the University of California, Berkeley's Museum of Paleontology (2017), geological mapping (Saucedo and Wagner 1992), and online literature were reviewed to determine the potential for paleontological resources. The Project area is a low-lying region within the Sardine Valley. It is underlain by Late Quaternary (Pleistocene to Holocene) lake deposits while the surrounding uplands comprise volcanic rocks (andesite) of Miocene to Pliocene age (Saucedo and Wagner 1992). Stromberg et al. (2007) studied the fossil pollen record of the sediments at Sardine Meadow to examine recent paleoclimatic changes.

A search of the University of California Museum of Paleontology (2017) database found no fossil mammal sites on record within a 10-mile radius. The paleontological potential of the Quaternary lake deposits of the Sardine Valley is considered moderate to high. Lake sediments are deposited in an environment where macrofossils of fish, other vertebrates, plants and invertebrates are likely to accumulate. Fossil pollen contained in the sediment (see Stromberg et al. 2007) is not considered a significant paleontological resource as these microfossils are widespread and abundant.

3.5.3 Impact Analysis

V. CULTURAL and TRIBAL RESOURCES Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as identified in Section 15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐
e) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size, or object with cultural value to the California Native American tribe and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).	☐	☒	☐	☐
f) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size, or object with cultural value to the California Native American tribe and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

a) Would the Project cause a substantial adverse change in the significance of a historical resource as identified in Section 15064.5?

Finding: Less than Significant with Mitigation Incorporated

The field survey on October 10, 2017 identified a historic railroad logging camp district within the project area. The district is recommended eligible for the CRHR under Criterion 1 and 4; however, the features of the historic logging district which contribute to the district's eligibility for the CRHR are located outside the Project footprint and would not be impacted by the proposed Project.

The railroad grade component of the Project footprint, identified as the Davies Mill Railroad Spur, was recorded as a non-contributing feature to the historic railroad logging camp district. Because the railroad grade is not a contributor to the historic logging camp district, the railroad grade is not considered a significant historical resource as identified in Section 15064.5 and thereby the removal of the railroad grade would not cause a substantial adverse change in the significance of the historic railroad logging camp district.

However, given the high sensitivity for historic cultural resources in the Project area, there is the potential during ground disturbing construction activities associated with the Project to unearth potentially significant historical resources. To reduce the potential for construction activities to cause a substantial adverse change to any undiscovered resources the following Mitigation Measures would be implemented:

- MM CUL-1: Pre-Construction Survey and Cultural Resource Worker Awareness Training; and
- MM CUL-2: Unanticipated Discovery of Cultural or Tribal Cultural Resources.

With the implementation of MM CUL-1 and MM CUL-2, construction crews would be educated on potential cultural or tribal cultural resources that may be encountered by a qualified archaeologist and measures would be in place to appropriately evaluate and if necessary avoid, record, and/or treat any resources identified during construction, reducing the potential to inadvertently impact resources during construction. MM CUL-1 and MM CUL-2 provide construction crews and the TRWC procedures to follow to stop work and conduct appropriate assessment and treatment of the inadvertent find which would include the evaluation of the resource to assess its potential historical significance in relevance to PRC section 15064.5; thereby reducing any potential to significantly impact the resource since mitigation and treatment would be developed in accordance with professional standards specific to the resource discovered. Therefore, the potential to cause a substantial adverse change to the significance of historical resources is less than significant with mitigation incorporated.

b) Would the Project cause a substantial adverse change in the significance of an archaeological resource as identified in Section 15064.5?

Finding: Less than Significant with Mitigation Incorporated

The records search and survey performed as part of the cultural resources analysis identified the NRHP listed (and therefore, CRHR eligible) Sardine Valley Archaeological District within the Project during the survey on October 10, 2017 and follow-up field recordation effort on November 2, 2017. During the surveys, it was confirmed that the recorded cultural resource sites identified as part of the Sardine Valley Archaeological District are outside the Project footprint and would not be impacted by the proposed Project nor would the Project have a substantial adverse change in the significance of the Sardine Valley Archaeological District. However, given high sensitivity for subsurface prehistoric cultural resources in the Project area, there is the potential for construction activities associated with the Project to unearth potentially significant archaeological resources. In order to prevent the construction activities from causing a substantial adverse change to any undiscovered resources the following Mitigation Measures would be implemented:

- MM CUL-1: Pre-Construction Survey and Cultural Resource Worker Awareness Training;
- MM CUL-2: Unanticipated Discovery of Cultural or Tribal Cultural Resources; and
- MM CUL-3: Unanticipated Discovery of Human Remains.

With the implementation of MM CUL-1, MM CUL-2, and MM CUL-3 construction crews would be educated on potential cultural or tribal cultural resources that may be encountered by a qualified archaeologist reducing the potential to inadvertently impact resources during construction. MM CUL-1, MM CUL-2, and MM CUL-3 provide construction crews and the TRWC procedures to follow to stop work and conduct appropriate assessment and treatment of the inadvertent find which would include the evaluation of the resource to assess its potential archaeological significance in relevance to PRC section 15064.5 and the development of treatment measures in accordance with professional standards to specifically treat or record the resource thereby reducing any potential to substantially change the archaeological significance of the resource. Therefore, the potential to substantially cause an adverse change in the significance of archaeological resources is less than significant with mitigation incorporated.

c) Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Finding: Less than Significant with Mitigation Incorporated

There are no previously recorded fossil mammal sites within or nearby the Sardine Valley that would constitute a unique paleontological resource, site, or unique geological feature. The paleontological potential for Late Quaternary fossils in lakebed deposits of the area is moderate to high; however, none of the Project ground disturbance would be expected to cause direct

impacts to paleontological resources since construction would only impact the surface vegetated top soil layer. Removal of the old railway bed would only disturb previously infilled areas and stripping of organics along the creek would be too shallow to disturb Late Quaternary deposits. Project infilling of the creek bed could cause an indirect effect by sterilizing any exposed paleontological sites. MM CUL-1 for Worker Awareness Training and MM CUL-4: Unanticipated Discovery of Paleontological Resources would be required to properly educate workers about what paleontological resources to be aware of and how to handle and treat inadvertent finds of paleontological resources if found which would reduce impacts to a less than significant level since they would be properly handled and treated prior to disturbance. With the incorporation of mitigation, the potential to destroy a unique paleontological resource or site or unique geologic feature is less than significant.

d) Would the Project disturb any human remains, including those interred outside of formal cemeteries?

Finding: Less than Significant with Mitigation Incorporated

There are no known human burials or remains within the Project area. However, given the historic and prehistoric use of Sardine Valley there is a potential for inadvertent discoveries of human remains. In the event that human remains are encountered during construction of the proposed Project, MM CUL-1: Pre-Construction Survey and Cultural Resources Worker Awareness Training and MM CUL-3: Unanticipated Discovery of Human Remains, would be implemented to educate construction staff of human remains and burial site features and to provide a procedure for stopping work and contacting the coroner that would reduce any potential for impact to a less than significant level. Therefore, the potential to disturb any human remains would be less than significant with mitigation incorporated.

e) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size, or object with cultural value to the California Native American tribe and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).

Finding: Less than Significant with Mitigation Incorporated

AB 52 Tribal consultations did not identify any tribal cultural resources and no further consultation was requested. However, the records search and survey performed as part of the cultural resources analysis identified the NRHP listed (and therefore, CRHR eligible) Sardine Valley Archaeological District within the Project area. But, during the survey, it was confirmed that recorded cultural resource sites identified within the Sardine Valley Archaeological District are outside the Project footprint and would not be impacted by the proposed Project indicating that the Project would not cause a substantial adverse change in the significance of the Sardine Valley Archaeological District.

Past tribal uses in the surrounding valley and nearby areas, indicate there is the potential for construction activities associated with the Project to unearth potentially significant tribal cultural resources. In order to prevent the construction activities from causing a substantial adverse change to any undiscovered resources the following Mitigation Measures would be implemented:

- MM CUL-1: Pre-Construction Survey and Cultural Resource Worker Awareness Training;
- MM CUL-2: Unanticipated Discovery of Cultural or Tribal Cultural Resources; and
- MM CUL-3: Unanticipated Discovery of Human Remains.

With the implementation of MM CUL-1, MM CUL-2, and MM CUL-3 construction crews would be educated on potential tribal cultural resources that may be encountered during ground disturbing activities. The mitigation measures would provide construction crews and the TRWC the appropriate procedures for stopping work and conducting appropriate assessment and treatment of the inadvertent find which would include the evaluation of the resource to assess its potential tribal cultural resource significance in relevance to PRC section 21074 or its eligibility for listing as defined in PRC section 5020.1(k); thereby reducing any potential to significantly impact. Therefore, the potential for the Project to cause a substantial adverse change to the significance of tribal cultural resources is considered less than significant with mitigation incorporated.

f) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size, or object with cultural value to the California Native American tribe and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Finding: Less than Significant with Mitigation Incorporated

As described in impact 'e)' above, tribal cultural resources have not been identified within the Project footprint, however, given past California Native American tribal uses in the surrounding valley and nearby areas there would be the potential for construction activities associated with the Project to unearth potentially significant California Native American tribal cultural resources. In order to prevent the construction activities from causing a substantial adverse change to any undiscovered resources the following Mitigation Measures would be implemented:

- MM CUL-1: Pre-Construction Survey and Cultural Resource Worker Awareness Training;
- MM CUL-2: Unanticipated Discovery of Cultural or Tribal Cultural Resources; and

- MM CUL-3: Unanticipated Discovery of Human Remains.

With the implementation of MM CUL-1, MM CUL-2, and MM CUL-3 construction crews would be educated on potential California Native American tribal cultural resources that may be encountered. Construction crews and the TRWC would have procedures to follow to stop work and conduct appropriate assessment and treatment of the inadvertent find which would include the evaluation of the resource to assess its potential California Native American tribal significance in relevance to PRC sections 21074 and 5024.1 and if significant, treatment and measures for protecting or preserving the significance; thereby reducing any potential to significantly impact. Therefore, the potential for impact to significant California Native American tribal cultural resources is less than significant with mitigation incorporated.

3.5.4 Mitigation Measures

3.5.4.1 Mitigation Measure CUL-1: Pre-Construction Survey and Cultural Resource Worker Awareness Training

A. Cultural Resources On-Call Monitoring

Due to the presence of cultural resources within the Project area, there is a high sensitivity for subsurface prehistoric or historical archaeological deposits within the Project footprint, the TRWC shall retain an on-call qualified archaeologist (who meets the Secretary of the Interior's Professional Qualifications Standards for Archaeology) to conduct a pre-construction survey of identified access routes and the pre-construction construction worker awareness training. The qualified archaeologist shall also be available on-call throughout construction to consult on any inadvertent cultural or tribal cultural resources found during construction.

The qualified archaeologist shall prepare a consulting and monitoring report documenting the preconstruction survey and worker awareness training as well as any on-call services. This report shall include a brief summary of the pre-construction cultural resource awareness training, preconstruction site access surveys including any resources found and measures taken to avoid the resource, and, if necessary, an update to the Sardine Valley Archaeological District Department of Parks and Recreation 523-series form. TRWC shall submit all monitoring reports to the LRWQCB to be kept in the LRWQCB's project file and the Northeast Information Center.

B. Cultural and Tribal Cultural Resource Awareness Training

The TRWC shall ensure that the qualified archaeologist shall conduct the pre-construction cultural resource awareness training. The training shall be for all construction personnel involved in any ground disturbing construction activity for the entire duration of the Project. Construction personnel shall be informed of the possibility of encountering subsurface prehistoric or historical cultural resources and/or human remains within the Project area and the protocol to be followed if a cultural or tribal cultural resource or human remains are encountered as detailed in Mitigation Measures CUL-2 and CUL-3.

Sensitive cultural resources the construction personnel should be made aware of include:

Archaeological and/or Tribal Materials – may include, but are not limited to, flaked stone tools (projectile point, biface, scraper, etc.) and debitage (flakes) made of chert, obsidian, etc., groundstone milling tools and fragments (mortar, pestle, handstone, millingstone, etc.), faunal bones, fire-affected rock, dark middens, house pit depressions and human interments.

Tribal Cultural Resources – A site feature, place, cultural landscape, sacred place, or object, which is of cultural value to a tribe – and is either: on or eligible for the CRHR or a local historic register, – or the CEQA lead agency, at its discretion, chooses to treat the resource as a tribal cultural resource – See: PRC 21074 (a)(1)(A)-(B).

Historic-era Resources – may include, but are not limited to, small cemeteries or burial plots, bones, cut (square) nails, containers or miscellaneous hardware, glass fragments, cans with soldered seams or tops, ceramic or stoneware objects or fragments, milled or split lumber, earthworks, feature or structure remains and trash dumps.

Paleontological Resources – are any remains, trace, or imprint of a plant or animal that has been preserved in the Earth's crust since some past geologic time and may include fossil materials such as macrofossils of fish, other vertebrates, plants and invertebrates in lake sediments within Sardine Valley.

C. Access Sites

To avoid disturbance of subsurface prehistoric and historical archaeological deposits, all access routes in undisturbed areas not subject to borrow or fill shall be surveyed and cleared by the qualified archaeologist prior to construction. If resources are identified alternative access routes shall be defined and cleared and the resource shall be flagged and avoided in accordance with MM CUL-2 and CUL-3.

Mitigation Measure CUL-1 Implementation

Responsible Party: The TRWC

Timing: An on-call qualified archaeologist shall be obtained prior to construction. Pre-construction cultural resource awareness training shall take place prior to construction and on-going during construction prior to new staff beginning work on the site.

Monitoring and Reporting Program: A monitoring report shall be completed by the qualified archaeologist for any on-call services completed including but not limited to preconstruction access surveys and the worker awareness training(s). This report shall include a brief summary of the pre-construction cultural resource awareness training, any on-call evaluation or consultation on inadvertent finds, and any necessary updates to the Sardine Valley Archaeological District Department of Parks and Recreation form. TRWC shall submit all monitoring reports to the LRWQCB to be kept in the LRWQCB's project file and the Northeast Information Center.

Standards of Success: The prevention of any unknown or known cultural resources from being disturbed/destroyed by Project construction without proper documentation and recordation.

3.5.4.2 Mitigation Measure CUL-2: Unanticipated Discovery of Cultural or Tribal Cultural Resources

In the event of discovery of cultural or tribal cultural resources during construction activities the following steps outlining the proper handling, evaluation, and treatment of cultural or tribal cultural resources shall be undertaken to ensure protection of potentially significant historically, archaeologically, or tribally significant resources.

Proper Handling:

If subsurface cultural or tribal cultural resources are inadvertently uncovered during Project ground disturbing activities, the TRWC's contractor shall adhere to the following procedures and methods:

- Immediately stop all work;
- Immediately contact the TRWC Project Manager or representative;
- Do not harass, damage, touch, or remove any cultural or tribal cultural resources materials once resource is identified;
- Leave all spoils in their current location unless directed by TRWC representatives;
- Record the location and keep notes of all calls and events providing them to the TRWC representative daily, or as requested;
- Secure the discovery location with flagging, plywood, or other appropriate material around the exposed site or a person watching the site as directed by the TRWC representative, until cleared by the TRWC representative and qualified archaeologist;
- Treat the find as confidential. Do not publicly disclose the location. Only authorized personnel, or individuals with the permission of the TRWC representative (or the land owner) shall be allowed on the site;
- Upon approval of TRWC, work may resume within no less than 150 feet of the discovery; and
- Upon clearance of TRWC, work may resume in the location where cultural resources were discovered after evaluation and clearance by the TRWC qualified archaeologist.

Upon notification by the contractor, the TRWC shall adhere to the following procedures and methods:

- Record the location and keep notes of all calls and events;
- Consult with the on-call qualified archeologist who shall facilitate evaluation and treatment procedures;
- Maintain communications with the archaeologist, documenting and recording evaluation, protection, treatment, and avoidance steps taken;
- Relocate work no less than 150 feet from the discovery or as otherwise directed by the archaeologist; and
- Treat the find as confidential. Do not publicly disclose the location. Only authorized personnel, or individuals with the permission of the TRWC (or the land owner) shall be allowed on the archaeological site.

Upon notification by the TRWC, the retained qualified archaeologist shall adhere to professional standards regarding the evaluation and treatment of the discovered cultural or tribal cultural resources and shall implement the following avoidance, evaluation, and/or treatment procedures and methods:

- Examine the site to confirm that no additional cultural or tribal resources are in the disturbed area where the resource was found;
- Recommend the appropriate discovery securing measures such as flagging, plywood, other material, or monitor around the exposed site until the evaluation is complete;
- Coordinate with TRWC to determine if design modifications are feasible to avoid the resource. If the resource can be avoided appropriate security measures such as flagging or other exclusion fencing shall be placed around the resource until construction activities within 250 feet of the resource are complete; and
- If the resource cannot be avoided, an evaluation of the find shall be conducted to determine the historical, archaeological, or tribal significance of the resource and consultation with the Office of Historic Preservation (SHPO) shall be undertaken for concurrence. If evaluation results in the determination that a resource is historically, archaeologically, or tribally significant, mitigation as recommended by the archaeologist/tribal representative and concurred upon by the SHPO and agreed upon by the TRWC would be implemented and the resource would be recorded for documentation in accordance with SHPO, tribal, and industry standards. If the resource is not found significant, construction may resume.

Mitigation Measure CUL-2 Implementation

Responsible Party: The TRWC, representatives, and contractor

Timing: During all ground disturbing activities.

Monitoring and Reporting Program: If any find is determined to be significant, representatives of the TRWC shall document consultation with the qualified archaeologist (and tribal representative if a tribal cultural resource) and determination of recommended protection and/or avoidance measures or other appropriate mitigation. The TRWC shall prepare a memorandum incorporating notes and records from the contractor and qualified archaeologist to document steps taken to comply with the avoidance measures or other appropriate mitigation. The memorandum shall be saved as a file copy by the LRWQCB and submitted to the Northeast Information Center.

Standards of Success: The evaluation and recording of any newly identified cultural or tribal cultural resources and treatment by avoidance, protection, or documentation of any discovered resources that qualify as historically, archaeologically, or tribally significant.

3.5.4.3 Mitigation Measure CUL-3: Unanticipated Discovery of Human Remains

Section 7050 of the California Health and Safety Code states that it is a misdemeanor to knowingly disturb a human burial site. If human remains are encountered (or are suspected) during any project-related activity, the TRWC, TRWC's representatives, and TRWC's contractor shall complete the following steps:

- Immediately stop all work;
- Immediately contact the TRWC Project Manager or representative;
- Contact a qualified archaeologist (someone who meets the Secretary of the Interior's Professional Qualifications Standards for Archaeology) who shall then notify the County Coroner immediately pursuant to PRC Section 7050.5. The County Coroner may assess the human remains. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of such identification. The NAHC shall identify the most likely descendant (MLD);
- Once given the permission by the TRWC (and the land owner), the MLD shall be allowed onsite. The MLD shall complete their inspection and make their recommendation to the TRWC for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98. MLD recommendations must be made within 48 hours of the NAHC notification to the MLD;
- Relocate work under direction of the TRWC within no less than 150 feet of the discovery or as otherwise directed by the TRWC qualified archaeologist;
- Consult with the onsite qualified archaeological monitor to confirm that no additional human remains are in the area;

- No additional work shall take place within the immediate vicinity of the find until the TRWC's qualified archaeologist gives approval to resume work in that area;
- Once work resumes in a location where human remains have been discovered and cleared, the onsite monitor shall observe further ground-disturbing construction activities closely for evidence of additional human remains;
- Do not touch, damage, remove any human remains, associated materials, or associated spoils;
- Record the location of the discovered remains and keep notes of all calls, site visits and events; and
- Treat the find as confidential and do not publicly disclose the location. The TRWC shall provide security to the area as needed. Only authorized personnel, or individuals with the permission of the TRWC (and the land owner) shall be allowed onsite.

Mitigation Measure CUL-3 Implementation

Responsible Party: The TRWC, representatives, and contractor.

Timing: During all ground disturbing activities.

Monitoring and Reporting Program: The find shall be immediately reported to the County Coroner. The recording and evaluation of any newly identified human remains shall be conducted by qualified professional archaeologist in conjunction with the County Coroner and a report detailing the recording, location, evaluation, and treatment of human remains, shall be kept on file at the TRWC, submitted to the LRWQCB, and submitted to the Northeast Information Center.

Standards of Success: The proper recording, evaluation, and treatment of any newly identified human remains.

3.5.4.4 Mitigation Measure CUL-4: Unanticipated Discovery of Paleontological Resources

If any paleontological resources (i.e., fossils) are found during Project construction, construction shall be halted immediately in the subject area and the TRWC shall be immediately notified. A qualified paleontologist (meeting the qualifications of the Society of Vertebrate Paleontology guidelines) shall be retained to evaluate the find. If any find is determined to be significant, representatives of the TRWC and a qualified paleontologist would meet to determine the avoidance measures, such as not infilling a fossiliferous section of the creek bed, or other appropriate mitigation, such as surface collection or excavation. All significant paleontological resources recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by the qualified paleontologist according to current professional standards

such as the Society of Vertebrate Paleontology guidelines on assessment and mitigation of adverse impacts to paleontological resources (SVP 2010).

This treatment of inadvertently discovered paleontological resources shall be implemented to ensure that the impacts to these resources are avoided or reduced to less than significant levels.

Mitigation Measure CUL-4 Implementation

Responsible Party: The TRWC, representatives, and contractor.

Timing: During all ground disturbing activities.

Monitoring and Reporting Program: A report, prepared by the qualified paleontologist, documenting the find following the standards of the Society of Vertebrate Paleontology and curated with a certified repository shall be kept as a file copy by the TRWC and the LRWQCB.

Standards of Success: The proper recording, evaluation, and treatment of any newly identified paleontological resource.

3.6 GEOLOGY AND SOILS

3.6.1 Regulatory Setting

3.6.1.1 Federal

3.6.1.1.1 Clean Water Act

The CWA (CWA, 33 USC 1344) focuses primarily on waters of the United States, and is further described in Section 3.4 (Biological Resources) and Section 3.8 (Hydrology and Water Quality). However, the CWA focuses on sediment control in two aspects. First, the USACE administers Section 404, which regulates the discharge of fill into waters of the United States. Second, Section 401 and 402 of the CWA apply to non-point source discharges, where erosion control is an integral part of achieving permit compliance.

3.6.1.1.2 Earthquake Hazards Reduction Act of 1977

The Earthquake Hazards Reduction Act of 1977 established the National Earthquake Hazards Reduction Program (NEHRP) "to reduce the risks of life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards reduction program." The four principal goals of the NEHRP are:

- Develop effective practices and policies for earthquake loss reduction and accelerate their implementation;
- Improve techniques for reducing earthquake vulnerabilities of facilities and systems;
- Improve earthquake hazards identification and risk assessment methods, and their use; and

- Improve the understanding of earthquakes and their effects.

Many of the tools used to assess, as well as mitigate, earthquake hazards and impacts were developed under the NEHRP.

3.6.1.2 State

3.6.1.2.1 Alquist-Priolo Zoning Act

The Alquist-Priolo Zoning Act requires the mapping of zones around active faults in California, in an effort to prohibit the construction of structures for human occupancy on active faults and minimize damage due to rupture of a fault. Active faults are those that have ruptured within the past 11,000 years. Where the act identifies an Earthquake Fault Zone, a geologic investigation and report is necessary to prevent siting of buildings on active fault traces.

3.6.1.2.2 Seismic Hazard Mapping Act

The Seismic Hazard Mapping Act is intended to delineate zones where earthquakes could cause hazardous ground shaking and ground failure, including liquefaction and landslides. Currently, zones near the San Andreas Fault in the urban centers of the Greater San Francisco Bay Area and Los Angeles have been delineated. Local cities and counties within these zones regulate construction in order to minimize loss associated with these seismic hazards.

3.6.1.3 Local

There are no applicable Sierra County General Plan goals or policies related geology and soils for the proposed Project.

3.6.2 Environmental Setting

3.6.2.1 General Geologic Setting

The proposed Project is characterized by a gently sloping Sierra meadow and surrounding mountainous region typical of the Sierra Nevada Mountain Range. The proposed Project site ranges from approximately 5,985 feet to 6,191 feet in elevation above mean sea level, depending on the location within the meadow. Bedrock geology in this part of the Sierra Nevada Mountains is characterized by Miocene-Pliocene volcanic rocks of Late Paleozoic and Mesozoic age. The proposed Project site specifically is characterized by Holocene era lake deposits (California Department of Conservation 2007).

3.6.2.2 Earthquake Potential

Sierra County is classified as a low-severity earthquake zone and contains relatively inactive faults. The Dog Valley Fault is a Quaternary fault and is the closest fault to the Project site, approximately 1.5-miles to the east. Historic displacement has occurred along this fault within the past 200 years (California Department of Conservation 2010b). The Polaris Fault is also located approximately four miles to the southwest of the Project site. This fault is classified as a

Holocene fault, meaning displacement has occurred in the past 11,700 years. The Honey Lake Fault Zone, located approximately 30 miles to the north of the Project site, is the nearest principal fault identified and mapped pursuant to the Alquist-Priolo Earthquake Zoning Act (California Department of Conservation 2015).

In the Sierra Nevada Range, there is relatively shallow weathered material underlain by dense bedrock, which lessens the seismic risk. Igneous and metamorphic bedrock provide the least amount of seismic hazard due to ground shaking. Soil resources identified in the proposed Project area were mapped in 1994 by the Natural Resources Conservation Service (NRCS 1994) as the following:

- Aquolls and Borolls, 0 to 5 percent slopes;
- Aldi-Kyburz complex, 2 to 30 percent slopes;
- Aldi variant- Kyburz- Jorge variant complex, 2 to 30 percent slopes;
- Aldi-Aquolls- Kyburz complex, 2 to 9 percent slopes; and
- Kyburz-Rock outcrop- Trojan complex, 2 to 30 percent slopes.

3.6.2.3 Soil Characteristics

The majority of the Project site consists of Aquolls and Borolls soils. Aquolls soils are shallow to moderately deep, poorly drained soils along valley floors with frequent ponding and slow runoff. Borolls soils are similar, shallow to moderately deep, poorly drained, with slow runoff and a low water capacity.

3.6.2.4 Liquefaction Potential

Liquefaction, a process in which the soil behaves like a liquid, can damage buildings, roads, and pipelines through loss of structural support capabilities and uneven settlement of the soil. Recently saturated loose, granular sediment and strong ground shaking are requirements for liquefaction to occur (USGS 2017). The ground shaking potential and poorly drained soils of the proposed Project site result in some potential for liquefaction.

3.6.2.5 Landslide Potential

The risk of landslides in Sierra County is generally low, and moderate at worst, due to the prevalence of igneous and metamorphic bedrock overlain by relatively shallow cohesive soils. Most soils within Sierra County are underlain with dense bedrock, resulting in "low risk" landslide ratings. Additionally, the Project site is located in a meadow region characterized by relatively flat topography that is not consistent with landslides.

3.6.3 Impact Analysis

VI. GEOLOGY AND SOILS **Would the Project:**	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less than Significant Impact**	**No Impact**
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
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 strata 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, creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

a) Would the Project 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.

Finding: Less than Significant

The proposed Project area is not located in a fault zone delineated on the California Geological Survey, Alquist-Priolo Earthquake Fault Zoning Map (California Department of Conservation 2015). The nearest active fault is approximately 30 miles north of the Project site. The Project does not include construction of structures for human occupancy and therefore would not subject people or structures to adverse effects due to rupture of a known fault. Therefore, impacts are considered less than significant.

ii) Strong seismic ground shaking.

Finding: Less than Significant

Sierra County is classified as a low-severity earthquake zone and contains relatively inactive faults with a range of faults including quaternary (displacement during the last 1.8 million years), late Quaternary (displacement during the last 700,000 years) and Holocene (displacement during the last 11,700 years) faults. The Dog Valley Fault zone has experienced historic displacement within the last 200 years near the proposed Project site (California Department of Conservation 2010). The low severity zone designation and relative inactivity of the faults within the area, combined with the fact that the Project is within a privately-owned site in an open undeveloped valley indicates there is a limited potential to expose people or structures to substantial adverse effects, including the risk of loss, injury, or death, resulting from strong seismic ground shaking. Therefore, the potential for impact is considered less than significant.

iii) Seismic related ground failure, including liquefaction.

Finding: Less than Significant

As discussed in the seismic ground shaking discussion above and the environmental setting (Section 3.6.2), the proposed Project site would be mildly susceptible to ground shaking due to the proximity of the Dog Valley fault and the low severity earthquake zone. The potential for ground failure resulting from things such as liquefaction is possible when the ground shaking potential is combined with the poorly drained soils located within the meadow. While the ground shaking potential and poorly drained soils of the proposed Project site result in some potential for liquefaction, there would be no manmade structures built within the proposed Project site which reduces the overall potential risk of liquefaction. Currently, the Project site is not open for public use and the proposed Project would not entail the use of the site for

recreation or public uses limiting the exposure of people to the Project site. Therefore, the potential to expose people or structures to substantial adverse effects, including the risk of loss, injury, or death involving seismic related ground failure, including liquefaction, is considered less than significant.

iv) Landslides

Finding: Less than Significant

Soils underlying the Project area are mostly characterized as Aquolls and Borolls soils (0 to 5 percent slopes). These soils are generally not susceptible to landslides due to the relatively flat nature of the soils. Geology in the Project area is generally characterized by Miocene-Pliocene volcanic rocks. Overall, the Project site is located within a meadow system with flat topography and gentle slopes. Additionally, no structures for residential purposes or public gathering places would be included as part of the proposed Project. According to the United States Department of Agriculture (USDA) Web Soil Survey, the Project area is not located in an area that is prone to landslides (USDA 2016). Due to the characteristics of the underlying geology, soils, and the fact that no structures for habitation or public gatherings are proposed for construction, no impacts related to landslide risk are considered less than significant.

b) Would the Project result in substantial soil erosion or the loss of topsoil?

Finding: Less than Significant with Mitigation Incorporated

The construction activities associated with the proposed Project, including, filling the current eroded Davies Creek channels, removing and recontouring the railroad grade, and revegetating the disturbed areas, have the potential to remove topsoil and increase erosion in the area. MM GEO-1 would be implemented in order to reduce erosion and loss of topsoil from construction activities and would include BMPs such as measures to trap sediment and prevent soil erosion or transport to nearby surface water courses to ensure potential impacts are less than significant. These plans shall be implemented and inspected accordingly throughout the construction process. Additionally, these plans would include measures for restoring and stabilizing the Project area after construction to minimize and control erosion after completion of the proposed Project. The implementation of the erosion control plan, along with the BMPs, would minimize any substantial soil erosion or loss of topsoil, reducing impacts to a less than significant level.

Additionally, the proposed Project construction activities would be temporary (six to eight weeks) and, once completed, the current Davies Creek channels and surrounding meadow system would have restored riparian, aquatic, and wetland functions which would stabilize topsoil and improve the current conditions preventing further erosion of the incised channels.

Therefore, the potential for the proposed Project to result in substantial soil erosion or the loss of topsoil is considered less than significant with mitigation incorporated.

c) Would the Project be located on strata 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?

Finding: Less than Significant

The proposed Project is located in the Sierra Nevada Range on mostly Aquolls and Borolls soils (0 to 5 percent slopes) underlain by dense bedrock, which lessens the seismic risk. Igneous and metamorphic bedrock provide the least amount of seismic hazard due to ground shaking. These soils, as well as the bedrock, are inherently stable, generally not susceptible to landslide or lateral spreading, and are not likely susceptible to subsidence or liquefaction (NRCS 1994). As a result, hazard potentials related to seismic ground failure, including liquefaction are considered low. Therefore, no impacts are considered to be less than significant.

d) Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property?

Finding: No Impact

The proposed Project does not involve the construction of structures, for human habitation or for public gathering places. Therefore, development of the proposed Project would not create substantial risks to life or property related to expansive soils. No impact would result from development of the project.

e) Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Finding: No Impact

Development of the proposed Project would not involve the use of septic tanks or alternative wastewater disposal systems. Therefore, no impact would result from project development.

3.6.4 Mitigation Measures

3.6.4.1 Mitigation Measure GEO-1: Sedimentation and Erosion Control Measures

The contractor and the TRWC shall prepare and implement an erosion control plan to ensure erosion and sedimentation from the Project is kept to a minimum. The standard erosion and sediment control Best Management Practices (BMPs) shall be used during and after construction to control accelerated soil erosion and sedimentation.

Erosion and sediment control BMPs shall be applied to all disturbed ground during temporary construction delays caused by weather events such as rainfall. Although, the restoration activities shall occur when meadows are dry and the stream channels are at minimum flow. The

proposed Project shall be timed to avoid the period of highest rainfall, streamflow, and erosion potential. However, if an unexpected rainfall event were to occur during construction, construction shall be shut down until the streamflow is sufficiently low and soil/channel conditions are sufficiently dry and stable. Examples of BMPs to be included during a rainfall event include placement of readily available mulch materials and/or imported mulch materials to protect any disturbed areas from rainfall, placement of tarps to cover exposed soil, and the placement of straw wattles, silt fences, and/or hay bales to reduce runoff velocity and intercept sediment.

The re-vegetation of all graded and disturbed areas of bare soil shall be completed within three months of Project completion or prior to the rainy season. Native seed mixes consistent with MM BIO-4 shall be used to replicate the naturally occurring vegetation.

Mitigation Measure GEO-1 Implementation

Responsible Party: The TRWC shall require the contractor to develop and implement the sedimentation and erosion control measures and re-vegetate the site.

Timing: During and immediately after construction activities.

Monitoring and Reporting Program: The TRWC shall monitor implementation of the mitigation measure and a copy of the sedimentation and erosion control measure shall remain on file at the project site as well as submitted to LRWQCB as a file copy.

Standards of Success: Minimize on- and off-site erosion and prevent introduction of significant amounts of sediment into any stream or drainage.

3.7 HAZARDS AND HAZARDOUS MATERIALS

3.7.1 Regulatory Setting

A hazardous material is defined by the California Environmental Protection Agency (CalEPA) and the Department of Toxic Substances Control (DTSC) as a material that poses a significant present or potential hazard to human health and safety or the environment if released because of its quantity, concentration, or physical or chemical characteristics (26 California Code of Regulations 25501). For the purposes of this analysis, hazardous materials include raw materials and material remaining on-site as a result of past activities. Applicable regulations and policies considered relevant to the proposed Project are summarized below.

3.7.1.1 Federal

The principal federal regulatory agency responsible for the safe use and handling of hazardous materials is the USEPA. Two key federal regulations pertaining to hazardous wastes are described below. Other applicable federal regulations are contained primarily in Titles 29, 40, and 49 of the Code of Federal Regulations.

3.7.1.1.1 Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act enables the USEPA to administer a regulatory program that extends from the manufacture of hazardous materials to their disposal, thus regulating the generation, transport, treatment, storage, and disposal of hazardous waste at all facilities and sites in the nation.

3.7.1.1.2 Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund, was passed to facilitate the cleanup of the nation's toxic waste sites. In 1986, the Superfund was amended through the Superfund Amendment and Reauthorization Act Title III (community right-to-know laws). Title III states that past and present owners of land contaminated with hazardous substances can be held liable for the entire cost of the cleanup, even if the material was dumped illegally when the property was under different ownership.

3.7.1.2 State

California regulations are equal to, or more stringent than, federal regulations. The USEPA has granted the State of California primary oversight responsibility to administer and enforce hazardous waste management to ensure that hazardous wastes are handled, stored, and disposed of properly to reduce risks to human health and the environment. Several key laws pertaining to hazardous wastes are discussed below.

3.7.1.2.1 Hazardous Waste Control Act

The Hazardous Waste Control Act created the State hazardous waste management program, which is similar to, but more stringent than, the federal Resource Conservation and Recovery Act program. The act is implemented by regulations contained in Title 26 of the California Code of Regulations, which describes the following required aspects for the proper management of hazardous waste:

- Identification and classification;
- Generation and transport;
- Design and permitting of recycling, treatment, storage, and disposal facilities;
- Treatment standards;
- Operation of facilities and staff training; and
- Closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of them. Under the Hazardous Waste Control Act and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from the generator to the transporter to the ultimate disposal location.

3.7.1.2.2 Emergency Services Act

Under the Emergency Services Act, the State developed an emergency response plant to coordinate emergency services provided by Federal, State, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an important part of the plan, which is administered by the California Office of Emergency Services (OES). The office coordinates the responses of other agencies, including the USEPA, the California Highway Patrol, Regional Water Quality Control Boards, air quality management districts, and county disaster response offices.

3.7.1.2.3 Other Laws, Regulations, and Programs

Various other State regulations have been enacted that affect hazardous waste management, including:

- Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65), which requires labeling of a substance known or suspected by the State to cause cancer; and
- California Government Code Section 65962.5, which requires the Office of Permit Assistance to compile a list of possible contaminate sites in the State.

State and Federal regulations also require that hazardous materials sites be identified and listed in public records. These lists are:

- Comprehensive Environmental Response, Compensation, and Liability Information System;
- National Priorities List for Uncontrolled Hazardous Waste Sites;
- Resource Conservation and Recovery Act;
- California Superfund List of Active Annual Workplan Sites; and
- Lists of State-registered underground and leaking underground storage tanks.

3.7.1.3 Local

3.7.1.3.1 Sierra County General Plan

Goal 1. It is the County's goal to maintain a high level of safety for people and property by limiting the exposure of its residents to safety hazards, including seismic and geologic hazards, flooding, and fire.

Policy 4. Maintain accurate and current floodplain information. Avoid downstream flooding potential by protecting natural drainage and vegetative patterns through project site plan review.

Policy 13. Maintain a comprehensive and current Emergency Services Plan (ESP).

Policy 23. Provide for the identification, safe use, storage, transport and disposal of hazardous materials.

3.7.2 Environmental Setting

No schools exist within one-quarter mile of the Project site and the Project site is not included on any list of hazardous materials sites (DTSC 2017). Additionally, there are no public or private use airports within 2.0 miles of the Project site.

The Project site also falls within a State Responsibility Area (SRA) and California Department of Forestry and Fire Protection (Cal Fire) places the entire area into a very high fire hazard severity zone (Cal Fire 2007). Fire protection in this area is primarily provided through the joint effort of Cal Fire and the USFS with additional assist by the Sierra County Fire Protection District (SCFPD). Additionally, although there is no formal emergency evacuation plan for this area, emergency access to the site would include Highway 89, Henness Pass Road, and Stampede Dam Road.

3.7.3 Impact Analysis

VIII. HAZARDS AND HAZARDOUS MATERIALS Would the Project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less than Significant Impact**	**No Impact**
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?	☐	☐	☐	☒

VIII. HAZARDS AND HAZARDOUS MATERIALS Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
f) For a Project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☒	☐	☐

a) Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Finding: Less than Significant

Temporary construction activities associated with the proposed Project would involve the transport and use of limited quantities of miscellaneous hazardous substances including gasoline, diesel fuel, hydraulic fluid, solvents, and oils. These chemicals would be brought to the proposed Project site, as well as transported along the roadways. Federal and State laws regulate the handling, storage, and transport of these and other hazardous materials, as well as the mechanisms to respond and clean up any spills along local and regional roadways. Chemicals present on site or used for the proposed Project would be handled in accordance with applicable Federal, State, and local regulations (including those laws mentioned in the regulatory setting above) for hazardous substances. Therefore, the potential for impacts related to hazardous materials transport, use, or disposal would be considered less than significant.

b) Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Finding: Less than Significant with Mitigation Incorporated

Temporary construction activities associated with the proposed Project would involve the transport and use of limited quantities of hazardous materials including gasoline, diesel fuel, hydraulic fluid, solvents, and oils. Chemicals present on site during Project construction would be handled by the contractor in accordance with applicable Federal, State, and local regulations for hazardous substances, and any spills would be immediately cleaned up and disposed of in

the appropriate manner. The proposed Project site is not listed by any Federal or State database that identifies known hazardous materials sites (DTSC 2017). To ensure hazardous materials are not released into the environment during construction, MM HAZ-1 would be implemented and involves the development and implementation of a Spill Prevention Control and Countermeasure Plan reducing the potential for a spill to create a significant hazard to the public or environment by quickly and efficiently having materials on-site to treat and clean up any potential spill. Therefore, with the incorporation of MM HAZ-1 impacts would be reduced to a less than significant level.

c) Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Finding: No Impact

The proposed Project is not expected to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. The closest school to the proposed Project site is Verdi Elementary School, located approximately 6.5 miles east of the Project site, and the proposed Project does not involve operational activities that would result in hazardous emissions. Operations would consist of a restored meadow ecosystem with no potential to emit hazardous materials or emissions. Therefore, no impacts would occur.

d) Would the Project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Finding: No Impact

A review of the USEPA hazardous materials sites database did not identify the Project site as a known hazardous materials sites (USEPA 2017b). Therefore, no impacts would occur.

e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?

Finding: No Impact

The proposed Project is not located within an airport land use plan, or within 2miles of a public or private airport. The nearest airports to the Project site are the Truckee Tahoe Airport and the Sierraville Dearwater Airport which are both located approximately 13 miles away to the south and northwest respectively of the Project site. Therefore, there is no potential for the Project to result in a safety hazard for people residing or working in the project area and no impact would occur.

f) For a Project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?

Finding: No Impact

The closest private airstrip to the proposed Project is the Totem Pole Ranch Airport in Sierraville. This private airstrip is located approximately 19 miles from the Project area. Consequently, the proposed Project would not be located within the vicinity of a private airstrip and would not result in a safety hazard for people residing or working in the Project area. Therefore, no impacts would occur.

g) Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Finding: Less than Significant

The completed Project would not result in any physical features that would impair implementation of, or physically interfere with, emergency evacuations. Access for all fire and police emergency response vehicles would be maintained on Highway 89, Henness Pass Road, and Stampede Dam Road and any of the smaller county roads throughout the construction period. Therefore, potential impacts to emergency, fire, and police response would be less than significant.

h) Would the Project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Finding: Less than Significant with Mitigation Incorporated

The proposed Project site is surrounded by vegetation, trees, and shrubs, in a forested and open grassland setting and the risk of fire is a possibility. Equipment used during construction activities may generate sparks that could ignite dry vegetation on or adjacent to the construction area and cause wildland fires in the area. The nearest fire station to the proposed Project site is approximately six miles to the east of the Project site at the Verdi Volunteer Fire Station 351 which is located at 155 Bridge Street, Reno, Nevada 89523. While the risk is minimal, to further reduce the risk of fire, MM HAZ-2, Fire Suppression and Control, would be incorporated into the Project. This mitigation measure includes roles and responsibilities in the event of a fire, specific equipment to prevent and control fires, and coordination with the fire chief and/or Sierra County on specific fire suppression actions to be taken. This would reduce the potential for a fire that could be caused by sparks from construction activities by taking precautions outlined in MM HAZ-2, thus reducing the impact to a less than significant level. Therefore, the potential impact would be considered less than significant with MM HAZ-2 incorporated.

3.7.4 Mitigation Measures

3.7.4.1 Mitigation Measure HAZ-1: Develop or use current Spill Prevention Control and Countermeasure Plan

TRWC, or its contractor shall develop and implement a Spill Prevention Control and Countermeasure Plan (SPCCP) in accordance with Federal and State requirements to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction activities for all contractors. The SPCCP shall include the following measures:

- Storage of hazardous materials, chemicals, fuels, and oils shall not take place within one hundred (100) feet of Davies Creek and liquid hazardous materials shall be covered and stored within secondary containment where containment is 110 percent of liquid material volume;
- Materials shall be stored in appropriate containers and contents labeled;
- Material volume shall be restricted to the volume that can be addressed by available spill kits and supplies.
- Used containers shall be disposed of at an appropriate landfill or other legal disposal or recycling facility;
- Bulk storage tanks shall have secondary containment systems. Secondary containment shall be at least 110 percent of storage tank capacity or more if the area is uncovered to account for storm events;
- Spill cleanup shall occur immediately and notification shall be given to the California Department of Fish and Wildlife, USFWS, TRWC, and LRWQCB;
- Workers shall be trained to properly handle hazardous materials, cleanup spills, and report spills. Construction workers shall be trained to identify indicators of contaminated soils such as soil discoloration, odors, differences in soil properties, and buried debris. Construction workers shall be trained to be aware of proper handling techniques and appropriate responses and actions to be taken if hazardous materials are accidentally released, with special emphasis on those hazardous materials with the greatest potential to occur at the Project site;
- Soils contaminated with fuels or chemicals shall be disposed of in a suitable location to prevent discharge to surface waters and in accordance with the rules and regulations of the U.S. Department of Transportation, the U.S. Environmental Protection Agency, the LRWQCB, and other agencies including but not limited to California Environmental Protection Agency;

- Excess or unused quantities of hazardous materials shall be removed upon Project completion. Although hazardous waste generation is not anticipated, any such wastes produced during construction shall be properly containerized, labeled, and transported to an approved hazardous waste disposal facility and

- All nonhazardous waste materials including construction refuse, garbage, and sanitary waste, shall be disposed of by removal from the work area to an approved disposal facility. All nonhazardous waste containers shall be covered when not in use and/or at the end of each shift or before a rain or other precipitation (snow) event.

A fueling plan shall be prepared separately or as a part of the SPCCP. The fueling plan shall include the following measures:

- Vehicles shall be monitored for fluid leaks and shall be maintained regularly to reduce the chance of leakage. If any leaks are detected, the vehicle shall be taken to a special paved area designated for vehicle repair and equipped with management controls for leaked materials or if it cannot be repaired removed from service and site and obtain replacement;

- Vehicles refueling shall only occur on flat level ground where there is little chance of a spilled substance reaching a stream or waterway over an impermeable surface. A spill kit shall be available as appropriate for the activity;

- Refueling and vehicle maintenance shall be performed at least 100 feet from receiving waters;

- All fueling materials shall be properly labeled; and

- Oil, antifreeze, solvents, and other materials related to equipment maintenance shall be disposed of or recycled appropriately offsite. If these materials have to be stored before disposal/recycling, they shall be stored in covered areas in containers with 110 percent capacity with berms and lined with impermeable material to contain any spills. The impermeable material should be maintained free of holes, etc. that would permit leaks to contact the ground surface or otherwise leave the containment area.

The TRWC shall review and approve the SPCCP before onset of construction activities. The TRWC shall routinely inspect the construction area to verify that the measures specified in the SPCCP are properly implemented and maintained. The TRWC shall notify its contractors immediately if there is a noncompliance issue and shall require compliance.

The Federal reportable spill quantity for petroleum products, as defined in the EPA's CFR (40 CFR 110) is any oil spill that (1) violates applicable water quality standards, (2) causes a film or sheen upon or discoloration of the water surface or adjoining shoreline, or (3) causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.

If a spill is reportable, the TRWC or the contractor would take action to contact the appropriate safety and clean-up crews to ensure the SPCCP is followed. A written description of reportable releases must be submitted to the LRWQCB. The submittal must include a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases would be documented on a spill report form.

In the unlikely event of a spill, the following parties shall be notified:

1. Call 911:
    - For spills that involve injury requiring medical treatment;
    - For spills that involve fire or hazards;
    - For spills that are potentially life threatening; and
    - For spills that occur after work hours.
2. Call Sierra County Department of Environmental Health at: (530)993-6716
    - For chemical spill situations which do not require 911 assistance;
    - For spills that cannot be cleaned up by personnel on site.
3. Call Lahontan Regional Water Quality Control Board at: (530) 542-5400
    - Immediately for a major spill;
    - Within 24 hours of a minor spill.

Mitigation Measure HAZ-1 Implementation

Responsible Party: The TRWC or its contractor shall develop and implement a Spill Prevention Control and Countermeasure Plan (SPCCP) to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction activities for all contractors.

Timing: The SPCCP shall be implemented prior to and during all phases of construction.

Monitoring and Reporting: Evaluation of SPCCP shall be conducted by the TRWC. Reports on the SPCCP implementation shall be documented by the TRWC and submitted to the LRWQCB to be kept on file.

Standard of Success: Minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction activities in accordance with the requirements of this measure as well as State and Federal laws.

3.7.4.2 Mitigation Measure HAZ-2: Fire Suppression and Control

The TRWC shall require the selected construction contractor to coordinate with the local fire chief and Sierra County to ensure fire control measures are in place to reduce the risk of fires during the proposed Project. The fire prevention and control measures shall include requirements for onsite extinguishers; roles and responsibilities of the TRWC, and the contractor including what to do in the event of a fire; fire suppression equipment and critical fire prevention and suppression items, and any other items or awareness measures recommended by the fire chief and/or Sierra County.

Mitigation Measure HAZ-2 Implementation

Responsible Party: The TRWC's contractor shall coordinate with the local fire chief and Sierra County to ensure fire control measures including but not limited to fire suppression and management measures are in place and on site and readily accessible during construction in the event of an unintended fire.

Timing: Coordination with the local fire chief and Sierra County shall take place prior to construction and implementation of fire suppression and control measures shall be implemented during all phases of construction.

Monitoring and Reporting: Evaluation of the fire suppression and control measures shall be conducted by TRWC. The TRWC inspector or other TRWC personnel shall verify that coordination with the fire chief and Sierra County took place and that proper responsibilities and fire suppression and control equipment/items are available on site during construction. Documentation shall be submitted by the TRWC to the LRWQCB to be kept on file at LRWQCB offices.

Standard of Success: Preparedness for and minimization of the start and spread of wildfire during construction activities for all contractors.

3.8 Hydrology and Water Quality

3.8.1 Regulatory Setting

3.8.1.1 Federal

3.8.1.1.1 Clean Water Act

The CWA (33 U.S.C. Section 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to

protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the National Pollution Discharge Elimination System (NPDES) permit process (CWA Section 402). Section 401 of the CWA regulates surface water quality and a Water Quality Certification is required for federal actions (including construction activities) that may entail impacts to surface water. In California, NPDES permitting authority is delegated to, and administered by, the nine RWQCBs. The Lahontan Regional Water Quality Control Board (LRWQCB) has jurisdiction over the proposed Project area.

3.8.1.1.2 National Flood Insurance Policy Act

The Federal Emergency Management Agency (FEMA) is responsible for managing the National Flood Insurance Program (NFIP), which makes federally backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage.

The NFIP, established in 1968 under the National Flood Insurance Act, requires that participating communities adopt certain minimum floodplain management standards, including restrictions on new development in designated floodways, a requirement that new structures in the 100-year flood zone be elevated to or above the 100-year flood level (known as base flood elevation). To facilitate identifying areas with flood potential, FEMA has developed Flood Insurance Rate Maps (FIRMs) that can be used for planning purposes, including floodplain management, flood insurance, and enforcement of mandatory flood insurance purchase requirements.

3.8.1.2 State

3.8.1.2.1 Porter Cologne Water Quality Control Act

The State of California established the SWRCB, which oversees the nine RWQCBs, through the Porter-Cologne Water Quality Control Act (Porter-Cologne). Through the enforcement of the Porter Cologne Act, the SWRCB determines the beneficial uses of the waters (surface and groundwater) of the State, establishes narrative and/or numerical water quality standards, and initiates policies relating to water quality. The SWRCB and, more specifically, the RWQCB, is authorized to prescribe waste discharge requirements (WDRs) for the discharge of waste, which may impact waters of the State. Furthermore, the development of water quality control plans, or Basin Plans, are required by Porter-Cologne to protect water quality.

The SWRCB issues both General Construction Permits and individual permits under the auspices of the federal NPDES program. Projects disturbing more than one acre of land during construction are required to file a Notice of Intent (NOI) with the SWRCB to be covered under the State NPDES General Construction Permit for discharges of storm water associated with construction activity. Construction activities that are subject to this General Permit includes clearing, grading, disturbances to the ground such as stockpiling, or excavation that results in soil disturbances of at least one acre of total land area. The TRWC must implement control measures that are consistent with the State General Permit. A SWPPP must be developed and implemented for each site covered by the General Permit. A SWPPP describes BMPs the

discharger will use to protect storm water runoff and reduce potential impacts to surface water quality through the construction period. The SWPPP must contain the following: a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment (SWRCB 2013).

3.8.1.3 Local

3.8.1.3.1 Sierra County General Plan

Goal 1. It is the County's goal to protect and maintain its water resources for the benefit of the County residents and natural habitats and to assure protection of its watersheds as a primary land use constraint.

> **Policy 14**. Cooperate with State and Federal agencies in the control of water pollution, require sufficient performance bonds of mining projects to allow for revegetation and water quality restoration efforts, and pursue funding resources to repair abandoned mining sites which continue to pollute.
>
> **Policy 16**. Encourage dredging techniques that have the least effect on water quality of those available.
>
> **Policy 22**. Protect natural swales and wetlands, plus a buffer from those features, for water quality protection.
>
> **Policy 31**. Preserve the integrity of water courses throughout the County.

3.8.1.3.2 Sierra County Code

Sierra County has floodplain management regulations which promote public health, safety, and general welfare while also minimizing the public and private losses due to flood conditions. The main objectives of this ordinance are to:

- restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion, flood heights or velocities;
- require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters;
- control filling, grading, dredging, and other development which may increase flood damage; and

- prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas (Sierra County Code 2000).

3.8.2 Environmental Setting

The 569-acre proposed Project site (Sardine Valley, Hydrologic Unit Code (HUC) 16050102) is in the Sierra Nevada Mountain Range, approximately one mile north of Stampede Reservoir. The hydrology in this region is complex and encompasses three different watersheds: the Upper Truckee River Watershed, the Middle Truckee River Watershed, and the Lower Truckee River Watershed. The Truckee River system begins at Meiss Meadows in Alpine county near Carson Pass and flows through Lake Tahoe and the town of Truckee, terminating at Pyramid Lake in Nevada.

Sardine Valley is located within the northeast portion of the Middle Truckee River watershed, which encompasses 27 sub-watershed basins, including the Davies Creek Sub-Basin, where the proposed Project site is located. The Project site includes Davies Creek, which runs through the Project site from west to east and then meets the north to south flowing Merrill Creek. The two creeks meet and then flow into Stampede Reservoir, which connects to the Little Truckee River.

3.8.3 Impact Analysis

IX. HYDROLOGY AND WATER QUALITY Would the Project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less than Significant Impact**	**No Impact**
a, f) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there should 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 site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☒	☐	☐
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?	☐	☐	☒	☐

IX. HYDROLOGY AND WATER QUALITY Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
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) Inundation of seiche, tsunami, or mudflow?	☐	☐	☐	☒

a, f) Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality?

Finding: Less than Significant with Mitigation Incorporated

The proposed Project would restore the historic riparian, aquatic, and wetland function of the meadow system within Sardine Valley and reduce non-point source sedimentation by eliminating incisions in the current channels and returning flows to their historic channels. The proposed Project has been designed to reduce water quality impacts as much as feasible during construction activities. The construction activities would potentially disturb approximately 25 acres.

Construction activities have the potential to create soil erosion and possibly increase sedimentation or degrade water quality from placement of unclean fill material. Construction activities could also increase the potential for accidental release of pollutants that could affect not only surface waters, but the beneficial uses associated with them. Such pollutants include oil and gas from machinery, chemicals associated with construction (e.g., lubricants, fuel, and waste material). Many construction-related pollutants have the potential to degrade water quality by increasing constituent levels in surface waters that could lead to an exceedance of water quality standards. Timing of the Project has been designed to occur in the late summer to minimize the likelihood of surface water in Davies Creek being present at the time of construction which reduces the potential for impacting water quality standards. Improper storage of hazardous materials on-site could pose a risk of release and result in the degradation

of water quality. MM HAZ-1 Develop or use current Spill Prevention Control and Countermeasure Plan would be implemented in order to reduce the potential of a hazardous material release from construction by requiring a SPCCP for all construction activities and MM HYDRO-1, Utilization of Clean Engineered Fill, would be implemented to further limit the potential for release of pollutants into waterways by containing pollutants from potential spills and ensuring fill material is free of contaminants.

Additionally, inadvertent erosion that results in increased sediment in streams or discharge of other materials into waterbodies as a result of Project construction activities could result in adverse impacts to water quality. MM GEO-1 would be implemented during the construction phase to avoid and minimize potential adverse impacts to water quality from erosion and sedimentation. Further, construction practices associated with dewatering practices have the potential to generate sediment and turbid waters if not properly dewatered and reintegrated back into the stream system. MM HYDRO-2 would be implemented to reduce potential dewatering water quality impacts by outlining specific steps for the TRWC to take to dewater in a fashion that minimizes spikes in turbidity. These mitigation measures would ensure that water quality standards are achieved, and thus reduce any impacts to a less than significant level.

Once construction is completed, the proposed Project would consist of a restored meadow habitat with improved hydrologic and ecosystem functions. The current Davies Creek channels would be restored to the historic channels with improved hydrologic benefits such as reduced sedimentation, improved late season baseflow, and elevated groundwater tables. Increasing the amount of water in the channels later in the summer would improve several flow-related water quality parameters such as temperature, dissolved oxygen, conductivity, and nutrient concentrations (NFWF 2010). Therefore, the potential for operations of the proposed Project to violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality would be considered less than significant.

Potential impacts from the proposed Project would be reduced to a less than significant level through the implementation of MM HAZ-1, MM GEO-1, MM HYDRO-1, and MM HYDRO-2. As such the proposed Project would have a less than significant impact to water quality degradation with mitigation incorporated.

b) Would the Project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there should 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)?

Finding: Less than Significant

The proposed Project would allow the current Davies Creek channels to be restored, as well as the associated meadow system, to its historical capacity with improved erosion control and water quality functions. The construction activities have the potential to temporarily affect the

current hydrologic functions of the area through movement of construction equipment and excavation in and around the proposed Project area. However, upon completion of the construction activates, the meadow system would be restored with improved hydrologic functions, thus allowing for improved groundwater supplies and recharge capability.

The primary mechanism by which the restoration of Sardine Meadow would enhance stream flow is reengagement of the shallow groundwater table. The incised channels drain the adjoining meadow soils preventing any water storage early in the season when spring runoff occurs. Restoring Davies Creek to its natural channels would increase groundwater-surface water interaction. The stream channel and restored floodplain processes would feed water to the adjoining meadow soils during spring snowmelt. This water would be seasonally stored in the meadow soils as shallow groundwater. When stream flow decreases later in the season this stored groundwater would be slowly released back to the stream channel as surface water, thus improving base flow conditions in the late season when direct precipitation and snowmelt water are at a minimum. Therefore, the potential for the proposed Project to substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there should be a net deficit in aquifer volume or a lowering of the local groundwater table level would be considered less than significant.

c) Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Finding: Less than Significant with Mitigation Incorporated

The proposed Project would allow the current Davies Creek channels to be restored, as well as the associated meadow system, to its historical capacity with improved erosion control and water quality functions. Due to substantial historic degradation activities such as logging and railroad grade construction, the meadow has experienced alterations in drainage patterns and increased erosion over time. The proposed Project would include altering the current Davies Creek drainage patterns back to historical patterns with improved erosion control which would allow for optimum restoration of the meadow. Restoration activities on the western side of the project area would be designed to transition flows from the private property to the west into the Project area to prevent back flows and incising. If the Project is not designed correctly and flows are abruptly changed at the edge of the property line, back flows, incising, and flooding would have the potential to occur and could have adverse effects, such as increased erosion, both upstream and downstream of the Project site. Therefore, the proposed Project would be designed to avoid these potential impacts and allow for a natural transition from the private property line into the proposed Project area. Therefore, although the proposed Project would substantially alter the existing drainage pattern of the Project area, this is a beneficial and intended outcome, and it would not result in substantial erosion on- or off-site.

By design, fill for the proposed Project would have similar characteristics and properties to those found in Sardine meadow system; would be from clean sources free of contaminants; and

would be available at the Boca Reservoir storage site or within the Project footprint at the time of construction of the proposed Project. Excavation of the current railroad grade would involve grading and other earth movement that would result in soil disturbance that could temporarily alter minor drainage patterns and locally increase hazard of erosion and sedimentation. The proposed Project would not significantly increase impervious areas or generate increased stormwater flows since no pervious surfaces are involved in construction of the proposed Project. Implementation of MM GEO-1 would minimize the potential for the proposed Project to substantially negatively alter the current Davies Creek drainage pattern of the site or area by including sedimentation and erosion control measures throughout project construction.

Therefore, the potential for the proposed Project to substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site would be considered less than significant with mitigation incorporated.

d) Would the Project 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?

Finding: Less than Significant

The proposed Project would allow the current Davies Creek to be restored, as well as the associated meadow system, to its historical capacity with improved erosion control and water quality functions. Although the proposed Project would entail altering the current Davies Creek drainage patterns of the area, these alterations would involve restoring the existing drainage patterns back to historical paths. No permanent structures would be placed within the proposed project site, and the Project would be designed to improve hydrologic functions, including water flows and groundwater recharge, thus reducing the potential for flooding. The stream channels through Sardine Meadow have been artificially straightened causing the stream to incise. Excessive erosion is currently prevalent along the three-mile length of Davies Creek. The restoration plan would return Davies Creek to historic remnant channels on the meadow surface. Additionally, restoration activities on the western side of the project area would be designed to transition flows from the private property to the west into the Project area to prevent back flows and incising. If the Project is not designed correctly and flows are abruptly changed at the edge of the property line, back flows, incising, and flooding would have the potential to occur and could have adverse effects both upstream and downstream of the Project site. Therefore, the proposed Project would be designed to avoid these potential impacts and allow for a natural transition from the private property line into the proposed Project area

The Project area is located in a Zone A, FEMA National Flood Zone area which means that the area "is subject to inundation by the 1-percent-annual-chance flood event" (FEMA 2012). This means that the potential for flooding is relatively low in this area. Therefore, the potential for the proposed Project to 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 is considered less than significant.

e) Would the Project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

Finding: No Impact

The proposed Project would allow the current Davies Creek channels to be restored, as well as the associated meadow system, to its historical capacity with improved erosion control and water quality functions. All construction activities and associated runoff, would take place within the meadow and any runoff would be contained within the meadow boundaries. Accordingly, the proposed Project would not contribute to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Therefore, no impact would occur.

Additionally, no permanent structures would be placed within the Project site that would contribute to stormwater drainage systems or increase polluted runoff. Therefore, no impact would result from the proposed Project.

g) Would the Project 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?

Finding: No Impact

The proposed Project would not include the construction of housing and would not place housing in a 100-year flood hazard area. The FEMA Flood Insurance Rate Map (FEMA 2012) designates the Project area as not occurring within a 100-year flood zone. Therefore, no impacts would occur.

h) Would the Project Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Finding: No Impact

The proposed Project would not place structures which would impede or redirect flood flows within a 100-year flood hazard. The FEMA Flood Insurance Rate Map (FEMA 2012) designates the Project area as not occurring within a 100-year flood zone. Therefore, no impacts would occur.

i) Would the Project 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?

Finding: Less than Significant

While the proposed Project is located near Stampede Dam and Boca Dam, it would not include any activities within the direct vicinity of a levee or dam. No housing or structures for human use are present or would be placed within the proposed Project site so there would be no potential risk of loss, injury or death. Additionally, the FEMA Flood Insurance Rate Map (FEMA 2012) designates the Project area as not occurring within a 100-year flood zone.

The proposed Project does include placing fill in the existing stream channels; however, the water would return to its historic flow channels and therefore would not cause a change in quantity of flows. While by design, the proposed Project would encourage high stream flows within the historic channels to over top their banks into the meadow, the resulting flooding would not expose people or structures to significant risk of loss, injury or death since no structures are present. The fill of the current channels and flooding of the meadow would promote groundwater level increases by redirecting flows from the currently incised channels to the historic channels. This would prevent future sedimentation and incision, thus reducing the potential for sediment to flow downstream to Stampede or Boca Dams where sediment buildup could result in dam failure. Therefore, the proposed Project would not expose people or structures to a significant risk of loss, injury, or death as a result of flooding or dam or levee failure and impacts would be considered less than significant.

j) Would the Project expose people or structures to a significant risk of loss, injury or death as a result of inundation of seiche, tsunami, or mudflow?

Finding: No Impact

The proposed Project's inland and low-gradient mountain meadow location negates the risk of a seiche, tsunami or mudflow. The project would not create any housing or other structures and would not expose people or structures to impacts from inundation by seiche, tsunami, or mudflow. Therefore, there is no impact.

3.8.4 Mitigation Measures

3.8.4.1 Mitigation Measure GEO-1: Sediment and Erosion Control Measures

See MM GEO-1, Section 3.6

3.8.4.2 Mitigation Measure HAZ-1: Develop or use current Spill Prevention Control and Countermeasure Plan

See MM HAZ-1, Section 3.7

3.8.4.3 Mitigation Measure HYDRO-1: Utilization of Clean Engineered Fill

Clean engineered fill material shall be used. A soils characterization plan shall be developed by a California Professional Engineer or California Registered Professional Geologist and implemented for evaluating all borrow material that has not previously undergone testing for contaminants. Only fill determined to be contaminant-free shall be used.

Mitigation Measure HYDRO-1 Implementation

Responsible Party: The TRWC.

Timing: Prior to construction.

Monitoring and Reporting Program: The TRWC shall provide documentation of soils testing to be kept on file at LRWQCB.

Standards for Success: Placement of clean fill.

3.8.4.4 Mitigation Measures HYDRO-2: Construction Dewatering Management Plan

Construction shall take place when there is no flow or very little flow in Davies Creek. However, in the event that flow is present or groundwater is encountered during construction, a construction dewatering plan shall be developed prior to project construction. Water generated by dewatering activities shall be used where possible for construction activities such as compaction and dust control. This would ensure that the water infiltrates rather than running into Davies Creek receiving waters. In order to reduce the potential for water from dewatering activities impacting the water quality of nearby waterways, TRWC shall require that the selected contractor develop a dewatering management plan prior to construction to include the following measures.

Non-contaminated water shall be discharged to land for infiltration, when 1) the water contains sediment, but is not contaminated with other pollutants, 2) the water does not runoff from the land to creek beds (even if dry), or other surface waters, 3) the LRWQCB has been contacted and discharge is authorized or permitted, if applicable, and 4) details and mitigation measures to address construction dewatering and stormwater inputs during construction would be required prior to issuance of a federal CWA section 401 Water Quality Certification and water would be discharged according to the permit conditions.

The dewatering management plan shall outline a dewatering design specifications, schedule and water quality monitoring procedures. The plan shall include emergency contingency plans if unanticipated contaminants are observed in the discharge or flooding occurs resulting in cessation of water pumping.

Mitigation Measure HYDRO-2 Implementation

Responsible Party: The TRWC's contractor shall implement the construction dewatering management plan.

Timing: Prior to construction.

Monitoring and Reporting Program: The TRWC review and approval of monitoring plan. TRWC shall submit file copies of the plan and compliance incident reports to LRWQCB.

Standards for Success: Compliance with monitoring plan, any dewatering permits, and prompt and complete incident reports to the LRWQCB.

3.9 Land Use and Planning

3.9.1 Regulatory Settings

There are no Federal or State requirements related to land use that are applicable to the proposed Project.

3.9.1.1 Local

3.9.1.1.1 Sierra County General Plan

Goal 2. Provide that areas outside of Community Influence Areas be maintained for natural resource industry growth and enhancement, for protection of the County's rural lifestyle, and for protection of environmental quality.

Policy 10. The County shall provide Open Space areas to preserve, protect, and provide for the management of sensitive environmental areas and resources which are of particular value to the County. Other land use designations which implement open space goals include the Recreation designation and the various resource production designations: Forest, Agriculture, and Mineral.

Policy 13. The County shall provide areas for agricultural preserves where the primary use is agricultural production. The intent is to ensure that parcel sizes and allowed uses further the viability of agriculture and avoid interference with agricultural operations as a result of land use conflicts.

3.9.2 Environmental Setting

The proposed Project has taken Sierra County General Plan and Zoning goals, objectives, and regulations into consideration during the planning stages. The proposed Project would be located on privately owned land within the Sardine Valley.

The General Plan designated land use for the Project site is "Open Space" with a Special Treatment Overlay of "Areas of Special Biological Concern". The Open Space land use

designation is intended to preserve, protect, and provide for the management of sensitive environment areas and resources. It is the intent of these protected areas to assure the continued availability of land for food production, discourage premature and unnecessary conversion of open space, and to protect watershed and watercourses. The Special Treatment Overlay is intended to preserve areas of particular biological importance and sensitivity (Sierra County General Plan).

The zoning designation for the Project site is Agriculture (A1) and is located on Assessor's Parcel Number (APN) 023-010-006. It should also be noted that the parcel that the Project site is located on a designated Williamson Act Contract which was discussed further in Section 3.2 (Agricultural and Forestry Resources) above. Pursuant to the Sierra County Zoning Regulations, the Agricultural District is intended to protect and preserve land that is most suited to agricultural use and other uses compatible therewith. It is intended that this Agriculture District be utilized in conjunction with appropriate State and Federal legislation to preserve and protect agricultural pursuits from encroachment by industrial, commercial, and residential use (Sierra County Zoning Code 2012).

3.9.3 Impact Analysis

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

a) Would the Project physically divide an established community?

Finding: No Impact

The proposed Project includes restoring the current Davies Creek channels which would not physically divide an established community. There are no residences within or near the proposed Project site and the area is designated as Open Space under the Sierra County General Plan

and is zoned as Agriculture under the Sierra County Zoning Regulations which means that there is currently no planned development for the area. Therefore, there would be no impact.

b) Would the Project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Finding: No Impact

The proposed Project would not conflict with any land use plans, policies, or regulations that are applicable to the Project. No change in land use is proposed or required and none would result from the implementation of the proposed Project. The proposed Project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project. Therefore, there would be no impact.

c) Would the Project conflict with any applicable habitat conservation plan or natural communities' conservation plan?

Finding: No Impact

There are no approved habitat conservation plans or natural communities' conservation plans that apply to the proposed Project site. Therefore, the proposed Project would not conflict with any such plan and there would be no impact.

3.9.4 Mitigation Measures

No mitigation is required.

3.10 MINERAL RESOURCES

3.10.1 Regulatory Setting

3.10.1.1 Federal

3.10.1.1.1 The Mining and Minerals Policy Act of 1970 (30 U.S.C 21(a))
The Mining and Minerals Policy Act of 1970 declared that it is in the national interest to foster and encourage private enterprise in the following ways:

- Development of economically sound and stable domestic mining and mineral related industries;
- Orderly and economic development of mineral resources to satisfy industrial, security, and environmental needs;

- Research to promote wise and efficient use of resources; and
- Research and development of mining and reclamation methods to lessen the impact of mining on the environment.

This act codified the importance of mining and mineral resources and recognized that public policy should evaluate these resources.

3.10.1.2 State

3.10.1.2.1 Surface Mining and Reclamation Act (SMARA)

The State of California enacted the Surface Mining and Reclamation Act (SMARA) in 1975 in part to identify the location of and preserve access to significant mineral deposits. The State geologist is required by SMARA to prepare maps that identify Mineral Resource Zones (MRZ) including areas of presence or likely presence of significant mineral deposits, MRZ-2. Areas that may have mineral resources, but where the presence cannot be determined from available information are also identified as MRZ-3. Additionally, SMARA requires local governments to evaluate the presence of mineral resources in their General Plans and when making land use decisions.

3.10.1.3 Local

3.10.1.3.1 Sierra County General Plan

Goal 1. It is the goal of the Mineral Management Element to encourage, enhance, and protect mining and mining related activities in the County, consistent with the fundamental goals of the County General Plan by developing clear and concise policies that coordinate agency and jurisdiction over the mineral extraction industry; that clearly establishes compatible, post-mining land uses for previously mineralize areas; and, that identifies and protects existing and potential mineralize areas.

3.10.2 Environmental Setting

Mineral resources are generally finite and occur in sporadic deposits, which often create a relative scarcity and a need to protect access to supplies. Many mineral resources are important to global, National, State, and local economies. In 2015, California had approximately 717 active mines responsible for approximately 4.2 percent of the U.S. non-fuel mineral production (California Geological Survey, 2015). The largest component of this production was derived from sand and gravel mining. The mineralogy of Sierra County has played an important historical role in local, regional, State, and National economics. The County encourages mining in areas of compatible land uses (Sierra County 2012). The proposed Project site is not located as a designated Mineral Rights land use area under the Sierra County Zoning Ordinance and there are no Mineral Rights land use areas directly surrounding the proposed Project site.

3.10.3 Impact Analysis

XI. MINERAL RESOURCES Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the State?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

a) Would the Project result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the State?

Finding: No Impact

The proposed Project site does not fall within an area classified as MRZ-2 according to the Sierra County General Plan (2012). Therefore, the proposed Project would not result in the loss of availability of a known mineral resource classified MRZ-2 and no impact would occur.

b) Would the Project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Finding: No Impact

The proposed Project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. According to the Sierra County General Plan (2012) and the Sierra County Zoning Ordinance, the proposed Project area is not located within or near an area of known important mineral resources (Sierra County Zoning Code 2012). Therefore, no impact would occur.

3.10.4 Mitigation Measures

No mitigation is required.

3.11 NOISE

3.11.1 Regulatory Setting

3.11.1.1 Federal

The federal Occupational Safety and Health Administration (OSHA) defines potentially harmful noise exposure (the level at which hearing loss may occur from long-term exposure) as exposure to greater than 90 decibels (dBA) averaged over eight hours. For noise greater than 90 dBA, the allowable exposure time is correspondingly shorter.

3.11.1.2 State

The State government sets noise standards for transportation noise sources such as automobiles, light trucks, and motorcycles. Noise sources associated with industrial, commercial, and construction activities are generally subject to local control through noise ordinances and general plan policies. Local general plans identify principles intended to guide and influence development plans.

The State of California General Plan Guidelines (Governor's OPR 2014) establishes guidelines for the preparation of local general plan noise elements, including a sound level/land use compatibility chart that categorizes, by land use, outdoor day-night average noise level (Ldn) ranges in four categories (normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable). For many land uses, the chart shows overlapping Ldn ranges for two or more compatibility categories.

The noise element guidelines identify the normally acceptable range of Ldn values for low-density residential uses as less than 60 decibels (dB) and the conditionally acceptable range as 55–70 dB. These overlapping Ldn ranges are intended to indicate that local conditions (existing sound levels and community attitudes toward dominant sound sources) should be considered in evaluating land use compatibility at specific locations. When noise levels are in the conditionally acceptable range, new construction should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation requirements are included in the design.

3.11.1.3 Local

3.11.1.3.1 Sierra County General Plan

Goal 1. To protect County residents from the harmful and annoying effects of exposure to excessive noise.

Goal 2. To preserve the rural noise environment of the County and surrounding areas.

Policy 13. Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table 7-4 at existing or planned noise-sensitive

uses, an acoustical analysis shall be required as part of the project environmental review process so that noise mitigation may be included in the project design.

The Sierra County General Plan has a summary of measured noise levels in specific areas within the County. The measured noise levels for the Stampede Reservoir area are as follows:

Table 3.11-1 Summary of Measured Noise Levels for the Stampede Reservoir Area

Site	Location	Date	Time	L_{eq}	L_{max}	Est. L_{dn}
8	Stampede Reservoir	8-29-91 8-29-91 8-29-91	11:22 16:13 23:29	42 40 31	61 58 36	41

L_{eq}= Average sound level, L_{max}= Maximum sound level, Est. L_{dn} = Estimated day-night average levels

3.11.2 Environmental Setting

Noise is commonly defined as unwanted sound in the environment. This definition reflects a subjective reaction to the characteristics of the physical phenomenon of noise. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness." Although elevated noise levels can result in physiological damage and hearing loss, excessive noise in the environment more commonly impairs general human well-being by contributing to psychological stress and irritation. Such health effects can result when noise interferes with everyday human activities such as sleep, talking, recreation, relaxation, and tasks requiring concentration. When noise is either disturbing or annoying, whether by its pitch or loudness, it may be considered objectionable.

The overall noise level associated with a given noise environment is called the "ambient" noise level. Ambient noise can be generated by a number of sources, including mobile sources such as automobiles, trucks, trains, and airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Other contributing noise sources, often referred to as "background" sources, can include the sound of birds, people talking, occasional vehicles passing by, or televisions and radios.

Sound pressure magnitude is measured and quantified using a logarithmic ratio of pressures, the scale of which gives the level of sound in decibels (dB). Environmental sound levels are usually measured in A-weighted decibels, or dBA, which is a method of taking into account the sensitivity of the human ear to various frequencies in the sound spectrum. In general, a difference of three decibels is barely perceptible to the human ear, while a difference of 10 decibels is perceived as a doubling of loudness. A common statistical tool used to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which is the sound level corresponding to a steady-state, A-weighted sound level containing the same total energy as a time-varying signal over a given period (usually one hour).

Factors that affect the transmission of noise between the noise source and the receptor include:

- Line of sight: Barriers, such as topography, sound walls and other structures, between a noise source and recipient can provide varying degrees of noise attenuation, particularly when placed near the noise source; and

- Distance: A reduction in noise level of roughly 6 dBA occurs with each doubling of distance from a noise source, depending on the hardness of intervening surfaces.

The existing noise environment in the vicinity of the proposed Project area retains a natural, undeveloped quality, characteristic of a typical open meadow of the Sierra Nevada Mountains. Natural noises from chirping birds and other wildlife is the predominant soundscape within the meadow and the surrounding area. Manmade noise within the area is characterized by a small number of cars traveling along Henness Pass Road and Smithneck Road on the south and west sides of Sardine Meadow, as well as recreation noise from boats in Stampede Reservoir. The nearest sensitive receptors include a few residences west of Smithneck Road, over three miles from the Project site, recreation users at the Sardine Peak Lookout, approximately three miles northwest of the meadow, and at Stampede Reservoir, as well as passing motorists along Henness Pass Road and Smithneck Road.

3.11.3 Impact Analysis

XII. NOISE Would the Project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?	☐	☐	☒	☐
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport of public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒
f) For a Project within the vicinity of a private airstrip, would the Project expose people	☐	☐	☐	☒

XII. NOISE Would the Project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
residing or working in the Project area to excessive noise levels?				

a) Would the Project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Finding: Less than Significant

The construction of the proposed Project would entail the use of construction related equipment including a backhoe, dump truck, excavators, etc. for approximately six to eight weeks in the fall of 2019. Noise impacts associated with the proposed Project construction would result in temporary or periodic increases in ambient noise levels, especially during the transportation of fill material from the Boca Reservoir site to the Project site. Construction noise would result from operation of machinery and equipment used in the construction process.

Noise from construction typically attenuates at a rate of 6 dB per doubling of distance. Additional attenuation of approximately 1-2 dB per doubling of distance also occurs where the ground is acoustically absorptive, where vegetation covers the ground. Assuming a nominal worst-case construction noise-level of 88 dBA at 50 feet for several pieces of equipment operating simultaneously, construction noise can be expected to be as high as the following levels at 50 feet from the construction activity:

Table 3.11-2 FTA Construction Equipment Noise Emission Levels.

Equipment	Typical Noise Level (dBA) 50 ft from Source*
Air Compressor	81
Backhoe	80
Dozer	85
Generator	81
Grader	85
Loader	85
Truck	88
FHWA 2006	

The nearest residences are over three miles away from the Project site, and the surrounding region overall is considered undeveloped. Therefore, the potential for the proposed Project to result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, would be considered less than significant.

b) Would the Project result in exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?

Finding: Less than Significant

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.11-3, Guideline Vibration Annoyance Potential Criteria, Table 3.11-3 summarizes the general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

Table 3.11-3: Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4
Notes: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment. Source: California Department of Transportation 2004.		

Sediment removal and replacement activities would include using an excavator or clam-shell bucket, and a dump truck to transport the sediment. While these activities would result in ground borne vibration, it would be expected that the vibrations would be less than significant due to their temporary nature and the distance to the nearest residential structures. The proposed Project would not involve blasting as an excavation method. Therefore, the potential for the proposed Project to result in exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels would be considered less than significant.

c) Would the Project result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Finding: No Impact

The operation of Sardine Meadow after the proposed Project is complete would not create a significant increase in noise levels at the Project site. The meadow system would be restored and no permanent structures for human use would be constructed within the Project site. Therefore, there would be no impact.

d) Would the Project result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Finding: Less than Significant

Construction activities of the proposed Project would result in temporary increases in noise above existing levels. However, construction activities would be temporary (six to eight weeks) and would occur between the hours of 7:00 a.m. and 7:00 p.m. Therefore, this impact would be considered less than significant.

e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport of public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?

Finding: No Impact

The proposed Project area is not located within an airport land use plan, or within two miles of a public airport. The nearest airports to the Project site are the Truckee Tahoe Airport and the Sierraville Dearwater Airport which are both located approximately 13 miles to the south and northwest of the Project site, respectively. The proposed Project would not expose sensitive receptors to excessive noise levels from airport/aircraft operations. Therefore, no impacts are anticipated.

f) For a Project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?

Finding: No Impact

The closest private airstrip to the proposed Project is the Totem Pole Ranch Airport in Sierraville. This private airstrip is located approximately 19 miles from the Project area. Therefore, the proposed Project would not be located within the vicinity of a private airstrip and would not expose people residing or working on the Project area to excessive noise levels.

3.11.4 Mitigation Measures

No mitigation is required.

3.12 POPULATION AND HOUSING

3.12.1 Regulatory Setting

There are no applicable State, Federal, or local laws or policies related to the proposed Project regarding Population and Housing.

3.12.2 Environmental Setting

The proposed Project site is located in Sierra County approximately 11 miles north of Truckee (population 16,391), 7 miles to the west of Verdi, Nevada (population 2,949), and 12 miles to the south of Loyalton (population 695) according to the 2016 United States Census Bureau (USCB). The only incorporated city within Sierra County is Loyalton. Additionally, Sierra County in a whole has a population of approximately 2,967 people. Thus, the Project area and the surrounding region is considered to be an undeveloped rural area with mixed agricultural and public uses. The Project site is an agricultural use area and does not include any housing units (USCB 2015).

3.12.3 Impact Analysis

XIII. POPULATION AND HOUSING: Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a) Would the Project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Finding: No Impact

Implementation of the proposed Project would not result in the construction of new homes or businesses. The proposed Project would consist of restoring the current Davies Creek channels in the Sardine Meadow area, which does not include the addition of homes or businesses. Therefore, there would be no impact.

b) Would the Project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Finding: No Impact

Implementation of the proposed Project would not displace any existing housing and would therefore not result in the necessity for the construction of replacement housing at an alternate location(s) because there are no people living within the Project area and no housing or business would be constructed under the proposed Project. Therefore, no impact would result from project development.

c) Would the Project displace substantial numbers of people necessitating the construction of replacement housing elsewhere?

Finding: No Impact

Implementation of the proposed Project would not result in the displacement of substantial numbers of people necessitating the construction of replacement housing in any other location(s) because there are no people living within the Project area and no housing or business would be constructed under the proposed Project. Therefore, no impact would result from project development.

3.12.4 Mitigation Measures

No mitigation is required.

3.13 PUBLIC SERVICES AND UTILITIES

3.13.1 Regulatory Setting

3.13.1.1 Federal

There are no Federal regulations that pertain to the proposed Project regarding public services and utilities.

3.13.1.2 State

3.13.1.2.1 California Occupational Safety and Health Administration

In accordance with California Code of Regulations, Title 8, Section 1270 Fire Prevention, and Section 6773 Fire Protection and Fire Equipment, the California Occupational Safety and Health Administration (Cal OSHA) has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hosing sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance, and use of all firefighting and emergency medical equipment (Cal OSHA 2017).

3.13.1.2.2 Assembly Bill 939

Assembly Bill 939 (AB 939) (Public Resources Code 41780) was enacted to increase landfill life and conserve other resources through increased source reduction and recycling. AB 939 requires cities and counties to prepare Solid Waste Management Plans to implement AB 939's goals, particularly to divert approximately 50 percent of solid waste from landfills. AB 939 also requires cities and counties to prepare Source Reduction and Recycling Elements. These elements are designed to develop programs to achieve diversion goals, stimulate local recycling in manufacturing and stimulate the purchase of recycled products. Public Resources Code 41780, as amended April 22, 2009 (AB 479), requires 60 percent diversion from landfills by January 2015 through source reduction, recycling, and composting activities. In addition, AB 470 also mandates additional recycling requirements for commercial businesses.

3.13.1.3 Local

3.13.1.3.1 Sierra County General Plan

Goal 1. It is the goal of Sierra County to provide for essential public facilities and services and allow for the provision of partial public facilities and services which are in keeping with the customs, culture, and heritage of Sierra County (Sierra County General Plan 2012).

3.13.2 Environmental Setting

Public services and utilities are typically provided by fire districts, public utility districts, school districts, sewer districts, water districts, and other single purpose districts in addition to those provided by Sierra County and any State and Federal agencies.

Fire protection in the proposed Project area is provided through the joint effort of Cal Fire and the USFS with additional assistance by the SCFPD. Police protection in the Project area is under the jurisdiction of the Sierra County Sheriff's Office. Additionally, there are no schools or public utilities involving water or sewers systems in the proposed Project area. Electrical power in Sierra County is provided by the Pacific Gas & Electric Company (PG&E), the Sierra Pacific Power Company, and the Plumas-Sierra Rural Electric Cooperative.

3.13.2.1 Fire Protection

The nearest fire station to the proposed Project area is approximately six miles away at the Verdi Volunteer Fire Station 351, which is located at 155 Bridge Street in Reno, Nevada 89523. A joint effort between Cal Fire, the USFS, and the SCFPD would be responsible for any fire-related emergencies within the proposed Project area due to the rural and forested nature of the surrounding area.

3.13.2.2 Police Protection

The proposed Project area falls under the jurisdiction of the Sierra County Sheriff's Office who is responsible for police protection and public safety in the vicinity of the proposed Project area. The nearest location of law enforcement services provided by the Sierra County Sheriff's Office is located at 100 Courthouse Sq. in Downieville (approximately 38 miles west of the proposed Project area). However, the Nevada County Sheriff's Office located at 10879 Donner Pass Road in Truckee, California and the Truckee Police Department located at 10183 Truckee Airport Rd, also in Truckee, are both closer to the proposed Project area (approximately 12.5 miles to the south of the proposed Project area).

3.13.2.3 Schools

Sierra County is a single district county run by the Sierra-Plumas joint Unified School District. Loyalton Elementary school and Loyalton High school are the closest schools to the proposed Project area within Sierra County, located approximately 13 miles to the north of the proposed Project area. There are no bus routes through or near the proposed Project area.

3.13.2.4 Water

The water supply within Sierra County is owned and operated through 17 different individual water companies near the communities within the County. Outside of these communities, residents either have tapped into nearby springs, nearby surface water supplies, or have dug a well. Stampede reservoir is located immediately to the south of the proposed Project area and is used largely for water supplies within Sierra County and the surrounding area.

3.13.2.5 Wastewater

Within Sierra County there is only one community with a sewer system, located in the town of Loyalton. This system is currently operating at full capacity and is undergoing expansion. The remainder of the County uses on-site septic systems (Sierra County General Plan 2012).

3.13.2.6 Solid Waste

Sierra County has developed an Integrated Waste Management Plan (IWMP) in accordance with the AB 939 requirement (Sierra County General Plan 2012). Additionally, according to the General Plan, Sierra County is currently operating four transfer stations as well as the Loyalton

Landfill. The County is currently looking at options for additional landfill disposal areas when the Loyalton Landfill expires (Sierra County General Plan 2012).

3.13.3 Impact Analysis

XIV. PUBLIC SERVICES and UTILITIES **Would the Project:**	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less than Significant Impact**	**No Impact**
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
b) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.	☐	☐	☐	☒
c) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
e) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
f) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's Projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
g) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?	☐	☐	☒	☐

h) Comply with Federal, State, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

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

Finding: No Impact

Fire protection and police services are not related to the proposed Project and there would be no increased demand for fire or police protection from the proposed Project. The construction activities would be temporary and would not affect the existing fire or police protection needs in the region. Additionally, the proposed Project would not impact schools because there are no schools or bus routes near the proposed Project area. As discussed in the environmental setting of this section, the nearest school within Sierra County to the proposed Project area is approximately 13 miles to the north and there are no residences in or immediately adjacent to Sardine Meadow.

Furthermore, the Project site is currently not open for public use and is not considered or intended to be a recreational area. The meadow is also not part of a park, or related to one, and therefore there would be no impact related to the proposed Project. Project activities do not include residential development, and therefore, would not result in the need for or impacts to other public facilities. Thus, no impact from the proposed Project related to fire protection, police protection, schools, parks, or any other governmental facilities would occur

b) Would the Project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Finding: No Impact

Implementation of the proposed Project would not result in land uses generating wastewater, and would therefore not result in exceeding wastewater treatment requirements specified by the LRWQCB. Therefore, no impact would result from Project implementation.

c) Would the Project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Finding: No Impact

Implementation of the proposed Project would not involve the development of land uses generating wastewater and would therefore not require any wastewater treatment capacity/facilities. Sardine Meadow is a natural setting with no wastewater facilities in or immediately adjacent to the proposed Project area. Therefore, no impact would result from the proposed Project implementation.

d) Would the Project require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Finding: No Impact

The proposed Project would not require the construction or expansion of any stormwater drainage facilities. Restoration of Sardine Meadow would restore the historic drainage patterns of the area and would improve the erosion control within the channel system. No manmade stormwater drainage systems are included with the proposed restoration activities for the proposed Project. Therefore, no impacts would result from the proposed Project implementation.

e) Would the Project have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?

Finding: No Impact

The proposed Project would not involve the use of water supplies for entitlements. The proposed Project area is a meadow system with no facilities for human habitation and no water entitlements are currently associated with the proposed Project area. Therefore, no impact would result from Project implementation.

f) Would the Project result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?

Finding: No Impact

Implementation of the proposed Project would not involve the development of land uses generating wastewater and would therefore not require any wastewater treatment capacity/facilities. Therefore, no impacts would result from Project implementation.

g) Would the Project be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?

Finding: Less than Significant

Proposed Project implementation would result in the restoration of the current Davies Creek channels within Sardine Meadow. There would be minimal trash associated with the proposed Project. Most of the trash would come from the construction workers who would haul their trash out and clean up the site daily. Any vegetation, brush, or organic material would be saved and preserved to the extent feasible to restore the area upon completion of the construction activities. The Loyalton landfill is located approximately 13 miles to the north of the proposed Project area and currently has the capacity to take any relatively small amounts of trash/debris the proposed Project may involve. Therefore, impacts related to solid waste disposal needs would be considered less than significant.

h) Would the Project comply with Federal, State, and local statutes and regulations related to solid waste?

Finding: No Impact

The California Integrated Waste Management Act requires every county to adopt an IWMP that describes county objectives, policies, and programs relative to waste disposal, management, source reduction, and recycling. The removal of solid waste due to proposed Project activities would comply with all Federal, State, and local statutes and regulations. Solid waste disposal services/facilities are currently available to accommodate proposed Project related waste in compliance with Federal, State, and local statutes and regulations. Therefore, no impacts would result from Project implementation.

3.13.4 Mitigation Measures

No mitigation is required.

3.14 RECREATION

3.14.1 Regulatory Setting

3.14.1.1 Federal

The proposed Project does not propose improvements on or affect access to or use of any federally-owned land. Therefore, there are no Federal regulations that apply to this project pertaining to recreation and recreational facilities.

3.14.1.2 State

3.14.1.2.1 California Government Code Section 65560(b)

California Government Code Section 65560(b) defines "open space land" as any parcel or area of land or water that is unimproved and devoted to an open space use. State law requires that the Sierra County General Plan include a Parks and Recreation element to promote the retention of open space for recreational purposes.

3.14.1.2.2 California Recreational Trails Plan

Goal for Private Property Owners: Work to identify and resolve conflicts between property owners and trail users and advocates.

Action Guideline: Encourage and support open and continuing dialogue among private property owners, community organizations, professional land use organizations such as farm and cattlemen associations, adjacent public property government entities, and trail expansion advocates regarding trail systems and needed links.

3.14.1.3 Local

3.14.1.3.1 Sierra County General Plan

Goal 1. Provide a wide variety of recreational opportunities in the County that direct priority to County Needs.

Goal 2. Provide a level of private and public recreation and tourism that does not destroy the quality of life or environmental quality of the County.

Policy 5a. Ensure adequate access to public waterways.

Policy 6. Provide for an encourage use of methods to ensure protection of unique recreational areas in the County.

Policy 11. Preserve and maintain high levels of forest health including, but not limited to water quality, fire protection, etc., to preserve high quality outdoor recreation experiences.

3.14.2 Environmental Setting

The proposed Project site is privately owned by the TPL and is mostly surrounded by USFS land which is designated as the Tahoe National Forest. The Tahoe National Forest has a wide range of recreation activities including hiking, biking, camping, fishing, and wildlife viewing. There are several campgrounds to the south of the Project site on the other side of Stampede Reservoir and several more located to the west along Highway 89. Stampede Reservoir offers opportunities for water recreation such as boating, watercraft use, and water skiing. Additionally, the Sardine Peak Lookout tower is located approximately three miles to the southwest of the Project site and is available to rent out to visitors.

The Project site currently does not offer any public access for recreational purposes.

3.14.3 Impact Analysis

XV. RECREATION Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Finding: Less than Significant

The proposed Project entails the restoration of the current Davies Creek channels within the Sardine Valley. The area is not currently open for public use, and would therefore have no impact on the existing recreation in the area. Recreation users surrounding the proposed Project site, such as nearby hikers, may be temporarily affected by the construction noise from the proposed Project, however due to the large area of both the proposed Project site and the surrounding Tahoe National Forest, as well as the limited duration of the construction activities, this would not be a significant impact to recreational activities. Any nearby recreational users on adjacent Tahoe National Forest land would be unlikely to hear or see the proposed construction activities and would not experience any substantial change to the existing recreational character of the area. Therefore, there would be a less than significant impact.

b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Finding: Less than Significant

The proposed Project entails the restoration of the current Davies Creek channels within Sardine Valley. The area is not currently open for public use, and would therefore have no impact on the existing recreation in the area. Recreation users surrounding the proposed Project site, such as nearby hikers, may be temporarily affected by the construction noise from the proposed Project, however due to the large area of both the proposed Project site and the surrounding Tahoe

National Forest, as well as the limited duration of the construction activities, this would not be seen as a significant impact to recreational activities. Any nearby recreational users on adjacent Tahoe National Forest land would be unlikely to hear or see the proposed construction activities and would not experience any substantial change to the exiting recreational character of the area. Therefore, there would be a less than significant impact.

3.14.4 Mitigation Measures

No mitigation is required.

3.15 TRANSPORTATION AND TRAFFIC

3.15.1 Regulatory Setting

3.15.1.1 Federal

No federal plans, policies, regulations, or laws related to transportation/traffic apply to the proposed Project.

3.15.1.2 State

3.15.1.2.1 California Department of Transportation

The California DOT manages interregional transportation, including the management and construction of the California highway system. In addition, the California DOT is responsible for the permitting and regulation of State roadways and requires that permits be obtained for transportation of oversized loads and transportation of certain materials, and for construction-related traffic disturbance.

3.15.1.3 Local

3.15.1.3.1 Sierra County General Plan
Goal 1. It is the goal of the County to provide a comprehensive, efficient, and safe transportation system within the existing roadway network.

Goal 2. It is the goal of the County to maintain a system of safe rural roads.

> **Policy 13.** Level of Service B as defined in the 1985 Highway Capacity Manual shall be the target on all roadways (State and County).
>
> **Policy 22.** Actively ensure that hazardous waste management is current with State and Federal Laws.

3.15.2 Environmental Setting

The proposed Project is located in Sierra County off Henness Pass Road. The closest major roadways in the region are Highway 89 and Interstate 80. According to the Sierra County General Plan, the street system is composed of a combination of roadways, including foot trails, arterials, collectors, minors, freight service, as well as freight and passenger service.

The main roads on which the proposed Project construction equipment and truck trips would occur are Henness Pass Road, Smithneck road, and Stampede Dam Road. These roads are all designated in the General Plan as "collector" roads yet large parts of Henness Pass Road and Smithneck Road in the vicinity of the Project are gravel or dirt. Although the Sierra County General Plan does not have specific level of service (LOS) standards for these individual roads, the existing trip generation for the entire County is 25,026 vehicles with the General Plan Build-Out Trip Generation of 56,117 vehicles (Sierra County General Plan 2012). These numbers are generally concentrated on the larger roads within Sierra County such as Highway 49 and Highway 89.

3.15.3 Impact Analysis

XVI.TRANSPORTATION and TRAFFIC Would the Project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less than Significant Impact**	**No Impact**
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm	☐	☐	☐	☒

XVI. TRANSPORTATION and TRAFFIC Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
equipment)?				
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

a) Would the Project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Finding: Less than Significant

Construction employees and equipment resulting from construction of proposed Project would use local roadways surrounding the Project area (Henness Pass Road, Smithneck road, and Stampede Dam Road to other connecting roadways and arterials) for the duration of construction. Truck trips from the Boca Reservoir storage site to the Project site would require the use of Stampede Meadows Road and West Hinton Road (Boca shooting range access) to transport the fill material resulting in a conservative estimate of approximately 5,000 haul trips (approximately 80 to 115 trips per day or 8 to 12 trips an hour). While haul trips would create a temporary increase of traffic on local roadways, it is not expected to conflict with any plan, ordinance, or policy related to effective circulation since the roads are very rural with low traffic volumes and Project activities would be temporary lasting only six to eight weeks. The proposed Project would not result in a substantial increase in traffic relative to the capacity of the street system. Therefore, the impact would be less than significant.

After the Project is completed, the operation of the meadow system would not create an increase in traffic or conflict with established plans, policies, or standards related to motorized or non-motorized travel and there would therefore, be a less than significant impact.

b) Would the Project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways?

Finding: Less than Significant

The proposed Project would use the nearby roadways (Henness Pass Road, Smithneck road, and Stampede Dam Road to other connecting roadways and arterials) and Project footprint for access to and from the Project area. Additionally, truck trips from the Boca Reservoir storage site to the Project site would require the use of Stampede Meadows Road and West Hinton Road to transport the fill material.

According to the Sierra County General Plan, the most significant traffic increases occur on the State Highways such as Highway 89 and Highway 49. The LOS for Highway 89 is designated as "C" while the remainder of the State Highway System within the County tends to operate as LOS B or better. Although the level of service provides a general indication of the capacity of a roadway, the actual volume of traffic that can be accommodated at each level of service depends on several factors. As collector roads, Henness Pass Road, Smithneck Road, and Stampede Dam Road are not near the core of the more urbanized areas of Sierra County. The minimal temporary increase in Project traffic, including construction employees and vehicles to and from the Boca Reservoir borrow site, would not be expected to decrease the level of service, change travel demands, or create any congestion. Project activities would be temporary and would not be expected to result in a substantial increase in traffic relative to the capacity of the street system. Therefore, the impact would be less than significant.

After the Project is completed, there will be no increase in traffic or conflict with established plans, policies, or standards related to motorized or non-motorized travel. Therefore, the proposed Project would not conflict with an applicable congestion management program and impacts are considered less than significant.

c) Would the Project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

Finding: No Impact

The Federal Aviation Administration (FAA) has specific rules and regulations that govern airports and require an air space permit for equipment within a certain distance of an airport over a certain height. The nearest airports to the Project site are the Truckee Tahoe Airport and the Sierraville Dearwater Airport which are both located approximately 13 miles away. The proposed Project would not require a change in airport operations or air traffic. Project construction would not require a FAA permit and would not be in violations of rules governing the Nevada County Air Park Airport airspace. Therefore, flight patterns in the Project vicinity would not be affected and therefore, no impacts would occur.

d) Would the Project substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Finding: No Impact

The proposed Project does not include any new design features on roadways, and therefore, would not result in any associated hazards. The proposed Project would not change the geometry of the meadows access points along the road nor would it introduce incompatible uses after construction. Therefore, there would be no impact.

e) Would the Project result in inadequate emergency access?

Finding: No Impact

The proposed Project would not change access points to the Project area. During Project implementation, the movement of construction equipment along Henness Pass Road, Smithneck road, Stampede Dam Road, and Stampede Meadows Road to other connecting roadways and arterials would be minimal. Emergency access would not be hindered. Therefore, there are no impacts to emergency access.

f) Would the Project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

Finding: No Impact

The proposed Project would not involve a change in land use or affect transportation policies including any policies, plans or programs supporting alternative transportation. The proposed Project would not add residences or other land uses that would generate a need for alternative transportation and would not impact currently existing alternative transportation plans or programs. The proposed Project is not along an existing or planned bus route and does not contain any bicycle or pedestrian facilities. Since the proposed Project is a meadow restoration project and there are no existing alternative transportation facilities or plans in place during construction, no impact would occur.

3.15.4 Mitigation Measures

No mitigation is required.

3.16 MANDATORY FINDINGS OF SIGNIFICANCE

3.16.1 Impact Analysis

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the Project have impacts that are individually limited, but cumulative considerable? ("Cumulative 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) Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

3.16.1.1 Biological and Cultural Impacts (a)

a) Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Finding: Less than Significant with Mitigation Incorporated

Biological Resources

As disclosed in Section 3.4 of this document, biological resources that may occur in the proposed Project area that may be affected by the proposed Project include a known population of Plumas ivesia (*Ivesia sericoleuca*) as well as other special status plant species. Plumas ivesia was observed in the proposed Project area during the biological surveys conducted on October 2017. However, with the implementation of MM BIO-1, MM BIO-2, MM

BIO-3, and MM BIO-4 the proposed Project is not expected to significantly impact any local, State, or Federal listed rare and endangered species (See Section 3.4.3 and Table 3.4-1).

Specifically, to mitigate for potential impacts to Plumas ivesia and other special status plant species and habitats, the following avoidance and minimization measures are recommended: 1) contractor environmental awareness training; 2) the installation of exclusion fencing; 3) the relocation of special status individuals: 4) maintaining and monitoring affected or relocated special status plant populations; 5) restore and enhance occupied habitat; and 6) compensation for direct impacts to wetlands. These measures would ensure that potential impacts to special status plant species are mitigated to less than significant levels.

The proposed Project would not reduce wildlife habitat or species, cause a fish or wildlife species population to drop below self-sustaining levels, or threaten to eliminate a rare or endangered plant or animal. Nor would the proposed Project substantially reduce fish habitat or wildlife species density. The Project phases would not substantially reduce fish habitat in the Davies Creek watershed as the proposed Project would allow the current Davies Creek channels, as well as the associated meadow system, to be restored to its historical capacity with improved erosion control and water quality functions. Sediment control measures would be taken to minimize impacts to surrounding waterways and drainages.

Overall, the proposed Project would improve the quality of the meadow and the overall ecosystem within Sardine Meadow. Construction impacts would be limited in size, temporary, and minimized by implementing erosion control BMPs and a SWPPP.

Cultural Resources

Tribes in the area were contacted by letter, telephone, and/or e-mail to request information about the Project area on November 16, 2017. No further consultation was requested by any of the tribes contacted. As disclosed in Section 3.5 of this document, the cultural resources survey identified a historic railroad logging camp district. The historic railroad logging camp district is recommended eligible for the CRHR under Criterion 1 and 4. However, the elements of the historic logging district which contribute to the district's eligibility are outside the proposed Project area and would not be impacted by the proposed Project.

The railroad grade was recorded as a non-contributing feature to the historic railroad logging camp district. Individually, the railroad grade is not considered eligible for the CRHR or NRHP. Therefore, as the resource is recommended not eligible and is not a contributor to the historic logging camp district, the resource requires no further consideration.

The records search and survey performed as part of the cultural resources analysis identified the NRHP listed (and therefore, CRHR eligible) Sardine Valley Archaeological District within a portion of the proposed Project area. However, during the survey, it was confirmed that cultural resource sites within the Sardine Valley Archaeological District are outside the proposed Project area and would not be impacted by the proposed Project nor would the Project have a substantial

adverse change in the significance of the Sardine Valley Archaeological District. In addition, the following Mitigation Measures would be implemented to reduce impacts to a less than significant level:

- MM CUL-1: Pre-Construction Survey and Cultural Resource Worker Awareness Training;
- MM CUL-2: Unanticipated Discovery of Cultural or Tribal Cultural Resources; and
- MM CUL-3: Unanticipated Discovery of Human Remains.

With the implementation of MM CUL-1, MM CUL-2, and MM CUL-3, potential impacts would be reduced to a level of less than significant.

Therefore, with the implementation of above mitigation, the proposed Project would not eliminate important examples of the major periods of California history or prehistory and impacts are considered less than significant.

3.16.1.2 Cumulative Impacts (b)

b) Does the Project have impacts that are individually limited, but cumulative considerable? ("Cumulative 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)?

Finding: Less than Significant

Although the proposed Project has the potential to impact the environment, those potential impacts, in addition to being fully mitigated, are primarily related to construction and are therefore, temporary. There are no long-term operational impacts from the proposed Project, and therefore no cumulatively considerable impacts when viewed in connection with the effects of past, current, or probable future projects. The impact from construction-related activities is less than significant with the incorporation of mitigation measures discussed above.

The TRWC has completed many successful restoration projects within the Middle Truckee River Watershed which were outlined in the Coordinated Watershed Management Strategy for the Middle Truckee River. Some of these projects include the Davies/Merrill Watershed Restoration Project, the Middle Martis Creek Wetlands Restoration Project, and various monitoring and rehabilitation programs.

Additionally, work on Stampede Dam is currently underway as part of the Bureau of Reclamation's Truckee Storage Project. Work on Stampede Dam started in May 2016 with the removal of the spillway and is expected to end in October of 2018 with improved spillway capacity functions (Bureau of Reclamation 2017).

Construction of the Boca Dam Safety of Dams Modification Project is likely to begin in 2018 and fill material would likely be used from the proposed Project to fill in most of the degraded current channels outlined in the Project Description (Section 2.0). Construction activities for the proposed Project would likely occur at the same time as the proposed Project.

No current or future projects are expected to occur in the immediate proposed Project area at the same time as the proposed Project. Any current or future projects in the surrounding area of the proposed Project, such as the Boca Dam Safety of Dams Modification Project, could add to traffic, air, and noise impacts; however, given the limited area and the timing of these projects, the cumulative nature of these impacts would be considered less than significant. In addition, any projects in the area would require noise and air quality mitigation that would facilitate a further reduction in potential cumulative impacts. Similarly, water quality impacts from the proposed Project and any projects occurring in the Project area would be considered cumulatively less than significant. This is because any current or future projects would employ erosion control BMPs and implement SWPPPS. Therefore, the proposed Project would not contribute to significant cumulative indirect growth impacts in the region and the proposed Project would not accommodate growth.

3.16.1.3 Effects on Human Beings (c)

c) Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Finding: Less than Significant

As discussed in the various sections throughout this IS/MND, the proposed Project construction and operation would not include uses, such as increased demand for utilities, increased recreational facilities, or increases in transportation which would result in substantial adverse effects on human beings. All potential impacts are considered either less than significant with mitigation, less than significant, or resulting in no impact. Mitigation Measures and BMPs described in the sections above would be incorporated by LRWQCB and would ensure all potential effects on human beings are less than significant. Additionally, the purpose of the proposed Project is to restore the historic riparian, aquatic, and wetland function of the meadow system within Sardine Valley. As such, the proposed Project would not cause any adverse effects to the environment. Therefore, the proposed Project would not have environmental effects with substantial adverse direct or indirect effects on human beings.

4.0 LIST OF PREPARERS

As required by the CEQA Guidelines, this chapter identifies the preparers of this IS/MND.

4.1 DOCUMENT PREPARATION

Table 4.1-1 Draft IS/MND Preparers and Reviewers

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Project Description	Zory Pope	Kim Clyma Wendy Broadhead John Moynier Bernadette Bezy
Aesthetics	Zory Pope	Meagan Kersten Kim Clyma
Agricultural and Forestry Resources	Meghan Oats	Emily Eppinger Kim Clyma
Air Quality and Greenhous Gas Emissions	Kate Gray Zory Pope	Meagan Kersten Kim Clyma
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Cultural and Tribal Resources	Garret Root Meagan Kersten Erin Sherlock Lisa Bohach	Josh Peabody Michelle Cross Kim Clyma
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Recreation	Zory Pope	Meagan Kersten Kim Clyma
Transportation and Traffic	Zory Pope	Meagan Kersten Kim Clyma
Mandatory Findings of Significance	Meghan Oats Meagan Kersten Zory Pope	Emily Eppinger Kim Clyma
Acronym List/Distribution List	Zory Pope	Meagan Kersten Kim Clyma
Literature Cited	Zory Pope	Meagan Kersten
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4.2 PREPARER QUALIFICATIONS

The following includes the title and qualifications of each preparer and/or reviewer:

Table 4.2-1 Preparer's Qualifications

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Douglas Cushman, PE	Chief, Non-Point Source Unit Senior Water Resources Control Engineer BS, Civil Engineer; California Professional Engineer

SARDINE MEADOW RESTORATION PROJECT

List of Preparers
December 22, 2017

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SARDINE MEADOW RESTORATION PROJECT

List of Preparers
December 22, 2017

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Zory Pope	Environmental Planner BS, Environmental Protection and Management
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6.0 MITIGATION MONITORING AND REPORTING PROGRAM

Sardine Meadow Restoration Project

Mitigation Monitoring and Reporting Program

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6.1 INTRODUCTION

Section 21081 of the California Environmental Quality Act (CEQA) requires a Lead Agency to adopt a Mitigation Monitoring or Reporting Program whenever it approves a project for which measures have been required to mitigate or avoid significant effects on the environment. The purpose of the monitoring or reporting program is to ensure compliance with the mitigation measures during project implementation. The Initial Study Mitigated Negative Declaration concluded that the implementation of the Project could result in potentially significant effects on the environment and mitigation measures were incorporated into the proposed Project or are required as a condition of project approval. This Mitigation Monitoring and Reporting Program addresses those measures in terms of how and when they will be implemented. This document does not discuss those subjects for which the Initial Study concluded that the impacts from implementation of the project would be less than significant.

6.2 PROCEDURES FOR MONITORING AND REPORTING

As the Project proponent, the Truckee River Watershed Council (TRWC) will be responsible for mitigation measure implementation oversight and compliance documentation. Under the oversight of Truckee River Watershed Council staff, mitigation actions required prior to and during construction will be performed by Truckee River Watershed Council's Consultants, the Construction Contractors, and/or Truckee River Watershed Council Staff.

Monitoring and reporting procedures will conform to the following steps prior to and during project construction and operations:

Step 1 Action: This step will be executed by the Truckee River Watershed Council, if designated a Consultant and/or Contractor. All actions taken as part of this MMRP will be documented monthly by the Truckee River Watershed Council and reported quarterly to Lahontan Regional Water Quality Control Board, as described in Steps 2 and 3 below. The designee responsible for implementation of mitigation measures will:

- Review mitigation status reports and any other information generated during construction;
- Ensure that the mitigation measures in the MMRP are undertaken, either by Staff, Contractors, or Consultants; and
- Verify monthly that mitigation actions are properly undertaken.

Step 2 Monitoring: This step will be executed by the Monitor. The Monitor will be designated by the Truckee River Watershed Council Project Manager and may be a consultant to the Truckee River Watershed Council. The Monitor will investigate noncompliance allegations and identify how the Truckee River Watershed Council staff or its designees should correct implementation of the measure. If a measure is under control of the Contractor, the Monitor will inform the Contractor of the Monitor's determination and request improved implementation.

The Monitor will have the following responsibilities:

- Be knowledgeable in the mitigation that is to be monitored; and
- Verify implementation of mitigation by:
    - Verifying in the field that required implementation has been properly executed during and after construction; and
    - Contacting the Project Manager and requesting that the situation be remedied if mitigation is not being implemented or executed properly.

Step 3 Reporting: This step will be executed by the Monitor. The Monitor will have the following responsibilities:

- Compile all mitigation status reports into a Report of Compliance. Recommendations may include updating the frequency of monitoring, changing the type of monitoring, and suggesting better ways to implement mitigation:
    - Assist the Truckee River Watershed Council Project Manager in reviewing Contractor's implementation of mitigation requirements, detailing corrective action and time of completion to resolve any issues that are raised; and
    - Keep all completed report and statements on file at the Truckee River Watershed Council office and submit a copy to the Lahontan Regional Water Quality Control Board office to keep in their project files.

6.3 CEQA MITIGATION MEASURES

Table 6.3-1 below describes the mitigation measures included in the proposed Project. For each mitigation measure the required action, responsible party, implementation timing, and reporting requirements are described.

Table 6.3-1 Summary of Sardine Meadow Restoration Project Mitigation Measures

Mitigation Measure	Responsible Party	Timing	Monitoring and Reporting Program	Standards for Success
Air Quality				
Mitigation Measure AIR-1: Dust and Emission Control Plan The TRWC shall require that the selected contractor prepare and implement a Project Dust and Emissions Control Plan that is approved by the NSAQMD prior to construction. The following shall be included in the plan and shall be implemented throughout the construction period to limit and control dust and air emissions: • All material excavated, stockpiled, or graded shall be sufficiently watered, treated, or covered to prevent fugitive dust from leaving the property boundaries and/or causing a public nuisance. Watering during construction activities shall occur at least three times daily, with application to all disturbed areas (excavated areas, stockpiles, and/or graded areas until stabilized). • All areas with vehicle traffic shall be watered or have dust palliative applied as necessary to minimize dust emissions. • All on-site vehicle traffic shall be limited to a speed of 15-mph on unpaved roads within the Project footprint. • All land clearing, grading, earth moving, or excavation activities on the Project shall be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20-mph. • All inactive portions of the Project site shall be covered, seeded, or watered or otherwise stabilized until a suitable cover is established. • All material transported to or from off-site shall be either sufficiently watered or securely covered to prevent it from being entrained in the air and there must be a minimum of six-(6) inches of freeboard in the bed of the transport vehicle. • The nearest paved street is approximately 0.5-miles to the south of the Project site. Any paved streets used for transport to the project shall be reasonably clean through methods such as sweeping or washing at the end of each day, or more frequently if necessary, to remove excessive accumulations or visibly raised areas of soil which may have resulted from activities transporting materials to or from the Project site. • Prior to the end of construction, the applicant shall re-establish ground cover on the Project site through seeding and re-vegetation. • The Project contractor shall ensure that all construction equipment is properly maintained; and • All applicable portable engines and off-road equipment must be registered with CARB's portable engine and off-road equipment programs.	The TRWC shall require that the contractor prepare and implement a Construction Emissions and Dust Control Plan. The TRWC shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of project development and construction by the contractor.	An Emissions and Dust Control Plan shall be prepared and approved by the NSAQMD and the TRWC prior to construction and implemented during all phases of grading and activities that have the potential to generate dust.	During construction, regular inspections shall be performed by a TRWC representative and reports shall be submitted by the TRWC to LRWQCB to be kept on file by LRWQCB for inspection by the NSAQMD or other interested parties.	Visible emissions and dust are kept to the lowest practicable level during construction periods. The goal is to minimize dust and emissions during construction and to the extent feasible, complaints from the public.
Mitigation Measure AIR-2: Implement BMPs to Reduce Impacts on Air Quality from Construction Equipment Emissions • Employ best management construction practices to avoid unnecessary emissions (e.g., trucks and vehicles in loading and unloading queues would turn their engines off when not in use). Vehicle and equipment idling shall not be allowed to exceed five minutes, unless extenuating circumstances are documented occur requiring additional idling time. Any idling time exceptions shall be documented by TRWC representatives and submitted to LRWQCB to be kept on file. • Encourage construction worker commuters to carpool or employ other means to reduce trip generation.	The TRWC shall require that the contractor implement construction equipment BMPS during all phases of project development and construction by the contractor.	BMPs would be implemented during all phases of construction activities.	Prior to construction, equipment inspections shall be performed by a TRWC representative and reports shall be submitted by the TRWC to the LRWQCB to be kept on file by LRWQCB for inspection by the NSAQMD or other interested parties. Reports documenting exceptions to idling time and off-road heavy-duty diesel engine compliance shall also be completed by the TRWC and a	Construction emissions from operating equipment reduced by operating all Tier 3 equipment. Construction queues minimized and idling vehicle time limited to five-minute maximums, unless exceptions are documented. Workers encouraged to carpool.

Mitigation Measure	Responsible Party	Timing	Monitoring and Reporting Program	Standards for Success
• A minimum of 50 percent of off-road heavy-duty (i.e., 50 horsepower, or greater) diesel fueled construction equipment shall, at a minimum, meet CARB's Tier 3 certified engine standards. Cleaner off-road heavy-duty diesel engines (e.g., Tier 4) shall be used to the extent feasible and available.			file copy submitted to for inspection or review by NSAQMD or interested parties.	
Biological Resources				
Mitigation Measure BIO-1: Pre-Construction Special Status Botanical Surveys A qualified botanist shall conduct surveys for sensitive plant species during the appropriate blooming period for each of those species (see Section 3.4 of the ISMND, Table 3.4-1). If special-status species are observed, Mitigation Measure BIO-2 shall be implemented.	TRWC shall ensure that a qualified biologist conducts pre-construction special-status plant surveys.	Surveys shall be conducted during the appropriate blooming period for each of the identified special status plant species.	The survey shall be conducted by a qualified biologist and a brief survey report shall be completed by the TRWC and submitted to LRWQCB to be kept on file.	The presence or absence of special status botanical species shall be documented and if found, they shall be handled according to Mitigation Measure BIO-2.
Mitigation Measure BIO-2: Special-Status Plant Species Avoidance, Protection, Relocation, and Monitoring For the known and identified population of Plumas ivesia in the Project area, and in the event that other special-status species are identified through MM BIO-1 within the Project area, the TRWC shall develop a protection and implementation plan to undertake one or more of the following construction actions: 6. Route construction activity away from identified sensitive plants by avoiding completely or strategically designing unfilled areas of the stream channel to coincide with the identified population to ensure the species and/or population is avoided; 7. Protect occupied habitat for the species on-site by flagging or delineating the habitat with construction flagging or fencing where avoidance is feasible; 8. Implement construction methods such as access route padding (where appropriate protective mats are placed for temporary construction access in avoidance areas) or other construction methods designed to prevent impact to plants; or 9. Relocate plants to suitable habitat outside of the immediate Project work area, whether within the Project footprint or off-site. Relocation techniques may include propagule collection and preparation, seedling protection, and weed and invasive exotics control in the replanting area. The present knowledge of propagation requirements for some plants is so limited that all efforts to propagate and reintroduce them in the wild should be carried out under the direct supervision of a specialist well versed in the cultural requirements of the genus (CNPS 1998). If within the Project footprint, flagging and habitat protection shall be implemented as required above under 2. Once the construction actions are determined, the TRWC shall incorporate the following into the protection and implementation plan and document execution of the plan: 10. A maintenance and monitoring program shall be designed and implemented for affected populations or relocated populations to document potential Project-related impacts. The monitoring program should utilize consistently documented data to further augment the existing knowledge of the species and to develop criteria for potential future restoration projects (CNPS 1998). Reporting requirements would be further defined after development of restoration and reclamation plan for rare plants is drafted. Additionally, if any Federal or State listed threatened or endangered species are detected in the proposed Project area that may be impacted by the project work, a 25-foot area surrounding the species shall be established. Within such exclusion zones, no construction work shall be conducted until consultation with California Department of Fish and Wildlife or United States Fish and Wildlife Service personnel, as appropriate, have been made and their recommendation for protection is incorporated.	The TRWC shall ensure that a qualified biologist flags the populations to be avoided and/or conducts the propagule collection and/or relocation of the special status plant(s) and that a qualified biologist conducts the maintenance and monitoring program.	Plan development, relocation, and/or propagule collection shall occur pre-construction.	The maintenance and monitoring program shall be conducted by a qualified biologist and a monitoring report shall be completed by the TRWC and kept on file with the LRWQCB. The monitoring report shall also be provided to CNPS to share implementation and success data on restoration projects.	The avoidance and/or relocation of the special status botanical species shall be documented and shall be handled according to the performance standards outlined above.

Mitigation Measure	Responsible Party	Timing	Monitoring and Reporting Program	Standards for Success
Mitigation Measure BIO-3: Pre-Construction Environmental Awareness Training Prior to construction, a qualified biologist shall conduct one Environmental Awareness Training for construction personnel. Environmental Awareness Training shall be given to construction personnel to brief them on how to recognize special status plant species, wildlife species, and sensitive habitats that could occur in the proposed Project area (i.e., special status plant identification, amphibian identification and habitat, wetland habitats, riparian habitats, relevant BMPs, mitigation, and regulations). Environmental Awareness Training reference pamphlets shall also be provided to keep onsite for use by an environmentally trained foreman for training new Project personnel in the absence of the biologist. If special status species are encountered in the work area, construction shall cease and the TRWC and qualified biologist shall be notified for guidance before any construction activities are resumed. Depending on the listing of the observed species and its persistence in the area, the TRWC shall notify the USFWS and/or CDFW for guidance.	The TRWC shall ensure that a qualified biologist conducts one pre-construction Environmental Awareness Training.	Prior to the initiation of construction.	The training shall be conducted by a qualified biologist, the environmental training reference pamphlets shall be kept on the construction site, and a sign-in sheet for all personnel required to attend the training shall be included in the MMRP report.	Construction personnel are trained in the key characteristics for identifying and avoiding impacts to special status species and sensitive habitats.
Mitigation Measure BIO-4: Minimize Vegetation Disturbance and Revegetate all Disturbed areas Ground and vegetation disturbance shall be minimized during project implementation. Activities shall be confined to designated marked access routes and well-marked project work sites. There shall be a project manager or representative on site at all times during work within the floodplain or stream channels. The contractor shall be instructed on the importance of avoiding disturbance of anything not necessary to meet project goals. All equipment shall use planned disturbance sites as access routes where possible and access routes shall be planned carefully. All disturbed areas shall be mulched with native material or weed-free straw (e.g., rice straw) and seeded with native species. Where needed, excavation sites shall have perimeter containment installed around the site's lower perimeter to contain any eroded material. Native vegetation such as willows and sedges would be transplanted if they need to be removed as part of the project. All disturbed areas shall be revegetated with approved native vegetation.	The TRWC shall ensure that a representative is onsite while work is occurring within the floodplain or creek and that ground and vegetation disturbance is being kept to a minimum. Additionally, the TRWC shall ensure that all sites are revegetated post-construction.	During construction; and revegetation post-construction.	The TRWC shall document the when construction occurs, as well as how and where revegetation occurred. A brief technical memorandum documenting vegetation disturbance and revegetation shall be prepared by TRWC and kept on file with the LRWQCB.	Vegetation disturbance is minimized and restored to pre-existing conditions within five years.
Mitigation Measure BIO-5: Compensation for Direct Impacts to Waters of the U.S. Because avoidance of the wetlands/waters of the U.S./waters of the State or riparian areas is not practicable, TRWC shall apply for and obtain a CWA Section 404 Nationwide Permit and comply with the current Corps compensation schedule for any loss of waters of the U.S.. TRWC shall work with the Corps to ensure that the local and federal "no net loss" of wetlands is properly upheld. In addition, for work within a stream or lake bed, riparian zone, or floodplain, TRWC shall apply for, obtain and comply with a CDFW Streambed Alteration Agreement (SAA). For all activities that trigger the Corps CWA 404 permit, the TRWC shall also apply for, obtain and comply with a Clean Water Act Section 401 Water Quality Certification from LRWQCB.	The TRWC is responsible for applying for all permits and approvals needed to fill the wetlands, work in waters of the U.S./Waters of the State, and riparian zones.	If required, the CWA Section 404, CDFW Streambed Alteration Agreement, and CWA 401 Permits shall be obtained prior to construction.	The TRWC shall ensure that environmental permits shall be obtained prior to construction and the appropriate fees paid to comply with the regulatory agency compensatory mitigation schedule for temporary and permanent impacts to waters of the U.S. and riparian areas. The TRWC shall prepare brief letter report on compliance with this mitigation measure and submit it to the LRWQCB for their files.	Appropriate State and Federal permit compliance and compensation, including no net loss of waters of the U.S. from the proposed Project.
Mitigation Measure GEO-1: Sediment and Erosion Control Measures See Geology and Soils				
Cultural and Tribal Resources				
Mitigation Measure CUL-1: Pre-Construction Survey and Cultural Resource Worker Awareness Training D. Cultural Resources On-Call Monitoring Due to the presence of cultural resources within the Project area, there is a high sensitivity for subsurface prehistoric or historical archaeological deposits within the Project footprint, the TRWC shall retain an on-call qualified archaeologist (who meets the Secretary of the Interior's Professional Qualifications Standards for Archaeology) to conduct a pre-construction survey of identified access routes and the pre-construction construction worker awareness training. The qualified archaeologist	The TRWC	An on-call qualified archaeologist shall be obtained prior to construction. Pre-construction cultural resource awareness training shall take place prior to construction and on-going during construction prior to new staff beginning work	A monitoring report shall be completed by the qualified archaeologist for any on-call services completed including but not limited to preconstruction access surveys and the worker awareness training(s). This report shall include a brief summary of the	The prevention of any unknown or known cultural resources from being disturbed/destroyed by Project construction without proper documentation and recordation.

Mitigation Measure	Responsible Party	Timing	Monitoring and Reporting Program	Standards for Success
shall also be available on-call throughout construction to consult on any inadvertent cultural or tribal cultural resources found during construction. The qualified archaeologist shall prepare a consulting and monitoring report documenting the preconstruction survey and worker awareness training as well as any on-call services. This report shall include a brief summary of the pre-construction cultural resource awareness training, preconstruction site access surveys including any resources found and measures taken to avoid the resource, and, if necessary, an update to the Sardine Valley Archaeological District Department of Parks and Recreation 523-series form. TRWC shall submit all monitoring reports to the LRWQCB to be kept in the LRWQCB's project file and the Northeast Information Center. E. Cultural and Tribal Cultural Resource Awareness Training The TRWC shall ensure that the qualified archaeologist shall conduct the pre-construction cultural resource awareness training. The training shall be for all construction personnel involved in any ground disturbing construction activity for the entire duration of the Project. Construction personnel shall be informed of the possibility of encountering subsurface prehistoric or historical cultural resources and/or human remains within the Project area and the protocol to be followed if a cultural or tribal cultural resource or human remains are encountered as detailed in Mitigation Measures CUL-2 and CUL-3. Sensitive cultural resources the construction personnel should be made aware of include: *Archaeological and/or Tribal Materials* – may include, but are not limited to, flaked stone tools (projectile point, biface, scraper, etc.) and debitage (flakes) made of chert, obsidian, etc., groundstone milling tools and fragments (mortar, pestle, handstone, millingstone, etc.), faunal bones, fire-affected rock, dark middens, house pit depressions and human interments. *Tribal Cultural Resources* – A site feature, place, cultural landscape, sacred place, or object, which is of cultural value to a tribe – and is either: on or eligible for the CRHR or a local historic register, – or the CEQA lead agency, at its discretion, chooses to treat the resource as a tribal cultural resource – See: PRC 21074 (a)(1)(A)-(B). *Historic-era Resources* – may include, but are not limited to, small cemeteries or burial plots, bones, cut (square) nails, containers or miscellaneous hardware, glass fragments, cans with soldered seams or tops, ceramic or stoneware objects or fragments, milled or split lumber, earthworks, feature or structure remains and trash dumps. *Paleontological Resources* – are any remains, trace, or imprint of a plant or animal that has been preserved in the Earth's crust since some past geologic time and may include fossil materials such as macrofossils of fish, other vertebrates, plants and invertebrates in lake sediments within Sardine Valley. F. Access Sites To avoid disturbance of subsurface prehistoric and historical archaeological deposits, all access routes in undisturbed areas not subject to borrow or fill shall be surveyed and cleared by the qualified archaeologist prior to construction. If resources are identified alternative access routes shall be defined and cleared and the resource shall be flagged and avoided in accordance with MM CUL-2 and CUL-3.		on the site.	pre-construction cultural resource awareness training, any on-call evaluation or consultation on inadvertent finds, and any necessary updates to the Sardine Valley Archaeological District Department of Parks and Recreation form. TRWC shall submit all monitoring reports to the LRWQCB to be kept in the LRWQCB's project file and the Northeast Information Center.	
Mitigation Measure CUL-2: Unanticipated Discovery of Cultural or Tribal Cultural Resources In the event of discovery of cultural or tribal cultural resources during construction activities the following steps outlining the proper handling, evaluation, and treatment of cultural or tribal cultural resources shall be undertaken to ensure protection of potentially significant historically, archaeologically, or tribally significant resources. **Proper Handling**: If subsurface cultural or tribal cultural resources are inadvertently uncovered during Project ground	The TRWC, representatives, and contractor.	During all ground disturbing activities.	If any find is determined to be significant, representatives of the TRWC shall document consultation with the qualified archaeologist (and tribal representative if a tribal cultural resource) and determination of recommended protection and/or avoidance	The evaluation and recording of any newly identified cultural or tribal cultural resources and treatment by avoidance, protection, or documentation of any discovered resources that qualify as historically, archaeologically, or tribally

Mitigation Measure	Responsible Party	Timing	Monitoring and Reporting Program	Standards for Success
disturbing activities, the TRWC's contractor shall adhere to the following procedures and methods: • Immediately stop all work; • Immediately contact the TRWC Project Manager or representative; • Do not harass, damage, touch, or remove any cultural or tribal cultural resources materials once resource is identified; • Leave all spoils in their current location unless directed by TRWC representatives; • Record the location and keep notes of all calls and events providing them to the TRWC representative daily, or as requested; • Secure the discovery location with flagging, plywood, or other appropriate material around the exposed site or a person watching the site as directed by the TRWC representative, until cleared by the TRWC representative and qualified archaeologist; • Treat the find as confidential. Do not publicly disclose the location. Only authorized personnel, or individuals with the permission of the TRWC representative (or the land owner) shall be allowed on the site; • Upon approval of TRWC, work may resume within no less than 150 feet of the discovery; and • Upon clearance of TRWC, work may resume in the location where cultural resources were discovered after evaluation and clearance by the TRWC qualified archaeologist. Upon notification by the contractor, the TRWC shall adhere to the following procedures and methods: • Record the location and keep notes of all calls and events; • Consult with the on-call qualified archeologist who shall facilitate evaluation and treatment procedures; • Maintain communications with the archaeologist, documenting and recording evaluation, protection, treatment, and avoidance steps taken; • Relocate work no less than 150 feet from the discovery or as otherwise directed by the archaeologist; and • Treat the find as confidential. Do not publicly disclose the location. Only authorized personnel, or individuals with the permission of the TRWC (or the land owner) shall be allowed on the archaeological site. Upon notification by the TRWC, the retained qualified archaeologist shall adhere to professional standards regarding the evaluation and treatment of the discovered cultural or tribal cultural resources and shall implement the following avoidance, evaluation, and/or treatment procedures and methods: • Examine the site to confirm that no additional cultural or tribal resources are in the disturbed area where the resource was found; • Recommend the appropriate discovery securing measures such as flagging, plywood, other material, or monitor around the exposed site until the evaluation is complete; • Coordinate with TRWC to determine if design modifications are feasible to avoid the resource. If the resource can be avoided appropriate security measures such as flagging or other exclusion fencing shall be placed around the resource until construction activities within 250 feet of the resource are complete; and • If the resource cannot be avoided, an evaluation of the find shall be conducted to determine the historical, archaeological, or tribal significance of the resource and consultation with the Office of Historic Preservation (SHPO) shall be undertaken for concurrence. If evaluation results in the determination that a resource is historically, archaeologically, or tribally significant, mitigation as recommended by the			measures or other appropriate mitigation. The TRWC shall prepare a memorandum incorporating notes and records from the contractor and qualified archaeologist to document steps taken to comply with the avoidance measures or other appropriate mitigation. The memorandum shall be saved as a file copy by the LRWQCB and submitted to the Northeast Information Center.	significant.

Mitigation Measure	Responsible Party	Timing	Monitoring and Reporting Program	Standards for Success
archaeologist/tribal representative and concurred upon by the SHPO and agreed upon by the TRWC would be implemented and the resource would be recorded for documentation in accordance with SHPO, tribal, and industry standards. If the resource is not found significant, construction may resume.				
Mitigation Measure CUL-3: Unanticipated Discovery of Human Remains Section 7050 of the California Health and Safety Code states that it is a misdemeanor to knowingly disturb a human burial site. If human remains are encountered (or are suspected) during any project-related activity, the TRWC, TRWC's representatives, and TRWC's contractor shall complete the following steps: • Immediately stop all work; • Immediately contact the TRWC Project Manager or representative; • Contact a qualified archaeologist (someone who meets the Secretary of the Interior's Professional Qualifications Standards for Archaeology) who shall then notify the County Coroner immediately pursuant to PRC Section 7050.5. The County Coroner may assess the human remains. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of such identification. The NAHC shall identify the most likely descendant (MLD); • Once given the permission by the TRWC (and the land owner), the MLD shall be allowed onsite. The MLD shall complete their inspection and make their recommendation to the TRWC for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98. MLD recommendations must be made within 48 hours of the NAHC notification to the MLD; • Relocate work under direction of the TRWC within no less than 150 feet of the discovery or as otherwise directed by the TRWC qualified archaeologist; • Consult with the onsite qualified archaeological monitor to confirm that no additional human remains are in the area; • No additional work shall take place within the immediate vicinity of the find until the TRWC's qualified archaeologist gives approval to resume work in that area; • Once work resumes in a location where human remains have been discovered and cleared, the onsite monitor shall observe further ground-disturbing construction activities closely for evidence of additional human remains; • Do not touch, damage, remove any human remains, associated materials, or associated spoils; • Record the location of the discovered remains and keep notes of all calls, site visits and events; and • Treat the find as confidential and do not publicly disclose the location. The TRWC shall provide security to the area as needed. Only authorized personnel, or individuals with the permission of the TRWC (and the land owner) shall be allowed onsite.	The TRWC, representatives, and contractor.	During all ground disturbing activities.	The find shall be immediately reported to the County Coroner. The recording and evaluation of any newly identified human remains shall be conducted by qualified professional archaeologist in conjunction with the County Coroner and a report detailing the recording, location, evaluation, and treatment of human remains, shall be kept on file at the TRWC, submitted to the LRWQCB, and submitted to the Northeast Information Center.	The proper recording, evaluation, and treatment of any newly identified human remains.
Mitigation Measure CUL-4: Unanticipated Discovery of Paleontological Resources If any paleontological resources (i.e., fossils) are found during Project construction, construction shall be halted immediately in the subject area and the TRWC shall be immediately notified. A qualified paleontologist (meeting the qualifications of the Society of Vertebrate Paleontology guidelines) shall be retained to evaluate the find. If any find is determined to be significant, representatives of the TRWC and a qualified paleontologist would meet to determine the avoidance measures, such as not infilling a fossiliferous section of the creek bed, or other appropriate mitigation, such as surface collection or excavation. All significant paleontological resources recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by the qualified	The TRWC, representatives, and contractor.	During all ground disturbing activities.	A report, prepared by the qualified paleontologist, documenting the find following the standards of the Society of Vertebrate Paleontology and curated with a certified repository shall be kept as a file copy by the TRWC and the LRWQCB.	The proper recording, evaluation, and treatment of any newly identified paleontological resource.

Mitigation Measure	Responsible Party	Timing	Monitoring and Reporting Program	Standards for Success
paleontologist according to current professional standards such as the Society of Vertebrate Paleontology guidelines on assessment and mitigation of adverse impacts to paleontological resources (SVP 2010). This treatment of inadvertently discovered paleontological resources shall be implemented to ensure that the impacts to these resources are avoided or reduced to less than significant levels.				
Geology and Soils				
Mitigation Measure GEO-1: Sedimentation and Erosion Control Measures The contractor and the TRWC shall prepare and implement an erosion control plan to ensure erosion and sedimentation from the Project is kept to a minimum. The standard erosion and sediment control Best Management Practices (BMPs) shall be used during and after construction to control accelerated soil erosion and sedimentation. Erosion and sediment control BMPs shall be applied to all disturbed ground during temporary construction delays caused by weather events such as rainfall. Although, the restoration activities shall occur when meadows are dry and the stream channels are at minimum flow. The proposed Project shall be timed to avoid the period of highest rainfall, streamflow, and erosion potential. However, if an unexpected rainfall event were to occur during construction, construction shall be shut down until the streamflow is sufficiently low and soil/channel conditions are sufficiently dry and stable. Examples of BMPs I to be included during a rainfall event include placement of readily available mulch materials and/or imported mulch materials to protect any disturbed areas from rainfall, placement of tarps to cover exposed soil, and the placement of straw wattles, silt fences, and/or hay bales to reduce runoff velocity and intercept sediment. The re-vegetation of all graded and disturbed areas of bare soil shall be completed within three months of Project completion or prior to the rainy season. Native seed mixes consistent with MM BIO-4 shall be used to replicate the naturally occurring vegetation.	The TRWC shall require the contractor to develop and implement the sedimentation and erosion control measures and re-vegetate the site.	During and immediately after construction activities.	The TRWC shall monitor implementation of the mitigation measure and a copy of the sedimentation and erosion control measure shall remain on file at the project site as well as submitted to LRWQCB as a file copy.	Minimize on- and off-site erosion and prevent introduction of significant amounts of sediment into any stream or drainage.
Hazards and Hazardous Materials				
Mitigation Measure HAZ-1: Develop or use Current Spill Prevention Control and Countermeasure Plan TRWC, or its contractor shall develop and implement a Spill Prevention Control and Countermeasure Plan (SPCCP) in accordance with Federal and State requirements to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction activities for all contractors. The SPCCP shall include the following measures: • Storage of hazardous materials, chemicals, fuels, and oils shall not take place within one hundred (100) feet of Davies Creek and liquid hazardous materials shall be covered and stored within secondary containment where containment is 110 percent of liquid material volume; • Materials shall be stored in appropriate containers and contents labeled; • Material volume shall be restricted to the volume that can be addressed by available spill kits and supplies. • Used containers shall be disposed of at an appropriate landfill or other legal disposal or recycling facility; • Bulk storage tanks shall have secondary containment systems. Secondary containment shall be at least 110 percent of storage tank capacity or more if the area is uncovered to account for storm events; • Spill cleanup shall occur immediately and notification shall be given to the California Department of Fish and Wildlife, USFWS, TRWC, and LRWQCB; • Workers shall be trained to properly handle hazardous materials, cleanup spills, and report spills. Construction workers shall be trained to identify indicators of contaminated soils such	The TRWC or its contractor shall develop and implement a Spill Prevention Control and Countermeasure Plan (SPCCP) to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction activities for all contractors.	The SPCCP shall be implemented prior to and during all phases of construction.	Evaluation of SPCCP shall be conducted by the TRWC. Reports on the SPCCP implementation shall be documented by the TRWC and submitted to the LRWQCB to be kept on file.	Minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction activities in accordance with the requirements of this measure as well as State and Federal laws.

Mitigation Measure	Responsible Party	Timing	Monitoring and Reporting Program	Standards for Success
as soil discoloration, odors, differences in soil properties, and buried debris. Construction workers shall be trained to be aware of proper handling techniques and appropriate responses and actions to be taken if hazardous materials are accidentally released, with special emphasis on those hazardous materials with the greatest potential to occur at the Project site; • Soils contaminated with fuels or chemicals shall be disposed of in a suitable location to prevent discharge to surface waters and in accordance with the rules and regulations of the U.S. Department of Transportation, the U.S. Environmental Protection Agency, the LRWQCB, and other agencies including but not limited to California Environmental Protection Agency; • Excess or unused quantities of hazardous materials shall be removed upon Project completion. Although hazardous waste generation is not anticipated, any such wastes produced during construction shall be properly containerized, labeled, and transported to an approved hazardous waste disposal facility and • All nonhazardous waste materials including construction refuse, garbage, and sanitary waste, shall be disposed of by removal from the work area to an approved disposal facility. All nonhazardous waste containers shall be covered when not in use and/or at the end of each shift or before a rain or other precipitation (snow) event. A fueling plan shall be prepared separately or as a part of the SPCCP. The fueling plan shall include the following measures: • Vehicles shall be monitored for fluid leaks and shall be maintained regularly to reduce the chance of leakage. If any leaks are detected, the vehicle shall be taken to a special paved area designated for vehicle repair and equipped with management controls for leaked materials or if it cannot be repaired removed from service and site and obtain replacement; • Vehicles refueling shall only occur on flat level ground where there is little chance of a spilled substance reaching a stream or waterway over an impermeable surface. A spill kit shall be available as appropriate for the activity; • Refueling and vehicle maintenance shall be performed at least 100 feet from receiving waters; • All fueling materials shall be properly labeled; and • Oil, antifreeze, solvents, and other materials related to equipment maintenance shall be disposed of or recycled appropriately offsite. If these materials have to be stored before disposal/recycling, they shall be stored in covered areas in containers with 110 percent capacity with berms and lined with impermeable material to contain any spills. The impermeable material should be maintained free of holes, etc. that would permit leaks to contact the ground surface or otherwise leave the containment area. The TRWC shall review and approve the SPCCP before onset of construction activities. The TRWC shall routinely inspect the construction area to verify that the measures specified in the SPCCP are properly implemented and maintained. The TRWC shall notify its contractors immediately if there is a noncompliance issue and shall require compliance. The Federal reportable spill quantity for petroleum products, as defined in the EPA's CFR (40 CFR 110) is any oil spill that (1) violates applicable water quality standards, (2) causes a film or sheen upon or discoloration of the water surface or adjoining shoreline, or (3) causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines. If a spill is reportable, the TRWC or the contractor would take action to contact the appropriate safety and clean-up crews to ensure the SPCCP is followed. A written description of reportable releases must be submitted to the LRWQCB. The submittal must include a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an				

Mitigation Measure	Responsible Party	Timing	Monitoring and Reporting Program	Standards for Success
explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases would be documented on a spill report form. In the unlikely event of a spill, the following parties shall be notified: 4. Call 911: • For spills that involve injury requiring medical treatment; • For spills that involve fire or hazards; • For spills that are potentially life threatening; and • For spills that occur after work hours. 5. Call Sierra County Department of Environmental Health at: (530)993-6716 • For chemical spill situations which do not require 911 assistance; • For spills that cannot be cleaned up by personnel on site. 6. Call Lahontan Regional Water Quality Control Board at: (530) 542-5400 • Immediately for a major spill; • Within 24 hours of a minor spill.				
Mitigation Measure HAZ-2: Fire Suppression and Control The TRWC shall require the selected construction contractor to coordinate with the local fire chief and Sierra County to ensure fire control measures are in place to reduce the risk of fires during the proposed Project. The fire prevention and control measures shall include requirements for onsite extinguishers; roles and responsibilities of the TRWC, and the contractor including what to do in the event of a fire; fire suppression equipment and critical fire prevention and suppression items, and any other items or awareness measures recommended by the fire chief and/or Sierra County.	The TRWC's contractor shall coordinate with the local fire chief and Sierra County to ensure fire control measures including but not limited to fire suppression and management measures are in place and on site and readily accessible during construction in the event of an unintended fire.	Coordination with the local fire chief and Sierra County shall take place prior to construction and implementation of fire suppression and control measures shall be implemented during all phases of construction.	Evaluation of the fire suppression and control measures shall be conducted by TRWC. The TRWC inspector or other TRWC personnel shall verify that coordination with the fire chief and Sierra County took place and that proper responsibilities and fire suppression and control equipment/items are available on site during construction. Documentation shall be submitted by the TRWC to the LRWQCB to be kept on file at LRWQCB offices.	Preparedness for and minimization of the start and spread of wildfire during construction activities for all contractors.
Hydrology and Water Quality				
Mitigation Measure GEO-1: Sediment and Erosion Control Measures See Geology and Soils				
Mitigation Measure HAZ-1: develop or use Current Spill Prevention Control and Countermeasure Plan See Hazards and Hazardous Materials				
Mitigation Measure HYDRO-1: Utilization of Clean Engineered Fill Clean engineered fill material shall be used. A soils characterization plan shall be developed by a California Professional Engineer or California Registered Geologist and implemented for evaluating all borrow material that has not previously undergone testing for contaminants. Only fill determined to be contaminant free shall be used.	The TRWC.	Prior to construction.	The TRWC shall provide documentation of soils testing to be kept on file at LRWQCB.	Placement of clean fill.
Mitigation Measure HYDRO-2: Construction Dewatering Management Plan Construction shall take place when there is no flow or very little flow in Davies Creek. However, in the event that flow is present or groundwater is encountered during construction, a construction dewatering plan shall be developed prior to project construction. Water generated by dewatering activities shall be used where possible for construction activities such as compaction and dust	The TRWC's contractor shall implement the construction dewatering management plan.	Prior to construction.	The TRWC review and approval of monitoring plan. TRWC shall submit file copies of the plan and compliance incident reports to LRWQCB.	Compliance with monitoring plan, dewatering permits, and prompt and complete incident reports to the LRWQCB.

Mitigation Measure	Responsible Party	Timing	Monitoring and Reporting Program	Standards for Success
control. This would ensure that the water infiltrates rather than running into Davies Creek receiving waters. In order to reduce the potential for water from dewatering activities impacting the water quality of nearby waterways, TRWC shall require that the selected contractor develop a dewatering management plan prior to construction to include the following measures. Non-contaminated water shall be discharged to land for infiltration, when 1) the water contains sediment, but is not contaminated with other pollutants, 2) the water does not runoff from the land to creek beds (even if dry), or other surface waters, 3) the LRWQCB has been contacted and discharge is authorized or permitted, if applicable, and 4) details and mitigation measures to address construction dewatering and stormwater inputs during construction would be required prior to issuance of a federal CWA section 401 Water Quality Certification and water would be discharged according to the permit conditions. The dewatering management plan shall outline a dewatering design specifications, schedule and water quality monitoring procedures. The plan shall include emergency contingency plans if unanticipated contaminants are observed in the discharge or flooding occurs resulting in cessation of water pumping.				

Appendix A PROJECT SCOPING

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

Request for Early Consultation

November 28, 2017

To: Reviewing Agencies

Re: Sardine Meadow Restoration Project
SCH# 2017112062

Prior to determining whether a Negative Declaration or an Environmental Impact Report (EIR) is required for a project under CEQA, a Lead Agency is required to consult with all responsible and trustee agencies. This notice and attachment fulfill the early consultation requirement. Recommendations on the appropriate type of environmental document for this project, as well as comments on its scope and content, should be transmitted to the Lead Agency at the address below. You do not have to be a responsible or trustee agency to comment on the project. All agencies are encouraged to comment in a manner that will assist the Lead Agency to prepare a complete and adequate environmental document.

Please direct your comments to:

Anne Holden
Regional Water Quality Control Board, Region 6 (Lahontan)
2501 Lake Tahoe Boulevard
South Lake Tahoe, CA 96150

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to SCH Number 2017112062 in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachment
cc: Lead Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2017112062
Project Title Sardine Meadow Restoration Project
Lead Agency Regional Water Quality Control Board, Region 6 (Lahontan), South Lake Tahoe

Type CON Early Consultation

Description The proposed project is in Sardine Valley within the Davies Creek watershed in Sierra County. The project plans to restore approx 300 acres of meadow habitat in the Davies Creek watershed by filling the eroded channel to restore groundwater levels and return the Creek to its historic channels. Direct impacts within the project footprint are anticipated to be approx 22 acres.

Lead Agency Contact

Name Anne Holden
Agency Regional Water Quality Control Board, Region 6 (Lahontan)
Phone (530) 542-5450 **Fax**
email
Address 2501 Lake Tahoe Boulevard
City South Lake Tahoe **State** CA **Zip** 96150

Project Location

County Sierra
City Loyalton
Region
Cross Streets Henness Pass Rd
Lat / Long 39° 30' 48" N / 120° 7' 23" W
Parcel No. 023-010-006
Township 19 **Range** 17 **Section** 8 **Base** East

Proximity to:

Highways
Airports
Railways
Waterways Davies Creek, Stampede Reservoir, Merrill Creek
Schools
Land Use ag/open space

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Cumulative Effects; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Growth Inducing; Landuse; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Septic System; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian

Reviewing Agencies Resources Agency; Department of Conservation; Department of Fish and Wildlife, Region 2; Department of Parks and Recreation; Department of Water Resources; Caltrans, District 3 S; State Water Resources Control Board, Division of Drinking Water; Regional Water Quality Control Bd., Region 6 (So Lake Tahoe); Native American Heritage Commission

Date Received 11/27/2017 **Start of Review** 11/27/2017 **End of Review** 12/11/2017

Note: Blanks in data fields result from insufficient information provided by lead agency.

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2017112062

Project Title: Sardine Meadow Restoration Project

Lead Agency: Lahontan Regional Water Quality Control Board | Contact Person: Anne Holden
Mailing Address: 2501 Lake Tahoe Boulevard | Phone: (530) 542-5450
City: South Lake Tahoe | Zip: 96150 | County: El Dorado

Project Location: County: Sierra County | City/Nearest Community: Loyalton, California
Cross Streets: Henness Pass Road | Zip Code: 96118
Longitude/Latitude (degrees, minutes and seconds): 39 ° 30 ′ 48 ″ N / 120 ° 7 ′ 23 ″ W Total Acres: 22
Assessor's Parcel No.: 023-010-006 | Section: 8 | Twp.: 19 | Range: 17 | Base: East
Within 2 Miles: State Hwy #: | Waterways: Davies Creek, Stampede Reservoir, Merrill Creek
Airports: | Railways: | Schools:

Document Type:

CEQA: ☐ NOP ☐ Draft EIR ☐ Supplement/Subsequent EIR ☒ Early Cons ☐ Neg Dec ☐ Mit Neg Dec (Prior SCH No.) Other:
NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI Other: ☐ Joint Document ☐ Final Document ☐ Other:

Governor's Office of Planning & Research

NOV 22 2017

STATE CLEARINGHOUSE

Local Action Type:

☐ General Plan Update ☐ Specific Plan ☐ Rezone ☐ Annexation
☐ General Plan Amendment ☐ Master Plan ☐ Prezone ☐ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☐ Use Permit ☐ Coastal Permit
☐ Community Plan ☐ Site Plan ☐ Land Division (Subdivision, etc.) ☒ Other: 401 permit

Development Type:

☐ Residential: Units ____ Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees ____
☐ Commercial: Sq.ft. ____ Acres ____ Employees ____
☐ Industrial: Sq.ft. ____ Acres ____ Employees ____
☐ Educational:
☐ Recreational:
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type
☐ Mining: Mineral
☐ Power: Type ____ MW ____
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type
☒ Other: Creek Restoration

Project Issues Discussed in Document:

☒ Aesthetic/Visual ☒ Agricultural Land ☒ Air Quality ☒ Archeological/Historical ☒ Biological Resources ☐ Coastal Zone ☒ Drainage/Absorption ☐ Economic/Jobs
☐ Fiscal ☒ Flood Plain/Flooding ☒ Forest Land/Fire Hazard ☒ Geologic/Seismic ☒ Minerals ☒ Noise ☒ Population/Housing Balance ☒ Public Services/Facilities
☒ Recreation/Parks ☒ Schools/Universities ☒ Septic Systems ☒ Sewer Capacity ☒ Soil Erosion/Compaction/Grading ☒ Solid Waste ☒ Toxic/Hazardous ☒ Traffic/Circulation
☒ Vegetation ☒ Water Quality ☒ Water Supply/Groundwater ☒ Wetland/Riparian ☒ Growth Inducement ☒ Land Use ☒ Cumulative Effects ☐ Other:

Present Land Use/Zoning/General Plan Designation:

Agriculture (A1)/Open Space

Project Description: *(please use a separate page if necessary)*

The proposed Project is in Sardine Valley within the Davies Creek watershed in Sierra County. The Project plans to restore approximately 300 acres of meadow habitat in the Davies Creek watershed by filling the eroded channel to restore groundwater levels and return the Creek to its historic channels. Direct impacts within the project footprint are anticipated to be approximately 22 acres.

State Clearinghouse Contact: SCH. (916) 445-0613

State Review Began: 11 - 27 - 2017

EARLY CONSULTATION

SEND COMMENTS DIRECTLY TO LEAD AGENCY BY: 12 - 11 - 2017

Please note State Clearinghouse Number (SCH#) on all Comments

SCH#: 2017112062

Please forward late comments directly to the Lead Agency

AQMD/APCD: LO

(Resources: 12 / 2)

Project Sent to the following State Agencies

- X Resources
- ____ Boating & Waterways
- ____ Central Valley Flood Prot.
- ____ Coastal Comm
- ____ Colorado Rvr Bd
- X Conservation
- X CDFW # 2
- ____ Cal Fire
- ____ Historic Preservation
- X Parks & Rec
- ____ Bay Cons & Dev Comm.
- X DWR

CalSTA

- ____ Aeronautics
- ____ CHP
- X Caltrans # 3S
- ____ CHP
- ____ Trans Planning

Other

- ____ Education
- ____ Food & Agriculture
- ____ HCD
- ____ OES

State/Consumer Svcs

- ____ General Services

Cal EPA

- ____ ARB: Airport & Freight
- ____ ARB: Transportation Projects
- ____ ARB: Major Industrial/Energy
- ____ Resources, Recyc. & Recovery
- X SWRCB: Div. of Drinking Water
- ____ **SWRCB: Div Drinking Wtr #**
- ____ SWRCB: Div. Financial Assist.
- ____ SWRCB: Wtr Quality
- ____ SWRCB: Wtr Rights
- X Reg. WQCB # 6
- ____ Toxic Sub Ctrl-CTC

Yth/Adlt Corrections

- ____ Corrections

Independent Comm

- ____ Delta Protection Comm
- ____ Delta Stewardship Council
- ____ Energy Commission
- X NAHC
- ____ Public Utilities Comm
- ____ Santa Monica Bay Restoration
- ____ State Lands Comm
- ____ Tahoe Rgl Plan Agency
- ____ Conservancy

____ Other:

Appendix B CALEEMOD AIR QUALITY MODEL

Appendix B CalEEMod Air Quality Model
December 22, 2017

Insert CalEEmod results

Sardine Meadow Restoration Project

Mountain Counties Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	12.50	Acre	12.50	544,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	8
Climate Zone	14			**Operational Year**	2019
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Non-default vaules based on Project Description.

Construction Phase - non-default vaules based on Project Description.

Off-road Equipment -

Off-road Equipment - non-default vaules based on Project Description.

Off-road Equipment - Non-default values based on Project Description.

Off-road Equipment - non default vaules based on Project description.

Trips and VMT - non-default values based on project description. 5,000 material hauling trips based on 50,000 cu yards of material, ~ 10 cu yards per truck.

Grading - non-default vaules based on Project Description.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	30.00	35.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	PhaseEndDate	11/6/2024	11/22/2019
tblConstructionPhase	PhaseEndDate	9/23/2020	8/30/2019
tblConstructionPhase	PhaseEndDate	11/17/2021	10/4/2019
tblConstructionPhase	PhaseStartDate	11/18/2021	10/7/2019
tblConstructionPhase	PhaseStartDate	9/24/2020	9/2/2019
tblGrading	AcresOfGrading	87.50	12.50
tblGrading	MaterialImported	0.00	50,000.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblProjectCharacteristics	OperationalYear	2018	2019
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	6,250.00	5,000.00
tblTripsAndVMT	WorkerTripNumber	15.00	8.00
tblTripsAndVMT	WorkerTripNumber	20.00	15.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1805	2.4788	1.1168	3.7800e-003	0.4561	0.0835	0.5396	0.2331	0.0770	0.3100	0.0000	350.7345	350.7345	0.0536	0.0000	352.0736
Total	**0.1805**	**2.4788**	**1.1168**	**3.7800e-003**	**0.4561**	**0.0835**	**0.5396**	**0.2331**	**0.0770**	**0.3100**	**0.0000**	**350.7345**	**350.7345**	**0.0536**	**0.0000**	**352.0736**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1805	2.4788	1.1168	3.7800e-003	0.4561	0.0835	0.5396	0.2331	0.0770	0.3100	0.0000	350.7343	350.7343	0.0536	0.0000	352.0734
Total	**0.1805**	**2.4788**	**1.1168**	**3.7800e-003**	**0.4561**	**0.0835**	**0.5396**	**0.2331**	**0.0770**	**0.3100**	**0.0000**	**350.7343**	**350.7343**	**0.0536**	**0.0000**	**352.0734**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.1300e-003	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.4000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0477	0.2297	0.5368	1.1300e-003	0.0832	1.7300e-003	0.0849	0.0223	1.6300e-003	0.0239	0.0000	103.4567	103.4567	5.7800e-003	0.0000	103.6011
Waste						0.0000	0.0000		0.0000	0.0000	0.2172	0.0000	0.2172	0.0128	0.0000	0.5381
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0529**	**0.2297**	**0.5369**	**1.1300e-003**	**0.0832**	**1.7300e-003**	**0.0849**	**0.0223**	**1.6300e-003**	**0.0239**	**0.2172**	**103.4569**	**103.6741**	**0.0186**	**0.0000**	**104.1395**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.1300e-003	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.4000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0477	0.2297	0.5368	1.1300e-003	0.0832	1.7300e-003	0.0849	0.0223	1.6300e-003	0.0239	0.0000	103.4567	103.4567	5.7800e-003	0.0000	103.6011
Waste						0.0000	0.0000		0.0000	0.0000	0.2172	0.0000	0.2172	0.0128	0.0000	0.5381
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0529**	**0.2297**	**0.5369**	**1.1300e-003**	**0.0832**	**1.7300e-003**	**0.0849**	**0.0223**	**1.6300e-003**	**0.0239**	**0.2172**	**103.4569**	**103.6741**	**0.0186**	**0.0000**	**104.1395**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/1/2019	8/30/2019	5	22	
2	Revegetation area	Site Preparation	9/2/2019	10/4/2019	5	25	
3	Grading and Recountoruing current channel and Historic railroad grades	Grading	10/7/2019	11/22/2019	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Revegetation area	Rubber Tired Dozers	3	8.00	247	0.40
Revegetation area	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading and Recountoruing current channel and Historic railroad grades	Excavators	2	8.00	158	0.38
Grading and Recountoruing current channel and Historic railroad grades	Graders	1	8.00	187	0.41
Grading and Recountoruing current channel and Historic railroad grades	Rubber Tired Dozers	1	8.00	247	0.40
Grading and Recountoruing current channel and Historic railroad grades	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading and Recountoruing current channel and Historic railroad grades	Scrapers	2	8.00	367	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Revegetation area	6	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading and Recountoruing current	8	15.00	0.00	5,000.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0662	0.0000	0.0662	0.0364	0.0000	0.0364	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0176	0.1842	0.0978	1.6000e-004		9.9100e-003	9.9100e-003		9.1200e-003	9.1200e-003	0.0000	14.5745	14.5745	4.6100e-003	0.0000	14.6898
Total	**0.0176**	**0.1842**	**0.0978**	**1.6000e-004**	**0.0662**	**9.9100e-003**	**0.0762**	**0.0364**	**9.1200e-003**	**0.0455**	**0.0000**	**14.5745**	**14.5745**	**4.6100e-003**	**0.0000**	**14.6898**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.5000e-004	6.9000e-004	6.3400e-003	1.0000e-005	1.1200e-003	1.0000e-005	1.1300e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	0.9845	0.9845	5.0000e-005	0.0000	0.9858
Total	**8.5000e-004**	**6.9000e-004**	**6.3400e-003**	**1.0000e-005**	**1.1200e-003**	**1.0000e-005**	**1.1300e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**0.9845**	**0.9845**	**5.0000e-005**	**0.0000**	**0.9858**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0662	0.0000	0.0662	0.0364	0.0000	0.0364	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0176	0.1842	0.0978	1.6000e-004		9.9100e-003	9.9100e-003		9.1200e-003	9.1200e-003	0.0000	14.5745	14.5745	4.6100e-003	0.0000	14.6898
Total	**0.0176**	**0.1842**	**0.0978**	**1.6000e-004**	**0.0662**	**9.9100e-003**	**0.0762**	**0.0364**	**9.1200e-003**	**0.0455**	**0.0000**	**14.5745**	**14.5745**	**4.6100e-003**	**0.0000**	**14.6898**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.5000e-004	6.9000e-004	6.3400e-003	1.0000e-005	1.1200e-003	1.0000e-005	1.1300e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	0.9845	0.9845	5.0000e-005	0.0000	0.9858
Total	**8.5000e-004**	**6.9000e-004**	**6.3400e-003**	**1.0000e-005**	**1.1200e-003**	**1.0000e-005**	**1.1300e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**0.9845**	**0.9845**	**5.0000e-005**	**0.0000**	**0.9858**

3.3 Revegetation area - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2258	0.0000	0.2258	0.1241	0.0000	0.1241	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0513	0.5404	0.2470	4.4000e-004		0.0279	0.0279		0.0257	0.0257	0.0000	39.2234	39.2234	0.0124	0.0000	39.5336
Total	**0.0513**	**0.5404**	**0.2470**	**4.4000e-004**	**0.2258**	**0.0279**	**0.2538**	**0.1241**	**0.0257**	**0.1498**	**0.0000**	**39.2234**	**39.2234**	**0.0124**	**0.0000**	**39.5336**

3.3 Revegetation area - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.6000e-004	7.8000e-004	7.2000e-003	1.0000e-005	1.2700e-003	1.0000e-005	1.2800e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.1187	1.1187	6.0000e-005	0.0000	1.1202
Total	**9.6000e-004**	**7.8000e-004**	**7.2000e-003**	**1.0000e-005**	**1.2700e-003**	**1.0000e-005**	**1.2800e-003**	**3.4000e-004**	**1.0000e-005**	**3.5000e-004**	**0.0000**	**1.1187**	**1.1187**	**6.0000e-005**	**0.0000**	**1.1202**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2258	0.0000	0.2258	0.1241	0.0000	0.1241	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0513	0.5404	0.2470	4.4000e-004		0.0279	0.0279		0.0257	0.0257	0.0000	39.2233	39.2233	0.0124	0.0000	39.5336
Total	**0.0513**	**0.5404**	**0.2470**	**4.4000e-004**	**0.2258**	**0.0279**	**0.2538**	**0.1241**	**0.0257**	**0.1498**	**0.0000**	**39.2233**	**39.2233**	**0.0124**	**0.0000**	**39.5336**

3.3 Revegetation area - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.6000e-004	7.8000e-004	7.2000e-003	1.0000e-005	1.2700e-003	1.0000e-005	1.2800e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.1187	1.1187	6.0000e-005	0.0000	1.1202
Total	**9.6000e-004**	**7.8000e-004**	**7.2000e-003**	**1.0000e-005**	**1.2700e-003**	**1.0000e-005**	**1.2800e-003**	**3.4000e-004**	**1.0000e-005**	**3.5000e-004**	**0.0000**	**1.1187**	**1.1187**	**6.0000e-005**	**0.0000**	**1.1202**

3.4 Grading and Recountoruing current channel and Historic railroad grades - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1148	0.0000	0.1148	0.0591	0.0000	0.0591	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0829	0.9541	0.5841	1.0900e-003		0.0417	0.0417		0.0384	0.0384	0.0000	97.4773	97.4773	0.0308	0.0000	98.2483
Total	**0.0829**	**0.9541**	**0.5841**	**1.0900e-003**	**0.1148**	**0.0417**	**0.1565**	**0.0591**	**0.0384**	**0.0974**	**0.0000**	**97.4773**	**97.4773**	**0.0308**	**0.0000**	**98.2483**

3.4 Grading and Recountoruing current channel and Historic railroad grades - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0243	0.7965	0.1554	2.0400e-003	0.0435	3.9200e-003	0.0474	0.0119	3.7500e-003	0.0157	0.0000	194.4195	194.4195	5.4300e-003	0.0000	194.5553
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5200e-003	2.0500e-003	0.0189	3.0000e-005	3.3400e-003	3.0000e-005	3.3600e-003	8.9000e-004	3.0000e-005	9.1000e-004	0.0000	2.9366	2.9366	1.6000e-004	0.0000	2.9406
Total	**0.0268**	**0.7985**	**0.1743**	**2.0700e-003**	**0.0468**	**3.9500e-003**	**0.0508**	**0.0128**	**3.7800e-003**	**0.0166**	**0.0000**	**197.3561**	**197.3561**	**5.5900e-003**	**0.0000**	**197.4959**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1148	0.0000	0.1148	0.0591	0.0000	0.0591	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0829	0.9541	0.5841	1.0900e-003		0.0417	0.0417		0.0384	0.0384	0.0000	97.4772	97.4772	0.0308	0.0000	98.2482
Total	**0.0829**	**0.9541**	**0.5841**	**1.0900e-003**	**0.1148**	**0.0417**	**0.1565**	**0.0591**	**0.0384**	**0.0974**	**0.0000**	**97.4772**	**97.4772**	**0.0308**	**0.0000**	**98.2482**

3.4 Grading and Recountoruing current channel and Historic railroad grades - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0243	0.7965	0.1554	2.0400e-003	0.0435	3.9200e-003	0.0474	0.0119	3.7500e-003	0.0157	0.0000	194.4195	194.4195	5.4300e-003	0.0000	194.5553
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5200e-003	2.0500e-003	0.0189	3.0000e-005	3.3400e-003	3.0000e-005	3.3600e-003	8.9000e-004	3.0000e-005	9.1000e-004	0.0000	2.9366	2.9366	1.6000e-004	0.0000	2.9406
Total	**0.0268**	**0.7985**	**0.1743**	**2.0700e-003**	**0.0468**	**3.9500e-003**	**0.0508**	**0.0128**	**3.7800e-003**	**0.0166**	**0.0000**	**197.3561**	**197.3561**	**5.5900e-003**	**0.0000**	**197.4959**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0477	0.2297	0.5368	1.1300e-003	0.0832	1.7300e-003	0.0849	0.0223	1.6300e-003	0.0239	0.0000	103.4567	103.4567	5.7800e-003	0.0000	103.6011
Unmitigated	0.0477	0.2297	0.5368	1.1300e-003	0.0832	1.7300e-003	0.0849	0.0223	1.6300e-003	0.0239	0.0000	103.4567	103.4567	5.7800e-003	0.0000	103.6011

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	23.63	284.38	209.25	215,529	215,529
Total	23.63	284.38	209.25	215,529	215,529

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.477812	0.046341	0.214053	0.144802	0.044200	0.008142	0.014479	0.037446	0.001825	0.001167	0.006726	0.000890	0.002117

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.1300e-003	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.4000e-004
Unmitigated	5.1300e-003	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.4000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.1200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.4000e-004
Total	**5.1300e-003**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.4000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.1200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.4000e-004
Total	**5.1300e-003**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.4000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 14.8935	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 14.8935	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2172	0.0128	0.0000	0.5381
Unmitigated	0.2172	0.0128	0.0000	0.5381

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	1.07	0.2172	0.0128	0.0000	0.5381
Total		**0.2172**	**0.0128**	**0.0000**	**0.5381**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	1.07	0.2172	0.0128	0.0000	0.5381
Total		**0.2172**	**0.0128**	**0.0000**	**0.5381**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Sardine Meadow Restoration Project

Mountain Counties Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	12.50	Acre	12.50	544,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	8
Climate Zone	14			**Operational Year**	2019
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Non-default vaules based on Project Description.

Construction Phase - non-default vaules based on Project Description.

Off-road Equipment -

Off-road Equipment - non-default vaules based on Project Description.

Off-road Equipment - Non-default values based on Project Description.

Off-road Equipment - non default vaules based on Project description.

Trips and VMT - non-default values based on project description. 5,000 material hauling trips based on 50,000 cu yards of material, ~ 10 cu yards per truck.

Grading - non-default vaules based on Project Description.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	30.00	35.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	PhaseEndDate	11/6/2024	11/22/2019
tblConstructionPhase	PhaseEndDate	9/23/2020	8/30/2019
tblConstructionPhase	PhaseEndDate	11/17/2021	10/4/2019
tblConstructionPhase	PhaseStartDate	11/18/2021	10/7/2019
tblConstructionPhase	PhaseStartDate	9/24/2020	9/2/2019
tblGrading	AcresOfGrading	87.50	12.50
tblGrading	MaterialImported	0.00	50,000.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblProjectCharacteristics	OperationalYear	2018	2019
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	6,250.00	5,000.00
tblTripsAndVMT	WorkerTripNumber	15.00	8.00
tblTripsAndVMT	WorkerTripNumber	20.00	15.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	6.2583	98.9405	42.9666	0.1819	18.1684	2.6062	20.4036	9.9578	2.4059	12.0141	0.0000	18,694.8918	18,694.8918	2.2783	0.0000	18,751.8485
Total	**6.2583**	**98.9405**	**42.9666**	**0.1819**	**18.1684**	**2.6062**	**20.4036**	**9.9578**	**2.4059**	**12.0141**	**0.0000**	**18,694.8918**	**18,694.8918**	**2.2783**	**0.0000**	**18,751.8485**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	6.2583	98.9405	42.9666	0.1819	18.1684	2.6062	20.4036	9.9578	2.4059	12.0141	0.0000	18,694.8918	18,694.8918	2.2783	0.0000	18,751.8485
Total	**6.2583**	**98.9405**	**42.9666**	**0.1819**	**18.1684**	**2.6062**	**20.4036**	**9.9578**	**2.4059**	**12.0141**	**0.0000**	**18,694.8918**	**18,694.8918**	**2.2783**	**0.0000**	**18,751.8485**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0282	1.0000e-005	1.2900e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.7400e-003	2.7400e-003	1.0000e-005		2.9200e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.9978	3.8950	9.6793	0.0215	1.4937	0.0307	1.5244	0.3999	0.0290	0.4290		2,159.4161	2,159.4161	0.1147		2,162.2829
Total	**1.0259**	**3.8950**	**9.6806**	**0.0215**	**1.4937**	**0.0307**	**1.5244**	**0.3999**	**0.0290**	**0.4290**		**2,159.4189**	**2,159.4189**	**0.1147**	**0.0000**	**2,162.2858**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0282	1.0000e-005	1.2900e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.7400e-003	2.7400e-003	1.0000e-005		2.9200e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.9978	3.8950	9.6793	0.0215	1.4937	0.0307	1.5244	0.3999	0.0290	0.4290		2,159.4161	2,159.4161	0.1147		2,162.2829
Total	**1.0259**	**3.8950**	**9.6806**	**0.0215**	**1.4937**	**0.0307**	**1.5244**	**0.3999**	**0.0290**	**0.4290**		**2,159.4189**	**2,159.4189**	**0.1147**	**0.0000**	**2,162.2858**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/1/2019	8/30/2019	5	22	
2	Revegetation area	Site Preparation	9/2/2019	10/4/2019	5	25	
3	Grading and Recountoruing current channel and Historic railroad grades	Grading	10/7/2019	11/22/2019	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Revegetation area	Rubber Tired Dozers	3	8.00	247	0.40
Revegetation area	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading and Recountoruing current channel and Historic railroad grades	Excavators	2	8.00	158	0.38
Grading and Recountoruing current channel and Historic railroad grades	Graders	1	8.00	187	0.41
Grading and Recountoruing current channel and Historic railroad grades	Rubber Tired Dozers	1	8.00	247	0.40
Grading and Recountoruing current channel and Historic railroad grades	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading and Recountoruing current channel and Historic railroad grades	Scrapers	2	8.00	367	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Revegetation area	6	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading and Recountoruing current	8	15.00	0.00	5,000.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	1.6002	16.7492	8.8895	0.0147		0.9008	0.9008		0.8288	0.8288		1,460.5122	1,460.5122	0.4621		1,472.0645
Total	**1.6002**	**16.7492**	**8.8895**	**0.0147**	**6.0221**	**0.9008**	**6.9229**	**3.3102**	**0.8288**	**4.1390**		**1,460.5122**	**1,460.5122**	**0.4621**		**1,472.0645**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0809	0.0532	0.6272	1.0800e-003	0.1022	8.4000e-004	0.1030	0.0271	7.7000e-004	0.0279		106.7045	106.7045	5.7300e-003		106.8479
Total	**0.0809**	**0.0532**	**0.6272**	**1.0800e-003**	**0.1022**	**8.4000e-004**	**0.1030**	**0.0271**	**7.7000e-004**	**0.0279**		**106.7045**	**106.7045**	**5.7300e-003**		**106.8479**

3.2 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	1.6002	16.7492	8.8895	0.0147		0.9008	0.9008		0.8288	0.8288	0.0000	1,460.5122	1,460.5122	0.4621		1,472.0645
Total	**1.6002**	**16.7492**	**8.8895**	**0.0147**	**6.0221**	**0.9008**	**6.9229**	**3.3102**	**0.8288**	**4.1390**	**0.0000**	**1,460.5122**	**1,460.5122**	**0.4621**		**1,472.0645**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0809	0.0532	0.6272	1.0800e-003	0.1022	8.4000e-004	0.1030	0.0271	7.7000e-004	0.0279		106.7045	106.7045	5.7300e-003		106.8479
Total	**0.0809**	**0.0532**	**0.6272**	**1.0800e-003**	**0.1022**	**8.4000e-004**	**0.1030**	**0.0271**	**7.7000e-004**	**0.0279**		**106.7045**	**106.7045**	**5.7300e-003**		**106.8479**

3.3 Revegetation area - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.1022	43.2354	19.7603	0.0349		2.2343	2.2343		2.0556	2.0556		3,458.9110	3,458.9110	1.0944		3,486.2701
Total	**4.1022**	**43.2354**	**19.7603**	**0.0349**	**18.0663**	**2.2343**	**20.3006**	**9.9307**	**2.0556**	**11.9863**		**3,458.9110**	**3,458.9110**	**1.0944**		**3,486.2701**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0809	0.0532	0.6272	1.0800e-003	0.1022	8.4000e-004	0.1030	0.0271	7.7000e-004	0.0279		106.7045	106.7045	5.7300e-003		106.8479
Total	**0.0809**	**0.0532**	**0.6272**	**1.0800e-003**	**0.1022**	**8.4000e-004**	**0.1030**	**0.0271**	**7.7000e-004**	**0.0279**		**106.7045**	**106.7045**	**5.7300e-003**		**106.8479**

3.3 Revegetation area - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.1022	43.2354	19.7603	0.0349		2.2343	2.2343		2.0556	2.0556	0.0000	3,458.9110	3,458.9110	1.0944		3,486.2701
Total	**4.1022**	**43.2354**	**19.7603**	**0.0349**	**18.0663**	**2.2343**	**20.3006**	**9.9307**	**2.0556**	**11.9863**	**0.0000**	**3,458.9110**	**3,458.9110**	**1.0944**		**3,486.2701**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0809	0.0532	0.6272	1.0800e-003	0.1022	8.4000e-004	0.1030	0.0271	7.7000e-004	0.0279		106.7045	106.7045	5.7300e-003		106.8479
Total	**0.0809**	**0.0532**	**0.6272**	**1.0800e-003**	**0.1022**	**8.4000e-004**	**0.1030**	**0.0271**	**7.7000e-004**	**0.0279**		**106.7045**	**106.7045**	**5.7300e-003**		**106.8479**

3.4 Grading and Recountoruing current channel and Historic railroad grades - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5624	0.0000	6.5624	3.3756	0.0000	3.3756			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920		6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**6.5624**	**2.3827**	**8.9450**	**3.3756**	**2.1920**	**5.5676**		**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3676	44.3206	8.4137	0.1178	2.4951	0.2220	2.7171	0.6837	0.2124	0.8960		12,354.8014	12,354.8014	0.3249		12,362.9233
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1518	0.0998	1.1761	2.0200e-003	0.1916	1.5800e-003	0.1932	0.0508	1.4500e-003	0.0523		200.0710	200.0710	0.0108		200.3397
Total	**1.5194**	**44.4204**	**9.5898**	**0.1199**	**2.6867**	**0.2236**	**2.9102**	**0.7345**	**0.2138**	**0.9483**		**12,554.8724**	**12,554.8724**	**0.3356**		**12,563.2631**

3.4 Grading and Recountoruing current channel and Historic railroad grades - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5624	0.0000	6.5624	3.3756	0.0000	3.3756			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920	0.0000	6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**6.5624**	**2.3827**	**8.9450**	**3.3756**	**2.1920**	**5.5676**	**0.0000**	**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3676	44.3206	8.4137	0.1178	2.4951	0.2220	2.7171	0.6837	0.2124	0.8960		12,354.8014	12,354.8014	0.3249		12,362.9233
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1518	0.0998	1.1761	2.0200e-003	0.1916	1.5800e-003	0.1932	0.0508	1.4500e-003	0.0523		200.0710	200.0710	0.0108		200.3397
Total	**1.5194**	**44.4204**	**9.5898**	**0.1199**	**2.6867**	**0.2236**	**2.9102**	**0.7345**	**0.2138**	**0.9483**		**12,554.8724**	**12,554.8724**	**0.3356**		**12,563.2631**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9978	3.8950	9.6793	0.0215	1.4937	0.0307	1.5244	0.3999	0.0290	0.4290		2,159.4161	2,159.4161	0.1147		2,162.2829
Unmitigated	0.9978	3.8950	9.6793	0.0215	1.4937	0.0307	1.5244	0.3999	0.0290	0.4290		2,159.4161	2,159.4161	0.1147		2,162.2829

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	23.63	284.38	209.25	215,529	215,529
Total	23.63	284.38	209.25	215,529	215,529

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.477812	0.046341	0.214053	0.144802	0.044200	0.008142	0.014479	0.037446	0.001825	0.001167	0.006726	0.000890	0.002117

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0282	1.0000e-005	1.2900e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.7400e-003	2.7400e-003	1.0000e-005		2.9200e-003
Unmitigated	0.0282	1.0000e-005	1.2900e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.7400e-003	2.7400e-003	1.0000e-005		2.9200e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0281					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2000e-004	1.0000e-005	1.2900e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.7400e-003	2.7400e-003	1.0000e-005		2.9200e-003
Total	**0.0282**	**1.0000e-005**	**1.2900e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.7400e-003**	**2.7400e-003**	**1.0000e-005**		**2.9200e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0281					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2000e-004	1.0000e-005	1.2900e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.7400e-003	2.7400e-003	1.0000e-005		2.9200e-003
Total	**0.0282**	**1.0000e-005**	**1.2900e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.7400e-003**	**2.7400e-003**	**1.0000e-005**		**2.9200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Sardine Meadow Restoration Project

Mountain Counties Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	12.50	Acre	12.50	544,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	8
Climate Zone	14			**Operational Year**	2019
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Non-default vaules based on Project Description.

Construction Phase - non-default vaules based on Project Description.

Off-road Equipment -

Off-road Equipment - non-default vaules based on Project Description.

Off-road Equipment - Non-default values based on Project Description.

Off-road Equipment - non default vaules based on Project description.

Trips and VMT - non-default values based on project description. 5,000 material hauling trips based on 50,000 cu yards of material, ~ 10 cu yards per truck.

Grading - non-default vaules based on Project Description.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	30.00	35.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	PhaseEndDate	11/6/2024	11/22/2019
tblConstructionPhase	PhaseEndDate	9/23/2020	8/30/2019
tblConstructionPhase	PhaseEndDate	11/17/2021	10/4/2019
tblConstructionPhase	PhaseStartDate	11/18/2021	10/7/2019
tblConstructionPhase	PhaseStartDate	9/24/2020	9/2/2019
tblGrading	AcresOfGrading	87.50	12.50
tblGrading	MaterialImported	0.00	50,000.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblProjectCharacteristics	OperationalYear	2018	2019
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	6,250.00	5,000.00
tblTripsAndVMT	WorkerTripNumber	15.00	8.00
tblTripsAndVMT	WorkerTripNumber	20.00	15.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	6.3204	100.1659	43.9017	0.1792	18.1684	2.6115	20.4036	9.9578	2.4109	12.0141	0.0000	18,417.9352	18,417.9352	2.3141	0.0000	18,475.7883
Total	**6.3204**	**100.1659**	**43.9017**	**0.1792**	**18.1684**	**2.6115**	**20.4036**	**9.9578**	**2.4109**	**12.0141**	**0.0000**	**18,417.9352**	**18,417.9352**	**2.3141**	**0.0000**	**18,475.7883**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	6.3204	100.1659	43.9017	0.1792	18.1684	2.6115	20.4036	9.9578	2.4109	12.0141	0.0000	18,417.9352	18,417.9352	2.3141	0.0000	18,475.7882
Total	**6.3204**	**100.1659**	**43.9017**	**0.1792**	**18.1684**	**2.6115**	**20.4036**	**9.9578**	**2.4109**	**12.0141**	**0.0000**	**18,417.9352**	**18,417.9352**	**2.3141**	**0.0000**	**18,475.7882**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0282	1.0000e-005	1.2900e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.7400e-003	2.7400e-003	1.0000e-005		2.9200e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.8495	4.1919	10.0549	0.0199	1.4937	0.0311	1.5248	0.3999	0.0294	0.4294		2,003.8548	2,003.8548	0.1168		2,006.7750
Total	**0.8777**	**4.1919**	**10.0562**	**0.0199**	**1.4937**	**0.0311**	**1.5248**	**0.3999**	**0.0294**	**0.4294**		**2,003.8576**	**2,003.8576**	**0.1168**	**0.0000**	**2,006.7779**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0282	1.0000e-005	1.2900e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.7400e-003	2.7400e-003	1.0000e-005		2.9200e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.8495	4.1919	10.0549	0.0199	1.4937	0.0311	1.5248	0.3999	0.0294	0.4294		2,003.8548	2,003.8548	0.1168		2,006.7750
Total	**0.8777**	**4.1919**	**10.0562**	**0.0199**	**1.4937**	**0.0311**	**1.5248**	**0.3999**	**0.0294**	**0.4294**		**2,003.8576**	**2,003.8576**	**0.1168**	**0.0000**	**2,006.7779**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/1/2019	8/30/2019	5	22	
2	Revegetation area	Site Preparation	9/2/2019	10/4/2019	5	25	
3	Grading and Recountoruing current channel and Historic railroad grades	Grading	10/7/2019	11/22/2019	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Revegetation area	Rubber Tired Dozers	3	8.00	247	0.40
Revegetation area	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading and Recountoruing current channel and Historic railroad grades	Excavators	2	8.00	158	0.38
Grading and Recountoruing current channel and Historic railroad grades	Graders	1	8.00	187	0.41
Grading and Recountoruing current channel and Historic railroad grades	Rubber Tired Dozers	1	8.00	247	0.40
Grading and Recountoruing current channel and Historic railroad grades	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading and Recountoruing current channel and Historic railroad grades	Scrapers	2	8.00	367	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Revegetation area	6	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading and Recountoruing current	8	15.00	0.00	5,000.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	1.6002	16.7492	8.8895	0.0147		0.9008	0.9008		0.8288	0.8288		1,460.5122	1,460.5122	0.4621		1,472.0645
Total	**1.6002**	**16.7492**	**8.8895**	**0.0147**	**6.0221**	**0.9008**	**6.9229**	**3.3102**	**0.8288**	**4.1390**		**1,460.5122**	**1,460.5122**	**0.4621**		**1,472.0645**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0862	0.0682	0.5839	9.8000e-004	0.1022	8.4000e-004	0.1030	0.0271	7.7000e-004	0.0279		96.7338	96.7338	5.3400e-003		96.8672
Total	**0.0862**	**0.0682**	**0.5839**	**9.8000e-004**	**0.1022**	**8.4000e-004**	**0.1030**	**0.0271**	**7.7000e-004**	**0.0279**		**96.7338**	**96.7338**	**5.3400e-003**		**96.8672**

3.2 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	1.6002	16.7492	8.8895	0.0147		0.9008	0.9008		0.8288	0.8288	0.0000	1,460.5122	1,460.5122	0.4621		1,472.0645
Total	**1.6002**	**16.7492**	**8.8895**	**0.0147**	**6.0221**	**0.9008**	**6.9229**	**3.3102**	**0.8288**	**4.1390**	**0.0000**	**1,460.5122**	**1,460.5122**	**0.4621**		**1,472.0645**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0862	0.0682	0.5839	9.8000e-004	0.1022	8.4000e-004	0.1030	0.0271	7.7000e-004	0.0279		96.7338	96.7338	5.3400e-003		96.8672
Total	**0.0862**	**0.0682**	**0.5839**	**9.8000e-004**	**0.1022**	**8.4000e-004**	**0.1030**	**0.0271**	**7.7000e-004**	**0.0279**		**96.7338**	**96.7338**	**5.3400e-003**		**96.8672**

3.3 Revegetation area - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.1022	43.2354	19.7603	0.0349		2.2343	2.2343		2.0556	2.0556		3,458.9110	3,458.9110	1.0944		3,486.2701
Total	**4.1022**	**43.2354**	**19.7603**	**0.0349**	**18.0663**	**2.2343**	**20.3006**	**9.9307**	**2.0556**	**11.9863**		**3,458.9110**	**3,458.9110**	**1.0944**		**3,486.2701**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0862	0.0682	0.5839	9.8000e-004	0.1022	8.4000e-004	0.1030	0.0271	7.7000e-004	0.0279		96.7338	96.7338	5.3400e-003		96.8672
Total	**0.0862**	**0.0682**	**0.5839**	**9.8000e-004**	**0.1022**	**8.4000e-004**	**0.1030**	**0.0271**	**7.7000e-004**	**0.0279**		**96.7338**	**96.7338**	**5.3400e-003**		**96.8672**

3.3 Revegetation area - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.1022	43.2354	19.7603	0.0349		2.2343	2.2343		2.0556	2.0556	0.0000	3,458.9110	3,458.9110	1.0944		3,486.2701
Total	**4.1022**	**43.2354**	**19.7603**	**0.0349**	**18.0663**	**2.2343**	**20.3006**	**9.9307**	**2.0556**	**11.9863**	**0.0000**	**3,458.9110**	**3,458.9110**	**1.0944**		**3,486.2701**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0862	0.0682	0.5839	9.8000e-004	0.1022	8.4000e-004	0.1030	0.0271	7.7000e-004	0.0279		96.7338	96.7338	5.3400e-003		96.8672
Total	**0.0862**	**0.0682**	**0.5839**	**9.8000e-004**	**0.1022**	**8.4000e-004**	**0.1030**	**0.0271**	**7.7000e-004**	**0.0279**		**96.7338**	**96.7338**	**5.3400e-003**		**96.8672**

3.4 Grading and Recountoruing current channel and Historic railroad grades - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5624	0.0000	6.5624	3.3756	0.0000	3.3756			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920		6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**6.5624**	**2.3827**	**8.9450**	**3.3756**	**2.1920**	**5.5676**		**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.4198	45.5178	9.4302	0.1154	2.4951	0.2273	2.7223	0.6837	0.2174	0.9011		12,096.5399	12,096.5399	0.3615		12,105.5769
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1617	0.1279	1.0947	1.8300e-003	0.1916	1.5800e-003	0.1932	0.0508	1.4500e-003	0.0523		181.3758	181.3758	0.0100		181.6260
Total	**1.5814**	**45.6458**	**10.5250**	**0.1172**	**2.6867**	**0.2288**	**2.9155**	**0.7345**	**0.2189**	**0.9533**		**12,277.9158**	**12,277.9158**	**0.3715**		**12,287.2028**

3.4 Grading and Recountoruing current channel and Historic railroad grades - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5624	0.0000	6.5624	3.3756	0.0000	3.3756			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920	0.0000	6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**6.5624**	**2.3827**	**8.9450**	**3.3756**	**2.1920**	**5.5676**	**0.0000**	**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.4198	45.5178	9.4302	0.1154	2.4951	0.2273	2.7223	0.6837	0.2174	0.9011		12,096.5399	12,096.5399	0.3615		12,105.5769
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1617	0.1279	1.0947	1.8300e-003	0.1916	1.5800e-003	0.1932	0.0508	1.4500e-003	0.0523		181.3758	181.3758	0.0100		181.6260
Total	**1.5814**	**45.6458**	**10.5250**	**0.1172**	**2.6867**	**0.2288**	**2.9155**	**0.7345**	**0.2189**	**0.9533**		**12,277.9158**	**12,277.9158**	**0.3715**		**12,287.2028**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.8495	4.1919	10.0549	0.0199	1.4937	0.0311	1.5248	0.3999	0.0294	0.4294		2,003.8548	2,003.8548	0.1168		2,006.7750
Unmitigated	0.8495	4.1919	10.0549	0.0199	1.4937	0.0311	1.5248	0.3999	0.0294	0.4294		2,003.8548	2,003.8548	0.1168		2,006.7750

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	23.63	284.38	209.25	215,529	215,529
Total	23.63	284.38	209.25	215,529	215,529

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.477812	0.046341	0.214053	0.144802	0.044200	0.008142	0.014479	0.037446	0.001825	0.001167	0.006726	0.000890	0.002117

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0282	1.0000e-005	1.2900e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.7400e-003	2.7400e-003	1.0000e-005		2.9200e-003
Unmitigated	0.0282	1.0000e-005	1.2900e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.7400e-003	2.7400e-003	1.0000e-005		2.9200e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0281					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2000e-004	1.0000e-005	1.2900e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.7400e-003	2.7400e-003	1.0000e-005		2.9200e-003
Total	**0.0282**	**1.0000e-005**	**1.2900e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.7400e-003**	**2.7400e-003**	**1.0000e-005**		**2.9200e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0281					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2000e-004	1.0000e-005	1.2900e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.7400e-003	2.7400e-003	1.0000e-005		2.9200e-003
Total	**0.0282**	**1.0000e-005**	**1.2900e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.7400e-003**	**2.7400e-003**	**1.0000e-005**		**2.9200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Appendix C BIOLOGICAL SURVEY RESULTS

C.1 BIOLOGICAL FIELD SURVEY RESULTS

Plant and wildlife species observed during Sardine Meadow site visit, October 4, 2017, Sierra County, California.

Common name	*Scientific name*
Plants	
Anderson's thistle	*Cirsium andersonii*
Antelope bitterbrush	*Purshia tridentata var. tridentata*
Bird's-foot trefoil	*Lotus tenuis*
Bluegrass	*Poa palustris*
Brewers naverretia	*Naverretia brewerii*
Buckwheat	*Eriogonum* sp.
Cinquefoil	*Potentilla gracilis*
Clover	*Trifolium* spp.
Cusick's bluegrass	*Poa cusckii*
Deathcamas	*Toxicoscordion venenosum*
Dock	*Rumex venosus*
Evening primrose	*Oenothera* sp.
Fescue spp.	*Festuca* spp.
Foxtail barley	*Hordeum jubatum*
Galleta grass	*Pleuraphis* sp.
Gayophytum	*Gayophytum diffusum*
Geum	*Geum triflorum*
Gilia	*Gilia* spp.
Hawksbeard	*Crepis* sp.
Hoary aster	*Dieteria canescens*
Hood's phlox	*Phlox hoodii*
Intermediate wheatgrass	*Thinopyrum intermedium*
Jeffrey pine	*Pinus jefferyi*
Larkspur	*Delphinium sp.*
Lomatium	*Lomatium* sp.
Low sage	*Artemisisa arbuscula ssp. Arbuscula*
Lupine	*Lupinus* spp.
Meadow penstemon	*Penstemon rydbergii*

Common name	*Scientific name*
Milkvetch	*Astragalus* sp.
Mount Hood pussypaws	*Calyptridium umbellatum*
Mountain brome	*Bromus carinatus var. marginatus*
Mountain sagebrush	*Artemisia tridentata ssp. vaseyana*
Mugwort	*Artemisia douglasiana*
Narrowleaf willow	*Salix exigua*
Nebraska sedge	*Carex nebrascensis*
Needlegrass, rice grass, thread grass	*Stipa* spp.
Oatgrass	*Danthonia californica*
Paintbrush	*Castilleja* sp.
Parry's rabbitbrush	*Ericameria parryi*
Penstemon	*Penstemon* spp.
Phacelia	*Phaceilia parishii*
Plumas ivesia [1, 3]	*Ivesia sericoleuca*
Prickly phlox	*Linanthus pungens*
Pussytoes	*Antennaria* sp.
Sandburg's bluegrass	*Poa secunda*
Carex spp.	*Carex* spp.
Silver sagebrush	*Artemisia ludoviciana*
Slender wheatgrass	*Elymus trachycaulum var. trachycaulum*
Smallwing sedge	*Carex microptera*
Squirrel tail grass	*Elymus elymoides*
Sulphur Buckwheat	*Eriogonum umbellatum*
Tufted hair grass	*Deschampsia cespitosa*
Western wheatgrass	*Elymus smithii*
Willow	*Salix lasiandra*
Willowherb	*Epilobium cilatum*
Yampah	*Perideridia sp.*
Yarrow	*Achellea millefolium*
Invertebrates	
Darner	*Anax* sp.

Common name	*Scientific name*
Predaceous diving beetle	*Hydroporus* sp.
Water boatman	*Corixidae*
Water strider	*Gerridae*
Birds	
American crow	*Corvus brachyrhynchos*
American robin	*Turdus migratorius*
Black-billed magpie	*Pica nebraskensis*
Brewer's blackbird [1]	*Euphagus cyanocephalus*
Brown-headed cowbird	*Molothrus ater*
Canada goose [1]	*Branta canadensis*
Cassin's finch	*Haemorhous cassinii*
Clark's nutcracker [1]	*Nucifraga columbiana*
Common raven	*Corvus corax*
Dark-eyed junco	*Junco hyemalis*
Green-tailed towhee	*Pipilo chlorurus*
Horned lark	*Eremophila alpestris*
Mountain bluebird	*Sialia currucoides*
Mountain chickadee	*Poecile gambeli*
Mourning dove	*Zenaida macroura*
Northern flicker	*Colaptes auratus*
Northern harrier	*Circus cyaneus*
Pygmy nuthatch	*Sitta pygmaea*
Red-breasted nuthatch	*Sitta canadensis*
Red-tailed hawk	*Buteo jamaicensis*
Red-winged blackbird [1]	*Agelaius phoeniceus*
Sandhill crane [1, 2]	*Grus canadensis*
Savannah sparrow	*Passerculus sandwichensis*
Sharp-shinned hawk [1]	*Accipiter striatus*
Song sparrow [1]	*Melospiza melodia*
Steller's jay	*Cyanocitta stelleri*
Western meadowlark	*Sturnella neglecta*
White-crowned sparrow	*Zonotrichia leucophrys*
Mammals	

Common name	*Scientific name*
Coyote	*Canis latrans*
Douglas's squirrel	*Tamiasciurus douglasii*
Pocket gopher	*Thomomys bottae*
Meadow vole	*Microtus pennsylvanicus*
Mule deer	*Odocoileus hemionus*
Muskrat	*Ondatra zibethicus*
Raccoon	*Procyon lotor*
Western gray squirrel	*Sciurus griseus*

[1] Presumed migrant
[2] Cal/USFS sensitive species and species of conservation concern.
[3] CNPS 1B species

C.2 BIOLOGICAL DESKTOP SURVEY RESULTS

The following describes the list of species that occurred during the CNDBB database search, but have a low to nil chance of occurring within the Project site.

Common Name Scientific Name	Legal Status			Geographic Distribution/ Floristic Province	Preferred Habitat	Identification Period	Level of Potential for Occurrence Within Project Sites
	Federal	State	CNPS				
Plants							
alder buckthorn *Rhamnus alnifolia*	–	–	2B.2	4,494-6,988 feet (1,370-2,130 meters)	Lower and upper montane coniferous forest; meadows, seeps, riparian scrub.	May-July	**Low.** Limited suitable habitat in the proposed Project area. No known occurrences within three miles of the proposed Project area.
Austin's astragalus *Astragalus austiniae*	–	–	1B.3	8,005-9,727 feet (2,440-2,965 meters)	Alpine boulders and rock fields; subalpine coniferous forest.	July-September	**Very Low to Nil.** Limited to no suitable habitat in the proposed Project area. Proposed Project area outside of known species elevation range. No known occurrences within three miles of the proposed Project area.
broad-nerved hump moss *Meesia uliginosa*	–	–	2B.2	3,969-9,200 feet (1,210-2,804 meters)	Damp soils, bogs, fens, meadows, seeps; subalpine coniferous forest, upper montane coniferous forest.	October	**Low.** Limited suitable habitat in the proposed Project area. Known occurrence within the Dog Valley USGS Quad. Specific occurrence at Merrill Creek, between Jones Valley and Merrill Valley, by a 2005 Orsolini CalFlora record.
clustered-flower cryptantha *Cryptantha glomeriflora*	–	–	4.3	5,905-12,305 feet (1,800-3,750 meters)	Great Basin scrub, meadows and seeps, subalpine coniferous forest, upper montane coniferous forest; granitic or volcanic, sandy environments.	June-September	**Low.** Suitable habitat in the proposed Project area, but limited in area and no known occurrences within three miles of the proposed Project area.

Common Name Scientific Name	Legal Status			Geographic Distribution/ Floristic Province	Preferred Habitat	Identification Period	Level of Potential for Occurrence Within Project Sites
	Federal	State	CNPS				
common moonwort *Botrychium lunaria*	–	–	2B.3	6,496-11,154 feet (1,980-3,400 meters)	Meadows, seeps; subalpine coniferous forest, upper montane coniferous forest.	August	**Low**. Limited suitable habitat in the proposed Project area. Proposed Project area outside of known species elevation range. Known occurrence in the Hobart Mills USGS Quad, specifically on Sagehen Creek (CNDDB 2017).
Davy's sedge *Carex davyi*	–	–	1B.3	4,921-10,498 feet (1,500-3,200 meters)	Subalpine coniferous forest, upper montane coniferous forest.	May-August	**Low**. Limited suitable habitat in the proposed Project area, and the area has higher soil moisture than sites where this species typically is known to occur. No known occurrences within three miles of the proposed Project area.
English sundew *Drosera anglica*	–	–	2B.3	4,265-7,398 feet (1,300-2,255 meters)	Bogs, fens, meadows, seeps; mesic environments.	June-September	**Very Low to Nil**. Limited to no suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.
fell-fields claytonia *Claytonia megarhiza*	–	–	2B.3	8,530-11,587 feet (2,600-3,532 meters)	Rocky crevices; alpine boulders rock fields; subalpine coniferous forest; rocky and gravelly environments.	July-September	**Very Low to Nil.** Limited to no suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.
fiddleleaf hawksbeard *Crepis runcinata*	–	–	2B.2	4,100-6,480 feet (1,250-1,975 meters)	Mojavean desert scrub, Pinyon and juniper woodland; mesic, alkaline environments.	May-August	**Low**. Limited suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.

Common Name Scientific Name	Legal Status			Geographic Distribution/ Floristic Province	Preferred Habitat	Identification Period	Level of Potential for Occurrence Within Project Sites
	Federal	State	CNPS				
field milk-vetch *Astragalus agrestis*	–	–	2B.2	5,115-5,415 feet (1,560-1,650 meters)	Great Basin scrub, meadows and seeps; vernally mesic environments.	April-July (August)	**Very Low to Nil.** Limited to no suitable habitat in the proposed Project area. Proposed Project area outside of known species elevation range. No known occurrences within three miles of the proposed Project area.
globose cymopterus *Cymopterus globosus*	–	–	2B.2	3,935-7,005 feet (1,200-2,135 meters)	Great Basin scrub; sandy environments, open flats.	March-June	**Very Low to Nil.** Limited to no suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.
golden violet *Viola purpurea ssp. aurea*	–	–	2B.2	3,280-8,200 feet (1,000-2,500 meters)	Great Basin scrub, Pinyon and juniper woodland; sandy environments.	April-June	**Very Low to Nil.** Limited to no suitable habitat in the proposed Project area. No known occurrences within three miles of the proposed Project area.
Lemmon's clover *Trifolium lemmonii*	–	–	4.2	4,920-6,005 feet (1,500-1,830 meters)	Great Basin scrub, lower montane coniferous forest.	May-July	**Low.** Suitable habitat in the proposed Project area, but limited in area and no known occurrences within three miles of the proposed Project area.
Lemmon's milk-vetch *Astragalus lemmonii*	–	–	1B.2	3,300-7,217 feet (1,007-2,200 meters)	Great Basin scrub; meadows, seeps, marshes, swamps, lake shores.	May-September	**Low.** Suitable habitat in the proposed Project area, but limited in area and no known occurrences within three miles of the proposed Project area.

Common Name Scientific Name	Legal Status			Geographic Distribution/ Floristic Province	Preferred Habitat	Identification Period	Level of Potential for Occurrence Within Project Sites
	Federal	State	CNPS				
long-petaled lewisia *Lewisia longipetala*	–	–	1B.3	8,202-9,596 feet (2,500-2,925 meters)	Granitic, rocky, mesic environments; alpine boulders, rock fields; subalpine coniferous forest.	July-September	**Very Low to Nil.** Limited to no suitable habitat in the proposed Project area. Proposed Project area outside of known species elevation range. No known occurrences within three miles of the proposed Project area.
Mingan moonwort *Botrychium minganense*	–	–	2B.2	4,773-7,152 feet (1,455-2,180 meters)	Bogs, fens, meadows, seeps; lower and upper montane coniferous forest.	July-September	**Very Low to Nil.** Limited to no suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.
Modoc County knotweed *Polygonum polygaloides ssp. esotericum*	–	–	1B.1	2,900-5,545 feet (885-1,690 meters)	Great Basin scrub, lower montane coniferous forest, meadows and seeps, vernal pools; mesic environments.	May-September	**Very Low to Nil.** Limited to no suitable habitat in the proposed Project area. Proposed Project area outside of known species elevation range. No known occurrences within three miles of the proposed Project area.
mud sedge *Carex limosa*	–	–	2B.2	3,937-8,858 feet (1,200-2,700 meters)	Bogs, fens, meadows, seeps; lower and upper montane coniferous forest.	June-August	**Low.** Limited suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.
Nevada daisy *Erigeron eatonii var. nevadincola*	–	–	2B.3	4,590-9,515 feet (1,400-2,900 meters)	Great Basin scrub, lower montane coniferous forest, Pinyon and juniper woodland; rocky environments.	May-July	**Low.** Limited suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.

Common Name Scientific Name	Legal Status			Geographic Distribution/ Floristic Province	Preferred Habitat	Identification Period	Level of Potential for Occurrence Within Project Sites
	Federal	State	CNPS				
Nevada lupine *Lupinus nevadensis*	–	–	4.3	3,280-9,845 feet (1,000-3,000 meters)	Great Basin scrub, Pinyon and juniper woodland.	April-June	**Low.** Limited suitable habitat in the proposed Project area. No known occurrences within three miles of the proposed Project area.
Oregon fireweed *Epilobium oreganum*	–	–	1B.2	1,640-7,350 feet (500-2,240 meters)	Bogs and fens, lower montane coniferous forest, meadows and seeps, upper montane coniferous forest; mesic environments.	June-September	**Very Low to Nil.** Limited to no suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.
Robbins' pondweed *Potamogeton robbinsii*	–	–	2B.3	5,019-10,826 feet (1,530-3,300 meters)	Marshes, swamps, deep waters, lakes.	July-August	**Very Low to Nil.** Limited to no suitable habitat in the proposed Project area. No known occurrences within three miles of the proposed Project area.
sagebrush bluebells *Mertensia oblongifolia* var. *oblongifolia*	–	–	2B.2	3,280-9,842 feet (1,000-3,000 meters)	Mesic environments; Great Basin scrub; lower montane coniferous forest; meadows, seeps; subalpine coniferous forest.	April-July	**Low**. Limited suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.
scalloped moonwort *Botrychium crenulatum*	–	–	2B.2	4,160-10,761 feet (1,268-3,280 meters)	Lower and upper montane coniferous forest; meadows, seeps, bogs, fens, marshes, swamps, bogs, fens, freshwaters.	June-September	**Very Low to Nil.** Limited to no suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.
Sierra Valley ivesia *Ivesia aperta var. aperta*	–	–	1B.2	4,855-7,545 feet (1,480-2,300 meters)	Vernally mesic, usually volcanic environments; Great Basin scrub; lower montane coniferous forest; pinyon and juniper woodland; vernal pools, meadows, seeps.	June-September	**Low.** Suitable habitat in the proposed Project area, but limited in area and no known occurrences within three miles of the proposed Project area.

Common Name Scientific Name	Legal Status			Geographic Distribution/ Floristic Province	Preferred Habitat	Identification Period	Level of Potential for Occurrence Within Project Sites
	Federal	State	CNPS				
slender cottongrass *Eriophorum gracile*	–	–	4.3	4,199-9,514 feet (1,280-2,900 meters)	Bogs, fens, meadows, seeps; upper montane coniferous forest.	May-September	**Very Low to Nil**. Limited to no suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.
starved daisy *Erigeron miser*	–	–	1B.3	6,036-8,595 feet (1,840-2,620 meters)	Upper montane coniferous forest; rocky environments.	June-October	**Low.** Limited suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.
subalpine fireweed *Epilobium howellii*	–	–	4.3	6,561-10,236 feet (2,000-3,120 meters)	Meadows, seeps; subalpine coniferous forest.	July-August	**Very Low to Nil.** Limited to no suitable habitat in Project area. Proposed Project area outside of known species elevation range. No known occurrences within three miles of the proposed Project area.
Susanville beardtongue *Penstemon sudans*	–	–	1B.2	3,935-7,955 feet (1,200-2,425 meters)	Great Basin scrub, lower montane coniferous forest (in openings), Pinyon and juniper woodland; volcanic and rocky environments, sometimes on roadsides.	June-July (August-September)	**Low.** Limited suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.
three-ranked hump moss *Meesia triquetra*	–	–	4.2	4,265-9,688 feet (1,300-2,953 meters)	Bogs, fens; meadows, seeps; subalpine coniferous forest; upper montane coniferous forest.	July	**Very Low to Nil.** Limited to no suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.
upswept moonwort *Botrychium ascendens*	–	–	2B.3	3,658-8,858 feet (1,115-2,700 meters)	Lower montane coniferous forest; meadows, seeps.	July-August	**Low.** Limited suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.

Common Name Scientific Name	Legal Status			Geographic Distribution/ Floristic Province	Preferred Habitat	Identification Period	Level of Potential for Occurrence Within Project Sites
	Federal	State	CNPS				
Webber's ivesia *Ivesia webberi*	T	–	1B.1	3,280-6,807 feet (1,000-2,075 meters)	Sandy or gravelly soil within Great Basin scrub; volcanic ash environments; lower montane coniferous forest; pinyon and juniper woodland.	May-July	**Low**. Limited suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.
western valley sedge *Carex vallicola*	–	–	2B.3	5,000-9,205 feet (1,525-2,805 meters)	Great Basin scrub, meadows and seeps; mesic environments.	July-August	**Low.** Suitable habitat in the proposed Project area, but limited in area and no known occurrences within three miles of the proposed Project area.
Fish							
Cui-ui *Chasmistes cujus*	E	–	N/A	Lower Truckee River and Pyramid Lake, Nevada.	Lakes and gravel bars for spawning.	Year-round	**Very Low to Nil.** No suitable habitat within the proposed Project area. Out of species known range, and no known occurrences within three miles of proposed Project area.
Lahontan cutthroat trout *Oncorhynchus clarkii henshawi*	T	--	N/A	Eastern Sierra drainages that once connected to ancient Lake Lahontan.	Streams with clear, cold water with silt-free substrate and a variety of habitats including areas with slow deep water, abundant instream cover and relatively stable streamflow and temperature regimes.	Year-round	**Very Low to Nil.** No suitable habitat within the proposed Project area. Out of species known range, and no known occurrences within three miles of proposed Project area.
Mammals							

Common Name Scientific Name	Legal Status			Geographic Distribution/ Floristic Province	Preferred Habitat	Identification Period	Level of Potential for Occurrence Within Project Sites
	Federal	State	CNPS				
California wolverine *Gulo gulo*	–	T, FP	N/A	Scarce resident of North Coast mountains and Sierra Nevada, 4,300-7,300 feet (1,311-2,225 meters) in the northern Sierra Nevada.	In northern Sierra Nevada, mixed conifer, red fir, lodgepole. Likely subalpine conifer, wet meadow, and montane riparian habitats. Prefers low human disturbance, finds cover generally in dense forest.	Year-round	**Low.** Limited suitable habitat within the proposed Project area. No known occurrences within three miles of proposed Project area.
Bat species	--	SSC	N/A	Variable distribution depending on species.	Most but not all species forage near water sources. Maternity and roost sites vary depending on species. Typical sites are rock outcrops and cliffs, caves, mining adits, trees, buildings, or bridges.	Seasonally variable, Spring through Autumn	**Very Low to Nil.** (Maternity/roosting). The area provides little roosting or maternity sites for bats, the trees surrounding the Project are not optimal for roosting. However, the Project area provides foraging habitat for most bat species.
Birds							
California spotted owl *Strix occidentalis occidentalis*	–	SSC	N/A	Northern California extending into southern California along the Sierra Nevada, Coastal, and transverse ranges.	Multi-layered forest habitat with high canopy closure with a mixture of tree sizes and densities, including large diameter old-growth trees for nesting and roosting. Found in elevations up to approximately 8,500 feet.	Year-round	**Low.** Limited suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.

Common Name Scientific Name	Legal Status			Geographic Distribution/ Floristic Province	Preferred Habitat	Identification Period	Level of Potential for Occurrence Within Project Sites
	Federal	State	CNPS				
Greater sandhill crane *Antigone (Grus) canadensis tabida*	--	T	N/A	North American meadow, marsh and agricultural fields	Greater sandhill nest within wet meadows and marshes on large mounds. In California nest only in the northeastern portion of the State within suitable Sierra, Modoc or east side valleys.	Nesting Wintering	**Low** (nesting). Limited suitable habitat for nesting that includes wet meadow occurs in Project area. Known occurrences include Kyburz Meadow and Sierra Valley both greater than three miles away (CNDDB 2017). Sandhill crane were noted during the October survey.
olive-sided flycatcher *Contopus cooperi*	–	SSC	N/A	Mountain ranges throughout the western North America, including the Sierra Nevada.	Coniferous forests at edges and openings, meadows and ponds, nesting on the outer rim of a tree branch.	Summer	**Low** (nesting). Limited suitable habitat in Project area. No known occurrences within three miles of the proposed Project area.
yellow warbler Setophaga petchia		SSC	N/A	Abundant and widespread throughout the northern 2/3rds of U.S., and all of Canada. Prefers habitat of diverse riparian and montane habitats.	Within the Sierra occurs within riparian and montane chaparral that provide adequate insect foraging.	Summer (nesting)	**Very Low to Nil** (nesting). Suitable diverse riparian habitat of for nesting does not occur within the Project area. Additionally, this species is heavily impacted by brown-headed cowbirds who parasitize other bird nests. Brown-headed cowbirds are common in grazed habitats.

Appendix D CULTURAL RESOURCES DOCUMENTATION

D.1 NATIVE AMERICAN CORRESPONDENCE

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Lahontan Regional Water Quality Control Board

November 17, 2017

Gene Whitehouse
Chairman
10720 Indian Hill Road
Auburn, CA 95603

Tribal Cultural Resources under the California Environmental Quality Act, AB 52 (Gatto, 2014). Formal Notification of Determination that a Project Application is Complete or Decision to Undertake a Project, and Notification of Consultation Opportunity, pursuant to Public Resources Code § 21080.3.1 (hereafter PRC).

The Lahontan Regional Water Quality Control Board (Water Board) has decided to undertake the Sardine Meadow Restoration Project (Project). The Water Board is the Lead Agency pursuant to the California Environmental Quality Act (CEQA), and is preparing an environmental document for the Project to comply with the requirements of CEQA. The environmental document is anticipated to be a Mitigated Negative Declaration (MND).

Below please find a description of the proposed Project, a map showing the Project location, and the name of our Project point of contact, pursuant to PRC § 21080.3.1 (d).

Project Location

The Project is located in the south-eastern portion of Sierra County, six miles west of the Nevada border in the Sardine Valley, north of Truckee, California. See the attached Project Location map for details.

Description of Proposed Project

Sardine Valley is located in the Davies Creek watershed and encompasses over 350 acres of degraded riparian meadow system and over 15,000 feet of degraded stream. Within Sardine Valley, portions of Davies Creek have been diverted from its historic flow patterns due to past logging, railroad building, and grazing practices. These influences have caused Davies Creek to divert from its course on the southern side of the meadow within Sardine Valley to the northern side where it is currently flowing in eroded and incised channels. The project will be carried out by the Truckee River Watershed Council (TRWC), consistent with its *Coordinated Watershed Management Strategy for the Middle Truckee River* (TRWC 2004).

The Project would return flow to approximately three miles of historic stream channel, and restore up to 300 acres of meadow habitat. The Project involves placing engineered fill within the currently incised, down cut channels to return stream flows to historic channels,

thus improving the meadow's hydrology and function. The Project would improve habitat for a range of mammals, raptors, and other important bird species, including willow flycatcher. The Project would provide hydrologic benefits such as reduced sedimentation, improved late season base flow, and elevated groundwater tables.

Specifically, the proposed Project would involve:

1) Filling the current degraded channels on the northern and southern sides of the meadow, and the removal and re-contouring of the railroad grade that crosses the meadow to restore natural hydrologic function and return flows to their historic channels.

2) Placement of approximately 50,000 cubic yards of engineered fill using borrow material stockpiled at Boca Reservoir.

3) Preparation of all sites by installing appropriate best management practices and undertaking vegetation salvaging efforts.

4) Re-vegetation and stabilization of the disturbed areas with native and local plant species to stabilize the site and ensure long term success.

The Project would have short-term construction impacts to approximately 22 acres that would be restored with native vegetation. It is anticipated that construction would operate with two crews consisting of an excavator/front-end loader and delivery dump truck that would operate in tandem working from one end of a project feature to another, restoring and cleaning up the site as they go to minimize the construction footprint. Construction is anticipated in the late summer/early fall of 2019 and would last approximately six to eight weeks.

Lead Agency Point of Contact

For questions or additional information, please contact Anne Holden at 530-542-5450 or anne.holden@waterboards.ca.gov.

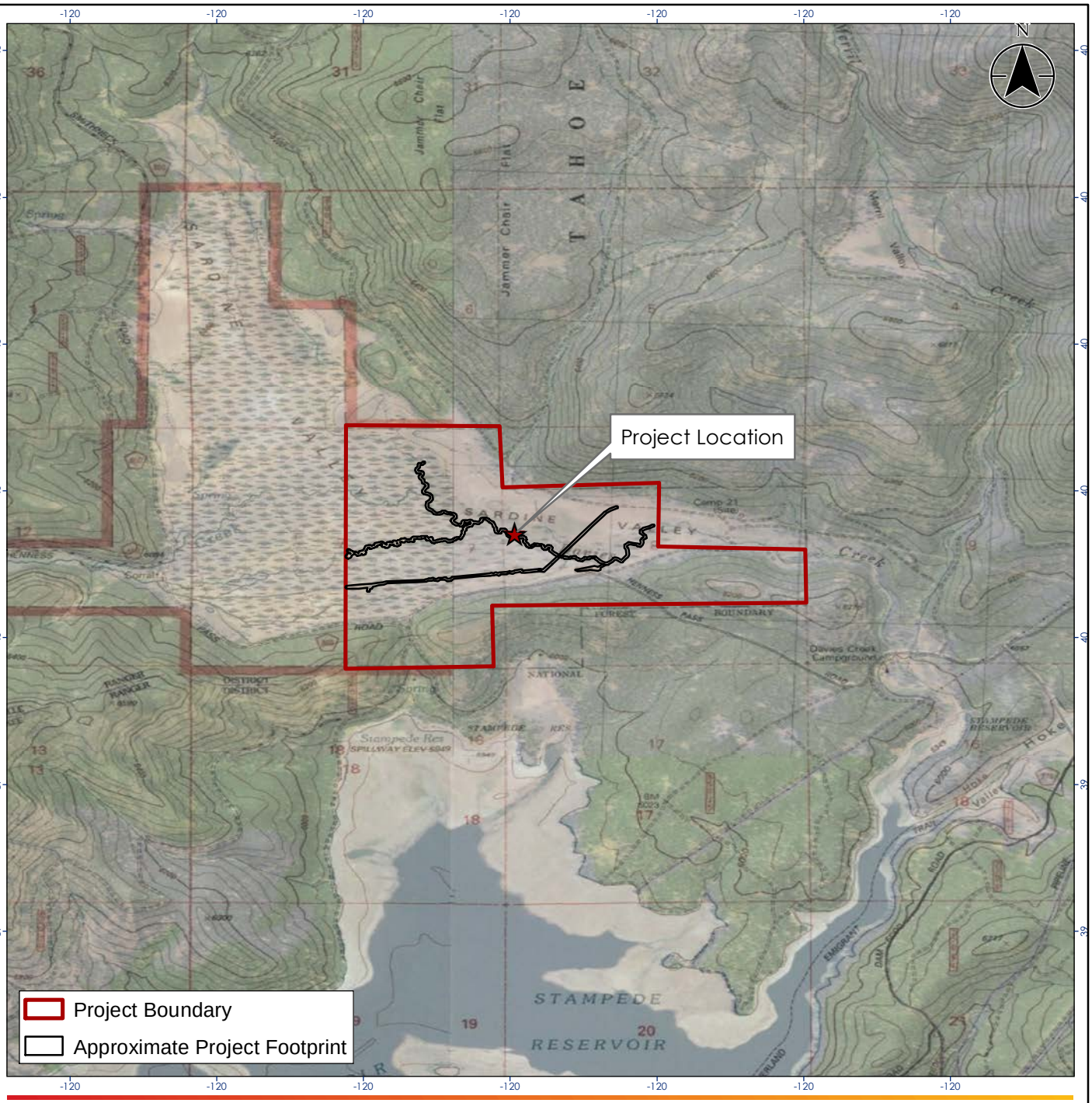
Pursuant to PRC § 21080.3.1 (b), you have 30 days from the receipt of this letter to request consultation, in writing, with the Water Board.

Very Respectfully,

Douglas Cushman, PE
Senior Water Resource Control Engineer
Nonpoint Source Pollution Control Unit

Enclosure: Sardine Meadow Restoration Project Location Map

cc: Continued next page



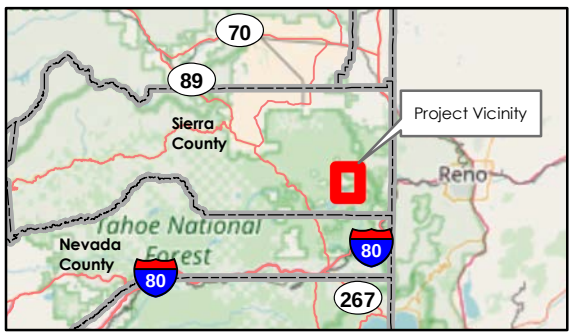


Figure No.

1

Title

Project Vicinity and Location

Client/Project

Truckee River Watershed Council
Sardine Meadow Restoration Project
185703836

0 0.5 1 Miles

foriver
TRUCKEE RIVER WATERSHED COUNCIL

Stantec

Notes

Coordinate System: GCS WGS 1984

V:\1857\active\185703836\gis\mxd\fig1_sardine_vicinity_8_5-11.mxd Revised: 2017-11-15 By: kchyma

cc: Jason Camp
Marcos Guerrero

AH/gg/T: CEQA.AB 52 Consultation.Sardine Valley
File Under: ECM

From: Holden, Anne@Waterboards
To: Clyma, Kimberly
Subject: FW: CEQA AB 52 Consultation.Sardine Valley
Date: Tuesday, November 21, 2017 10:48:02 AM

AB 52 response from the UAIC for the admin record.

From: Marcos Guerrero [mailto:mguerrero@auburnrancheria.com]
Sent: Monday, November 20, 2017 7:16 AM
To: Lahontan
Cc: Cushman, Douglas@Waterboards; Holden, Anne@Waterboards; Matthew Moore
Subject: RE: CEQA AB 52 Consultation.Sardine Valley

Hello Gina,
UAIC has no comments on this project at this time, you can consider AB52-CEQA consultation closed for the purposes of your administrative record.
Thank you for the letter,
Marcos

From: Gennaro, Gina@Waterboards [mailto:Gina.Gennaro@Waterboards.ca.gov] **On Behalf Of** Lahontan
Sent: Friday, November 17, 2017 4:46 PM
Cc: Cushman, Douglas@Waterboards <douglas.cushman@waterboards.ca.gov>; Jason Camp <jcamp@auburnrancheria.com>; Marcos Guerrero <mguerrero@auburnrancheria.com>; Holden, Anne@Waterboards <anne.holden@waterboards.ca.gov>
Subject: CEQA AB 52 Consultation.Sardine Valley

Good afternoon,

Please see attached.

Thank you,

Gina Gennaro
Administrative Unit
Lahontan Regional Water Quality Control Board
2501 Lake Tahoe Boulevard
South Lake Tahoe, CA 96150
(530) 542-5400

D.2 BACKGROUND CULTURAL INFORMATION

Contextual setting for the cultural and tribal resources in the Project area used to establish baseline conditions is provided below.

Prehistoric Context for the Sierra Nevada

Interest in the archaeology and prehistory of the Sierra Nevada region of California began during the Gold Rush (1840s), as previously undisturbed gravel and mineral deposits were subject to increasing exploitation (Moratto 1984). Several early discoveries were posited by some as evidence of a static culture in California since the Holocene (10,000 years before present [BP] to present). They include an assortment of charmstones, mortars, pestles, and a human skull discovered at Table Mountain, a human skeleton allegedly discovered in basaltic lava at 11.6 meters below the surface (Whitney 1880), and the infamous "Calaveras skull," all of which were later debunked (Moratto 1984; Whitney 1867, 1880). In the 1860s, 1870s, and 1880s, Whitney was especially vocal about such claims, although even at that time there were detractors, such as Holmes and Sinclair (Holmes 1899; Moratto 1984; Sinclair 1908).

Serious, scholarly archaeological investigations throughout the region began in the 1870s, including at a burial site along the Stanislaus River in 1877 (Powers), within Yosemite National Park (Beatty 1933; Harden 1908), at petroglyph sites throughout the region (Steward 1929), and at high altitude lithic scatters north of Lake Tahoe (Avery 1873). Steward's work identified two distinct petroglyph styles: A and B. Style A, is located east of the crest of the Sierra Nevada mountains, and is typified by geometric motifs. Style B is located within the southern Sierra Nevada foothills, and includes more naturalistic paintings of both humans and animals (Steward 1929).

Archaeological work during the 1940s and 1950s included large scale archaeological surveys, conducted by the Smithsonian Institution and by the University of California's Berkeley branch. The Smithsonian's river basin surveys were conducted at numerous locations in the 1940s, including Folsom, Isabella, Mariposa, New Melones, Pine Flat, Sly Park, and Success Reservoirs (Fenenga 1947; Fredrickson 1949). Heizer also conducted comprehensive surveys within the region via the University of California, Berkeley (Heizer 1948).

Northern Sierra Nevada

As archaeological survey and excavation within the region continued into the 1950s, more specific questions related to lifeways and subsistence practices began to be investigated. In 1952, Bolt, Elsasser and Heizer tested surface collections at twenty-six archaeological sites along the eastern side of the Sierra Nevada crest, near Lake Tahoe, which led to a greater understanding of the functionality and location of seasonal camping/occupation sites within the region (Heizer and Elsasser 1953). Heizer and Elsasser's work along the north shore of Lake Tahoe conducted in 1953, helped better define the northern Sierra prehistoric chronology with the

observation two distinct material cultures: Martis (4,000 – 2,000 years BP) and Kings Beach (AD 1,000-Historic Period) (Heizer and Elsasser 1953).

The Martis pattern was first identified at archaeological site CA-PLA-5, and was named after its location within the Martis Valley. Other archaeological investigated in the 1950s and 1960s which led to additional discoveries of assemblages with Martis components included work within Martis Valley (Arnold 1957), at Chilcoot rockshelter in Plumas County (Payen and Boloyen 1961); at Loyalton rockshelter in Sierra County (Wilson 1963); at CA-NEV-13 and CA-SIE-20; Prosser Creek Reservoir, located north of Truckee in Nevada County (Davis 1958); Watasheamu Reservoir near Kings Beach, and from the excavations conducted at Stampede Reservoir on the Little Truckee River in Sierra County (Moratto 1984; Payen and Olsen 1969). Work at Stampede Reservoir led to the identification of a seasonal occupation base at CA-SIE-44 and the discovery of a large circular stone structure, which may have been used for trapping pronghorn, at CA-SIE-20 (Payen and Olson 1969).

The chronology of the Northern Sierra Nevada region, and specifically, the Lake Tahoe region, was expanded upon by Davis and Elston in the late 1960s and 1970s, as a result of the excavation of four sites near Lake Tahoe. A correlation between the ethnographic Washoe and Kings Beach was posited based on work done by Davis and Elston (Davis 1967). Additionally, the Spooner cultural, which predated Martis, was identified by Davis and later Elston. It was broken up into four phases and labeled Spooner I (5,150-2,970 B.C.), Spooner II (1,100 BC – AD 60), Spooner III (AD 60 – 1,385), and Spooner IV (AD 1,385 – Historic) (Davis 1967; Elston 1971). Elston et al. (1977) conducted a later study which further refined the Tahoe region chronology into seven phases: 1) Tahoe Reach (6,000 BC); 2) Spooner (2,000 – 5,000 BC); 3) Early Martis (1,500 – 2,000 BC); 4) Middle Martis (1,500 – 500 BC); 5) Late Martis (500 BC – AD 500); 6) Early Kings Beach (AD 500 – 1,200), and 7) Washo-Late Kings Beach (1,200 AD – Historic Period) (Elston et al. 1977; Hull 2007).

In the 1980s and 1990s, investigations within the Sierra Nevada regions broadened to include more work at mid to upper elevations. Seminal projects included work in such places as New Melones (Moratto et al. 1988), the American River watershed (Jackson and Ballard 1999), the northeastern Sierra Valley (Waechter and Andolina 2005), the Lake Tahoe Basin (Jackson et al. 1994), and the overall Tahoe-Truckee region (Ataman et al. 1999; Bloomer 1997). Work in the Mokelumne drainage led to new information on subsistence and settlement patters in the Tahoe-Truckee region (Cleland 1988; Hull 2007). More recent efforts have identified features which contribute to our overall understanding of the prehistory of the Sierra Nevada region, including rock ring dwellings, stone game drive features located in central and southern Sierras, and stone-lined vegetable processing features, identified in the northern Sierra Nevada (Bloomer et al. 2002; Waechter and Andolina 2005).

Major sources of investigation from the 1990s into the 2,000s have included obsidian hydration and sourcing studies (Hull 2001), lithic technology analysis, including studies related to lithic procurement, exchange, and transport (Jackson 1988), analysis of millingstone and bedrock mortar technology and the transition between the two, including delving into the rationale

behind the differing depths of various mortar cups and their relation to functionality and ethnography (McCarthy, Blount, and Hicks 1985), and studies pertaining to social organization, including the division of the workplace and village by gender (Jackson 1991; Rucks 1995).

Summaries of the past 147 years of archaeological research and investigations within the Sierra Nevada's have been completed by several individuals through the last 34 years. Aside from Moratto's landmark Sierra Nevada synthesis, Hull and Moratto compiled central Sierran data in 1998, and Hull, building off of Moratto, summarized the history of archaeological efforts within the Sierra Nevada from the 1980s through the early 2,000s (Hull 2007; Moratto 1984).

What follows below is a current description of the typical material culture/artifact typology associated with the Tahoe/Truckee region of the Sierra Nevada, which has been refined throughout the past 35 years (Hull 2007).

Washoe Lake (pre-8,000 BC)

This phase is identified by the presence of fluted points and pre-dates the Tahoe Reach phase.

Tahoe Reach (8,000 – 6,000 BC)

Originally defined by Layton (1979) by the presence of Parman Points, and first identified at CA-PLA-23 and CA-PLA-164, this phase is succeeded by the Spooner phase.

Spooner (5,000 – 2,000 BC)

This phase is preceded by the Tahoe Reach phase, and is typified by contracting-stem projectile points, including the Humboldt and Pinto series projectile points. It has been postulated that this phase is associated with the ethnolinguistic group, the Hokan (Hull 2007).

Martis (3,000 – 2,000 BC and AD 500 - 600)

The Martis phase is further subdivided into three phases (Early, Middle, Late) and is defined by the presence of Elko and Martis projectile points. Other Martis characteristics include the extensive use of basalt for flaked tools, large projectile points, atatl weights, mano and millingstones, which were utilized for grinding, bowl mortars, cylindrical pestles, and flaked basalt scrapers, and a subsistence pattern which focused on hunting and gathering (Heizer and Elsasser 1953; Moratto 1984). The Martis phase is thought to be associated with the ethnolinguistic Maiduan group (Elsasser 1960; Justice 2002).

Kings Beach (AD 500 – Historic Period)

The Kings Beach phase can be further subdivided into two phases (Early and Late). Artifacts associated with Kings Beach include flaked obsidian and silicate implements, small projectile points, including the Eastgate and Rose spring (associated with Early Kings Beach), and Desert and Cottonwood small projectile points (associated with Late Kings Beach), the bow and arrow,

scrapers, bedrock mortars, and a subsistence pattern which emphasizes hunting, fishing, and pinon nut gathering (Hull 2007; Moratto 1984). The Kings Beach phase is often associated with the Washoe ethnolinguistic group (Hull 2007; Moratto 1984).

Ethnographic Context

The Project area is located within the ancestral territory of the Washoe (D'Azevedo 1986), within a region known as *atabi wata detde yi*, or area of the fish dwellers (D'Azevedo 1986). Washoe ethnographic territory included the mountains between Honey Lake and the Walker River, but their trade networks extended well beyond this core area, as far west as Sacramento (Moratto 1984). The Washoe were members of the Hokan stock of languages, which includes Hokan, Hokan-Coahuiltecan and Hokan-Siouan (Jacobson, Jr. 1986). Hokan includes thirteen language branches throughout California and the American Southwest (Jacobson, Jr. 1986).

Aboriginally, the Washoe, like other northern Sierran tribes, dwelt in mostly permanent settlements of 10 to 100 individuals in the upper Sonoran and lower transition zones of the Sierras. Settlements, or village communities, were groups of closely related households, and were referred to by the Washoe as "the bunch." Although permanent settlements were located at lower elevations, higher elevations were visited during the warmer spring and summer months for hunting, gathering, and fishing, as Washoe subsistence patterns followed the seasonal annual round (D'Azevedo 1986). Village communities were typically placed near fresh water sources, such as streams, or along knolls with a southern exposure, and could be found in large valleys at 4,500 feet elevation and in small valleys at 5,500 feet elevation (D'Azevedo 1986; Moratto 1984). A typical village community would include family dwellings, acorn granaries, bedrock mortars, sweat houses, headman's house, and possibly a large communal dance house (Moratto 1984). House construction for permanent settlements were typically a twelve to fifteen-foot diameter circular structure, with a shallow house pit, and constructed of a circular formation of vertically situated long poles, and roofed using bundles of grass, tule, willow or deer hide. A fire was situated in the center of the dwelling (D'Azevedo 1986). Temporary summer houses could be a simple lean to, or a hut constructed of tule or brush, woven with willow branches.

Washoe clothing was constructed of deer hide and other skins, which were used to manufacture breech clothes, aprons, capes, and leggings. Rabbitskin was also utilized to make robes, but also blankets, which were highly prized (D'Azevedo 1986).

Sometimes, although not always, a village community might have been led by a headman (*datumu*), which was not hereditary. Illustrating the importance of rabbit in the Washoe diet, a leader was also appointed to head rabbit drives (*pelew datumu*). An individual who led the rabbit drives was an exceptional hunter who had demonstrated skill, and who might be guided by dreams. The position of antelope or rabbit drive leader was a temporary one, and not necessarily hereditary (D'Azevedo 1986).

The Washoe were hunter-gatherers and exploited a wide variety of resources, including game, fish, plants, roots, seeds, berries, and insects. Rabbits and fish were very important resources.

Game included deer, pronghorn, porcupine, beaver, chipmunk, gopher, squirrel, woodchuck, badger, and rodents, such as mice, rats, shrews and voles (D'Azevedo 1986). The Washoe also caught or ensnared birds, such as valley and mountain quail, and sage and blue grouse. Fish, such as trout and suckers were fished using spears, nets, as well as poison, and could be eaten fresh, or dried and preserved for the winter months. Insects were also gathered, including locusts, grasshoppers, fly grubs and bee larvae. The fly grubs and grasshoppers were sometimes dried, ground, and formed into cakes to eat during the winter.

Plant gathering, usually conducted by women, occurred from spring until fall. In the spring, bulbs, roots, Camas, bitterroot, sego lily, wild onions, "Indian potato," tule, cattail, and Indian balsam root (*Leptotaenia dissecta*) were gathered. Grasses, and seeds (sunflower, wild mustard, wild rye and pigweed), and nuts, including pine nuts (*ta-gim*) and acorns were also important staples of the diet, as both could be processed, preserved, and consumed at a later date. Berries, such as western chokeberry, elder berry (*Sambucus glauca*), buckberry (*Shepherdia argentea*), Saskatoon serviceberry, desert and golden currants, Sierra plum, Sierra gooseberry, wild strawberry, and manzanita berries, were also gathered. Watercresses (*Rorippa curvisiliqua*), miners lettuce, wild rhubarb (*Peltiphyllum peltatum*), mushrooms, tobacco (*Nicotiana attenuata*), and Mormon tea (Ephedra), were also gathered. The Ephedra was used to make a stimulating drink and the tobacco was smoked mostly by men, but sometimes for women as a medicinal aid (D'Azevedo 1986). Plants gathered for sweeteners included honey, pollen (used to sweeten acorn cakes) and the sap of the pinon tree and sugar pine.

Pine cones were roasted in a fire, then the nuts were gathered and parched over coals in a flat basket tray. The shells of the nuts were then cracked utilizing a mano and metate, then winnowed, and either eaten plain, or ground into a flour for a pine nut soup. Similarily, acorns were processed by using a mortar and pestle to remove the tough acorn skin, then pounded and ground into a flour using a mano and metate. The floor was leached using cloth or a basketry tray within a stream, then again in a sand pit with warm water. The result was an acorn gruel (D'Azevedo 1986). Sometimes the acorn mush may have been seasoned with Juniper sprigs (*Juniperus osteosperma*, *J. occidentalis*) or incense cedar (*Libocedrus decurrens*) (D'Azevedo 1986).

Historic Context

In 1844, the first group of American settlers crossed the Sierra Nevada arriving in California, passing through what is now eastern Sierra County before continuing to the fertile, Sacramento Valley. This pattern persisted for the next five years, with pioneers only passing through the Sierras and never stopping to settle there, until 1849 when miners began to move north up the Yuba River in their search for gold. The first settlement was Foster's Bar in 1848 and the mining camp Downieville became the first town in 1849. In 1850, the Sierra Valley was discovered by miners and by the next year, the land had been settled as farmland. With California's admittance to the Union in 1850, the State comprised 27 counties. What is today Sierra County was originally part of Yuba County. Management of an area that extended from the Sacramento Valley to the border of Nevada proved too difficult, in 1852 the eastern portion of Yuba County broke

away and formed Sierra County with Downieville as the county seat. New towns were established and settlements in the mountainous regions grew as mining remained the mainstay of the economy, but in the southeastern portion of the county, agriculture and ranching increased (Kyle 2002: 474; Copren 2017; California State Association of Counties 2006).

Settlers in Sierra County's southeastern region found the alpine valleys a perfect location for grazing cattle for both beef and dairies. In the 1850s several ranches were established in Sardine and Dog Valleys. Located in the southernmost part of the county on Henness Pass Road, which connected California gold fields with Nevada silver mines. Originally the lowest known route through the Sierra Nevada, Henness Pass was used as a wagon toll road from 1852 until 1868, when the first transcontinental railroad was completed. People traveling along Henness Pass in the 1860s identified the advantages of the mountain valleys. By the 1870s several ranchers had begun settlement within Sardine Valley (East Valley Chamber of Commerce 2017; Sierra Nevada 2017; Nevada State Journal 1879, 1883; Copren 2014: 1-2).

By the 1870s several dairies were established in Sardine Valley. It proved an ideal landscape for grazing and Davies Creek provided drinking water. Aside from beef and milk, butter was an important regional export with around 60,000 pounds going to market each year, mainly in San Francisco. Ranchers also cultivated hay to support their herds and as an export. While ranching and dairying was profitable another industry began to shape Sierra County. Timber harvesting started as yearly as the 1850s, but did not become a dominant industry in southeastern Sierra County until 1886 when the Lewis and the Peck brothers joined forces creating Lewis Mill. Accelerating the decline of cattle ranching, in 1879, a Sardine Valley grasshopper infestation destroyed the hay crop needed to feed the cows. This calamity and rising timber and lumber demands led to a regional economic shift (East Sierra Valley Chamber of Commerce 2017; Nevada State Journal 1879, 1883; Copren 2014: 1-2).

Starting in 1855, California became self-sufficient in timber harvesting and lumber milling. The timber industry developed along the western flank of the Sierra Nevada, largely to meet the demand of miners, first in California's gold mines and then in Nevada's Comstock silver mines. Within five years, California had developed a timber industry that counted over 300 sawmills and produced over 110 million board feet of lumber, with much of the lumber coming from the eastern Sierra Nevada. The timber industry in the larger Truckee River Basin catered largely to lumber mills, but also harvested timber as a fuel source for both California and Nevada mining camps. These demands spurred development of sawmills in Sierra, Nevada, Placer, and El Dorado Counties. By the 1860s Sierra County accounted for most sawmill operations with ten in operation. Placer County had three mills, El Dorado County had two, and there was one in Nevada County (Knowles 1942: 5-7; Whalley 2007: 3-4).

Early sawmills were quickly eclipsed by larger operations developed to support the Central Pacific Railroad. Construction of the Central Pacific Railroad resulted in a timber harvest explosion along the Truckee River and in the greater Truckee Basin. The United States government ceded timber harvest rights of government land to the railroad company as a subsidy for construction of the transcontinental railroad. Railroad company executives took full-

advantage of this subsidy, choosing railroad alignments not for the best grade or easiest route through mountains, but through areas with the richest timberland such as the Truckee River Basin and near Donner Lake. The timber subsidy greatly offset the railroad company's costs as the timber was used for a variety of applications including construction of bridges, trestles, snow sheds, tunnel shoring, depots, and ties, in addition to thousands of cords burned to power their locomotives. While logging in Placer County was dominated by Central Pacific and their affiliates, further north in the Truckee River Basin a competition raged in Sierra County for control of the lumber industry (Knowles 1942: 12-15).

Timber and lumber were the primary industries in the Truckee River Basin, specifically in Sierra County, from the 1860s to the 1920s. One high producing area for timber harvesting was Boca. Settlements were established along the construction path of the Central Pacific tracks. As timber resources were depleted along the corridor, harvesting moved farther from the tracks, in 1868 Boca was established beyond the main line. It became increasingly laborious to transport distant felled trees to established mills in Truckee that the three Lewis brothers (and two Peck brothers) built Lewis Mill around 1886. Located 17 miles north of Boca in Smithneck Canyon following Little Truckee River to Sardine Valley and into the canyon. Following the success of Lewis Mill they opened a box factory in Verdi in 1887. Lumber was transferred from the mill near Boca, up the canyon into Sardine Valley, to Merrill and then over Dog Valley Summit and down into Verdi. In 1888, the brothers partnered with Captain John H. Roberts, a former steamboat captain who owned several steam-traction engines. The Lewis Brothers contracted with Captain Roberts to use the tractors to transport lumber from their mill near Boca to their box factory in Verdi (Myrick 1962: 398-399; Copren 2014: 3).

Verdi, a camp town for the Verdi Lumber Company, was in Dog Valley. Verdi was accessible by high elevation mountains which proved taxing on the steam-traction engines. In addition to the strain put on the tractors because of the elevation, farmers complained for years about the noise. To combat these two issues the Lewis Brothers found a solution for lumber transportation. In 1900, they constructed a new railroad north from Boca along the Little Truckee River to Lewis Mill, and through Smithneck Canyon to Loyalton on the south side of the Sierra Valley. This route bypassed Verdi and the box factory, but getting the lumber to Boca enabled the brothers to supply larger manufacturers with timber. The company opted for a standard gauge line, where their competitors chose a narrow gauge. This choice of standard over narrow played to their advantage as the lumber did not have to be transferred to other cars to get to the mill, it could be transported all on one line. The Boca-Loyalton Railroad incorporated on September 25, 1900 with construction commencing soon after. Construction was overseen by D.M. DeLong w and the company board of directors included Captain John H. Roberts, William S. Lewis, Richard H. Lewis, P.J. Harney, and George Bates. The planned mainline route extended 45.2 miles from Boca to Portola, with 11.29 miles of branch lines. In 1901, the 17-mile line from Boca to Lewis Mill, was completed with the remaining 26-mile line finished in the summer of 1901. The populations of both Loyalton and Boca grew due to the influx of railroad and mill workers. By October 1901, the railroad extended north to Beckwourth, with spurs connection a multitude of small mountainous regions. East of Beckwourth, the line reached Horton Junction and moved north toward Clover Valley. The final stretch to Portola was completed in 1905 (Whalley 2007: 1, 9-10; Myrick 2007: 139; Myrick 2006: 48).

Following completion of the mainline in 1901 there was speculation of expansion however a competitor, Sierra Valleys Railroad prevented this extension. Sierra Valleys Railroad was the first regional railroad, starting in 1885, 15 years prior to the Boca-Loyalton. From 1903 through 1907, Boca-Loyalton and Sierra Valleys Railroad sparred for control of crossings at Clover Valley. The crossing provided access to four mills and three box factories in Loyalton. While the Sierra Valleys Railroad attempted to control Sierra County rail, losses over Clover Valley hastened their demise when purchased by Western Pacific Railroad in 1910 (Myrick 2007: 139; East Sierra Valley Chamber of Commerce 2017).

At the height of the Boca-Loyalton Railroad's prominence, there were three lumber companies operating in Sardine Valley. The Lewis Brothers operated a small mill operation in Sardine Valley. Additionally, Arthur Davies established a camp and operated the Davies Box and Lumber Company in Sardine Valley. The Davies Box and Lumber Company was connected to the greater Boca-Loyalton Railroad via the Davies Spur. In addition to the mill at Sardine, the Davies brothers had five mills around the area, including in Truckee and near Donner Lake. The mill remained in operation for ten years from 1905 to 1915. Stewart McKay also operated a mill in Sardine Valley, beginning in 1897. As the years progressed, timber in the region became scarce due to overharvesting and by 1915, most of the mills were nonoperational. Arthur Davies purchased land in western Sierra County and in 1916, moved his mill and associated camp infrastructure, transporting houses and mill facilities on Boca-Loyalton flat cars. With the decline of the lumber industry in the region, the decline of the Boca-Loyalton Railroad soon followed (Whalley 2007: 12; West 2017; Wilson 1992: 68, 75; Myrick 2006: 229).

Southeastern Sierra County growth during the early twentieth century is directly attributable to the timber industry and railroad spur connections with larger mainlines. The location of the lumber industry in eastern Sierra County helped Loyalton become an incorporated town in 1902. By 1907, Loyalton had four sawmills and three box factories and owed their prosperity to their proximity to the Boca-Loyalton Railroad. By 1907, however, the Boca-Loyalton Railroad has experienced financial losses, due to diminished returns from over-harvesting and railroad competition. Western Pacific Railroad purchased a portion of the Boca-Loyalton line outside Beckwourth, before officially opening the newest transcontinental route in 1909. Starting in 1910 and lasting until 1915, Boca-Loyalton defaulted on their loans. The California Railroad Commission allowed them to suspend full operations in 1916 from January-May to avoid the winter months, but by September of 1916, Boca-Loyalton was foreclosed on. The line was purchased by Western Pacific and ceased to exist on December 1, 1916. Western Pacific ended operations to Boca and the track was removed in 1917. The Loyalton branch of the line remained operational and was mainly used by the Clover Valley Lumber Company. Western Pacific abandoned the former main line of Boca-Loyalton in 1920 and only used the line from Loyalton to Hawley, until it too was discontinued in 1957, leaving Sardine Valley and the towns created by the Boca-Loyalton Railroad deserted. (Copren 2014: 5; Myrick 2006: 408-409; Western Pacific Railroad 1916).

Paleontological Context

The paleontological database at the University of California, Berkeley's Museum of Paleontology (2017), geological mapping (Saucedo and Wagner 1992), and online literature were reviewed to determine the potential for paleontological resources. The Project area is a low-lying region within the Sardine Valley. It is underlain by Late Quaternary (Pleistocene to Holocene) lake deposits while the surrounding uplands comprise volcanic rocks (andesite) of Miocene to Pliocene age (Saucedo and Wagner 1992). Stromberg et al. (2007) studied the fossil pollen record of the sediments at Sardine Meadow to examine recent paleoclimatic changes.

A search of the University of California Museum of Paleontology (2017) database found no fossil mammal sites on record within a 10-mile radius. The paleontological potential of the Quaternary lake deposits of the Sardine Valley is considered moderate to high. Lake sediments are deposited in an environment where macrofossils of fish, other vertebrates, plants and invertebrates are likely to accumulate. Fossil pollen contained in the sediment (see Stromberg et al. 2007) is not considered a significant paleontological resource as these microfossils are widespread and abundant.