

**INITIAL STUDY /
MITIGATED NEGATIVE
DECLARATION**

**NID ENGLISH MEADOW FLOODPLAIN
RESTORATION AND ENHANCEMENT
PROJECT**

LEAD AGENCY:



**NEVADA IRRIGATION DISTRICT
1036 WEST MAIN STREET
GRASS VALLEY, CALIFORNIA 95945**

July 2021

PREPARED BY:



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EXECUTIVE SUMMARY

The Nevada Irrigation District (NID or the District) proposes to implement the English Meadow Floodplain Restoration and Enhancement Project, approximately 35 miles northwest of Lake Tahoe, on the boundary between Nevada County and Sierra County, California. This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq., and State CEQA Guidelines, Title 14 California Code of Regulations 15000 et seq.

1.1 Project Overview

The Proposed Project is subject to approval by the District Board of Directors and is subject to review under CEQA. As the Lead Agency, the District prepared an Initial Study/Mitigated Negative Declaration (IS/MND), which assesses the potential environmental impacts of the Project. In accordance with CEQA guidelines, the IS/MND will be circulated for 30 days for public review. 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). This executive summary provides an overview of the findings of the IS/MND including resources for which the Project would have no impact; (b) less than significant impacts; and (c) less than significant impacts with incorporation of mitigation measures. The mitigation measures are summarized in Table E-1. Refer to Section 3 of the IS/MND for a more detailed analysis of potential effects and proposed mitigation measures.

1.2 CEQA Analysis and Findings

1.2.1 No Impact

The Proposed Project would have no impact on the following resources:

- Agriculture and Forest Resources,
- Land Use and Planning,
- Mineral Resources,
- Population and Housing,
- Utilities and Service Systems

1.2.2 Less Than Significant Impacts

The Proposed Project would have less than significant impacts on the following resources:

- Aesthetics,
- Energy,
- Greenhouse Gas Emissions,

-
- Noise,
 - Recreation.

1.2.3 Less Than Significant Impacts with Incorporation of Mitigation

With implementation of mitigation, the Proposed Project would have less than significant impacts on the following resources:

- Air Quality,
- Biological Resources,
- Cultural Resources,
- Geology and Soils,
- Hazards and Hazardous Materials,
- Hydrology and Water Quality,
- Public Services,
- Transportation and Traffic,
- Tribal Cultural Resources,
- Wildfire.

As required by CEQA, a Mitigation Monitoring and Reporting Program (MMRP) (Table E-1) will be adopted at the time of Project approval. It will include those mitigation measures that would reduce environmental impacts to less than significant levels.

1.2.4 Significant Unavoidable Impacts

There are no significant and unavoidable Project-specific or cumulatively considerable impacts associated with implementation of the Proposed Project.

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<p><u>AIR-1. Air Quality Best Management Practices.</u></p> <ul style="list-style-type: none"> • The following ozone precursor-reduction measures shall be implemented during implementation of the Project: <ul style="list-style-type: none"> ○ All off-road equipment (portable and mobile) shall meet or be cleaner than Tier 2 engine emission specifications. Note that all off-road equipment must meet all applicable state and federal requirements. ○ Emissions from onsite construction equipment shall comply with NSAQMD Regulation II, Rule 202, Visible Emissions. ○ Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes when not in use (as required by California airborne toxics control measure Title 13, Section 2485 of CCR). Clear signage shall be provided for construction workers at all access points. ○ All construction equipment shall be maintained and properly tuned in accordance with manufacturers’ specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. ○ Existing power sources (e.g., power poles) or clean fuel generators shall be utilized rather than temporary power generators (i.e. diesel generators), where feasible. • The following dust control measures shall be implemented as part of the Project to comply with NSAQMD Rule 226. 	<p>During Project implementation</p>	<p>NID</p>	<p>NID</p>

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<ul style="list-style-type: none"> ○ Fugitive dust created along roads and in the meadow during restoration/enhancement activities shall be mitigated with the use of water. ○ A water truck shall be on-site and available at all times to mitigate road and construction dust. 			
<p><u>BIO-1. Environmental Awareness Training.</u></p> <ul style="list-style-type: none"> ● Work crews shall attend an environmental awareness training prior to initiation of each work season. The training shall be conducted by a qualified biologist and shall include a review of: <ul style="list-style-type: none"> ○ Habitat requirements and natural history of special-status plant and wildlife species and resident fish known to occur or potentially occurring on site; ○ Descriptions of noxious weeds known to occur or potentially occurring on site; ○ Location of sensitive habitats occurring on site; ○ Legal protections for special-status species or sensitive habitats and associated penalties; and ○ Mitigation measures, Project-specific protective measures, and conditions required by agency permits to be implemented as part of the Project. ● Interpretation shall be provided for non-English speaking workers. 	Prior to each work season	NID	NID

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<ul style="list-style-type: none"> • The training shall be provided for any new workers prior to their performing work in the Project area. • Upon completion of the training, attendees shall sign a form stating they attended the program and understand all protection measures. The forms shall be kept in Project records. 			
<p><u>BIO-2. General Construction Measures.</u></p> <p>The District shall implement the following to minimize disturbance of sensitive resources in the Project area:</p> <ul style="list-style-type: none"> • A qualified biologist shall be on site prior to and during all ground- and habitat-disturbing activities, and shall have authority to immediately stop any activity that is not consistent with Project mitigation measures or agency permit conditions, and/or to order any reasonable measure to avoid or minimize impacts to fish and wildlife resources. <ul style="list-style-type: none"> ○ The qualified biologist shall be knowledgeable about/experienced in the biological and natural history of local birds, fish, and wildlife resources present in the Project area. • Restoration/enhancement activities shall be limited to a designated work area (including the work corridor and staging area). The work area shall be clearly identified on the construction drawings and shall be staked and flagged where necessary prior to initiation of restoration/enhancement activities. • All staging areas and access routes shall be located on developed roads and areas that have already been disturbed. Access routes shall be planned 	<p>During Project implementation</p>	<p>NID</p>	<p>NID</p>

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<p>carefully and shall utilize previously disturbed areas or areas of proposed Project-related disturbance, to the degree possible.</p> <ul style="list-style-type: none"> • Restoration/enhancement activities, including activities within equipment staging areas, shall be limited to the hours between sunrise (but no earlier than 7:00 a.m.) and sunset (but no later than 7:00 p.m.). • The District shall ensure that all equipment and vehicles shall be removed from the Project site following completion of the Project. • Ground and vegetation disturbance shall be limited to those areas where such activities are necessary to achieve Project objectives. • Stockpiled materials shall be covered if the National Weather Service declares a 50 percent or greater chance of precipitation. • Stockpiled materials or other construction materials/equipment that may provide shelter for wildlife shall be inspected for the presence of wildlife at the beginning of each workday. If wildlife species are observed, they shall be allowed to leave on their own accord. • A Project manager or representative shall be on site at all times during work within the floodplain or stream channels. 			
<p><u>BIO-3. Special-Status Plant Protection.</u></p> <ul style="list-style-type: none"> • Known populations of special-status plants (e.g., woolly-fruited sedge and starved daisy) shall be flagged with a 25-foot buffer. No ground-disturbing activities or vegetation removal would occur within this buffer. • Surveys for special-status plants were conducted in 2018 and 2019. Based on the California Department of Fish and Wildlife (CDFW) survey protocol 	Prior to each work season	NID	NID

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<p>(2010), surveys within forest habitats are considered viable for a period of 5 years, while surveys within wetland and grassland habitats should be conducted annually. Accordingly:</p> <ul style="list-style-type: none"> ○ Surveys within upland forest habitats where forest treatments shall be implemented do not need to be repeated over the term of the Proposed Project. ○ Surveys within wetland and grassland habitats where mainstem and floodplain treatments and floodplain vegetation treatments will be implemented shall be surveyed annually over the term of the Proposed Project. Prior to each work season, a qualified biologist shall survey areas where mainstem and floodplain treatments and floodplain vegetation treatments will be implemented. <ul style="list-style-type: none"> ▪ If new populations of special-status plants are observed, they shall be flagged with a 25-foot buffer. No ground-disturbing activities or vegetation removal shall occur within this buffer. 			

<p><u>BIO-4. Noxious Weed Prevention.</u></p> <ul style="list-style-type: none"> • To the extent practicable, known populations of noxious weeds shall be flagged and avoided during Project implementation. • All equipment shall be cleaned and inspected by NID staff (or other authorized individual) for the presence of mud or vegetative debris (including noxious weed seed) prior to entry to the Project area. • Only certified weed-free materials shall be used for erosion control and site stabilization. • Construction crews shall periodically inspect for, remove, bag, and properly dispose of weed seed on clothing and boots. • The following measures shall be implemented to minimize the potential for the introduction or spread of noxious weeds associated with borrow sites or other areas where soils shall be excavated and used for fill: <ul style="list-style-type: none"> ○ Noxious weeds and/or their seed heads shall be removed prior to ground disturbance or removal of herbaceous vegetation. Weeds and/or seed heads shall be bagged and disposed of properly. ○ Certified weed-free erosion control and soil stabilization measures shall be installed, where necessary, immediately following completion of ground disturbance, excavation, or removal of herbaceous vegetation. ○ Where appropriate, these sites shall be mulched and revegetated. • NID shall continue to work with the USFS Range Managers and the USFS permittee to discourage unauthorized grazing on NID lands in the Project area. 	<p>During Project implementation</p>	<p>NID</p>	<p>NID</p>
<p><u>BIO-5. Noxious Weed Monitoring.</u></p> <ul style="list-style-type: none"> • All areas subject to ground disturbance, excavation, and/or removal of herbaceous vegetation (resulting in a denuded condition) as part of Project 	<p>For 3 years following each work season</p>	<p>NID</p>	<p>NID</p>

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<p>restoration/enhancement activities shall be monitored for the presence of noxious weeds annually for 3 years following each work season (i.e., areas where Project restoration/enhancement activities are completed in 2021 shall be monitored in 2022, 2023, and 2024; areas where Project restoration/enhancement activities are completed in 2022 shall be monitored in 2023, 2024, and 2025, etc.).</p> <ul style="list-style-type: none"> ○ Any noxious weeds present in these areas shall be controlled using best management practices. 			
<p><u>BIO-6. Fish Capture and Relocation.</u></p> <ul style="list-style-type: none"> • NID shall implement the following to avoid potential impacts to resident fish within the Middle Fork Yuba River or within French Creek and/or Secret Creek (located along Meadow Lake Road): • During dewatering, a team of qualified biologists shall use electrofishing and /or seines to capture and relocate any stranded fish. Fish shall be placed in the mainstem downstream of the work area. • A record shall be maintained of all fish that are captured and relocated. This shall include biologist names, date, number and species of fish, lengths, and method of capture. The completed record shall be provided to California Department of Fish and Wildlife (CDFW) following completion of each work season. 	<p>Prior to dewatering</p>	<p>NID</p>	<p>NID</p>

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<p><u>BIO-7. Clean Water Act, Porter Cologne Water Quality Control Act, and California Fish and Game Code Permitting and Compliance</u></p> <ul style="list-style-type: none"> • NID shall obtain relevant permits required under the Clean Water Act (e.g., Sections 401, 402, and 404), the Porter Cologne Water Quality Control Act, and the California Fish and Game Code (e.g., Section 1602 Lake or Streambed Alteration Agreement). • All conditions identified in the permits shall be implemented as part of the Project. 	Prior to Project implementation	NID	NID
<p><u>BIO-8. Protection of Burrows</u></p> <ul style="list-style-type: none"> • A qualified biologist shall conduct a clearance survey prior to each week’s work to determine whether animal burrows are present in areas where floodplain treatments, floodplain vegetation treatments, or forest treatments are proposed. • Animal burrows shall be flagged and avoided to the degree possible. • Any burrows that cannot be avoided shall be inspected by a qualified biologist to determine whether they are actively inhabited. • Uninhabited burrows that cannot be avoided shall be collapsed by or in the presence of the biologist to avoid future occupation. • If a burrow is inhabited and cannot be avoided, the qualified biologist shall determine alternative avoidance, protection, and/or exclusion measures. Such measures would depend on the species involved, site-specific conditions and nature and extent of work activities to be implemented near the burrow. Measures could include, but are not limited to, implementation 	During Project implementation	NID	NID

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<p>of a protective buffer around the burrow or exclusion/evacuation and collapse of the burrow.</p>			
<p><u>BIO-9. Sierra Nevada Yellow-Legged Frog Protection</u></p> <ul style="list-style-type: none"> • Based on studies conducted by a species expert and agency consultation, there is low potential for Sierra Nevada yellow-legged frog (SNYLF) to be present in the Project area, and therefore a low potential for the Project to affect this species. The following measures are provided to avoid the species, in the unlikely event that individuals are present. <ul style="list-style-type: none"> ○ Perennial riverine features (i.e., the Middle Fork Yuba River, R3UB2-1, and R3UB2-2) shall be surveyed by a qualified biologist for SNYLF immediately prior to dewatering and/or ground-disturbing work within the bed and/or along the bank of the feature. ○ If SNYLF are observed, the following steps shall be taken to avoid the species: <ul style="list-style-type: none"> ▪ Any proposed activities within 100 feet upstream and downstream of the observation shall be postponed until appropriate measures are developed considering the location of the observation, number individuals involved and proposed work activities. Such measures may include, but are not limited to, altering the location or timing of Project activities. • NID shall notify resource agencies (U.S. Fish and Wildlife Service [USFWS], California Department of Fish and Wildlife [CDFW]) within 24 hours of the presence of SNYLF and shall provide a description of proposed measures implemented to avoid the species. 	<p>Prior to dewatering or ground-disturbance within or along perennial riverine features</p>	<p>NID</p>	<p>NID</p>

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility										
<ul style="list-style-type: none"> No handling or relocation of SNYLF shall occur as part of the Project. Intake piping used for dewatering shall be fitted with a screen or similar device (e.g., sock filter). Plastic mono-filament netting or similar materials shall not be used as part of the Project. 													
<p><u>BIO-10. Protection of Forest-Nesting Birds</u></p> <ul style="list-style-type: none"> If practicable, forest treatments shall take place outside the breeding for the forest-nesting species potentially occurring in the Project area (February 1 – September 1). If work must take place during the breeding season, the Project area and a 0.25-mile radius shall be surveyed a qualified biologist for forest-nesting birds no more than 2 weeks prior to forest treatments. If an active nest is observed, the following species-appropriate protective buffers shall be implemented around the nest site: <table border="1"> <thead> <tr> <th>Species</th> <th>Protective Buffer Size</th> </tr> </thead> <tbody> <tr> <td>Northern goshawk, California spotted owl, great gray owl</td> <td>0.25 mile</td> </tr> <tr> <td>Bald eagle</td> <td>660 feet</td> </tr> <tr> <td>Other raptors</td> <td>500 feet</td> </tr> <tr> <td>All other migratory birds</td> <td>Avoidance of nest tree</td> </tr> </tbody> </table>	Species	Protective Buffer Size	Northern goshawk, California spotted owl, great gray owl	0.25 mile	Bald eagle	660 feet	Other raptors	500 feet	All other migratory birds	Avoidance of nest tree	2 weeks prior to initiation of forest treatments	NID	NID
Species	Protective Buffer Size												
Northern goshawk, California spotted owl, great gray owl	0.25 mile												
Bald eagle	660 feet												
Other raptors	500 feet												
All other migratory birds	Avoidance of nest tree												

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<ul style="list-style-type: none"> The results of the nest surveys shall be provided to California Department of Fish and Wildlife (CDFW). No Project activities shall occur within the protective buffers until the breeding season has ended or the qualified biologist has determined that the young have fledged. 			
<p><u>BIO-11. Protection of Meadow-Nesting Birds</u></p> <ul style="list-style-type: none"> If practicable, floodplain vegetation treatments shall take place outside the breeding season for the meadow-nesting species potentially occurring in the Project area (February 1 – September 1). If work must take place within the breeding season, the Project area and a 0.25-mile radius shall be surveyed by a qualified biologist for meadow-nesting birds no more than 2 weeks prior to floodplain vegetation treatments. If active nests are identified, the biologist shall develop and implement protective buffers, considering the species, location of nest, and the nature of activities proposed within the vicinity of the nest. No Project activities shall occur within the protective buffers until the breeding season has ended or the biologist has determined that the young have fledged. 	2 weeks prior to floodplain vegetation treatments	NID	NID
<p><u>BIO-12. Protection of Riparian Habitat</u></p> <ul style="list-style-type: none"> Riparian vegetation shall be avoided to the greatest extent practicable. Exceptions may include (but are not limited to): 	During Project implementation	NID	NID

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<ul style="list-style-type: none"> ○ Removal of riparian shrubs and sod may be required for use restoration/enhancement structures and revegetation. ○ Trimming of riparian shrubs/trees to allow for installation of restoration/enhancement structures. 			
<p><u>BIO-13. Protection of Fens and Springs</u></p> <ul style="list-style-type: none"> ● Fens shall be flagged (using pin flags, wooden stakes, and/or plastic flagging tape) to delineated 10-foot buffer from the edge of the fen. ● During the Tribal consultation conducted for the Proposed Project, it was identified that there is a spring associated with the National Register of Historic Properties (NRHP)-eligible resource located within the Project area. This spring (which is located adjacent to, but outside the Project area) shall be flagged (using pin flags, wooden stakes, and/or plastic flagging tape) to delineate a minimum 50-foot buffer from the edge of the spring or limits of wetland vegetation associated with the spring, whichever is greater. ● No Project activities shall occur within the flagged protective buffers. 	During Project implementation	NID	NID
<p><u>BIO-14. General Wildlife Protection</u></p> <ul style="list-style-type: none"> ● If special-status wildlife are observed that may potentially be disturbed or harmed by Project activities, all such activities shall cease until the animal has moved out of harm’s way on its own accord. 	During Project implementation	NID	NID

<p><u>CULT/TRIB-1. Worker Education Program for Cultural Awareness</u></p> <ul style="list-style-type: none"> • NID shall design and implement a Worker Education Program for Cultural Awareness, in coordination with consulting Tribes, that shall be provided to all Project personnel who may encounter and/or alter historical resources, unique archaeological properties, or Tribal Cultural Resources (TCRs) including construction supervisors and field personnel. No worker shall be involved in field operations without having participated in the Worker Education Program for Cultural Awareness. This Program shall include, at a minimum: <ul style="list-style-type: none"> ○ A review of archaeology, history and Native American cultures associated with cultural and TCRs in the Project vicinity. ○ TCRs are defined under PRC Section 21074(a)(1) and (2) as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe” that are either included or determined to be eligible for inclusion in the California Register or included in a local register of historical resources, or a resource that is determined to be a Tribal cultural resource by a lead agency, in its discretion and supported by substantial evidence. ○ The Native American Heritage Commission (NAHC) further defines TCRs to include: <ul style="list-style-type: none"> ▪ Prehistoric sites representing the material remains of Native American societies and their activities. ▪ Ethnohistoric sites, defined as Native American settlements occupied after the arrival of European settlers in California. ▪ Areas of traditional cultural significance which have been, and continue to be important to the Native peoples today. They include Native American sacred areas where religious ceremonies are practiced, or which are central to their origins as a people. They also include areas where Native 	<p>Prior to Project implementation</p>	<p>NID, consulting Tribes</p>	<p>NID</p>
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Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<p>Americans gather plants for food, medicinal, or economic purposes.</p> <ul style="list-style-type: none"> ○ A review of applicable local, state and federal ordinances, laws and regulations pertaining to historic preservation; ○ A discussion on confidentiality of cultural sites and item locations; ○ A discussion of procedures to be followed in the event that unanticipated cultural and/or Tribal Cultural resources are discovered during implementation of the Project; ○ A discussion of disciplinary, fines, and other actions that could be taken against persons violating historic, cultural, and Tribal preservation laws and NID policies which may include immediate termination of contracts and associated legal penalties and consequences; ○ A review of appropriate avoidance and minimization measures for resources that have the potential to be located on the project site and will outline what to do and whom to contact if any potential TCRs or archaeological resources are encountered. The program will underscore the requirement for confidentiality and culturally appropriate treatment of any find with cultural significance to Native Americans Tribal values; and ○ A statement by the contractor or applicable employer agreeing to abide by the Worker Education Program for Cultural Awareness, NID policies and other applicable laws and regulations. <ul style="list-style-type: none"> ● All personnel receiving the Cultural Awareness Program training shall be required to sign a form that acknowledges receipt of the training. 			

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<ul style="list-style-type: none"> The Worker Education Program may be conducted in concert with other environmental or safety awareness and education programs for the Project, provided that the program elements pertaining to cultural resources are provided by a qualified instructor meeting applicable professional qualifications standards. 			
<p><u>CULT/TRIB-2. Protection of NRHP-Eligible Cultural Resources</u></p> <ul style="list-style-type: none"> NID shall, in consultation with interested Tribes, develop educational signage informing the public regarding federal and state regulations prohibiting the removal or destruction of Tribal cultural resources. The signage shall be posted in locations where it is most likely to be viewed by the public (e.g., at potential entrance points to Project area). NID shall flag the boundaries of the National Register of Historic Properties (NRHP)-eligible cultural resource occurring within the Project APE as a Special Treatment Area. Vegetation management shall be permitted within the flagged boundaries, as described below. No other Project activities shall be permitted within the flagged boundaries. A Tribal monitor shall be present during all vegetation management activities conducted within 50 feet of the flagged boundary. <ul style="list-style-type: none"> Vegetation management within 50 feet of the flagged boundary shall be conducted using hand tools only. No use of mechanical equipment (e.g., masticator) or other ground-disturbing activities shall be permitted within the flagged boundaries. 	<p>Prior to/during Project implementation</p>	<p>NID, consulting Tribes</p>	<p>NID, consulting Tribes</p>

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<p><u>CULT/TRIB-3. Inadvertent Discovery of Cultural or Tribal Resources</u></p> <ul style="list-style-type: none"> • If an inadvertent discovery of Tribal cultural resources, archaeological resources, or other cultural resources/materials (e.g., unusual amounts of shell, animal bone, glass, ceramics, structure/building remains, etc.) is made during Project-related construction activities, the following steps shall be implemented: <ul style="list-style-type: none"> ○ Contractor shall pause all work within 100 feet of the discovery and shall immediately contact the NID Project Manager, who will notify the NID Qualified Professional Archaeologist and the Tribal Representative from consulting Tribes. ○ No additional work shall take place within 100 feet of the discovery until approval is obtained from NID Qualified Professional Archaeologist, Tribal Representative from consulting Tribes, and/or the State Historic Properties Officer, as applicable. ○ The archaeologist, in consultation with the Tribal Representative from consulting Tribes (as applicable), shall determine whether the resource is potentially significant per the Center for Regional Heritage Research (CRHR) and develop appropriate mitigation in consultation with NID, the State Historic Preservation Officer (SHPO), and Native American Tribal representatives to protect the integrity of the resource and ensure that no additional resources are impacted. Mitigation could include, but not necessarily be limited to preservation in-place, archival research, subsurface testing, or data recovery. ○ NID or its contractor shall record the location and keep notes of all calls and events. 	<p>During Project implementation</p>	<p>NID</p>	<p>NID</p>

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<ul style="list-style-type: none"> NID or its contractor shall treat the find as confidential and shall not publicly disclose the location. Only authorized personnel, or individuals with the permission of NID (and the landowner if different from NID) shall be allowed on the site. 			
<p><u>CULT/TRIB-4. Unanticipated Discovery of Human Remains</u></p> <ul style="list-style-type: none"> In accordance with the California Health and Safety Code and NID Cultural Resources Policy (No. 6085.2 Discovery of Human Remains), if human remains are uncovered during ground-disturbing activities, all work shall be halted. The NID Project manager shall be notified immediately, who in turn shall notify the Nevada or Sierra County sheriff and Coroner to determine the nature and extent of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of Native American descent, the coroner must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). The NAHC shall identify the most likely descendant (MLD). Once given permission by NID and landowner, the MLD shall be allowed on-site. The MLD shall complete their inspection and make their recommendation to NID 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. 	During Project implementation	NID	NID

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<ul style="list-style-type: none"> • No additional work shall take place within the immediate vicinity of the find until the qualified archaeologist and/or Tribal Historic Preservation Officer (as applicable) give approval to resume work in that area. • A range of possible treatments for the remains, including nondestructive removal and analysis, preservation in-place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment, may be discussed. AB 2641 suggests that the concerned parties may extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. AB 2641(e) includes a list of site protection measures and states that the landowner shall comply with one or more of the following: <ul style="list-style-type: none"> ○ Record the site with the NAHC or the appropriate Information Center; ○ Utilize an open space or conservation zoning designation or easement; and/or ○ Record a document with the county in which the property is located. • If the NAHC is unable to identify a MLD or the MLD fails to make a recommendation within 48 hours after being granted access to the site, the landowner or their authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. The landowner or their authorized representative may also re-inter the remains in a location not subject to further disturbance if they reject the recommendation of the MLD, and mediation by the NAHC fails to provide measures acceptable to the landowner. 			

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<p><u>HAZ-1. Hazard Training</u></p> <ul style="list-style-type: none"> • Annually, prior to Project implementation, all contractor and subcontractor personnel shall receive training regarding the appropriate work practices necessary to effectively comply with the applicable environmental laws and regulations, including hazardous materials spill prevention and response measures. 	Prior to Project implementation	NID	NID
<p><u>HAZ-2. Spill Prevention, Control, and Countermeasures Plan</u></p> <ul style="list-style-type: none"> • A Spill Prevention, Control, and Countermeasure Plan (SPCCP) will be prepared and implemented. The SPCCP will be consistent with Nevada County and Sierra County requirements and will incorporate industry standard best management practices (e.g., Department of Water Resources’ best management practices). The plan will include the following: <ul style="list-style-type: none"> ○ Requirements for staging and storage areas for equipment, materials, fuels, lubricants, and solvents shall be located outside of Waters of the U.S./State (including wetlands) or other sensitive habitats. identify measures to limit and control fuel spills, including use of bermed storage areas, equipment inspections, fueling and refueling procedures. ○ Describe the use and placement of spill kits and specify reporting requirements in the event of a spill. ○ Require that all equipment and fuel stored on site be properly contained and protected from rain. 	Prior to Project implementation	NID	NID
<p><u>HAZ-3. Standard Fire Prevention Measures</u></p>	During Project implementation	NID	NID

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<ul style="list-style-type: none"> The District and/or its contractor will implement fire prevention measures as described in the Middle Yuba River Headwaters English Meadow Forest Management Plan (NID 2020), including but not limited to, requiring fire prevention equipment to be available at all times, identifying construction sites as non-smoking areas, and providing fire prevention training to work crews. Also included are measures for fuel modification along roads, pile burning requirements, and understory thinning practices. Portable communication devices (i.e., radio or mobile telephones) would be made available to all work crews to allow for prompt notification to the District or other local authorities in case of a fire. 			

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<p><u>HYD-1 Stormwater Pollution Prevention Plan</u></p> <p>NID shall obtain coverage under the General Permit for Discharges of Storm Water Associated with a Construction Activity (Construction General Permit Order 2009-0009-DWQ, or current permit). Measures included in the general construction permit and associated Stormwater Pollution Prevention Plan (SWPPP) shall implemented as part of the Project. The SWPPP shall include:</p> <ul style="list-style-type: none"> • Pollution prevention measures (erosion and sediment control measures and measures to control non-stormwater discharges and hazardous spills); • Demonstration of compliance with all applicable local and regional erosion and sediment control standards; • Identification of responsible parties; and • A best management practices (BMP) monitoring and maintenance schedule. 	<p>Prior to Project implementation</p>	<p>NID</p>	<p>NID</p>
<p><u>HYD-2. Dewatering and Diversion Plan</u></p> <ul style="list-style-type: none"> • NID shall develop a detailed Dewatering and Diversion Plan that shall be submitted with the applications for permits required under the Clean Water Act (e.g., Sections 401 and 404), Porter Cologne Water Quality Control Act, and the California Fish and Game Code (e.g., Section 1602 Lake or Streambed Alteration Agreement). • The agency-approved Dewatering and Diversion Plan shall be implemented as part of the Project. 	<p>Prior to Project implementation</p>	<p>NID</p>	<p>NID</p>

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<p><u>HYD-3. Middle Yuba River and Associated Floodplain Hydrology Monitoring</u></p> <ul style="list-style-type: none"> • NID shall monitor hydrological conditions in the Middle Yuba River and the associated floodplain following completion of treatments. This shall include the following: <ul style="list-style-type: none"> ○ Evaluate pre-Project and post-Project channel conditions in the mainstem and intermittent tributaries at five sample locations for a minimum of 3 years. Trends to be evaluated include comparative elevations of the thalweg versus the floodplain, and whether the channels are trending toward aggradation versus incision. This shall include: <ul style="list-style-type: none"> ▪ Annual inspection of all debris jams and riffles. Adjust materials or add additional materials, as necessary to achieve net deposition (an aggradational trend). ▪ Obtaining annual thalweg:floodplain elevations at sample locations. Criteria to be evaluated include comparative elevations of the thalweg versus the floodplain, and whether the channels are trending toward aggradation versus incision. Adjust or add additional materials (e.g., trees, branches, native cobble) to debris jams as needed. ○ Conduct a one-time inventory large woody debris, fish habitat types, bank stability, and cover within a 1000-foot sample reach of the mainstem channel, comparing pre-Project and post-Project conditions, using a modified USFS Region 5 Stream Condition Inventory protocol (Frazier et al. 2005) to prepare pre- and post-Project conditions. 	<p>Years 3, 4, and 5 of Project</p>	<p>NID</p>	<p>NID</p>

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<ul style="list-style-type: none"> ○ Compare pre- and post-Project streamflow hydrographs (for large storms and spring melt) for a minimum of 3 years to determine whether there is an attenuation of peak flows and a flattened falling limb. <ul style="list-style-type: none"> ▪ Obtain data from the A-Level TROLL pressure sensor in the Middle Yuba River below English Meadow annually to look for desired hydrographic trend (i.e., attenuation of peak flows and a flattened falling limb). ○ Collect and analyze in-stream water temperature, measured with HOBO temperature continuous recorders for a minimum of 3 years. <ul style="list-style-type: none"> ▪ Collect and analyze in-stream water temperature data annually, as measured at HOBO temperature continuous recorder locations and the A-Level TROLL temperature sensor in the Middle Yuba River below English Meadow, to determine whether maximum water temperatures and diurnal fluctuations are decreasing. ○ Obtain groundwater elevation data from California State University, Sacramento research partners’ existing ground water wells (Cornwell 2018), if possible, for a minimum of 3 years. ○ Monitor headcut locations using Geographic Positioning Systems (GPS) unit and photo points for a minimum of 3 years. ● NID shall adaptively manage the project and make in-field adjustments, as necessary. Such adjustments may include, but are not limited to, adding additional woody debris; altering the configuration of debris jams and riffles; and/or re-seeding of revegetation areas. 			

Table E-1. English Meadow Floodplain Restoration and Enhancement Project Mitigation Monitoring and Reporting Program.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
<ul style="list-style-type: none"> • The results of monitoring shall be documented in an annual report that shall include the following: <ul style="list-style-type: none"> ○ A brief write-up of the monitoring methods and results; ○ Summary of adaptive management actions taken to address any issues identified during monitoring; ○ Appendices providing any data sheets and pre- and post-Project photographs used in the evaluation. • The report shall be submitted to resource agencies for review by December 31 of each year in which monitoring is conducted. 			
<p><u>TRAF-1 Traffic Safety Measures</u></p> <ul style="list-style-type: none"> • NID will evaluate the volume of traffic on Meadow Lake Road during mobilization of heavy equipment to the Project area. • If warranted, safety signage and/or flags will be placed along the road to warn motorists of truck traffic from the Unclassified Forest Service Road (logging access road) that provides direct access to the Project area, and/or a work crew member will be assigned to monitor and direct traffic. • In addition, a gate will be installed to block public access onto the Unclassified Forest Service Road. 	During Project implementation	NID	NID

1 INTRODUCTION

1.1 Introduction and Regulatory Guidance

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared by the Nevada Irrigation District (NID or District) to evaluate the potential environmental effects of implementation of the English Meadow Floodplain Restoration and Enhancement Project (Proposed Project or Project). This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq., and State CEQA Guidelines, Title 14 California Code of Regulations 15000 et seq. A summary of permits and agency approvals required for the implementation of the Proposed Project is provided in Section 2.9, Permits and Approvals.

This IS/MND was prepared by the District (the Lead Agency) to determine if the Proposed Project could have significant impacts on the environment. In accordance with the State CEQA Guidelines 15064(a), an environmental impact report (EIR) must be prepared if there is substantial evidence that a Project may have significant impacts on the environment. If the Lead Agency determines that there is no substantial evidence for such impacts, or if the potential impacts can be reduced through Project revisions, a mitigated negative declaration or a negative declaration, can be prepared (CEQA Guidelines 15070(b)).

1.2 Environmental Document

The District has determined that an IS/MND is the appropriate document for compliance with CEQA. The purpose of this document is to present to the public the environmental consequences of implementing the Proposed Project. This document has been prepared consistent with the 20153 State CEQA Guidelines.

This disclosure document is being made available to the public for review and comment. The IS/MND is available for a 30-day public review period beginning May 12, 2021 and ending June 13, 2021 at 5:00 p.m. Please address written comments to:

Kris Stepanian, Board Secretary
Nevada Irrigation District Business Center
1036 West Main Street
Grass Valley, CA 95945

E-mail comments may be addressed to: stepaniank@nidwater.com.

Input may also be provided at a public meeting starting at 6:00 pm May 2, 2021 via Zoom. The Zoom meeting can be accessed from a computer, tablet or smartphone at <https://us02web.zoom.us/j/83748037762>

To join as a conference call, dial (669) 900-6833 or (346) 248-7799. The Webinar ID is 837 4803 7762.

If you wish to send written comments (including via e-mail), they must be received no later than June 13 by 5:00 p.m.

Upon completion of the public review period, the District staff will provide the District Board of Directors with the public and agency comments received on the IS/MND along with a recommendation for the final action to the Board for its consideration.

The District Board may: (1) adopt the mitigated negative declaration and approve the Proposed Project; (2) undertake additional environmental studies; or (3) abandon the Proposed Project.

This IS/MND is available for public review electronically (due to the COVID pandemic) and can be accessed via the following link: <https://www.nidwater.com/english-meadow>.

1.3 Summary of Findings

Section 3 of this document contains the analysis and discussion of potential environmental impacts resulting from implementation of the Proposed Project. Based on the resources evaluated, it was determined that the Proposed Project would have **no impact** on the following resources:

- Agriculture and Forest Resources,
- Land Use and Planning,
- Mineral Resources,
- Population and Housing, and
- Utilities and Service Systems.

Impacts of the Proposed Project were determined to be **less than significant** for the following resources:

- Aesthetics,
- Energy,
- Greenhouse Gas Emissions,
- Noise, and
- Recreation.

Impacts of the Proposed Project to the following resources would be **less than significant with incorporation of the mitigation measures** described in Section 3 and the MND included with this document:

- Air Quality,
- Biological Resources,
- Cultural Resources,
- Geology and Soils,
- Hazards and Hazardous Materials,
- Hydrology and Water Quality,
- Public Services,

-
- Transportation and Traffic,
 - Tribal Cultural Resources, and
 - Wildfire.

As required by CEQA, a Mitigation Monitoring and Reporting Program (MMRP) has been prepared and is included with this IS/MND (Table E-1). It will be adopted at the time of Project approval. It will include those mitigation measures that would reduce environmental impacts to less than significant levels.

1.4 Document Purpose and Organization

The purpose of this document is to evaluate the potential environmental effects of the Proposed restoration and enhancement activities. This document is organized in the following manner:

Section 1 - Introduction. This section provides an introduction and describes the purpose, scope, and organization of this document.

Section 2 - Project Description. This section describes the purpose and need of the Proposed Project, the Proposed Project objectives, and a description of the Proposed Project's characteristics.

Section 3 - Environmental Checklist. This section provides the environmental setting for the Proposed Project, analyzes the environmental impacts of the Proposed Project, and recommends mitigation measures where appropriate. Resource topics appear in the order that they occur in the CEQA Environmental Checklist from Appendix G of the State CEQA Guidelines. Mitigation measures are incorporated and discussed, where appropriate, to reduce "potentially significant" impacts to a "less than significant" level. Mandatory Findings of Significance are also presented in this section.

Section 4 - Agencies and Persons Consulted. This section identifies agencies and persons consulted regarding environmental resource topics during preparation of this document.

Section 5 - List of Preparers. This section contains a list of people that assisted in the preparation of this document.

Section 6 - References. This section identifies the references used in the preparation of this document.

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2 PROJECT DESCRIPTION

The Nevada Irrigation District (NID or District) plans to implement floodplain restoration and forest management activities on 380 acres within the headwaters of the Middle Fork of the Yuba River (Middle Yuba River) in Nevada and Sierra Counties, California. English Meadow, located in the headwaters of the Middle Yuba River, is located approximately 1 mile upstream of one of NID's largest water storage reservoirs, Jackson Meadows Reservoir¹. Water in the reservoir is used primarily for hydroelectric generation, agricultural irrigation, and municipal water supply. Refer to **Map 2-1** for the general location of the Project.

2.1 Site History

In 1858, a 125-foot-tall wooden crib dam was constructed in English Meadow, approximately 0.25 miles downstream of the Proposed Project area, creating the Rudyard Reservoir (also called English Reservoir). In 1867 the North Bloomfield Gravel Mining Company purchased the reservoir—the largest in the state at the time—to supply water for their hydraulic mining operations (Malakoff Diggins State Historic Park 2017). The site remained inundated for many years before the wooden dam ruptured and rapidly drained the meadow. The dam was later rebuilt as a larger 131-foot-tall stone dam in the same location, but again was destroyed in 1883, and was never reconstructed.

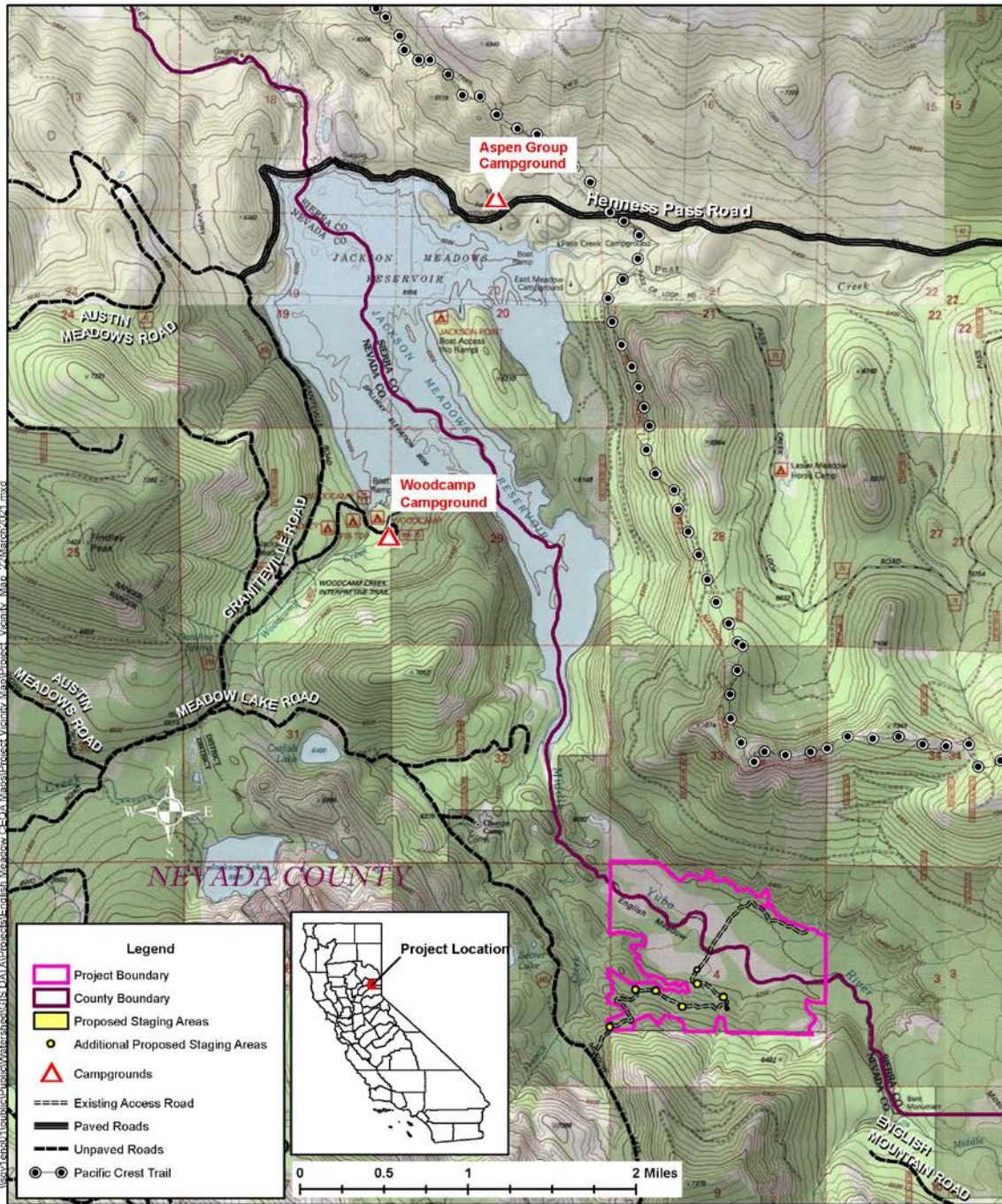
Since the last dam rupture in 1883, the English Meadow valley floor has been extensively grazed by cattle. Ditches were excavated on the north and south slopes of the meadow to dry out the meadow to provide better grazing. Today the meadow lies within the English Grazing Allotment, administered by the US Department of Agriculture Forest Service (USFS or Forest Service). NID does not currently authorize grazing within the Project area. However, due to the remoteness of the location and open grazing laws in Sierra County, unauthorized grazing does occur within the site occasionally. NID will continue to work with the USFS Range Managers and the USFS permittee to discourage unauthorized grazing in the future.

The forest habitats on the slopes surrounding the valley, which include lodgepole pine, Jeffery pine, white and red fir, and white pine, have been utilized for timber since the 1800s and were last harvested in 1999. The forests are currently densely overgrown and support large amounts of dead, dying, and downed woody material.

2.2 Existing Conditions

The existing condition of English Meadow and the surrounding forests reflects the complex history of inundation and draining, construction of ditches, grazing, and logging at the site. The rapid draining of water that resulted from the destruction of the dams likely initiated the incision of the Middle Yuba River channel within the meadow, and its subsequent disconnect from the

¹ Jackson Meadow Reservoir is part of NID's Yuba Bear Hydroelectric Project (Federal Energy Regulatory Commission [FERC]) Project No. 2266). The Project area addressed in this IS-MND is not within the FERC Project boundary.



Map 2-1: English Meadow Restoration & Enhancement Project Vicinity Map

Date: 4/20/2021

Drawn By: C. TOWNSEND

NEVADA IRRIGATION DISTRICT
NEVADA COUNTY – PLACER COUNTY
GRASS VALLEY, CALIFORNIA

Scale: 1:47,520

Sheet: 1 of 1

Map 2-1. Vicinity Map.



On the western slope of the Sierra Nevada, meadows occur in locations where a relatively flat landform is surrounded by steep terrain. These areas are typically underlain by a shallow water table and fine-textured soils. During spring, snowmelt and streams contribute to rising groundwater levels and inundate the meadows, bringing nutrients that sustain the landscape.

Water table and soil moisture gradients strongly influence vegetation composition and structure in these wetlands. Most Sierran meadows contain a complex mosaic of wet, moist, and dry areas that support distinctly different plant and animal communities. These meadows have a short growing season with relatively shallow soil and may be very sensitive to even small changes in water availability. Any factor, therefore, that alters the underlying hydrology has the potential to shift species composition of these mountain wetlands.

Adapted from
<https://www.nps.gov/yose/learn/nature/meadows.htm>



meadow, lodgepole pine are established which in turn may contribute to the depletion of the aquifer. In combination, overly dense forests and dead and down woody material throughout the meadow and the adjacent slopes increases the risk of catastrophic wildfire.

2.3 Project Purpose

Consistent with the District's land use objectives, the purpose of this Project is to improve watershed/floodplain function and resilience of English Meadow and the surrounding forest to potential disturbances to achieve the following benefits:

- Reduce the transport of bedload and fine sediment from the upper watershed into Jackson Meadows Reservoir (maintain reservoir water storage capacity).
- Increase seasonal retention and release of precipitation in the meadow floodplain aquifer.
- Enhance habitat for meadow-dependent species.

meadow floodplain (Mink 2016). Refer to **Appendix A** for photographs of the Project area under existing conditions. The Middle Yuba River in the Project area currently exhibits extreme high and low flows, resulting in erosion of the river's banks as precipitation and snowmelt quickly flow through the meadow and into Jackson Meadows Reservoir, without spilling out over the floodplain. This, in combination with construction of the ditches and drying of the meadow, has resulted in a shift in the proportion of wetland versus upland habitat, dieback of riparian vegetation, and encroachment of conifers (primarily lodgepole pines) into the meadow. Grazing has further resulted in disturbance of soils and vegetation, particularly within the remnant wet meadow and fen habitats.

The history of logging, followed by decades of fire suppression and lack of management of the forest vegetation, has resulted in densely overgrown forest that supports large amounts of dead, dying, and downed woody material on the slopes surrounding the meadow. The dense forest community reduces snow accumulation and subsequent surface runoff that is characteristic of a managed forest community, and may also consume more water resources. Within the

- Improve forest health to reduce wildfire risk through fuels reduction.
- Increase snowpack and surface flow through mechanical thinning of the forest community on north facing slopes.
- Reduce conifer encroachment into the meadow.

2.4 Project Location

The Project lies in the headwaters of the Middle Yuba River watershed, approximately 35 miles northwest of Lake Tahoe, and straddles the boundary between Sierra and Nevada counties. The closest city is Truckee, in Nevada County (**Map 2-1**). Land ownership in the Project vicinity is shown in **Map 2-2**. The Middle Yuba River, which bisects English Meadow, flows into Jackson Meadows Reservoir approximately 1 mile downstream of the Project. **Table 2-1**, below, provides information on the Section, Township, Range, and parcels in the Project area.

Table 2-1. Project Location Information (Section, Township, Range, and Parcels).

County	Section(s)	Township & Range MDB&M	Assessor's Parcel Number
Sierra	Portion of N ½ of Sec 4	T18N, R13E	014-130-002
Nevada	Portion of N ½ of Sec 4	T18N, R13E	015-030-005

2.5 Description of the Project Area

The Project area, shown in **Maps 2-3 and 2-4**, is defined to include the work areas, access routes, and staging areas that will be used during implementation of the Project. Provided below is information on site access, followed by a description of the staging areas and work areas.

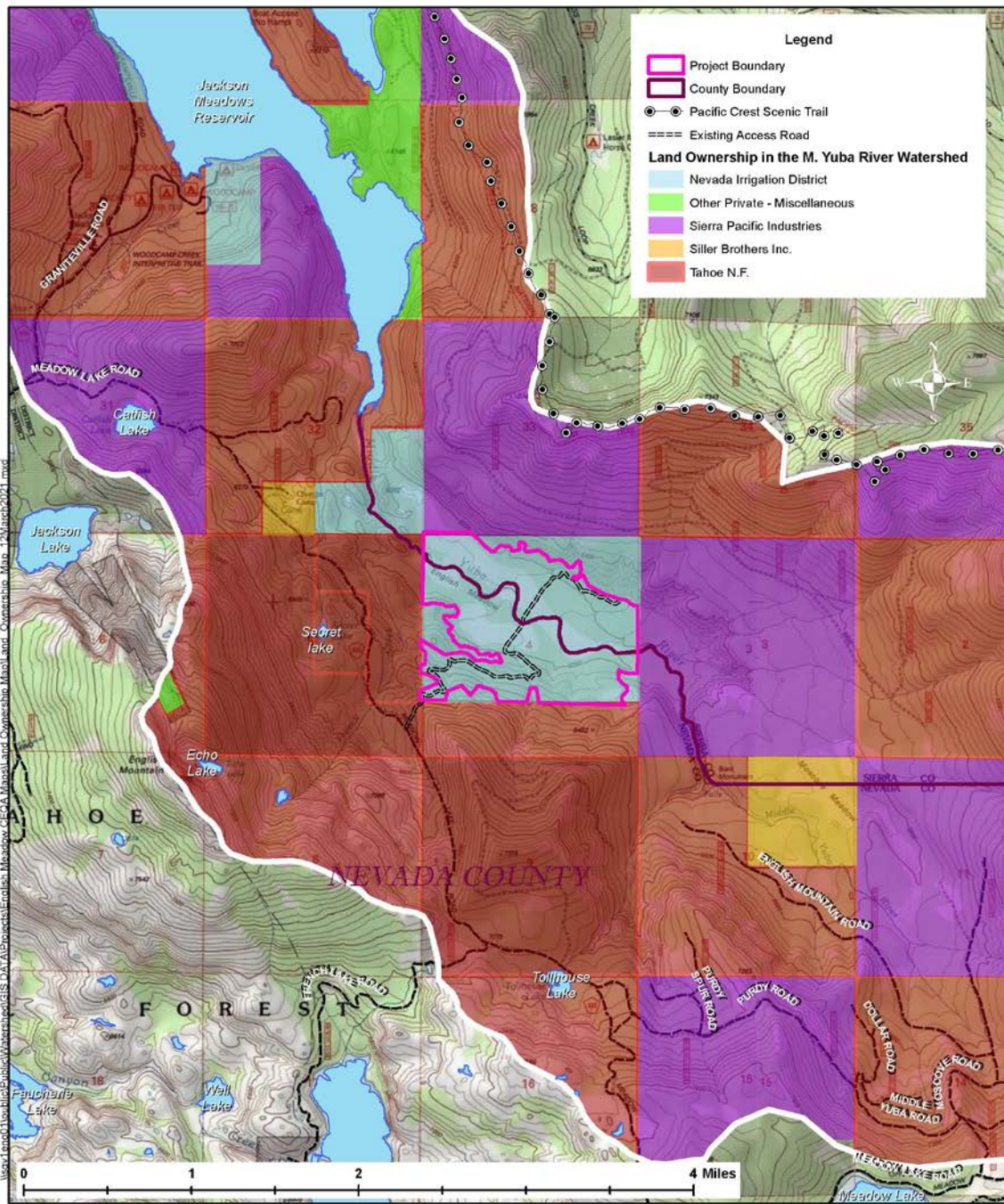
2.5.1 Site Access

To access the site from Truckee, follow CA-89 north for approximately 15 miles to Bear Valley Road. Take a brief left on Bear Valley, and then head south on Jackson Meadows Road/Heness Pass Road for approximately 16 miles. After crossing Jackson Meadows Dam, head south on Graniteville Road for approximately 5 miles to its intersection with Meadow Lake Road. Note that the pavement ends approximately 1 mile north of the intersection. Continue on Meadow Lake Road for approximately 3 miles to an Unclassified Forest Service Road that provides direct access to (and across) English Meadow.

Use of the Unclassified Road (referred heretofore in this document as the “logging access road”) has been authorized by the Tahoe National Forest (TNF) via a Letter of Authorization, received by NID on April 16, 2021. NID will obtain a permit from Sierra County for the use of Meadow Lake Road, if required.

2.5.2 Staging and Stockpile Areas

The following staging areas will be used during implementation of the Project.



Map 2-2: English Meadow Restoration & Enhancement Project Land Ownership Map

Date: 4/20/2021
 Drawn By: C. TOWNSEND

NEVADA IRRIGATION DISTRICT
 NEVADA COUNTY – PLACER COUNTY
 GRASS VALLEY, CALIFORNIA

Scale: 1:47,520
 Sheet: 1 of 1

Map 2-2. Land Ownership Map.

-
- A previously disturbed 0.5-acre area located on NID property along the logging access road (**Map 2-3**), will be used for work crew parking, log/tree storage, and placement of a portable toilet. The logging access road includes several small existing pullouts and landing sites that were developed during previous forest management efforts. These previously disturbed sites will be used as necessary to stage construction equipment and materials.

Excavated materials (e.g., soil, gravel, cobble) will be temporarily stockpiled immediately adjacent to borrow sites (refer to Section 2.5.4) or areas where floodplain treatments are being actively implemented (for example, immediately adjacent to an active debris jam or riffle construction location). These stockpiles will only remain in place temporarily. Materials that require stockpiling for a longer period of time (e.g., for use in other treatments) would be re-located to designated staging areas away from Waters of the U.S./State. Stockpiles will be covered if the National Weather Service declares a 50 percent or greater chance of precipitation.

Fuel will be trucked in and stored in a dual-walled 1,000-gallon fuel tank that will be staged at NID's Woodcamp Campground. The tank will be secured behind a locked gate, and will be placed on an appropriate containment structure (as specified in Project permits [e.g., Stormwater Pollution Prevention Plan (SWPPP)]). Fuel will be transported by pick-up trucks to the Project area in 70- to 90-gallon tanks once per day, or as required depending on use. Refer to **Map 2-3** for the location of potential staging areas where fueling will occur.

2.5.3 Work Area

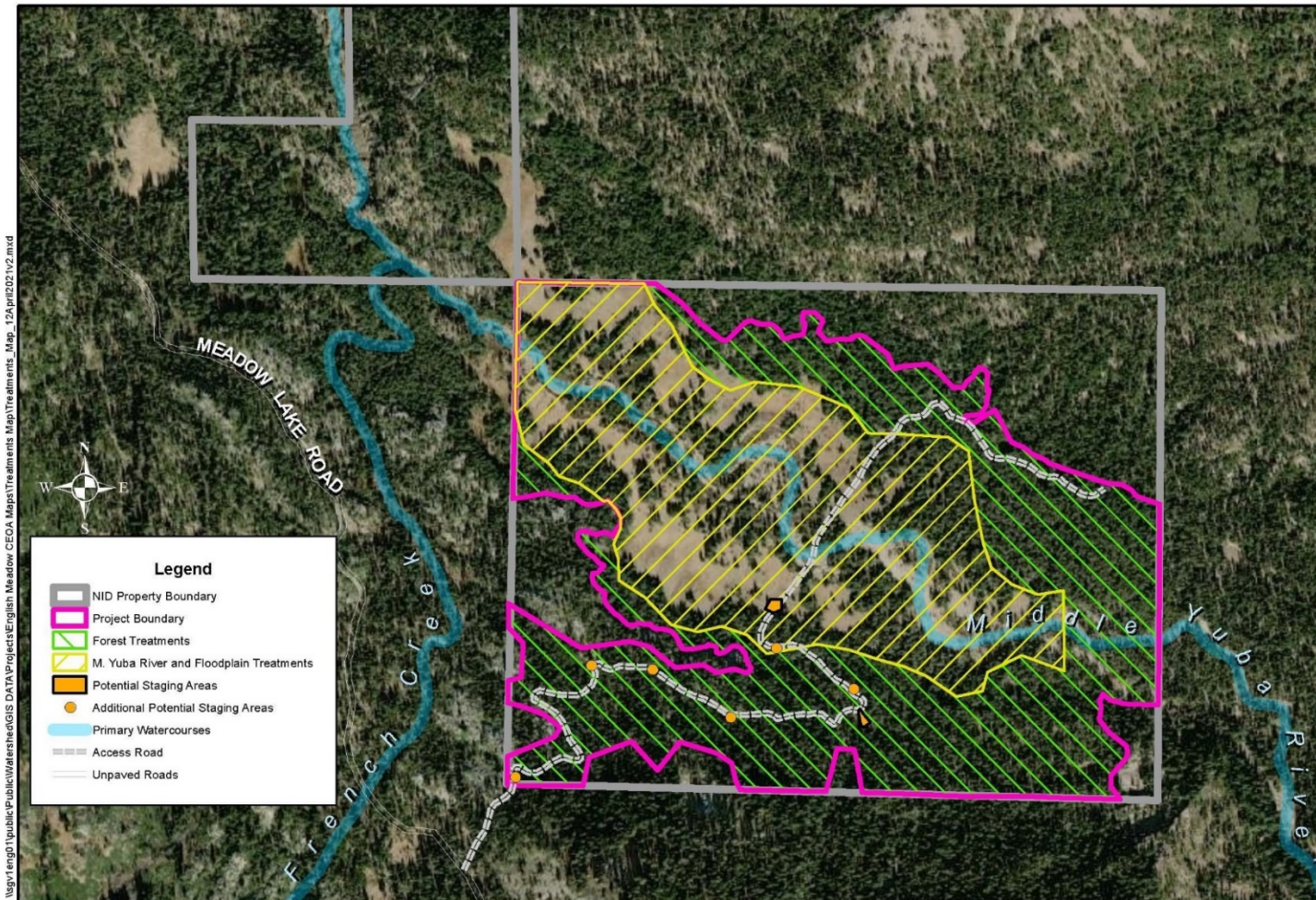
The Work Area is defined to include those areas shown on **Maps 2-3 and 2-4** where mainstem and floodplain treatments (e.g., debris jams, riffles, and bank stabilizations) would be installed; the 200-acre area where meadow vegetation treatments would be implemented; and the surrounding 175-acre area where upland forest treatments would be implemented.

2.5.4 Borrow Sites

NID has identified several potential borrow sites that would be excavated to provide native soil and rock to be used for proposed treatments (e.g., fill of channels [i.e., erosional features and manmade ditches]). Refer to **Map 2-4** for the location of the proposed borrow sites. The topmost soil layer will be temporarily stockpiled adjacent the borrow site. Materials that require stockpiling for a longer period of time (e.g., for use in other treatments) would be re-located to designated staging areas away from Waters of the U.S./State. Stockpiles will be covered if the National Weather Service declares a 50 percent or greater chance of precipitation. Following completion of excavation, the borrow sites would be revegetated utilizing the topmost soil layer containing the existing seedbank, and mulched with on-site materials as needed.

2.6 Project Components

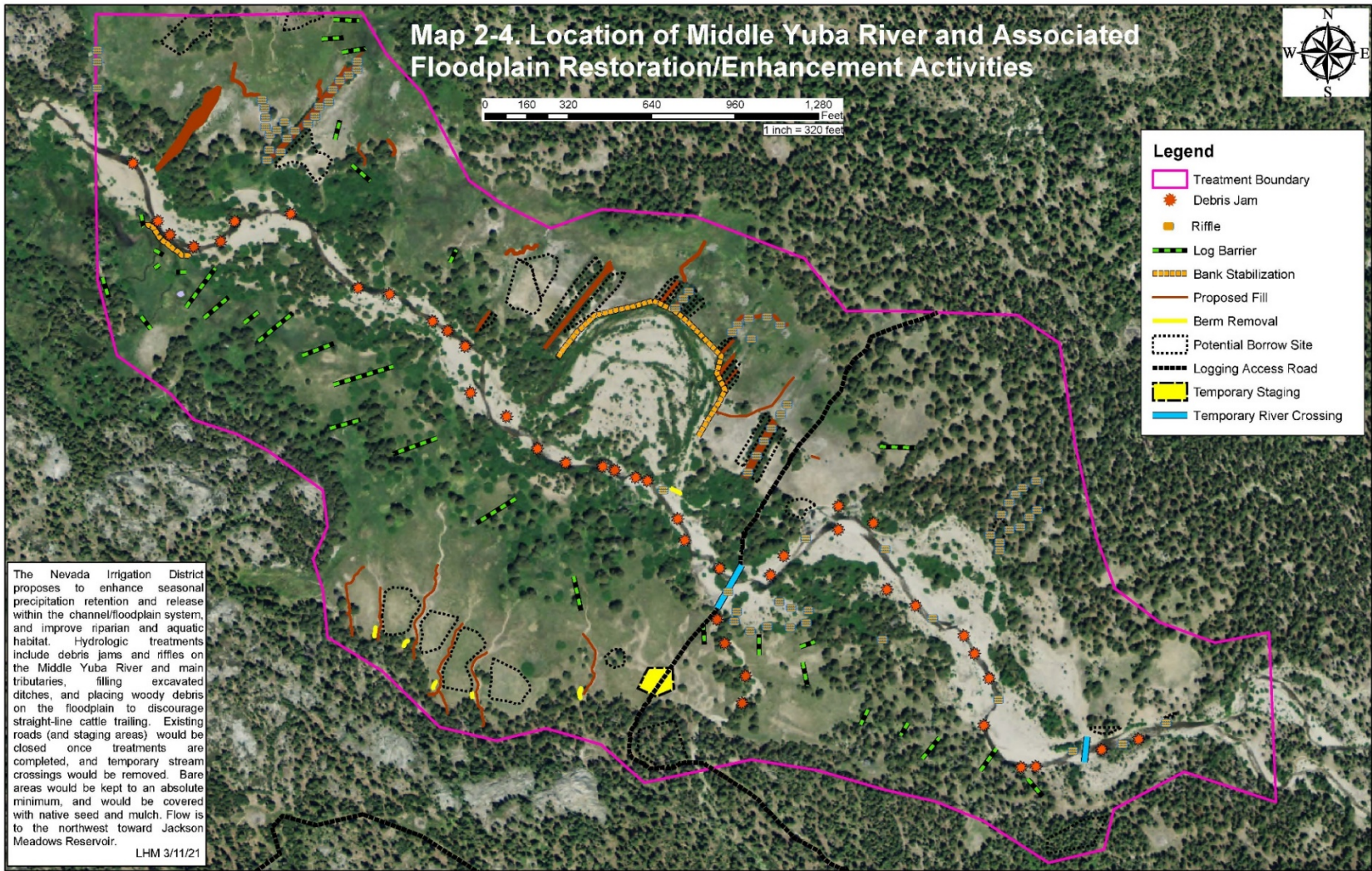
The Project described in this section was designed by NID in consultation with an interdisciplinary team of restoration experts. Pre-Project baseline data that has been collected includes fluvial geomorphology and valley cross-sectional measurements; assessment of floral



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 GRASS VALLEY, CALIFORNIA

Map 2-3: English Meadow Restoration & Enhancement Project Treatment Locations Map
 Drawn By: C. TOWNSEND Date: 4/20/2021 Scale: 1:21,120 Sheet: 1 of 1

Map 2-3. Treatment Locations Map.



Map 2-4. Location of Middle Yuba River and Associated Floodplain Restoration/Enhancement Activities.

and faunal communities; completion of an aquatic resources delineation; an archeological survey; development of a groundwater basin definition and associated monitoring; flow monitoring; a geological assessment; and an assessment of forest conditions. Data from these studies has informed the development of the Project design; and are incorporated into the analyses provided in Section 3.0 of this IS-MND.

Provided below is a description of Project components including site preparation; treatments within the Middle Yuba River and associated floodplain; floodplain vegetation treatments; forest treatments; access road modifications; Project demobilization; monitoring and reporting; construction equipment; schedule, work hours, and personnel; and permits and approvals required for implementation of the Project.

2.6.1 Site Preparation

Meadow Lake Road and the logging access road may require maintenance or repair prior to use. Maintenance activities would include grading or blading within the prism of the existing road, and installation of temporary crossings (culverts and/or rock crossings), as necessary to allow for equipment access. Crossings may be required along Meadow Lake Road where it crosses two streams, French Creek and Secret Creek, and at up to seven additional locations along the existing logging access road within NID property (refer to Map 2-3). If water is present at the initiation of the work season, the temporary crossings would require temporary diversion of water around the work site, and NID will install 18-inch diameter squashed corrugated metal piping, covered with up to approximately 35 cubic yards of clean rock and gravel, topped by 1.5-inch aggregate base, to allow for passage of equipment. Diversion equipment would be removed immediately following installation of the temporary crossing, and normal flows restored through the culvert(s).

If the streams are dry, only the rock and aggregate base would be installed to allow equipment to pass over the streambed.

The culverts and/or rock water crossings and all associated material (e.g., pipes and rock) would be installed at the beginning of each work season and would be removed at conclusion of each work season. Material removed will be positioned outside of the banks to contain potential high spring flows. A rolling dip will be created to direct flows on the road surface into the berm of the road.

NID would install up to two temporary river crossings of the Middle Yuba River at locations indicated on **Map 2-4**. The larger proposed crossing would be located in a portion of the river that normally experiences perennial flows. Therefore, diversion of flows is necessary prior to installation of the crossing. The smaller proposed crossing, approximately 2,000 feet upstream, would be located within a portion of the Middle Yuba River with intermittent flows, and is typically dry by late June. Therefore, the necessity for diversion of flows at this location will depend on the timing of installation and water year type. A detailed Dewatering and Diversion Plan will be developed and approved by resource agencies as part of Project permitting.

Following dewatering of the potential crossings, up to approximately 215 cubic yards of in-channel material (cobble and rock), and a culvert (or diversion pipe) will be placed to allow vehicles and equipment to safely cross the riverbed. Immediately following installation of the

crossing, the diversion pipes (if used) will be directed through the culverts and flows returned to the riverbed immediately below the culvert. The crossings and all associated materials would be removed at the conclusion of each work season, and reinstalled during the next, if necessary.

2.6.2 Middle Yuba River and Associated Floodplain Restoration/Enhancement Activities

The hydrologic regime in the Project area is highly dynamic, with watershed conditions resulting in short bursts of high flows, typically associated with rain-on-snow events in the spring. The high-velocity flows have resulted in headcutting and channel incision. A headcut is an erosional feature occurring in the head, or upstream extent, of an intermittent or perennial stream, characterized by an abrupt vertical drop in the streambed. Headcutting is often present in unstable river systems that have experienced disturbances to the hydrologic regime. Channel incision, in turn, is very common when headcuts are present in stream morphology. In functional channel/floodplain systems, the flows overbank every 1.5 to 2 years. However, because of channel incision, Middle Yuba River flows within the Project area are estimated to overbank only every 10 years (Mink 2021a). The infrequent overbanking of the stream, coupled with the increased rate at which water flows from the meadow due to incision, have altered soil conditions and plant assemblages within the meadow. Restoration/enhancement activities aim to return moisture to soils in the floodplain and increase groundwater hydrologic activity via modified process-assistance based techniques using on-site materials.

Provided below is a detailed description of treatments that are proposed for the mainstem Middle Yuba River channel (Section 2.6.2.1) and for restoration of the floodplain adjacent to the channel (Section 2.6.2.2).

2.6.2.1 Mainstem Treatments

The following describes treatments to be implemented in and along the channel of the Middle Yuba River, including debris jams, riffles, and bank stabilization.

Two of the proposed treatment methods described in this section—debris jams and riffles—are intended to reduce headcutting, bank erosion, and channel incision by 1) raising the elevation of the streambed, or thalweg³, of the mainstem channel, thus allowing flows to access the existing meadow floodplain aquifer and 2) slowing the velocity of flows, allowing for the natural aggradation of bedload material. In addition, limited bank stabilization will be implemented to address two areas of destructive tributary head-cutting along the mainstem channel.

Portions of the mainstem channel will be dewatered, as necessary, to allow for installation of treatments within the ordinary high water mark (OHWM). Diversion and dewatering methods for treatment installation location will be similar to that described for the road crossings and will be described in detail in the Dewatering and Diversion Plan to be approved as part of Project permitting and implemented as part of the Project. After the designated portion of the streambed is dewatered, NID would install the appropriate treatments (i.e., debris jams, riffles, and bank

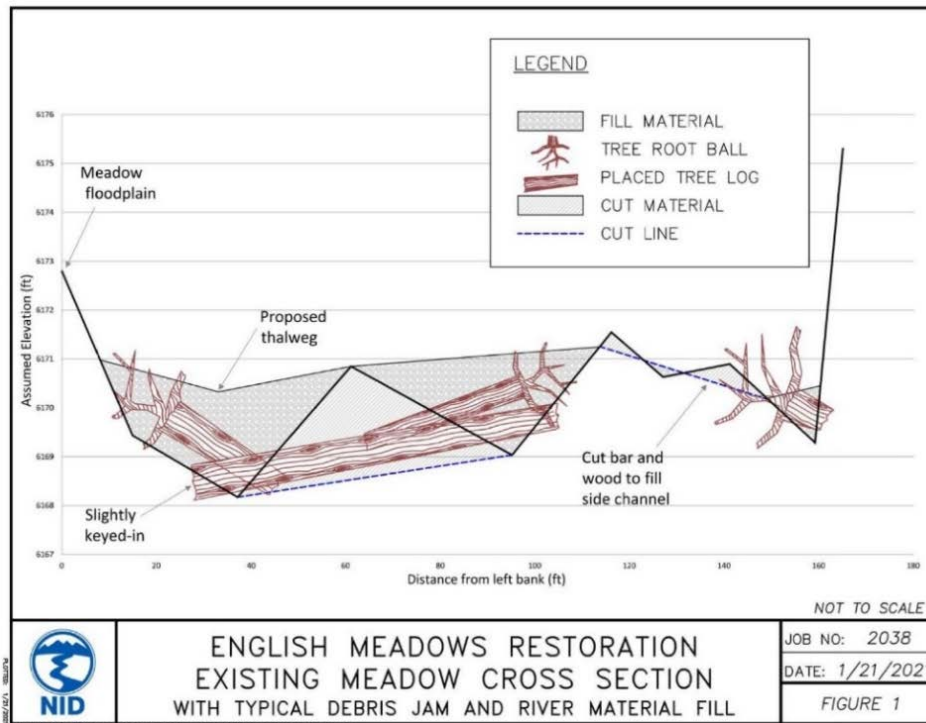
³ In geography and fluvial geomorphology, the thalweg is defined as the line of lowest elevation within a valley or watercourse.

stabilizations). Upon completion of installation, flows would be returned to the streambed and the next sequential portion of streambed will be dewatered, as necessary, during the work season.

Debris Jams

NID proposes to construct approximately 38 debris jams within the mainstem channel. Refer to **Map 2-4** for the proposed location of the debris jams, and to **Figure 2-1** for a cross-section of a typical debris jam.

Figure 2-1. Typical Debris Jam and River Material Fill.



Following dewatering of the channel (if necessary), an excavator would be used to excavate the bed of the channel as necessary to allow for placement of foundational logs of the debris jam. As described previously (refer to Section 2.5.4), excavated material would be temporarily stockpiled adjacent to the work area for later use. Next, a loader would be used to place multiple trees (including branches and roots) in the channel. In general, each jam will require 12 trees between 6 and 30 inches diameter at breast height (DBH)⁴. Each debris jam will be approximately 0.1 to 4.5 feet high (average height 2.4 feet). The trees would be arranged to raise the thalweg to the designed height, and then “keyed in” to the bank or channel bottom as necessary to stabilize the structure. The upstream face of the jam would be lined with large-tree root wads.

Following placement of trees, approximately 40 cubic yards of the previously excavated channel bed cobbles, small trees, branches, and wood debris would be incorporated into the jam to fill in

⁴ Construction of debris jams and riffles will utilize trees removed during the floodplain vegetation and forest treatments described in Section 1.6.2.1

the spaces and to create stability. Debris jams would adjust over time in response to flows. As described in Section 2.6.7, the condition of each jam would be assessed following Year 1 of restoration/enhancement activities, and adjustments made in Years 2 and/or 3, as necessary. Debris jams, as well as riffles, are permeable to flows, and will not entirely obstruct natural flows. The design of these structures allows natural flows to continue within the existing channel alignment.

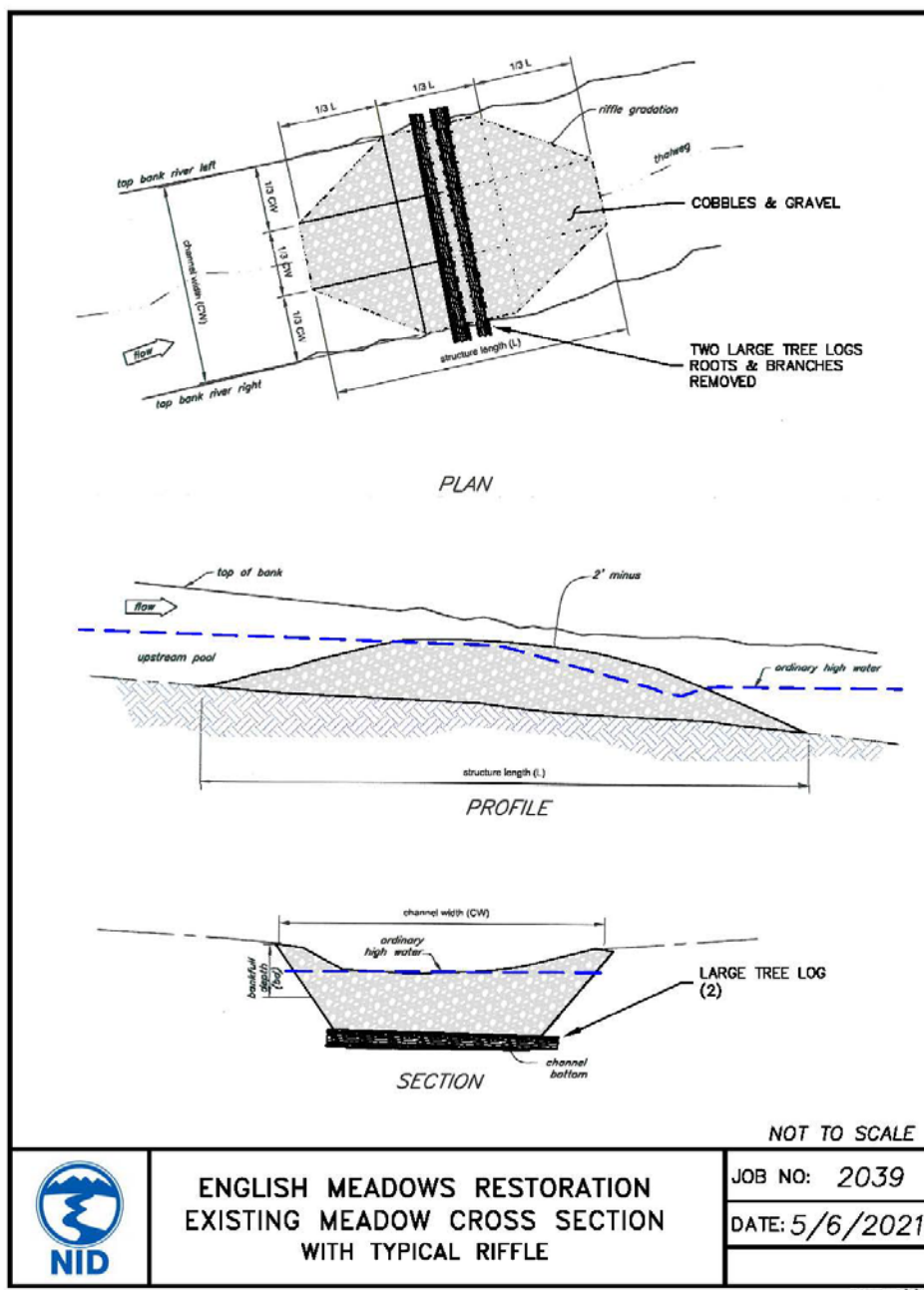
Riffles

NID proposes to construct approximately nine riffles within the mainstem channel. in strategic locations to support an upstream debris jam, or where particularly high velocity flows are expected. Refer to **Map 2-4** for the proposed location of each riffle, and to **Figure 2-2** for a cross-section of a typical riffle structure.

First, following dewatering of the mainstem channel (if necessary), an excavator and/or loader would be used to excavate the bed of the channel as necessary to allow for placement of the riffle. Excavated material would be temporarily stockpiled immediately adjacent to the work area for use in construction of the riffle. Any stockpiled materials that are not re-used in the riffle or in other restoration/enhancement activities would be relocated to designated staging areas for later use in other restoration/enhancement activities. Next, an excavator would be used to place two channel-wide lengths of large (12 inches DBH or greater) tree logs (i.e., with branches and roots removed) to form the base of the riffle. Between six and 12 large tree logs would be used, on average, depending on the width of the channel. The logs would be placed to maximize contact to the channel bed and discourage future undercutting. An additional layer of logs may be used for larger riffles. Up to 50–100 cubic yards of native channel material (i.e., coarse gravel and cobble, generally sized between 0.25 inch and 3 inch) would then be placed on top of the logs, and small trees (approximately 6 inches DBH) or branches integrated into the structure to provide roughness on the outer margins of the riffle. The number of small trees/branches required would vary widely depending on the location. In general, a minimum of seven small trees may be required for smaller riffles; while up to 80 small trees may be required for the largest riffles. To discourage headcutting, the elevation of the toe of the riffle would be equal to the crest of the next downstream debris jam.

As described previously for the debris jams, each riffle may adjust over time in response to flows. As described in Section 2.6.7, the condition of each riffle would be assessed following completion of restoration/enhancement activities, and adjustments made in subsequent years, as necessary.

Figure 2-2. Existing Meadow Cross-Section with Typical Riffle.



Bank Stabilization

Two areas of active erosion would be stabilized to protect existing wetland resources. One is 1000-foot-long area located north of the mainstem (river-right); and the other is a 200-foot-long area along the south bank of the mainstem (river-left). The channel would be dewatered, if necessary, and an excavator would be used to cut back the bank to a 3:1 slope. The bank would

then be stabilized with on-site gravel bar material, willow stakes and whole plants as available, and locally sourced grasses from borrow site areas.

2.6.2.2 Floodplain Treatments

The floodplain surrounding the mainstem channel supports a number of natural perennial and intermittent tributaries, as well as erosional features (i.e., gullies) and artificial channels (i.e., manmade ditches). Most of these tributaries, gullies, and manmade ditches are deeply incised, causing winter flows and spring snowmelt to drain quickly into the mainstem, rather than spread out over the floodplain. As a result, the floodplain aquifer and mainstem connectivity has been disrupted. The purpose, therefore, of the floodplain treatments is to enhance the ability of the shallow floodplain aquifer to retain winter precipitation, and release it more slowly throughout the growing season. Refer to **Table 2-3**, below, for a summary of the treatment methods proposed for floodplain tributaries, gullies, and manmade ditches; and to **Map 2-4** for the location of these features and associated treatments. In addition, measures will be implemented to promote regrowth of vegetation along currently denuded channel bars along the mainstem (**Map 2-4**).

Note that all work within intermittent tributaries, gullies, and manmade ditches will be implemented during the dry season when no water is present. Therefore, dewatering will not be required.

Table 2-3. Summary of Proposed Floodplain Treatments.

Floodplain Features to be Treated (refer to Map 2-4)	Floodplain Treatments				
	Debris Jams	Riffles	Channel Filling	Berm Removal	Revegetation
Large Intermittent Tributary	X	X			
Other Intermittent Tributaries		X			
Erosional Features (Gullies)		X	X	X	
Artificial Channels (Manmade Ditches)		X	X		
Large Mainstem River Bars					X

Debris Jams

A large, intermittent tributary on the south floodplain (located east of the temporary staging area as shown on **Map 2-4**) enters the mainstem channel adjacent to the logging access road crossing. This 500-foot-long channel would be treated with four debris jams, which are expected to maintain the existing flow path and encourage deposition. Refer to Section 2.6.2.1 for a description of the debris jam structures and construction methods. The large intermittent tributary features a steep drop at its confluence with the mainstem. Additional rock will be used to create a more gradual slope at this location.

Riffles

Approximately 20 riffles would be utilized to slow the flow of water within intermittent tributaries. Riffles may also be used, often in combination with channel filling, within erosional features (gullies) and artificial channels (manmade ditches). Refer to Section 2.6.2.1 for a description of the riffle structures and construction methods.

Fill of Erosional Features and Manmade Ditches

Incised channels of erosional features (gullies), and the artificial channels (manmade ditches) will be filled using native rock, soil, and woody debris. Native rock and soil would be excavated either directly adjacent to the site or from berms that are proposed for removal (refer below) or excavated from proposed borrow sites (Section 2.5.4). All areas of ground disturbance would be revegetated following completion of work.

As shown in **Map 2-4**, some channels may be completely filled; in other channels, filling would be used in combination with riffles or berm removal. Fill material will be placed at a slightly higher elevation than the surrounding native soil to disperse seasonal flow onto vegetated areas. To reduce erosion of fill material and maintain dispersed flow, fill material would be keyed into the native soil every 100 feet. Specifically, NID will dig into the lower portions of the bank of the erosional features or manmade ditches to create sections where the fill intrudes into the native soil. The purpose of this is to avoid creating a straight-line seam between fill and the native soil, which could become a weak point where water can enter, resulting in erosion within the seam and slippage of the fill. Partially buried logs would be placed along the edge of the fill material, approximately every 25 feet. To preclude additional head-cutting, overland flow paths would be reinforced by laying back the slope of the banks and placing rock at the edge of the gully incision.

Berm Removal

At several locations, including at six erosional features (gullies) located along the southern border of the Project area, road- or trail-side berms are contributing to the incision of erosional features. These berms will be removed, where necessary, and the material used for fill of erosional features (gullies), and the artificial channels (manmade ditches).

Revegetation of Mainstem Channel and Floodplain Treatment Areas and Borrow Sites

NID proposes to promote revegetation of bare-ground areas, including channel bars along the mainstem, which are clearly visible in the aerial photograph (**Map 2-4**). Revegetation would involve one or more of the following, depending on the condition and location of the site to be treated:

- Application of mulch (i.e., chipped wood obtained from vegetation treatments);
- Introduction of topsoil collected on site;
- Reseeding of select areas with a locally native seed mix; and/or

-
- Use of existing native vegetation (e.g., shrubs), which would be dug up and transplanted on site. New plant material may also be used, where necessary, to support revegetation. Such material will consist of plants that are native to the area, and will be purchased from local sources.
 - Best management practices will be utilized to address potential soil erosion (e.g. topsoil, mulch), as necessary.

These methods would also be implemented to revegetate areas where ground disturbance is required for restoration/enhancement activities, such as excavation of borrow sites (refer to Section 2.5.4) or areas of excavation adjacent to channels (i.e., erosional features and manmade ditches) to be filled.

2.6.3 Floodplain Vegetation Treatments

As described previously, English Meadow is in a xeric, or dry, trend due to the presence of incised channels, hydrologic disconnection of the floodplain and river channel, and headcutting in tributary creeks. The conversion of wet meadow soils to dry soils, among other factors, has allowed the encroachment of conifers into the meadow. Furthermore, current conditions increase the potential for ignition of high-intensity fire that would impair the health and functionality of English Meadow. In addition, unauthorized cattle grazing has impacted wetland areas due to trampling and chiseling; and has formed an incised cowpath through the southern half of the meadow which may accumulate flows; and has likely resulted in the introduction of non-native grasses. Future site management will focus on addressing this issue and minimizing impacts.

Approximately 200 acres of habitat within the meadow basin (refer to the area denoted in yellow cross-hatching on **Map 2-3**) will be treated to remove encroaching conifers. Treatment methods will include mastication/mechanical thinning by hand; individual selection and removal of trees; and placement of log barriers to obstruct cattle movement.

2.6.3.1 Mastication

NID will utilize low-pressure tracked mechanical masticators to remove dense stands of non-wetland shrubs and small trees that have encroached into the floodplain. Wood chips from this treatment would be used on-site to retain organic material within the meadow and upland forest areas (refer to Section 2.6.2.2) and to treat exposed soils at borrow sites (refer to Section 2.5.4).

2.6.3.2 Conifer Removal

Conifers measuring less than 24 inches DBH will be removed from within the meadow and along the meadows edge. No hardwood trees (i.e., cottonwood or aspen) of any size would be removed.

For conifers to be used in the construction of debris jams, a loader or excavator may be used to excavate and loosen the root wad of the tree, and the tree would then be knocked/pushed over with a loader. Trees that are not needed for debris jams may also be felled using a chainsaw. Hand crews will use chippers to grind trees that are not utilized for debris jam construction, and

these chips will be incorporated into revegetation and treatment of exposed soils associated with the debris jam construction.

NID will retain between three and seven large snags per acre to provide wildlife habitat. In areas with an insufficient number of existing snags, the desired number of snags will be created by girdling large trees (i.e., greater than 24 inches DBH) that are considered a seed source for future encroachment. Girdling is defined as cutting a ring around the trunk to induce mortality of the tree by restricting growth and disrupting the cambium layer.

2.6.3.3 Log Barriers

Logs or other suitable woody debris that are not used in the creation of debris jams or riffles will be strategically placed within the meadow habitats to direct cattle to use the forested slopes or roads to move through the property, and to discourage creation of new straight-line cattle trails or entry of cattle into fens or wet meadow habitats. Refer to **Map 2-4** for potential placement locations. These placements may be altered during implementation of the Project based on site-specific conditions.

2.6.4 Forest Treatments

A 175-acre area of upland conifer forest around the meadow will be thinned to decrease the potential for high-intensity wildfire, to reduce future conifer encroachment into the meadow, and to increase water yield (i.e., by increasing accumulated snow load or reducing water resources consumed by trees). The methods, which will include mastication and conifer selection/removal by hand crew, are similar to those described above for floodplain vegetation treatment (Section 2.6.3).

2.6.4.1 Mastication/Mechanical Thinning

NID will use mechanical masticators to remove dense stands of smaller trees and shrubs. Wood chips from this treatment would be left on-site to retain organic material, and potentially used as part of revegetation along the mainstem channel or borrow sites.

2.6.4.2 Forest Thinning

Individual trees will be identified and removed to achieve a minimum of 30-foot spacing between trunks and reduce canopy closure within the residual stand. Mastication of 10-inch DBH and smaller material will create these desired conditions, though several methods may be used. Trees that are suitable for use in the debris jams may be knocked down; or trees may be felled using a chainsaw. Alternately, some trees may be girdled to eventually induce mortality. By these means, the desired residual spacing can be achieved over time and habitat can be created. Downed trees that are not used in the construction of debris jams, riffles, or log barriers will either be chipped and used as part of revegetation; or they will be left where they fall. This material will be left on site to provide habitat for small mammals, reptiles, and amphibians as well as to slowly build soil.

2.6.4.3 Special Treatment Area

Through consultation with affiliated Tribal organizations, NID has identified a Special Treatment Area that encompasses a known cultural Tribal resource. A Tribal monitor will be present during all vegetation management activities within the Special Treatment Area, and vegetation management will be conducted using hand tools only. No use of mechanical equipment (e.g., a masticator) or other ground-disturbing activities will occur within the Special Treatment Area. Refer to Section 3.5 (Cultural Resources) and Section 3.18 (Tribal Cultural Resources) for additional information.

2.6.5 Access Road Modifications to Limit Future Access

Following the final year of the Project, NID will install a barrier across the logging access road to prevent entrance of vehicles into the meadow. The barrier will consist of logs, large rocks and/or boulders obtained from the Project area.

2.6.6 Demobilizations

Following each season of work, any dewatering and diversion equipment and/or temporary river crossings, if used, would be removed from the mainstem channel, and all vehicles and construction equipment will be removed from the Project area.

2.6.7 Monitoring and Reporting

As described previously, NID has partnered with an interdisciplinary team of restoration experts to collect 4 years of pre-Project baseline data. Post-project implementation monitoring will be performed in Years 3, 4, and 5 of the Project (at a minimum) to evaluate the effectiveness of the channel and floodplain treatments, and to determine whether modifications or additional treatments are necessary. Note that, because environmental conditions will vary from year to year in response to weather and hydrological conditions (e.g., snowpack), the emphasis of the evaluation will be on trends over time (e.g., decrease in channel incision in relation to floodplain, increase in the elevation of thalweg in relation to the floodplain), rather than achievement of specific quantitative benchmarks.

The evaluation will include the below-listed pre- and post-Project comparisons (some to be conducted annually, others on an as-needed basis):

- Evaluate pre-Project and post-Project channel conditions in the mainstem and intermittent tributaries at five sample locations. Trends to be evaluated include comparative elevations of the thalweg versus the floodplain, and whether the channels are trending toward aggradation versus incision. This will include:
 - Annual inspection of all debris jams and riffles. Adjust materials or add additional materials, as necessary to achieve net deposition (an aggradational trend).
 - Obtaining annual thalweg:floodplain elevations at sample locations. Criteria to be evaluated include comparative elevations of the thalweg versus the

floodplain, and whether the channels are trending toward aggradation versus incision. Adjust or add additional materials (e.g., trees, branches, native cobble) to debris jams as needed.

- Conduct a one-time inventory of large woody debris, fish habitat types, bank stability, and cover within a 1000-foot sample reach of the mainstem channel, comparing pre-Project and post-Project conditions, using a modified USFS Region 5 Stream Condition Inventory protocol (Frazier et al. 2005) to prepare pre- and post-Project conditions.
- Utilize photo points and aerial imagery to monitor fill treatments within erosional features and manmade ditches, vegetative cover, forest condition, and overall ecosystem appearance. Monitoring of fill treatments within erosional features and manmade ditches will include the following:
 - Installing markers following completion of initial fill; perform annual visual inspections of location of markers filled erosional features and manmade ditches to determine whether slippage between fill and native soil is occurring. Adjust materials or add additional materials, as necessary.
- Compare pre- and post-Project streamflow hydrographs (for large storms and spring melt) to determine whether there is an attenuation of peak flows and a flattened falling limb.
 - Obtain data from the A-Level TROLL pressure sensor in the Middle Yuba River below English Meadow annually to look for desired hydrographic trend (i.e., attenuation of peak flows and a flattened falling limb).
- Use aerial imagery to compare riparian vegetation cover. In addition, evaluate the condition of bank stabilization areas and revegetation areas (e.g., borrow sites and excavated areas adjacent to filled channels), and re-vegetate as needed.
 - Conduct photo monitoring, and visit bank stabilization and revegetation sites annually to evaluate success of plantings (70 percent cover). Add willows, as necessary. Replace dead or dying plants as necessary to achieve at least 70 percent vegetative cover. Cast seed and rake in or mulch where needed.
- Collect and analyze in-stream water temperature, measured with HOBO temperature continuous recorders.
 - Collect and analyze in-stream water temperature annually, as measured at HOBO temperature continuous recorder locations and the A-Level TROLL temperature sensor in the Middle Yuba River below English Meadow, to determine whether maximum water temperatures and diurnal fluctuations are decreasing.
- Obtain groundwater elevation data from California State University, Sacramento research partners' existing groundwater wells (Cornwell 2018), if possible.
- Monitor headcut locations using Geographic Positioning Systems (GPS) unit and photo points.

-
- Install motion-detecting game cameras to collect data on wildlife use of the Project area.
 - Cameras will be installed as soon as possible (pending grant funding) and will remain operational throughout the Project.
 - All wildlife detections will be tabulated and the results (per camera) summarized in an annual report.
 - Pre- and post-Project data within representative forest treatment plots will be reviewed to assess changes in:
 - Stand density/trees per acre (TPA);
 - Species composition;
 - Average diameter increase;
 - The Forest Vegetation Simulator (FVS) model will be used to model likely growth rates, regeneration rates, and fire behavior; and to inform the return interval for long-term maintenance. Fall monitoring visits will include the observation of natural conifer regeneration rates.

If determined necessary based on the evaluations, NID will adaptively manage the project and make in-field adjustments, as necessary. Such adjustments may include, but are not limited to, adding additional woody debris; altering the configuration of debris jams and riffles; and/or re-seeding of revegetation areas.

The results of post-project monitoring will be documented in a report. The report will include the following:

- A brief write-up of the monitoring methods and results;
- Summary of actions taken to address any issues identified during monitoring;
- Appendices providing any data sheets and pre- and post-Project photographs used in the evaluation.

Monitoring protocols will be designed to be cost-effective, informative, and relatively easy to collect and analyze. NID will be responsible for the collection and analysis of monitoring data for a minimum of 3 years following restoration/enhancement activities.

2.7 Construction Equipment

Table 2-3, below, provides a list of construction vehicles and equipment that will be used during implementation of the Project. Not all of the equipment would be used at once.

Table 2-3. Construction Vehicles and Equipment.

Vehicles/Equipment	Applicable Project Activities			
	Site Preparation	Mainstem and Floodplain Treatments	Floodplain Vegetation Treatments	Forest Treatments
Chainsaw		X	X	X
Dump Truck (10 yd)		X		
Excavators (2, medium)	X	X		
Fuel Tank (staged outside Project)	X			
Loader (Medium)		X		
Masticator (tracked)			X	X
Portable Toilets (at staging area only)	X			
Standard Fire Suppression Equipment	X	X	X	X
Track Loader Cat 953		X		
Tracked Dump Truck		X		
Tractors with blade	X		X	X
Water Pumps		X		
Water Truck	X	X	X	X

2.8 Schedule, Work Hours, and Personnel

The Project will be implemented in up to five work seasons between 2021 and 2025. Work during each season will take place between June and November, or as weather and on-the-ground conditions allow.

- **Year 1 (2021)** – Site preparation; forest treatments
- **Year 2 (2022)** – Site preparation; mainstem and floodplain treatments; meadow vegetation treatments, and forest treatments
- **Year 3 (2023)** – Completion of any tasks that were not fully realized in Year 2; post-treatment monitoring and follow-up adjustments, if necessary
- **Year 4 (2024)** – Post-treatment monitoring and follow-up adjustments, if necessary
- **Year 5 (2025)** – Post-treatment monitoring and follow-up adjustments, if necessary

Work will be conducted up to 7 days a week during daylight hours. No night work or artificial lighting will be required.

Mainstem and floodplain treatment will require crews of up to five people; vegetation and forest treatments will typically require two to four people. Crews will either commute to the site from local communities; stay in a trailer to be parked at the staging area on NID lands (subject to NID

approval); or stay at the Aspen Group Campsite, or NID's Woodcamp Campground at Jackson Meadows Reservoir (refer to **Map 1**).

2.9 Permits and Approvals

The agencies listed below will be consulted and will participate in review of the IS/MND. Also noted are permits or other approvals that may potentially be required for the implementation of restoration/enhancement activities associated with the Proposed Project.

- U.S. Army Corps of Engineers (USACE) – Clean Water Act Section 404 Permit.
- U.S. Fish and Wildlife Service (USFWS) – Federal Endangered Species Act (ESA) Consultation.
- USFS – Letter of Approval to Utilize Unclassified Road
- California Air Resources Board (ARB) – State CEQA reviewing agency.
- California Department of Fish and Wildlife (CDFW) – California Fish and Game Code (including Section 1602 Streambed Alteration Agreement), State CEQA reviewing agency.
- Regional Water Quality Control Board (RWQCB) – Clean Water Act Section 401 Certification, Clean Water Act Section 402 National Pollutant Discharge Elimination System (NPDES) Construction General Permit, or California Water Code Waste Discharge Requirement (WDR)
- Sierra County – Road Use Permit (if required)

3 ENVIRONMENTAL CHECKLIST

Following is the environmental checklist form (CEQA Guidelines, Appendix G) that provides discussion of the environmental impacts associated with implementation of the English Meadow Floodplain Restoration and Enhancement Project.

1. **Project title:** English Meadow Floodplain Restoration and Enhancement Project
2. **Lead agency name and address:** Nevada Irrigation District (NID)
3. **Contact person and phone number:** Neysa King, (530) 271-6733
4. **Project location:** Project lies on the border of unincorporated Sierra County and Nevada County on NID-owned lands, 22 miles northwest of Truckee.
5. **Project sponsor's name and address:** Nevada Irrigation District, 1036 West Main Street, Grass Valley, CA 95945
6. **General plan designation:** Nevada County General Plan - FOR (Forestland); Sierra County General Plan – Forest and Open Space
7. **Zoning:** Nevada County General Plan – FR (Forestland); Sierra County General Plan –Forest and Open Space
8. **Description of the Project:** The District proposes to improve watershed/floodplain function and forest resilience in English Meadow. English Meadow, located in the headwaters of the Middle Yuba River, is located approximately 1 mile upstream of one of NID's largest water storage reservoirs, Jackson Meadows Reservoir. Water in the reservoir is primarily used for agricultural irrigation, as well as some municipal water supply.

Consistent with the District's land use objectives, the purpose of this Project is to improve watershed/floodplain function and resilience of English Meadow and the surrounding forest to achieve the following benefits:

- Reduce the transport of bedload and fine sediment from the upper watershed into Jackson Meadows Reservoir (maintain reservoir water storage capacity).
- Increase seasonal retention and release of precipitation in the meadow floodplain aquifer.
- Enhance habitat for meadow-dependent species.
- Improve forest health to reduce wildfire risk through fuels reduction.
- Increase snowpack and surface flow through mechanical thinning of the forest community on north facing slopes.
- Reduce conifer encroachment into the meadow.

9. Surrounding land uses and setting: Lands surrounding the Project area are forestlands owned by the Tahoe National Forest (TNF) and Sierra Pacific Industries.

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

Federal: USACE, USFWS

State: CDFW, SHPO

Local: Northern Sierra Air Quality Management District (NSAQMD); Regional Water Quality Control Board, Central Valley – Region 5 (RWQCB)

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

NID has completed the consultation process set forth under Assembly Bill (AB) 52. Three Tribal organizations—the Colfax Todds Valley Consolidated Tribe, the Washoe Tribe of Nevada and California, and the United Auburn Indian Community (UAIC) of the Auburn Rancheria—responded to the initial inquiry requesting additional information and/or consultation on the Proposed Project. NID hosted video meetings (attended by the Washoe Tribe of Nevada and California, and the UAIC) to discuss the Project, including known cultural and biological resources in the Project area, and to review draft mitigation measures. The results of consultation are fully described in Section 3.18, Tribal Cultural Resources. Both the Washoe Tribe of Nevada and California and the UAIC expressed their desire for ongoing involvement and consultation over the course of the Proposed Project, beyond the minimum requirements of the AB-52 consultation. NID affirmed its commitment to include the Washoe Tribe of Nevada and California and the UAIC as part of the interdisciplinary team that will guide the Project throughout its implementation.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

- | | | |
|---|---|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials |

-
- | | | |
|--|---|---|
| <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire | <input type="checkbox"/> Mandatory Findings of Significance |

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 or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the Proposed Project, nothing further is required.

Signature

Date

Signature

Date

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to Projects like the one involved (e.g., the Project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on Project-specific factors as well as general standards (e.g., the Project will not expose sensitive receptors to pollutants, based on a Project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as Project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a. Earlier Analysis Used. Identify and state where they are available for review.
 - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the Project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

-
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
 8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a Project's environmental effects in whatever format is selected.
 9. The explanation of each issue should identify:
 - a. The significance criteria or threshold, if any, used to evaluate each question; and
 - b. The mitigation measure identified, if any, to reduce the impact to less than significance.

3.1 Aesthetics

Except as provided in Public Resources Code Section 21099, would the Project...	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.1.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to aesthetics if the Project would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcrops, and historic buildings within a state scenic highway;
- In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality; or
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

3.1.2 Setting

The Proposed Project is located in and adjacent to a high elevation montane meadow (approximately 6,100 feet above mean seal level [msl]) bisected by the Middle Yuba River. The Project area is comprised of the meadow basin; an annual grassland bisected by an exposed and erosive river channel of various sized cobble. The Middle Yuba River within the Project area consists of perennial and intermittent reaches. The slopes of the Project area are populated by dense stands of conifers (e.g., white fir, red fir, Jeffrey pine, and lodgepole pine). Exposed rocky outcroppings are dispersed throughout the Project area, and barren mountain peaks are visible from within the meadow basin. Perennial reaches of the Middle Yuba River within the Project area exhibit moderate amounts of pooling and riffing between dense thickets of willow, while intermittent flows in the upper reaches are bounded by poplar and lodgepole pine. The landscape

surrounding the project has complex and diverse topographic conditions characterized by high, rugged peaks and ridges, deep canyons, mountain meadows, and numerous streams and lakes. Elements of constructed environments such as roads, trails, campgrounds, and reservoirs are present, but are secondary to the dominant natural landscape.

The Proposed Project consists of treatments intended to restore and enhance English Meadow and adjacent forestlands. These treatments would improve natural scenic beauty by promoting growth of meadow vegetation, and enhancing groundwater hydrology for the benefit of grasses beyond the reach of the channel. In addition, understory thinning on the slopes of the meadow will both improve the visual appearance of forest stands through the increased health and vigor of remaining trees.

3.1.2.1 Regulatory Setting

As a jurisdiction with equal authority, NID is exempt from the following goals and policies within the Nevada County and Sierra County General Plans. However, NID aims to comply with applicable goals and policies outlined in these General Plans.

Nevada County General Plan

- Objective 2.14: Encourage protection and enhancement of the natural scenic beauty of this County in support of the tourist trade.
- Objective 15.2: Promote and provide for the continued diversity and sustainability of the forest resources including timber, watersheds, wildlife habitat, aesthetics and recreation.
- Goal 18.1: Promote and provide for aesthetic design in new development which reflects existing character.
- Goal 18.2: Protect and preserve important scenic resources.

Sierra County General Plan

The following goals regarding scenic resources are set forth in the Visual Resources Element of the 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.

3.1.3 Discussion

a) *The Project will not affect a scenic vista.*

A scenic vista is generally defined as an expansive view of highly valued landscape observable from a publicly accessible vantage point. Views of the Project area from vantage points such as recreational areas, hiking trails, and roads are, in general, blocked by intervening topography or vegetation. The Project area is not visible from Jackson Meadow Reservoir. The Project area may be visible from vantage points along the Pacific Crest Scenic Trail, which is located

approximately 0.5 mile from Project area. Any visual effects from the presence of vehicles or equipment during implementation of the Project would be temporary and short-term. Permanent structures incorporated into the landscape (i.e., debris jams, riffles, and log barriers) would be constructed from natural materials obtained on site and would be consistent with the visual character of the site. Vegetation treatments would result in a reduction of the density of vegetation, but would not result in a loss or conversion of existing vegetation communities in the Project area and are expected to improve the health and resilience to wildfire of these communities, which would preserve or improve the visual character of the site over time. Therefore, the Project would have **no impact** on a scenic vista.

b) *The Project will not affect scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway or Federal scenic byway.*

State scenic highways are designated by the State of California Department of Transportation's (Caltrans) Scenic Highway Program (Caltrans 2020). In Nevada County, portions of State Route (SR) 49, SR-174, SR-20, SR-89, and I-80 are designated as 'eligible state scenic highways', however, they are not officially designated at this time. The closest of these road segments is located approximately 12 miles to the south of the Project area. Sierra County has one officially designated scenic highway. This is a 41-mile section of State Route (SR) 49 from the county line in the west to summit of Yuba Pass in the east. This portion of the highway is located 8 miles north of the Project area.

The National Scenic Byways Program is a voluntary, community-based program administered through the Federal Highway Administration (FHWA) to recognize, protect, and promote the country's most outstanding roads. There are no federally designated scenic byways located within Nevada or Sierra counties (Scenic America 2021).

Considering that the nearest state scenic highway is located 8 miles from the Project area, and that there are no national scenic byways in Nevada or Sierra counties, the Project would have **no impact** on scenic resources associated with a State scenic highway or Federal scenic byway.

c) *The Project would not substantially degrade, and may improve the existing visual character or quality of public views of the site and its surroundings.*

The proposed restoration/enhancement activities will not be visible from Meadow Lake Road or Jackson Meadows Reservoir. As described previously, the nearest public access point with a potential view of the Project area is the Pacific Crest Scenic Trail. While Project activities may potentially be visible to recreationists from some vantage points along the trail, this impact would temporary and limited to the time in which restoration/enhancement activities are ongoing. Furthermore, work crews would be minimal (5 to 10 people at a time), and the area in which restoration/enhancement activities would be conducted any given time would be small in relation to the surrounding landscape. Over the long term, the Project would restore and enhance the appearance of the wet meadow and forest habitats, and would minimize the potential for viewshed impacts resulting from catastrophic wildfire. Impacts on visual quality and character both during and after implementation of the project activities would therefore be **less than significant**.

d) *Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?*

All restoration/enhancement activities would take place during daylight hours and no additional lighting will be used during restoration/enhancement activities. Therefore, the Project will have **no impact** from light or glare that would adversely affect day or nighttime views.

3.1.4 Mitigation Measures

No significant impacts related to aesthetics would result from implementation of the Proposed Project. Therefore, no mitigation is required.

3.2 Agriculture and Forest Resources

Would the Project...	Potentially Significant Impact	Less than Significant with Mitigation	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined in Public Resources Code section 4526) or timberland zoned Timberland Production (as defined by Government Code section 51104 (g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.2.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to agriculture or forest resources if the Project would:

- 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 nonagricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract;
- Conflict with existing zoning for, or cause rezoning of, forest land or timberland, as defined by the Public Resources Code;
- Result in the loss of forest land or conversion of forest land to non-forest use; or
- 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.

3.2.2 Setting

The project area is located in English Meadow along the Middle Yuba River, which forms the border between Nevada and Sierra counties. This area is part of the English Grazing Allotment, administered by the Tahoe National Forest (TNF), however NID retains authority over District-owned lands and can grant or decline permission for a contracted grazing operator to utilize

District lands within this allotment. Cattle grazing is not currently authorized in the Project area. The slopes surrounding the meadow and beyond the Project area are comprised of primarily white fir, red fire, Jeffery pine, and lodgepole pine stands, interspersed with extensive rock outcroppings and barren mountain peaks.

The portion of the Project area that lies within Nevada County is designated as forestland under both the zoning code (FR 160) and the land use code (FOR). The county has gradually transitioned from a resource-based (timber, mining, farming, and ranching) rural county to a more varied and diverse economic base reflected by the increase in commercial, industrial, rural residential, and recreational uses. Nevada County also supports an extensive timber resource, a majority of which (200,000 acres) is under TNF jurisdiction.

Forest and Agricultural lands comprise 98 percent of the total land use in Sierra County (Sierra County General Plan 2012). The portion of the Project area which falls within Sierra County is designated as Forest and Open Space on the county land use maps (Sierra County 2021), but does not have an official zoning designation. Sierra County is a free-range county, in that it is the responsibility of landowners to keep cattle off their land if desired, and not vice-versa.

3.2.3 Discussion

The Project area is not designated as Farmland of Importance at the state or local level; is not zoned for agricultural use; and is not on lands under a Williamson Act contract. Implementation of the Project would therefore have **no impact** related to (a) Prime Farmland, Unique Farmland, or Farmland of Statewide Importance; or (b) conflict with lands zoned for agricultural use or a Williamson Act contract.

Project activities would be implemented within parcels designated as forest land by Sierra and Nevada counties. Treatments would follow a legal prescription and include understory thinning and non-commercial removal of select trees for use in restoration/enhancement activities. The Project is intended to improve existing forest lands and the resilience and hydrologic function of the meadow basin. As such, there will be **no impact** related to (c) conflicts with existing land use zoning, or (d, e) loss or conversion of forest land to non-forest use.

3.2.4 Mitigation Measures

No significant impacts related to agriculture or forest resources would result from implementation of the Proposed Project. Therefore, no mitigation is required.

3.3 Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the Project...	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.3.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact on the environment related to air resources if the Project would:

- Substantially conflict with or substantially obstruct implementation of the applicable air quality plan;
- 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;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

3.3.2 Setting

The Project site bisects unincorporated areas of Nevada and Sierra counties. Both counties are part of the Mountain Counties Air Basin (MCAB), which includes Plumas, Sierra, Nevada, Placer, El Dorado, Amador, Calaveras, Tuolumne, and Mariposa counties. The Project area is under the jurisdiction of the Northern Sierra Air Quality Management District (NSAQMD).

Generally, the MCAB has a Mediterranean climate consisting of hot, dry summers and cool, rainy winters. However, the micro-climate differs with elevation and distance to the mountain ranges of the Sierra Nevada with the variability in terrain making it possible for different climates to exist in relatively close proximity. The patterns of mountains and hills creates a wide variation in rainfall, temperature and localized winds throughout the basin. The western portions of the basin slope relatively gradually, with deep river canyons running from southwest to northeast toward the crest of the Sierra Nevada. The slopes in the Sierra Nevada are steeper, but river canyons are relatively shallow in the eastern portion of the basin.

Overall, air quality in the MCAB is very good. Only two pollutants, ozone (O₃) and suspended particulate matter (PM₁₀ and PM_{2.5}), are known to be problems in Nevada and Sierra counties (NSAQMD 2009). Air quality in the Proposed Project vicinity is affected by various emission sources and atmospheric conditions, such as wind speed, wind direction, temperature, and rainfall, as well as geography.

Concentrations of ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and lead are used as indicators of ambient air quality conditions. Because these are the most prevalent air pollutants known to be deleterious to human health and extensive health-effects criteria documents are available, they are commonly referred to as “criteria air pollutants.”

One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed “sensitive receptors.” The term “sensitive receptors” refers to specific population groups, as well as the land uses where they would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses are residences, schools, playgrounds, childcare centers, retirement homes or convalescent homes, hospitals, and clinics. Toxic air contaminants (TAC), naturally occurring asbestos (NOA), and odors are also factors that influence air quality and potential Project effects to air quality.

3.3.2.1 Local Air Quality

Nevada County Attainment Designation.

The attainment classifications for criteria pollutants are outlined in Table 3.2-1, Nevada County Attainment Classification.

Table 3.2-1 Nevada County Attainment Classification.

Pollutant	Averaging Time	State Designation/Classification	National Designation/Classification
O ₃	8-hour	Non-attainment	Western Nevada County <ul style="list-style-type: none"> • Non-attainment (Serious), 2008 NAAQS • Non-attainment (Moderate^b), 2015 NAAQS Eastern Nevada County <ul style="list-style-type: none"> • Unclassified/attainment
NO ₂	1-hour Annual arithmetic mean	Attainment	Unclassified/attainment
CO	1-hour 8-hour	Unclassified	Unclassified/attainment
SO ₂	1-hour 24-hour Annual arithmetic mean	Attainment	Unclassified
PM ₁₀	24-hour	Non-attainment	Unclassified
PM _{2.5}	24-hour	Unclassified	Unclassified/attainment
Lead (Pb)	30-day average	Attainment	Unclassified/attainment
Sulfates (SO ₄)	24-hour	Attainment	—
Hydrogen sulfide (H ₂ S)	1-hour	Unclassified	—
Vinyl chloride ^a	24-hour	—	—

Pollutant	Averaging Time	State Designation/Classification	National Designation/Classification
Visibility-reducing particles	8-hour (10:00 a.m. – 6:00 p.m.)	Unclassified	—

Sources: CARB 2016 (state designation/classification); EPA 2017 (national designation/classification).

Note: O₃ = ozone; NO₂ = nitrogen dioxide; CO = carbon monoxide; SO₂ = sulfur dioxide; PM₁₀ = coarse particulate matter; PM_{2.5} = fine particulate matter.

^a CARB has identified lead and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined.

^bBased on communications with the NSAQMD, this rating will be increased to Serious within the year.

As shown in Table 3.2-1, Nevada County, is a non-attainment area for both federal (Western Nevada County only) and state O₃ standards and the state PM₁₀ standards. Nevada County is also designated unclassified or unclassified/attainment (meaning there is not enough data to classify the region attainment or non-attainment) for the federal 24-hour standard for PM₁₀, NO₂, CO, SO₂, PM_{2.5}, and lead; and the state standard for CO, PM_{2.5}, hydrogen sulfide, and visibility-reducing particles. Nevada County has been designated as an attainment area for all other criteria air pollutants.

Sierra County Attainment Designation.

The attainment classifications for criteria pollutants are outlined in Table 3.2-2.

Table 3.2-2 Sierra County Attainment Classification.

Pollutant	Averaging Time	State Designation/Classification	National Designation/Classification
O ₃ (2008 Standard)	1-hour 8-hour	Unclassified	Unclassified/attainment
O ₃ (2015 Standard)	1-hour 8-hour	Unclassified	Unclassified/attainment
NO ₂	1-hour Annual arithmetic mean	Attainment	Unclassified/attainment
CO	1-hour 8-hour	Unclassified	Unclassified/attainment
SO ₂	1-hour 24-hour Annual arithmetic mean	Attainment	Unclassified
PM ₁₀	24-hour	Non-attainment	Unclassified
PM _{2.5}	24-hour	Unclassified	Unclassified/attainment
Lead (Pb)	30-day average	Attainment	Unclassified/attainment
Sulfates (SO ₄)	24-hour	Attainment	—
Hydrogen sulfide (H ₂ S)	1-hour	Unclassified	—
Vinyl chloride ^a	24-hour	—	—
Visibility-reducing particles	8-hour (10:00 a.m. – 6:00 p.m.)	Unclassified	—

Sources: NSAQMD 2009.

Note: O₃ = ozone; NO₂ = nitrogen dioxide; CO = carbon monoxide; SO₂ = sulfur dioxide; PM₁₀ = coarse particulate matter; PM_{2.5} = fine particulate matter.

^a CARB has identified lead and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined.

As shown in Table 3.2-2, Sierra County, is a non-attainment area for the state PM₁₀ standards. Sierra County is also designated unclassified or unclassified/attainment (meaning there is not enough data to classify the region attainment or non-attainment) for the federal 24-hour standard

for O₃, PM₁₀, NO₂, CO, SO₂, PM_{2.5}, and lead; and the state standard for CO, PM_{2.5}, hydrogen sulfide, and visibility-reducing particles. Sierra County has been designated as an attainment area for all other criteria air pollutants.

3.3.2.2 Regulatory Setting

Federal Air Quality Regulations

At the federal level, the U.S. Environmental Protection Agency (U.S. EPA) has been charged with implementing national air quality programs. The U.S. EPA's air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA), which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990. The FCAA required the U.S. EPA to establish National Ambient Air Quality Standards (NAAQS) and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions.

California Air Quality Regulations

The 1988 California Clean Air Act (CCAA) requires that all air districts in the state endeavor to achieve and maintain California Ambient Air Quality Standards (CAAQS) for ozone, CO, sulfur dioxide (SO₂), and nitrogen dioxide (NO₂) by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either: (1) achieve a 5% annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions.

Northern Sierra Air Quality Management District

Air quality within the Project area is regulated by the NSAQMD. The NSAQMD was created in 1986 with the merging of the Nevada, Plumas and Sierra counties air districts. As it pertains to the project, the NSAQMD is the agency primarily responsible for ensuring that federal and state ambient air quality standards are not exceeded and that air quality conditions are maintained. This is achieved through the preparation of plans for the attainment of air quality standards, inspection, and issuance of permits to operate stationary sources, adoption and enforcement of air pollution rules and regulations, air quality monitoring, and the implementation of programs and regulations required under the Federal and State Clean Air Acts.

The NSAQMD is in the process of certifying its federally enforceable State Implementation Plan (SIP) (NSAQMD 2021). The SIP is an air quality attainment plan designed to address the County's non-attainment status for the State 1-hour ozone standard through the reduction of emissions of ozone precursors. This plan includes various pollution control strategies. However, most of these reductions are expected to come from motor vehicles becoming cleaner and from State regulations.

The NSAQMD rules applicable to the Project include:

- **Rule 226 - Fugitive Dust Control.** Rule 226 requires the submittal of a dust control plan to be approved by an 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. This applies to any clearing or grading.

The intent of this rule is to reduce and control fugitive dust emissions. This rule applies to public and private construction activities, including dismantling/demolition of structures, processing/moving materials (sand, gravel, rock, dirt, etc.), and operation of machines/equipment. The dust control plan would need to identify the use of reasonable measures to prevent dust emissions and could include cessation of operations during high winds, cleanup, sweeping, watering, compacting, and seeding disturbed areas.

If a project is in an area mapped as having ultramafic rock or serpentine, or if these rock types are discovered on-site, the statewide Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations (Section 93105 of Title 17 of the California Code of Regulations) applies. Also, for large projects or in special circumstances (e.g., near schools or other sensitive receptors), additional measures (e.g., limits on active disturbance area or grading hours) may be required (NSAQMD 2015).

- **Rule 523 – Portable Equipment Registration.** Rule 523 requires a permit to operate for portable engines rated 50 break horsepower (bhp) or greater that are not registered through the Statewide Portable Equipment Registration Program (PERP). Portable equipment includes diesel pile-driving hammers, pumps, power generators, cranes, dredges on boats or barges, woodchippers, compressors, vacuum trucks, well drilling, and welding (NSAQMD 2019a). The NSAQMD “recommends obtaining a PERP registration in lieu of a district permit when possible; however, if an engine operates in one location for more than twelve continuous months an NSAQMD permit is required (NSAQMD 2019b).”

Local Regulations

Nevada County General Plan

Chapter 14, Air Quality, of the Nevada County General Plan provides goals, objectives and policies related to improving air quality. The air quality goals and policies applicable to the analysis of the Proposed Project’s air quality impacts are as follows:

- **Goal 14.1:** Attain, maintain, and ensure high air quality.
- **Objective 14.1:** Establish land use patterns that minimize impacts on air quality.
- **Policy 14.1:** Cooperate with the Air Quality Management District (currently the NSAQMD), during review of development proposals. As part of the site plan review process, require applicants of all subdivisions, multi-family, commercial, and industrial development projects to address cumulative and long-term air quality impacts, and request the District enforce appropriate land use regulations to reduce air pollution.
- **Objective 14.2:** Implement standards that minimize impacts on and/or restore air quality.
- **Policy 14.3:** Where it is determined necessary to reduce short-term and long-term cumulative impact, the County shall require all new discretionary projects to offset

any pollutant increases. Wherever possible, such offsets shall benefit lower-income housing (Nevada County 2014).

Sierra County General Plan

Element 17, Air Quality, of the Sierra County General Plan (2012) provides goals, objectives and policies for air quality in the County. The air quality policies applicable to the analysis of the Proposed Project's air quality impacts are as follows:

- Policy 2. Cooperate with state and regional agencies, including adjacent counties, to develop programs to reduce air quality impacts.
- Policy 3. Work towards reduction of air quality violations in the County.

3.3.3 Discussion

a) *The Proposed Project would not conflict with or substantially obstruct implementation of the applicable air quality plan.*

Nevada County is in nonattainment for federal and state O₃ standards and the state PM₁₀ standards. The NSAQMD prepared the Western Nevada County Ozone Plan to fulfill requirements under the CAA that result from Western Nevada County being designated as non-attainment for the 2008 8-hour Ozone NAAQS. The Western Nevada County Ozone Plan requested a revision to the SIP that the area be reclassified to a "Serious" Non-attainment classification from the previous "Moderate" classification designated in June 2016. The plan addresses planning elements for a Serious area, including emissions inventory, transportation conformity budgets, emissions statements, new source review (NSR), RACM, RFP, attainment demonstration, and contingency measures.

Sierra County is a non-attainment area for the state PM₁₀ standards. There are no applicable air quality plans within Sierra County.

The Proposed Project would not conflict or obstruct implementation of any applicable air quality plans. There are currently no ongoing emissions sources in the Project area; and the Project does not include any new ongoing sources of emissions. There is a potential for a minor increase in emissions from use diesel equipment during restoration/enhancement activities; and from workers (no more than 5 at time) commuting to the site on a weekly basis from communities within Sierra and Nevada counties. However, this minor increase in emission will be short-term and temporary, limited to the duration of implementation of the Project. Such emissions will not cumulatively contribute to a decline in air quality nor substantially increase pollutant concentrations beyond existing levels in the Project region. The Project, therefore, would not conflict or obstruct implementation of any applicable air quality plan; therefore, impacts would be **less than significant**.

e) *With implementation of mitigation, the Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant of which the Project region is non-attainment under an applicable federal or state ambient air quality standard (NAAQS or CAAQS).*

The Proposed Project is a multi-year ecological enhancement effort that will not result in any long-term impacts to emissions. A small number of people would commute to the Project area

during the work season (June to November, depending on weather conditions); and many would camp on site or at nearby campgrounds during the week to avoid long commute times. The Proposed Project would result only in temporary air-quality emissions consisting of a limited and local amount of fugitive dust resulting from earth moving activities. Therefore, the Project is expected to remain far below the NSAQMD thresholds of significance for construction emissions. In addition, implementation of air quality best management practices (BMPs) (Mitigation Measure AIR-1) consistent with the NSAQMD rules and guidance, would further reduce emissions to less than significant levels. Therefore, with implementation of mitigation, this impact would be **less than significant**.

b) *With implementation of mitigation, the Proposed Project would not expose sensitive receptors to substantial pollutant concentrations.*

Sensitive receptors are specific population groups who are most sensitive to the adverse health effects of air pollution, as well as the land uses where these groups would reside for long periods. The Project is located on remote forestlands, and there are no private residences or other sensitive receptors in the vicinity of the Proposed Project. As discussed in (b) above, the Proposed Project may result in minor short-term increases in fugitive dust emissions. However, the temporary nature of construction, coupled with the implementation of Mitigation Measure AIR-1 (i.e., NSAQMD's recommended mitigation measures), would not result in conditions where sensitive receptors would be exposed to substantial pollutant concentrations. Therefore, with implementation of mitigation, this impact would be **less than significant**.

f) *With implementation of mitigation, the Proposed Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.*

The Proposed Project would not result in the use or installation of any equipment or processes that would be considered odor-emission sources. The Project will require use of diesel-powered equipment; however, such use would be short-term and temporary; and would take place in and around a remote high-elevation meadow where few people are expected to be present. .

Furthermore, with implementation of Mitigation Measure AIR-1, the District will implement all applicable BMPs to reduce adverse emissions such as odors, including limiting idling time of diesel vehicles. This measure would reduce adverse emissions such as odors resulting from exhaust fumes; therefore, with implementation of mitigation, this impact would be considered **less than significant**.

3.3.4 Mitigation Measures

AIR-1. Air Quality Best Management Practices.

- The following ozone precursor-reduction measures shall be implemented during implementation of the Project:
- All off-road equipment (portable and mobile) shall meet or be cleaner than Tier 2 engine emission specifications. Note that all off-road equipment must meet all applicable state and federal requirements.
- Emissions from onsite construction equipment shall comply with NSAQMD Regulation II, Rule 202, Visible Emissions.

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- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes when not in use (as required by California airborne toxics control measure Title 13, Section 2485 of CCR). Clear signage shall be provided for construction workers at all access points.
 - All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
 - Existing power sources (e.g., power poles) or clean fuel generators shall be utilized rather than temporary power generators (i.e. diesel generators), where feasible.
 - The following dust control measures shall be implemented as part of the Project to comply with NSAQMD Rule 226.
 - Fugitive dust created along roads and in the meadow during restoration/enhancement activities shall be mitigated with the use of water.
 - A water truck shall be on-site and available at all times to mitigate road and construction dust.

3.4 Biological Resources

Would the Proposed Project...	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.4.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact on the environment related to biological resources if the Project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

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- 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;
 - Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
 - Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

3.4.2 Setting

This section describes the biological setting of the Project area, including aquatic and upland vegetation communities/wildlife habitats and special-status plants and wildlife. Provided below is a summary of the methods used to obtain information on biological resources in the Project area, and the resulting description of those resources.

3.4.2.1 Methods

This section summarizes the methods and results of the literature review and biological resource surveys completed to determine the presence of special-status plant and wildlife species or their habitat in the Project area.

Literature Review

Existing documents pertinent to special-status plant and wildlife species in the vicinity of the Proposed Project were compiled, reviewed, and analyzed. This included a review of the CDFW California Natural Diversity Database (CNDDDB 2021), the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS 2021), the Nevada County General Plan (Nevada County 2014), the Sierra County General Plan (Sierra County 2012), USFWS Species List (USFWS 2021a), USFWS National Wetlands Inventory (NWI) (USFWS 2021b), and the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2021). The Middle Yuba River Headwaters English Meadow Forest Management Plan (NID 2020) was also reviewed for relevant background information. Relevant technical information from these sources is incorporated and referenced as appropriate.

Biological Resource Surveys

The Project area was extensively surveyed to determine the presence of biological resources that may potentially be affected by the Project. The following surveys were conducted to assess biological resources in the Project area:

- A California Rapid Assessment Method (CRAM) slope wetland assessment and evaluation – conducted by Dr. Michelle Stevens and Chris Hersey between July 20 and 28, 2016 (Stevens and Hersey 2016);

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- A CRAM slope wetland assessment and evaluation – conducted by Dr. Michelle Stevens, Milo Kovet, and Andrea Archer between July 31 and September 8, 2017 (Stevens et al. 2018);
 - An animal resources evaluation – conducted by Dr. Ted Beedy on June 20, 29, 30 and July 13, 2018 (Beedy 2018);
 - An amphibian survey – conducted by Sean J. Barry on July 7, August 29 and 30, 2018 (Barry 2018);
 - A special-status plant resource evaluation, conducted by Dr. Michelle Stevens and Michael Dolan on July 6–9, July 16–20, and August 31–September 1, 2018 (Stevens and Dolan 2018);
 - A special-status plant resource evaluation, conducted by Dr. Michelle Stevens and Michael Dolan on July 29–30, 2019 (Stevens and Dolan 2019); and
 - An aquatic resources delineation conducted by Leslie Mink and Abby Folchi on June 21, June 26–27, and August 7, 2018 (Mink 2021a).

These reports are summarized and referenced as appropriate in this document.

Methods for determining vegetation communities/wildlife habitats and special-status plants and wildlife are summarized below.

Wildlife Habitat

Vegetation communities were characterized during the CRAM assessments (Stevens and Hersey 2016, Stevens et al. 2017), animal resource evaluation (Beedy 2018), and aquatic resources delineation (Mink 2021a) using a variety of methods. The vegetation communities described in these sources were cross-referenced to wildlife habitat types as classified in California Statewide Wildlife Habitat Relationships System (CWHR) (Mayer and Laudenslayer 1988).

Several habitat types are considered sensitive by a local, state, or federal agency, as described below.

- **Waters of the U.S. and Waters of the State, including wetlands:** Any potential wetlands or other water features that would qualify as waters of the United States (WOUS) or of California (WOS), as well as other sensitive natural communities, were documented during the CRAM assessments (Stevens and Hersey 2016, Stevens et al. 2017) and an aquatic resources delineation (Mink 2021a) conducted for this project.

The CRAM methodology is a three-tiered monitoring paradigm that provides a structured framework for conducted integrated assessments of wetland resources across multiple scales (Solek et al. 2008, Stein et al. 2009). CRAM uses field diagnostics and existing data to assess conditions at wetland sites. CRAM is an assessment method for wetland conditions and is not a wetland identification/delineation methodology.

The aquatic resources delineation was conducted in accordance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual (USACE 1987) and the Regional Supplement for Western Mountains, Valleys, and Coast Regions (USACE 2010). The aquatic resources

delineation determines the boundaries of wetlands through an assessment of vegetation, soil, and hydrology conditions at sampling points.

The USACE has regulatory authority over WOUS pursuant to Section 404 of the Clean Water Act. The Navigable Waters Protection Rule (NWPR) (33 CFR 328.3 and 40 CFR 120.2), which was effective as of June 22, 2020, establishes the scope of federal regulatory authority under the Clean Water Act. Under the NWPR, WOUS are defined to include:

- The territorial seas and traditional navigable waters (TNWs);
- Perennial and intermittent tributaries that contribute surface water flow to such waters;
- Certain lakes, ponds, and impoundments of jurisdictional waters; and
- Wetlands adjacent to other jurisdictional waters.

The following features are excluded from the definition of WOUS:

- Groundwater, including groundwater drained through subsurface drainage systems;
- Ephemeral features that flow only in direct response to precipitation, including ephemeral streams, swales, gullies, rills, and pools;
- Diffuse stormwater runoff and directional sheet flow over upland;
- Ditches that are not TNWs, tributaries, or that are not constructed in adjacent wetlands, subject to certain limitations;
- Prior converted cropland;
- Artificially irrigated areas that would revert to upland if artificial irrigation ceases;
- Artificial lakes and ponds that are not jurisdictional impoundments and that are constructed or excavated in upland or non-jurisdictional waters;
- Water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel;
- Stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater run-off;
- Groundwater recharge, water reuse, and wastewater recycling structures constructed or excavated in upland or in non-jurisdictional waters; and
- Waste treatment systems.

The State of California exerts jurisdiction over “any surface water or groundwater, including saline waters, within the boundaries of the State” (California Water Code Section 13050(e)). This definition includes wetlands, which have recently been further defined by the State Water Resources Control Board (2020) to include 1) areas with continuous saturation from groundwater or surface water; 2) conditions in which duration of saturation is sufficient to cause anaerobic conditions (or water quality problems); and 3) an area’s vegetation is dominated by hydrophytes (aquatic plants).

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- **Riparian Habitat:** Riparian habitat is defined as areas adjacent to the banks of rivers, streams, or other waterways that contain vegetation that is distinct from upland species. Typical riparian species include cottonwood (*Populus* spp.), alder (*Alnus* spp.), ash (*Fraxinus* spp.) and willow (*Salix* spp.) These habitats are important to wildlife for foraging, nesting, refuge, and as migratory corridors. Riparian habitats are protected by CDFW under Fish and Game Code 1600–1603.
 - In addition, the Wildlife and Vegetation Element of the Nevada County General Plan includes policies that protect riparian habitat (Nevada County 2014), including the following:
 - **Policy 13.2B.** *Development projects which have the potential to remove natural riparian or wetland habitat of 1 acre or more shall not be permitted unless:*
 - a. *No suitable alternative site or design exists for the land use;*
 - b. *There is no degradation of the habitat or reduction in the numbers of any rare, threatened, or endangered plant or animal species as a result of the project;*
 - c. *Habitat of superior quantity and superior or comparable quality will be created or restored to compensate for the loss; and*
 - d. *The Project conforms to regulations and guidelines of the U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, California Department of Fish and Game, and other relevant agencies.*
 - **Policy 13.4A.** *No net loss of habitat functions or values shall be caused by development where rare and endangered species and wetlands of over 1 acre, in aggregate, are identified during the review of proposed projects. No net loss shall be achieved through avoidance of the resource, or through creation or restoration of habitat of superior or comparable quality, in accordance with guidelines of the U.S. Fish and Wildlife Service and the California Department of Fish and Game.*

The Plants and Wildlife Element of the Sierra County General Plan includes policies that protect riparian and stream habitat (Sierra County 2012), including the following:

- **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.*
 - **2a.** *As part of the stream zone district, define permitted, conditional, and non-permitted uses in Zoning Ordinance. Permitted uses in this zone should be restricted to:*
 - *Maintenance of existing structures and facilities;*
 - *New road and utility crossings;*
 - *Grazing;*
 - *Any non-structural uses allowed in the base zoning district when it can be conclusively demonstrated that they would not have significant impacts on the stream environment zone;*

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- *Residences and other structures within Community Core areas consistent with Land Use designation.*
 - *2b. Utilize above in Project Review Procedures*
 - *Policy 3. Prohibit removal of native vegetation in lake and stream zones except when done in conjunction with the permitted uses as described under [Policy] #2, above.*
 - *3a. Develop a grading ordinance with vegetation removal restrictions.*
 - *3b. Utilize above in project Environmental Review Procedures.*

Special-Status Plants

For the purposes of this document, a special-status plant is defined as any species that is granted status by a federal, state, or local agency. Federally listed plant species are defined as those species granted status by the USFWS under the ESA and include threatened (FT), endangered (FE), proposed threatened or endangered (FPT, FPE), candidate (FC), or listed species proposed for delisting (FPD). State of California listed plant species, which are granted status by CDFW under the California Endangered Species Act (CESA), include rare (SR), threatened (ST), or endangered (SE) species. Under CEQA, special-status plants include species listed by CNPS as rare, threatened, or endangered in California and plants for which more information is needed (CNPS Lists 1B, 2B, and 3) (CNPS 2021).

Special-status plant surveys were conducted to obtain information on special-status plant species and their habitats within the Project area in 2018 and 2019 (Stevens and Dolan 2018, 2019). The boundaries of special-status plant populations were recorded and mapped. General observations of the suitability of available habitat for various special-status plant species was also analyzed.

Special-Status Wildlife

For the purposes of this document, a special-status wildlife species is defined as any species that is granted status by a federal, state, or local agency. Federally listed species are those granted status by federal agencies as FT, FE, FPT, FPE, FC, or FPD. State of California listed wildlife species are defined as those species granted status as ST, SE, State Candidate Threatened (SCT), State Candidate Endangered (SCE), California Fully Protected species (CFP), and species of special concern (SSC). In addition, this document includes raptor species protected under Section 3503.5 of the California Fish and Game Code and bird species protected under the Migratory Bird Treaty Act (MBTA) (16 USC 703–711).

Wildlife surveys were conducted by Dr. Ted Beedy within the Project area in June and July 2018 (Beedy 2018). Incidental wildlife observations were also made by the Project Forester, Kevin Whitlock, during surveys conducted for the project in 2018, Leslie Mink during the aquatic resources delineation in 2019, and Michelle Stevens during special-status plant and wetland surveys in 2016–2019. General observations of the suitability of available habitat for various special-status species were also recorded.

3.4.2.2 Results

The results of the biological resource surveys described above are presented in the following sections.

Wildlife Habitats

Provided below is a description of aquatic habitats (i.e., riverine habitats, wet meadows, and riparian habitats) and upland habitats that characterize the Project area.

Aquatic Habitats

Aquatic habitats in the Project area include riverine habitats (rivers and streams), wet meadow (including fens), and montane riparian. Each habitat type is further described below.

Riverine Habitats

There are approximately 14,799 linear feet (2.8 miles) of riverine habitats (rivers and streams) in the Project area. Refer to Table 3.4-1 for a list of each river and stream, its hydroperiod, and length within the Project area. The Middle Yuba River is intermittent for approximately 3,398 linear feet within the upstream portion of the Project; the remainder is perennial. All of these features would be considered WOUS/WOS.

Table 3.4-1. Rivers and Streams in the Project Area.

River/Stream Name/Unique Identifier¹	Hydroperiod	Stream Length (linear feet)
Middle Yuba River	Perennial	4,284
	Intermittent (R4SB2-1)	3,398
R3UB2-1	Perennial	516
R3UB2-2	Perennial	561
R4SB2-2	Intermittent	971
R4SB3-1	Intermittent	797
R4SB3-2	Intermittent	20
R4SB3-3	Intermittent	554
R4SB3-4	Intermittent	964
R4SB3-5	Intermittent	881
R4SB5-1	Intermittent	452
R4SB5-2	Intermittent	609
R4SB5-3	Intermittent	359
R4SB5-4	Intermittent	20
R4SB5-5	Intermittent	20
R4SB5-6	Intermittent	393

¹ River/stream name or unique identifier and associated data are obtained from the aquatic resources delineation conducted for this Project (Mink 2021a).

Wet Meadows and Associated Fens

The Project area contains 11 wet meadows (also referred to as palustrine emergent meadows [Pem]), each briefly described in Table 3.4-2. Wet meadows generally consist of herbaceous plants. Overstory shrub or tree layers are usually absent or very sparse, and are typically located along the meadow's edge when present. The meadows listed in Table 3.4-2 are considered WOUS/WOS.

Table 3.4-2. Wet Meadows in the Project Area.

Wet Meadow Unique Identifier	Acres	Dominant plant species
Pem1-1	1.06	Nebraska sedge (<i>Carex nebraskensis</i>)
Pem1-2	0.80	navarretia (<i>Navarretia intertexta</i>), Kentucky bluegrass (<i>Poa pratensis</i>), blue wildrye (<i>Elymus glaucus</i>), wandering daisy (<i>Erigeron glacialis</i>), meadow beardtongue (<i>Penstemon rydbergii</i>)
Pem1-3	1.92	long-stalked clover (<i>Trifolium longipes</i>), slender cinquefoil (<i>Potentilla gracilis</i>), Nebraska sedge, Baltic rush (<i>Juncus balticus</i>), meadow beardtongue
Pem1-4	1.47	Oregon checker mallow (<i>Sidalcea oregana</i>), long-leaved rush (<i>Juncus macrophyllus</i>), Nebraska sedge, meadow beardtongue
Pem1-5	1.02	Nebraska sedge, Lemmon's willow (<i>Salix lemmonii</i>), Oregon fireweed (<i>Epilobium oreganum</i>), common horsetail (<i>Equisetum arvense</i>), tufted hairgrass (<i>Deschampsia cespitosa</i>)
Pem1-6	0.58	mountain alder (<i>Alnus incana</i>), scarlet paintbrush (<i>Castilleja miniata</i>), giant lupine (<i>Lupinus polyphyllus</i>), cow parsnip (<i>Heracleum lanatum</i>)
Pem1-7	0.12	cow parsnip, California corn lily (<i>Veratrum californicum</i>)
Pem1-8	0.78	sedges (<i>Carex</i> spp.), long-stalked clover
Pem1-9	0.31	Nebraska sedge
Pem1-10	7.28	Kentucky bluegrass, few-flowered spikerush (<i>Eleocharis quinqueflora</i>)
Pem1-11	0.12	Nebraska sedge
TOTAL	15.47	

¹ Wet meadow unique identified and associated data are adapted from the aquatic resources delineation conducted for this Project (Mink 2021a).

Fens were identified within portions of Pem1-2, Pem1-5, and Pem1-10 during wetland characterization, or CRAM, studies conducted in support of the Project (Stevens and Hersey 2016, Stevens et al. 2018). A fen is defined as an ecosystem with hydric soils and an accumulation of peat in the uppermost layer (approximately 1 meter [3.3 feet]). Peat consists of partially decomposed organic matter, derived mostly from plant material, which has accumulated under conditions of waterlogging, oxygen deficiency, and high acidity. The English Meadow fens are further defined as sloping fens. Sloping fens occur on or at the base of slopes where groundwater discharges to the surface due to a break in the topography, or change in geology, or in valley bottoms where alluvial groundwater supports peat formation (Cooper 1990, Stevens and Dolan 2018, 2019). This is the most common type of fen in the Sierra Nevada (Stevens and Dolan 2018, 2019). Compared to other habitats, fens support a disproportionately large number of rare vascular and nonvascular plant species in the Sierra Nevada, underscoring the importance of these habitats for regional biological diversity.

Montane Riparian

Montane riparian habitats generally occur in a narrow band along streams, floodplains, and waterways in the western Sierra Nevada, typically between 2,000 and 8,000 feet in elevation. In the Project area, the riparian zone occurs as narrow, dense groves of thinleaf alder (*Alnus incana*) and white alder (*Alnus rhombifolia*) in the understory with an overstory of aspen (*Populus tremuloides*) and cottonwoods (*Populus* spp.) up to 15 meters (49 feet) high. In the Project area, montane riparian habitat is distributed along the Middle Yuba River and in scattered patches along the wet meadow edges.

Upland Habitats

Upland habitats in the Project area include lodgepole pine, Jeffrey pine, and white fir forest types, as well as perennial grassland and barren habitats, as defined by the CWHR system. Forest habitats in the Project area were heavily logged in the 1800s; current conditions in the forests include an overcrowded understory, and excessive dead and downed trees. Each habitat type is described further below.

Lodgepole Pine

Most commonly found at elevations above 5,900 feet in the Sierra Nevada, lodgepole pine forms open stands, often at the edges of meadows and streams. When lodgepole pine forms dominant stands, the density of seedlings and saplings is often higher than other conifer types, making them susceptible to insect outbreaks and wildfire. Compared to other forest types, lodgepole pine habitats often shows low structural diversity (CWHR 2021). In the Project area, this habitat surrounds the wet meadows on the slopes above the Middle Yuba River (Stevens and Dolan 2018, 2019).

Jeffrey Pine

Jeffrey pine forest is typically found on moderately dry sites between 500 to 9,500 feet in elevation, with various conifer and hardwood species mixed in the understory. Often a sclerophyllous shrub layer is found in the understory, typically consisting of huckleberry oak (*Quercus vaccinifolia*), manzanita (*Arctostaphylos* spp.), and mountain misery (*Chamaebatia foliolosa*). In the Project area, Jeffrey pine occurs on the upper slopes above the southwestern edge of English Meadow.

White Fir

White fir forest forms dense shady stands in the western Sierra Nevada above 5,500 feet in elevation. Sugar pine (*Pinus lambertiana*), incense cedar (*Calocedrus decurrens*), and red fir are also common associates. In the Project area, white fir occurs on the upper slopes surrounding English Meadow.

Perennial Grassland

Perennial grasslands are dominated by perennial grasses and forbs, typically occurring on ridges and south-facing slopes in the Sierra Nevada. This habitat type is susceptible to invasion by non-native annual grasses. In the Project area, perennial grasslands are interspersed on higher sites above the wet meadows. Historically, these areas likely supported wetland vegetation, but have converted to degraded grassland through a combination of altered hydrology resulting from the excavation of ditches intended to dry the meadows, and overgrazing by cattle. Lodgepole pine recently encroached into these areas. Typical species include yarrow (*Achillea millefolium*), mountain brome (*Bromus carinatus*), squirrel tail (*Elymus elymoides*), buckwheats (*Eriogonum* spp.), dwarf lupine (*Lupinus lepidus*), penstemons (*Penstemon* spp.), and California needlegrass (*Stipa occidentalis* var. *californica*).

Barren

Barren habitat is defined by the absence of vegetation. Any habitat with less than 2 percent total vegetative cover by herbaceous, desert, or non-wildland species and less than 10 percent cover

by tree or shrub species is defined this way. In the Project area, this category includes areas scoured of vegetation by flowing water (e.g., along the mainstem), tuff soils, and some bedrock.

Special-Status Plants

The Project area was comprehensively surveyed for special-status plants in 2018 and 2019 (Stevens and Dolan 2018, 2019). Two special-status plant species were identified in the Project area:

- Woolly-fruited sedge (*Carex lasiocarpa* – CRPR 2B.3); and
- Starved daisy (*Erigeron miser* – CRPR 1B.3).

Refer to **Map 3.4-1** for the location of special-status plant populations known in the Project area and vicinity.

Based on a review of vegetation communities, species range, and the elevation of the Project, an additional 17 special-status plant species may potentially occur in the Project area. Refer to **Appendix B** for information on the status, life history, distribution, and potential for occurrence of these special-status plant species.

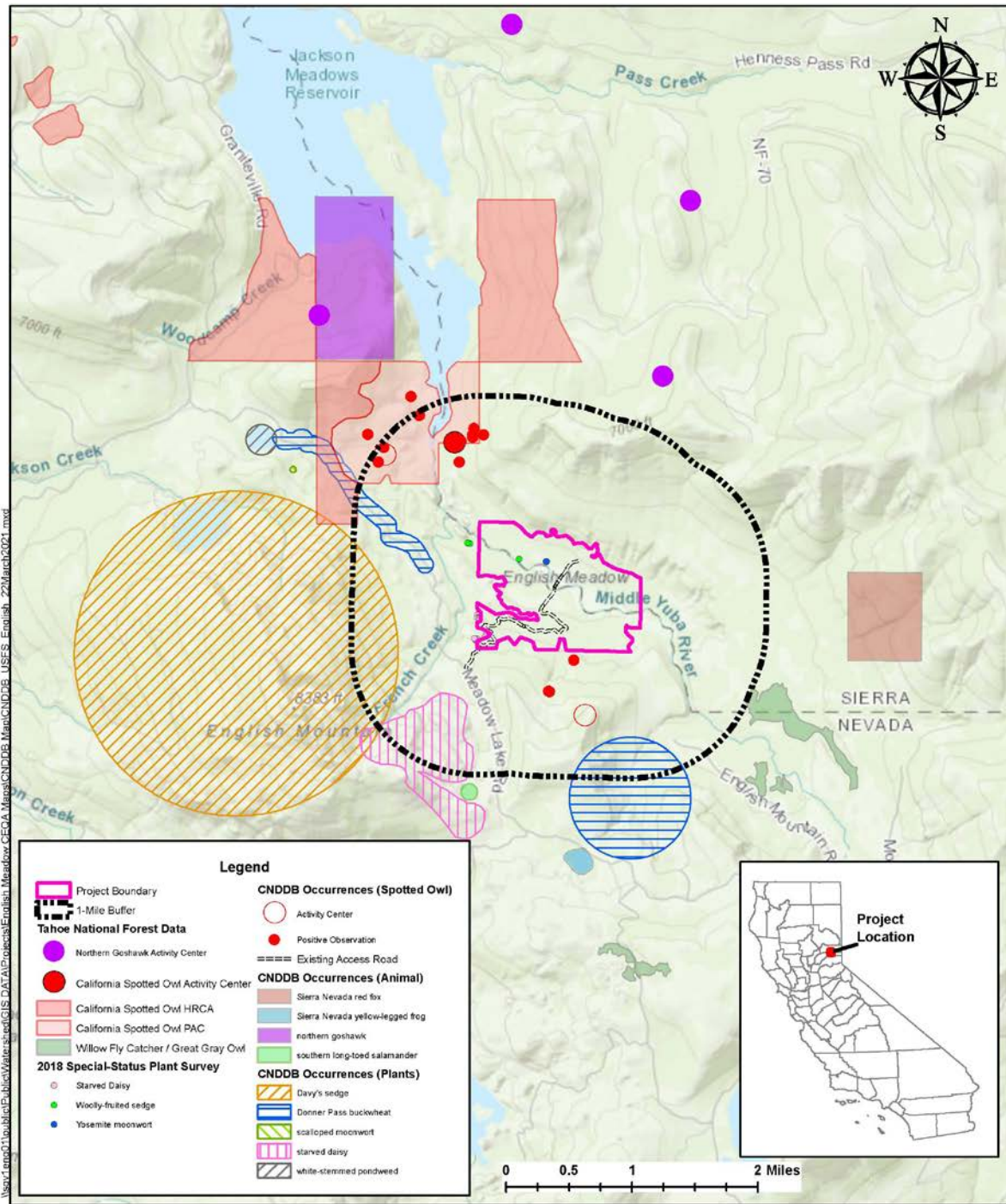
Special-Status Wildlife

The Project area was comprehensively surveyed for the presence of special-status wildlife and their habitats in 2018 (Beedy 2018), and incidental observations of other wildlife species were made during other surveys conducted in the Project area (Stevens et al. 2018, Stevens and Dolan 2018, 2019). A total of four special-status wildlife species were observed in the Project area, including:

- Greater sandhill crane (*Grus canadensis tabida* – ST);
- Northern goshawk (*Accipiter gentilis* – SSC);
- Olive-sided flycatcher (*Contopus cooperi* – SSC);
- Yellow warbler (*Setophaga petechia* – SSC).

Based on the elevation and the habitats present onsite, an additional 18 special-status wildlife species may potentially occur in the Project area. Information on the status, life history, distribution, and potential for occurrence of these species is described below and summarized in **Appendix C**. Refer to **Map 3.4-1** for the location of special-status wildlife species known to occur within 1 mile of the Project area.

Information on special-status wildlife with potential to occur in the Project area is provided below.



Map 3.4-1: English Meadow Restoration & Enhancement Project Special-Status Wildlife and Plant Occurrences

Date: 4/19/2021

Drawn By: C. TOWNSEND

NEVADA IRRIGATION DISTRICT
 NEVADA COUNTY – PLACER COUNTY
 GRASS VALLEY, CALIFORNIA

Scale: 1:63,360

Sheet 1 of 1

Map 3.4-1. Special-Status Wildlife and Plant Occurrences.

Invertebrates

- **Western bumble bee (*Bombus occidentalis* – SCE):** Western bumble bees are found throughout the mountains of the western United States. They are typically found in open habitats such as grasslands and wet meadows that support rodent burrows and sufficiently large populations of flowering plants. Western bumble bees overwinter in the ground in abandoned rodent burrows and emerge around mid-March. Colony size is often large relative to other species of bumblebee, and can contain up to as many as 1,685 workers (MacFarlane et al. 1994).

Suitable habitat for western bumble bee is present in the perennial grassland and wet meadow habitats in the Project area. There are no recorded occurrences of western bumble bee within 1 mile of the Project area (CNDDDB 2021).

Resident Fish

Information on resident fish potentially occurring in the Project area is based on studies conducted as part of the relicensing of NID’s Yuba-Bear Hydroelectric Project (NID and Pacific Gas & Electric Company [PGE] 2010), CDFW fish stocking records, and the amphibian and wildlife surveys conducted in support of the Proposed Project (Barry 2018 and Beatty 2019, respectively).

NID conducted fish studies in 2008–2009 as part of the relicensing of the Yuba-Bear Hydroelectric Project (NID and Pacific Gas & Electric Company [PGE] 2010). Sampling sites were established within Jackson Meadows Reservoir and the Middle Yuba River downstream of the reservoir; however, no sampling was conducted in the Middle Yuba River upstream of the reservoir. Refer to Table 3.4-3, below, for fish species captured during these studies, including scientific and common name, guild (i.e., game fish or forage fish), and status.

Table 3.4-3 Resident Fish Species Observed in Jackson Meadows and the Middle Yuba River (Downstream of the Reservoir) During Studies Conducted for the Yuba-Bear Hydroelectric Project (NID and PGE 2010).

Species	Location Where Species Was Observed During 2008/2009 Studies		Guild	Status
	Jackson Meadows Reservoir	Middle Yuba River (Jackson Meadows Dam Reach)		
Rainbow trout (<i>Oncorhynchus mykiss</i>)	X	X	Game Fish	—
Lahontan cutthroat trout (<i>O. clarki henshawi</i>)	X	—	Game Fish	FT
Brown trout (<i>Salmo trutta</i>)	X	X	Game Fish	—
Lahontan redbreast (<i>Richardsonius egregious</i>)	X	X	Forage Fish	—
Speckled dace (<i>Rhinichthys osculus</i>)	X	—	Forage Fish	—
Tui chub (<i>Gila bicolor</i>)	X	—	Forage Fish	—

Jackson Meadows Reservoir is stocked with rainbow trout and brown trout at least twice a year by the California Department of Fish and Wildlife (CDFW 2020). Lahontan cutthroat trout are not stocked; but are caught occasionally in the reservoir (only two individuals were caught during relicensing studies [NID and PG&E 2010]. The source of the Lahontan cutthroat trout is unknown; however they may be introduced by the public (e.g., sport fishermen) into the reservoir from known populations in the nearby Truckee River watershed (e.g., Independence Lake in Sierra County) (Bacher 2016).

Movement of fish from Jackson Meadows Reservoir into the Middle Yuba River within English Meadow is precluded by the presence of an impassible passage barrier created by a bedrock waterfall series with highest drop of approximately 15 vertical feet, located approximately 0.6 mile upstream of the reservoir (400 feet downstream of the Project area) (Vander Meer, pers. comm., 2021). The only species that has been directly observed in the Project area is rainbow trout, which was observed in the Middle Yuba River during special-status amphibian surveys (Barry 2018) and incidentally during other pre-Project studies (Mink, pers. comm., 2021b). Rainbow trout were observed in the active channel during periods of high flow, from mid-September through early July (approximately); and isolated within deep pools during low-flow periods (from late July to mid-September, approximately) (Barry 2018, Mink, pers. comm., 2021b).

Fish, including trout, are also known to occur with French Creek and Secret Creek, two streams located along Meadow Lake Road. Refer to Map 2-3 for the location of these streams.

Amphibians

The Project area was surveyed for special-status amphibians in 2018. The survey report concluded that there is a low potential for two special-status amphibians to occur in the Project area, the southern long-toed salamander and the Sierra Nevada yellow-legged frog (SNYLF), both described below. Both species are considered unlikely to breed in the Project area because of the lack of suitable aquatic habitat (southern long-toed salamander) or the presence of predatory trout species (SNYLF).

- **Southern long-toed salamander (*Amyxstoma macrodactylum sigillatum* – SSC):**
The southern long-toed salamander spends most of its life underground in rodent burrows and other subterranean retreats, usually within forested areas in the northern Sierra Nevada and southern Cascade mountains of California and southern Oregon (Stebbins 1951). Adult salamanders emerge from underground retreats and migrate to aquatic breeding habitat after the first thaw in the spring or early summer. Breeding habitat includes seasonal and permanent ponds, lakes, and perhaps other lotic water, usually greater than 2 meters (6.6 feet) in depth (Thomson et al. 2016). At elevations exceeding about 1,830 meters (6,000 feet), where breeding occurs late and the time to larval metamorphosis is prolonged, breeding pools must be permanent to allow salamander larvae sufficient time to metamorphosis (Thomson et al. 2016). The reason most often offered for this species' apparent decline is exotic trout introductions in salamander breeding habitat, but climate change and disease have also been suggested (Thomson et al. 2016).

Southern long-toed salamanders are known to breed in several small lakes and ponds in the vicinity of English Meadow near Catfish Lake and along both sides of the Sierra

Nevada crest (CNDDDB 2021). There are no recorded occurrences of southern long-toed salamanders, and no individuals were observed in the Project area during surveys (Barry 2018). There is no suitable breeding habitat in the Project area, and upland habitats support fewer borrows than seen in other habitats that are occupied by the species (Barry 2018). The likelihood of southern long-toed salamanders occurring in the Project area is low, although dispersing individuals may potentially be present.

- **Sierra Nevada yellow-legged frog (*Rana sierrae* – FE, ST):** SNYLF is an almost fully aquatic species that occupies the margins of high mountain streams and alpine lakes from about 1,670 meters (5,500 feet) up to the highest elevations in the Sierra Nevada, from Plumas County south to Tulare County (Zweifel 1955, Vredenburg et al. 2007). SNYLF rarely move more than meter or two from the water's edge, and when disturbed they invariably escape by jumping into the water and swimming to the bottom (Zweifel 1955). Adults typically hibernate in aquatic substrata that do not freeze during the winter (Bradford 1983), and they emerge at the first thaw, which may not occur until early summer. Breeding occurs soon after emergence, and the eggs require several weeks to hatch. Tadpoles congregate in the warmest parts of the breeding habitat, and they overwinter through at least one season and possibly as many as four. Thus, breeding habitat must be permanent through all years (Bradford 1983). Exotic trout have been shown to reduce or eliminate alpine lake SNYLF populations (Bradford 1989, Bradford et al. 1993, Vredenburg 2004, Vredenburg et al. 2007), and many other populations have been nearly extirpated by infection with chytridiomycosis, a fungal disease that damages tadpole mouthparts and impairs foraging (Vredenburg and Summers 2001).

SNYLF are known to occur in Perazzo Meadows, Sagehen Creek, Independence Lake, and Pass Creek in the vicinity of English Meadows. The closest critical habitat is Subunit 2C/Black Buttes, approximately 1.2 mile west of the Project area (USFWS 2016). The nearest historical occurrence is Tollhouse Lake, approximately 1.2 mile south of the Project area, where frogs were last observed in 1968 (CNDDDB 2021).

No SNYLF individuals were observed during surveys (Barry 2018). Because of the absence of permanent water, the upstream half of the Middle Yuba River within the Project area is incapable of supporting SNYLF breeding populations. The only habitat with perennial flow capable of supporting SNYLF breeding populations is the perennial (downstream) section of the Middle Yuba River (Barry 2018). However, the presence of rainbow trout, a known predator of SNYLF, in the Middle Yuba River likely precludes breeding (Barry 2018). Aquatic habitats in English Meadows represent marginal dispersal habitat for SNYLF, and, considering the distance to reproductive populations, the likelihood of individuals dispersing to the Project area is low (Barry 2018).

Birds

- **Greater sandhill crane (*Grus canadensis tabida* – ST):** Nesting greater sandhill cranes typically breed in healthy undisturbed wetland ecosystems and agricultural areas in the northeastern counties of California (including Lassen, Modoc, Plumas, Shasta, Sierra, and Siskiyou counties). A primary requirement for nesting is the cover of tall grasses/forbs to hide and shelter the ground nest and juvenile cranes. This species winters in the Central Valley on agricultural farmlands and wildlife reserves

with shallow wetland habitats. Nesting in California has been threatened by the conversion of wetland habitat to cropland and changes in agricultural use patterns (such as earlier harvest dates). Droughts, cattle grazing, and predation by mesocarnivores can all result in nest failures (California Fish and Game Commission 1994). Powerline collisions are believed to be the primary mortality factor for adult birds.

A pair of adult greater sandhill cranes were observed in a wet meadow during special-status plant and wetland surveys conducted for the Project in 2017 and 2018, though no nests or juveniles were observed. The nearest known nesting is documented at Lacey Valley in Sierra County (CNDDDB 2021). However, suitable wet meadow nesting habitat is present in the Project area.

- **Northern goshawk (*Accipiter gentilis* – SSC):** Northern goshawk (*Accipiter gentilis*) are found in mature, dense conifer forests, though they can be found in pinyon-juniper and low-elevation riparian habitats. Foraging takes place in wooded areas where they use snags and dead-topped trees for observation and prey-plucking. This species nests on north-facing slopes, in dense stands near water, from March through August. Nests are typically 19 to 92 feet above the ground (Zeiner et al. 1988). Average clutch sizes for northern goshawk range from one to five with an average of three. The female will incubate for 36 to 41 days and the young typically fledge within 45 days (Zeiner et al. 1988).

Suitable foraging habitat is present in the Project area, but forest conditions are likely too open for nesting adjacent to the meadow. A nesting pair and fledged juveniles were observed in the Project vicinity during wildlife surveys in 2018 (Beedy 2018). A designated Forest Service Protected Activity Center (PAC) is located in forested habitat, approximately 1.5 miles northeast of the Project area (USDA-FS 2021).

- **Bald eagle (*Haliaeetus leucocephalus* – Bald and Golden Eagle Protect Act [BAGEPA], SE, CFP):** Bald eagles typically nest in large conifer or hardwood trees in forested areas, or on cliff faces (Anthony et al. 1982, USFWS 1986). Nest trees are typically located within 1 mile of water (USFWS 2007), often much closer, and bald eagles typically select the largest tree in a stand in a prominent location providing vistas over the surrounding area (Buehler 2000, USFWS 1986). During winter, bald eagles typically inhabit low-elevation areas, but may be found up to 8,125 feet msl in some western states (Buehler 2000).

The quality of foraging habitat associated with large bodies of water depends on such factors as abundance of the fish that bald eagles prey upon; the presence of shallow water, which may increase the availability of prey; and the level of human disturbance (Buehler 2000; Stalmaster and Kaiser 1998; Garrett et al. 1993). The presence of suitable perch sites is also an important factor. In addition to being near water with ample prey, perch sites tend to be those that provide good views of the surrounding area and are often the highest site available (USFWS 1986). In arid climates, reservoirs provide important foraging habitat during both the breeding season and winter.

There are no known bald eagle nests in the Project vicinity, and this species was not observed within the Project area during surveys conducted in 2018. However, bald eagles

were observed at nearby Jackson Meadows Reservoir (Beedy 2018) and the Project area contains suitable foraging habitat along the Middle Yuba River. Therefore, bald eagle may potentially forage in the Project area.

- **American peregrine falcon (*Falco peregrinum anatum* – CFP):** Peregrine falcons nest on cliffs and tall buildings that offer expansive views of the surrounding landscape for foraging. Breeds mostly in woodland, forest, and coastal habitats. Riparian and coastal and inland wetlands are important foraging grounds for this species.

This species was not observed within the Project area during surveys conducted in 2018. However, peregrine falcons were observed at nearby Jackson Meadows Reservoir (Beedy 2018) and the Project area contains suitable foraging habitat. Therefore, American peregrine falcon may potentially forage in the Project area.

- **Great gray owl (*Strix nebulosa* – SE):** The great gray owl is a rare resident of the Sierra Nevada. It occurs in montane mixed conifer or red fir forests with nearby montane meadows, from about 2,500 to 8,000 feet in elevation. Some great gray owls move into lower elevations during harsh winters. This species preys on rodents, particularly gophers and voles. Breeding takes place in late winter with a pair generally establishing nests in large old trees or snags, usually in conifers but sometimes in large decadent hardwoods (Wu et al. 2016). Nest trees are usually placed in forest stands with high canopy cover. Most nests are within 800 feet of a meadow edge. Meadows or meadow complexes typically must total 10 acres or more to represent a potential territory for great gray owls (Beck and Winter 2000)

This species was not observed during surveys conducted in 2018. The nearest documented occurrence of this species is near Independence Lake and Yuba Pass (CNDDDB 2021). However, English Meadow and surrounding forests represent suitable nesting and foraging habitat. Therefore, great gray owl may potentially nest and forage in the Project area.

- **California spotted owl (*Strix occidentalis* – SSC):** The California spotted owl is a resident of Sierra mixed conifer, ponderosa pine, red fir and montane hardwood forest types with high structural diversity, and dominated by medium (12 to 24 inches) and large (greater than 24 inches) trees and with moderate to high levels of canopy cover (generally greater than 40 percent) (Blakesley 2003, Blakesley et al. 2005, Chatfield 2005, Seamans 2005). This species is found in the Sierra Nevada up to elevations of 7,600 feet. Nests can be found inside cavities of live and dead firs and pines, in the top of broken-topped trees and snags, in platform nests which naturally exist in branching structures or which were built by another species, or in mistletoe brooms (Gutiérrez et al. 1992, Blakesley et al. 2005). Nesting habitat is primarily dominated by medium (12 to 24 inches dbh) to large (greater than 24 inches) trees and multi-storied stands with dense canopy closure (generally greater than 70 percent) (Verner et al. 1992, Moen and Gutiérrez 1997, North et al. 2000, Blakesley 2003, Blakesley et al. 2005). Large trees typically provide tall, dense, canopies with open understories, suitable nesting cavities, and structural complexity, which benefits prey species for foraging and nesting. Breeding season varies by latitude and elevation, but generally begins mid-February and lasts as late as mid-September.

This species was not observed during wildlife surveys conducted in 2018. However, forested habitats on the slopes above English Meadow represent suitable nesting and foraging habitat. Within the Project area, forest canopy cover conditions are likely too open for nesting. There is a designated USDA-FS California spotted owl Protected Activity Center (PAC) approximately 0.6 mile northwest of the Project area (USDA-FS 2021), and two activity centers are recorded in the Project vicinity in CNDDDB (2021). Therefore, California spotted owl may potentially forage in the Project area.

- **Vaux's swift (*Chaetura vauxii* – SSC):** The Vaux's swift is a migratory bird that nests in a variety of coniferous forest habitats in California, from the Northern Coast ranges, Cascades, and Sierra Nevada down to Tulare County (Hunter 2008). This species winters in central Mexico south into Central America. This species nests and roosts in cavities in conifer trees, usually in old-growth forests; less-frequently they roost in chimneys or other buildings with vertical elements (Hunter 2008). Loss of potential roost and nest sites are probably the primary threat to the Vaux's swift.

This species was not observed during wildlife surveys conducted in 2018. However, forested habitats on the slopes above English Meadow represent suitable nesting habitat and English Meadow provides open foraging habitat for this species. Therefore, Vaux's swift may potentially nest and forage in the Project area.

- **Black swift (*Cypseloides niger* – SSC):** The black swift is widespread in California during migration, but nesting is highly localized in the western Sierra Nevada. The total population may be less than 50 pairs. Known breeding localities include the Yosemite Valley and in the Royal Gorge of the North Fork American River, where they nest in small colonies on cliffs behind or adjacent to waterfalls in deep river canyons (Beedy and Pandolfino 2013).

This species was not observed during wildlife surveys conducted in 2018. Suitable nesting habitat is not present; however, English Meadow provides open foraging habitat for this species. Therefore, black swift may potentially forage in the Project area.

- **Olive-sided flycatcher (*Contopus cooperi* – SSC):** The olive-sided flycatcher is a summer resident of coniferous forest habitats in the mountains and foothill regions of California. Olive-sided flycatchers breed in primarily late-successional coniferous forests with open canopies at elevations between 3,000 and 7,000 feet (Verner 1980, Altman and Sallabanks 2000). Olive-sided flycatchers typically nest on the upper surface of branches of large conifer trees, up to 100 feet off the ground (Widdowson 2008). This species prefers to forage from unobstructed perches and over forest canopies; they are often seen making sallying flights to catch insect prey.

This species was observed during wildlife surveys conducted in 2018 (Beedy 2018). Forested habitat on the slopes above English Meadow represent suitable nesting habitat for this species, and English Meadow represents potential foraging habitat. Therefore, olive-sided flycatcher may potentially forage in the Project area.

- **Willow flycatcher (*Empidonax traillii* – SE):** The willow flycatcher is a summer resident in California, present from late April to September in wet meadow as well as foothill and montane riparian habitats from 2,000 to 8,000 feet in the Sierra Nevada. It nests on the edges of openings in dense willow thickets, usually within 7 feet of the

ground. The willow flycatcher generally nests from June to August in riparian sites that are moist and shrubby, often with standing or running water. Suitable nesting habitat in the Sierra Nevada is defined as meadows at least 1 acre in size supporting riparian vegetation, though they usually prefer meadows 10 to 15 acres in size (Green et al. 2003).

This species was not observed during wildlife surveys conducted in 2018 (Beedy 2018). Small thickets of willows and individual willows are patchily distributed throughout the Project area. These patches are relatively small (less than 1 acre) and therefore do not represent nesting habitat. However, there is some potential for this species to forage in the Project area.

- **Yellow warbler (*Setophaga petechia* – SSC):** The yellow warbler breeds in riparian vegetation along streams or in wet meadows, especially in willows, cottonwoods, and various riparian shrubs (Heath 2008). It may occasionally use shrublands and understory trees in mixed conifer forests. The yellow warbler is fairly abundant in the Sierra Nevada, although it has been nearly extirpated from the Central Valley (Heath 2008). This species occurs as a migrant from late March through early October, and breeds from April to late July (Heath 2008).

This species was frequently observed in riparian habitat within the Project area in 2018 (Beedy 2018), and is presumed to nest and forage in the Project area.

Mammals

- **Sierra Nevada Mountain Beaver (*Aplodontia rufa californica* – SSC):** The Sierra Nevada mountain beaver is a small, thick-bodied rodent with tiny eyes and small ears. The mountain beaver is the only member of its genus; it resembles a muskrat. The mountain beaver is about 12 inches long, grayish or brownish-red in color, and is nearly tailless. The Sierra Nevada mountain beaver frequents open forest near water. Deep, friable (easily crumbled) soils are required for burrowing, along with a cool, moist microclimate. Burrows are located in deep soils in dense thickets, preferably near a stream or spring. The mountain beaver lines its nest with dry vegetation. Nest chambers are 1 to 4 ½ feet below the ground surface. Breeding occurs from December through March (peaking in February). Young are born February to June (peaking March through May). There is one litter per year, and litter size averages between two and three.

There are no recorded occurrences of mountain beaver, nor was this species observed during surveys conducted in the Project area in 2018. However, riparian and coniferous forest habitat within and adjacent to English Meadow represent suitable habitat for this species.

- **Sierra Nevada snowshoe hare (*Lepus americanus tahoensis* – SSC):** The Sierra Nevada snowshoe hare is an uncommon resident at upper elevations in the Cascades and northern Sierra Nevada mountains. In California, this species is typically found in montane riparian habitats with thickets of alders and willows, and also in stands of young conifers with abundant chaparral. This species favors meadow edge habitats (Ingles 1965). Dense cover is required for reproduction.

There are no recorded occurrences of this species, nor was it observed during wildlife surveys conducted in the Project area in 2018. However, riparian and coniferous forest habitat within and adjacent to English Meadow represent suitable habitat for this species.

- **Pallid bat (*Antrozous pallidus* – SSC):** The pallid bat is a year-round resident in California. The pallid bat is found in arid desert areas, grasslands and oak savanna, coastal forested areas, and coniferous forests of the mountain regions of California. Day and night roost sites typically include rock outcroppings, caves, hollow trees, mines, buildings, and bridges. Pallid bats will use more open sites such as eaves, awnings, and open areas under bridges for night feeding roosts.

There are no recorded occurrences of pallid bat in the Project area, and no bats were observed during the wildlife surveys conducted in 2018. Hollow trees in the Project area represent potential roosting habitat for this species. Open areas in the Project area represent potential foraging habitat. Therefore, this species could potentially occur in the Project area.

- **Townsend's big-eared bat (*Lasiurus blossevillii* – SSC):** Townsend's big-eared bat is a year-round resident in California. The Townsend's big-eared bat is found primarily in rural settings, from inland deserts to coastal redwoods, oak woodland of the inner Coast Ranges and Sierra Nevada foothills, and low to mid-elevation mixed coniferous-deciduous forests (National Park Service [NPS] 2017). It typically roosts during the day in caves and mines, but may roost in buildings that offer suitable conditions. Large trees, especially incense cedars with historical fire scars, are less frequently used (Fellers and Pierson 2002). Night roosts are typically located in more open settings such as bridges.

There are no recorded occurrences of Townsend's big-eared bat in the Project area, and no bats were observed during the wildlife surveys conducted in 2018. There are no mines, caves, or other structures in the Project area that provide roosting habitat for this species, and forested areas are likely in young seral stages which make tree roosting habitat unlikely. Open areas over upland habitat represent potential foraging habitat for this species. Therefore, this species could potentially occur in the Project area.

- **Spotted bat (*Euderma maculatum* – SSC):** The spotted bat is found in mountainous regions of California, including the Sierra Nevada south to the desert ranges. Spotted bats roost in horizontal rock crevices in canyons and cliffs (Watkins 1977), though caves and buildings are also occasionally used. Forages over brush, woodland, forests, and open habitats.

There are no recorded occurrences of spotted bat in the Project area, and no bats were observed during the wildlife surveys conducted in 2018. There are no cliffs, mines, caves, or other structures in the Project area that provide roosting habitat for this species. Open areas over upland habitat represent potential foraging habitat for this species. Therefore, this species could potentially occur in the Project area.

- **Western red bat (*Lasiurus blossevillii* – SSC):** Western red bat can be found from Shasta County in northern California to the Mexican border, west of the Sierra Nevada/Cascade crest and deserts. This species roosts in forest and woodlands ranging from sea level through mixed conifer forests. Roosting takes place primarily

in trees in areas that are protected from above and roost sites are often adjacent to streams, fields, or urban areas. This species forages over a variety of habitats, including grasslands, shrublands, open woodlands and forests, and croplands. Threats to this species include motor vehicles, pesticides, and poor water quality.

There are no recorded occurrences of western red bat in the Project area, and no bats were observed during the wildlife surveys conducted in 2018. Montane riparian and coniferous forest habitat represents potential roosting habitat for this species. Open areas over upland habitat represent potential foraging habitat for this species. Therefore, this species could potentially occur in the Project area.

- **Western mastiff bat (*Eumops perotis californicus* – SSC):** Western mastiff bats are found in the Sierra Nevada south to the southern deserts of California. Western mastiff bats are the largest bat species in California, with a wingspan up to 2 feet. Roosts in crevices in vertical cliffs, usually in granite or consolidated sandstone, with a sufficient vertical drop for bats to take flight. Forages over open habitats and can travel widely in search of insect prey.

There are no recorded occurrences of western mastiff bat in the Project area, and no bats were observed during the wildlife surveys conducted in 2018. The Project area does not contain suitable roosting habitat for this species. However, open areas represent potential foraging habitat for this species. Therefore, this species could potentially occur in the Project area.

- **American badger (*Taxidea taxus* – SSC):** American badgers are found in herbaceous and shrub communities, or other open stages of habitats with dry, friable soils. Badgers excavate dens in the soil and typical home ranges are up to 243 hectares. Badgers are opportunistic hunters and feed on a wide variety of vertebrate and invertebrate prey. Breeding occurs in August through October, and young are born in March and April.

There are no recorded occurrences of American badger in the Project area, and no badgers were observed during the wildlife surveys conducted in 2018. However, the Project area represents suitable denning and foraging habitat for this species.

- **California wolverine (*Gulo gulo* – FPT, CT, CFP):** Wolverines are known to inhabit a variety of habitat types within an elevation range of 1,600 to 14,200 feet. In California, historically this species frequents upper and subalpine coniferous forest types and alpine meadows. This species prefers areas of low human disturbance. Dens in caves, hollows in cliffs, logs, or burrows for cover, generally in denser forest stages. Breeding is initiated in May through July and the young are born between January and April.

There are no known occurrences of wolverine in the Project area, and no wolverine were observed during the wildlife surveys conducted in 2018. Historical records of wolverine are known from near Jackson Meadows Reservoir and Sagehen Creek (CNDDDB 2021). More recently, a lone wolverine was observed north of Truckee near Castle Peak on the Tahoe National Forest (Tahoe Daily Tribune 2016).

Other Protected Bird Species

In addition to the species listed above, the Project area represents potential habitat for raptors protected under Section 3503.5 of the California Fish and Game Code and other bird species protected under the MBTA, including raptors such as the red-tailed hawk (*Buteo jamaicensis*) and great horned owl (*Bubo virginianus*); ground-nesting species such as mountain quail (*Oreortyx pictus*); and nesting songbirds such as the song sparrow (*Melospiza melodia*).

3.4.3 Discussion

- a) *With implementation of mitigation, the Proposed Project will not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.*

The Proposed Project vicinity represents potential habitat for 19 special-status plant species and 22 special-status wildlife species, as well as raptors protected under California Fish and Game Code or other bird species protected under the MBTA. The following is a discussion of potential impacts to these special-status species.

3.4.3.1 Special-Status Plants

Overall, the Proposed Project would benefit special-status plants over the long term by restoring and enhancing suitable habitat within the floodplain and surrounding uplands. In the short term, however, implementation of the Project may potentially result in minor direct and indirect impacts to special-status plants. These potential impacts, and mitigation measures proposed to avoid or minimize these impacts to less than significant levels, are described below.

Direct Impacts

Two special-status plants, the woolly-fruited sedge (floodplain treatment area) and starved daisy (forest treatment area), are known to occur in the Project area. In addition, previously undiscovered populations of special-status plants may potentially be present during implementation of the Project.

Use of vehicles and heavy machinery has the potential to directly impact sensitive plants by crushing plants, displacing soil and plants, or smothering plants with soil. To avoid direct impacts to special-status plants, NID will implement **Mitigation Measures BIO-1, BIO-2, and BIO-3**. Mitigation Measure BIO-1 states that work crews will attend an environmental awareness training prior to initiation of each work season. The training, which will be conducted by a qualified biologist, will include a review of special-status plants occurring at the site, legal protections for plants and associated penalties, and applicable protective measures. Mitigation Measure BIO-2 includes general construction measures such as qualified biologist with stop-work authority on site prior to and during all ground- and habitat-disturbing activities, limiting activities to designated work areas; locating staging areas on previously disturbed land; and limiting vegetation disturbance to those areas where such activities are necessary to achieve Project objectives. Mitigation Measure BIO-3 states that known populations of special-status plants (e.g., woolly-fruited sedge and starved daisy) shall be flagged with a 25-foot buffer; and no ground-disturbing activities or vegetation removal would occur within this buffer.

Surveys for special-status plants were conducted in 2018 and 2019. Based on CDFW's *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities* (CDFW 2010), surveys within forest habitats are typically viable for a period of 5 years, while surveys within wetland and grassland habitats should be conducted annually. Accordingly, surveys within upland forest habitats, where forest treatments will be implemented, do not need to be repeated over the term of the Proposed Project (2021–2025). However, Mitigation Measure BIO-3 requires annual surveys within wetland and grassland habitats. Prior to each work season, a qualified biologist will survey areas where mainstem and floodplain treatments and floodplain vegetation treatments will be implemented. If new populations of special-status plants are observed, they will be flagged with a 25-foot buffer. No ground-disturbing activities or vegetation removal would occur within this buffer.

With implementation of **Mitigation Measures BIO-1, BIO-2, and BIO-3**, direct impacts to special-status plants would be **less than significant**.

Indirect Impacts

Overall, the Proposed Project would benefit special-status plants by restoring and enhancing suitable habitat within the floodplain and upland habitats. However, ground disturbing activities, vegetation removal, and use of vehicles and construction equipment necessary to implement the proposed restoration/enhancement activities could potentially result in the introduction or spread of noxious weeds in the Project area.

Populations of St. John's wort (*Hypericum perforatum*) were observed during special-status plants surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019); and this species is well established in and around the treatment areas. This species, or other noxious weed species, could potentially proliferate, displacing native and special-status plants and degrading their habitat.

NID will implement **Mitigation Measures BIO-1, BIO-2, BIO-4, and BIO-5** to minimize the potential for the introduction or spread of noxious weeds. As described previously, Mitigation Measures BIO-1 requires implementation of environmental awareness training, which will include a review of noxious weeds potentially occurring at the site and applicable mitigation measures. Mitigation Measure BIO-2 includes requirements to have a qualified biologist with stop-work authority on site during all ground- and habitat-disturbing activities, limit work to define work areas, and to locate staging areas and access routes in areas that have been previously disturbed. Mitigation Measure BIO-4 states that, to the extent practicable, known populations of noxious weeds shall be flagged and avoided during Project implementation; requires that all equipment be cleaned and free of vegetative debris prior to entry to the Project area and inspected by an NID staff person or authorized individual; requires certified weed-free materials to be used for erosion control and site stabilization; and states that work crews shall periodically inspect for, remove, bag, and properly dispose of weed seed on clothing and boots.

Mitigation Measures BIO-4 also requires the following measures to be implemented to minimize the potential for the introduction or spread of noxious weeds associated with borrow sites or other areas where soils will be excavated and used for fill:

-
- Noxious weeds and/or their seed heads shall be removed prior to ground disturbance or removal of herbaceous vegetation. Weeds and/or seed heads shall be bagged and disposed of properly.
 - Certified weed-free erosion control and soil stabilization measures shall be installed, where necessary, immediately following completion of ground disturbance, excavation, or removal of herbaceous vegetation.
 - Where appropriate, these sites shall be mulched and revegetated.

Finally, the measure states that NID will work with USFS Range Managers and the USFS permittee to discourage unauthorized grazing on NID lands in the Project area.

Mitigation Measure BIO-5 states that all areas subject to ground disturbance, excavation, and/or removal of herbaceous vegetation (resulting in a denuded condition) as part of Project restoration/enhancement activities will be monitored, and noxious weeds will be controlled, annually for 3 years following each work season (i.e., areas where Project restoration/enhancement activities are completed in 2021 shall be monitored in 2022, 2023, and 2024; areas where Project restoration/enhancement activities are completed in 2022 shall be monitored in 2023, 2024, and 2025, etc.)

With implementation of **Mitigation Measure BIO-1, BIO-2, BIO-4, and BIO-5**, indirect impacts to special-status plants would be considered **less than significant**.

3.4.3.2 Special-Status Wildlife

Provided below is discussion of potential impacts to special-status wildlife species, resident fish, and birds, and mammals. For simplicity of analysis, similar species are grouped where appropriate.

Invertebrates

Western Bumble Bee

Western bumble bees are unlikely to nest in the Project area due to the scarcity of rodent burrows available for nesting (Barry 2018). As described above, over the long term the Project is expected to benefit native species, including bumble bees, by restoring and enhancing their foraging habitats (i.e., flowering herbs and shrubs). However, in the short term, vegetation removal associated with excavation of the borrow sites, bank stabilization, and other ground-disturbing activities could result in loss of flowering species available to bumble bees for foraging. In addition, potential spread of invasive plants could reduce floral diversity and therefore degrade the quality of foraging habitat for this species. Implementation of the mitigation measures described above for special-status plants would also protect habitat for western bumble bees. These include environmental awareness training (Mitigation Measure BIO-1); general measures that require the presence on-site of a qualified biologist with stop-work authority, limit the location of work areas, staging areas, and access routes (Mitigation Measure BIO-2); requirements for flagging and avoidance of special-status plants and annual floristic surveys within the floodplain (Mitigation Measure BIO-3); standard measures to minimize the potential for introduction and spread of noxious weeds (Mitigation Measure BIO-4); and ongoing noxious weed monitoring (Mitigation Measure BIO-5). Refer above for a more

detailed description of each of these measures. In addition, Mitigation Measure BIO-8 describes measures to protect animal burrows present in areas where floodplain treatments, floodplain vegetation treatments, or forest treatments are proposed. This includes surveys to determine the location of burrows; flagging and avoidance of burrows to the degree possible; and collapsing of uninhabited burrows. Inhabited burrows that cannot be avoided would be protected with site-specific measures that consider site-specific conditions and nature and extent of work activities to be implemented near the burrow. Measures could include, but are not limited to, implementation of a protective buffer around the burrow or exclusion/evacuation and collapse of the burrow. With implementation of **Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, and BIO-8**, impacts to western bumble bee would be **less than significant**.

Resident Fish

Rainbow trout are known to occur in the Middle Yuba River in the Project area. Overall, the Project would benefit trout through restoration and enhancement of aquatic habitat within the Middle Yuba River. However, in the near term, implementation of Middle Yuba River and associated floodplain treatments could result in direct and indirect impacts to these species. These potential impacts are described below.

Direct Impacts

Resident fish populations, including trout, may potentially be stranded during dewatering of portions of the Middle Yuba River, which will be required prior to construction of the temporary river crossing or placement of debris jams. Resident fish may also potentially be affected by dewatering of French Creek or Secret Creek prior to installation of culverts along Meadow Lake Road, if required. In order to avoid and minimize this potential impact, NID will implement **Mitigation Measure BIO-1, BIO-6, and BIO-7**. Mitigation Measure BIO-1 requires environmental awareness training for work crews that covers resident fish species potentially occurring on the site and measures that are required to avoid or minimize impacts to these species. Mitigation Measure BIO-6 states that any stranded fish will be captured and relocated downstream of the dewatered area. A record will be maintained of all fish that are captured and relocated. This will include biologist names, date, number and species of fish, and method of capture. The completed record will be provided to CDFW following completion of each work season. Mitigation Measure BIO-7 requires NID to obtain relevant permits required under the Clean Water Act (e.g., Sections 401 and 404) and the California Fish and Game Code (e.g., Section 1602 Lake or Streambed Alteration Agreement); and to implement all permit conditions, including those pertaining to avoidance and protection of aquatic species such as trout.

With implementation of Mitigation Measure BIO-1, BIO-6 and BIO-7, direct impacts to trout from dewatering of the Middle Yuba River would be **less than significant**.

Indirect Impacts

As stated previously, one of the objectives of the Project is to improve hydrological conditions within the Middle Yuba River, which would indirectly benefit fish through habitat improvements. However, dewatering and use of vehicles and construction equipment within the bed or along the bank of the Middle Yuba River, or along French Creek, Secret Creek along Meadow Lake Road (in the case that dewatering and installation of culverts is required), may

also result in temporary degradation of water quality, which could temporarily affect resident fish (including trout) present downstream of in-water work areas.

The potential for degradation of water quality would be avoided through implementation of **Mitigation Measures HYD-1, HYD-2, and BIO-7**. Mitigation Measures HYD-1 requires preparation and implementation of a SWPPP in accordance with RWQCB requirements. The SWPPP will include BMPs to address potential release of fuels, oil, and/or lubricants from operational vehicles and equipment (e.g., drip pans, secondary containment, washing stations), as well as release of fine sediment from material stockpiles (e.g., sediment barriers, soil binders). Mitigation Measures HYD-2 states that NID will develop a detailed Dewatering and Diversion Plan that would be reviewed/approved by USACE, RWQCB, and CDFW as part of Clean Water Act, Porter-Cologne Water Quality Control Act, and California Fish and Game Code permit issuance. The approved plan will be implemented as part of the Project. Mitigation Measure BIO-7 requires NID to obtain all obtain relevant agency permits; and to implement all permit conditions, including those pertaining to maintenance of water quality, as part of the Project.

The Project involves placement of structures (debris jams and riffles) into the riverbed, which could potentially impede the movement of fish. As described in the discussion of fish movement under item d) of this checklist, the design of the debris jams and riffles would result in the creation of larger pools for fish to over-summer in. In addition, the structures will integrate natural materials (e.g., trees and woody debris) that are permeable and will allow for the movement of water and organisms through the structure during high flows; will maintain or enhance habitat within the river; and will contribute to movement and sorting of bed material, which may enhance trout spawning and colonization by macroinvertebrates (Mink, pers. comm., 2021b).

Considering that the Project will restore and enhance aquatic habitat within the Middle Yuba River, and with implementation of **Mitigation Measures HYD-1, HYD-2, and BIO-7**, indirect impacts to fish would be **less than significant**.

Aquatic Amphibians

Overall, the Proposed Project would benefit special-status amphibians over the long term by restoring and enhancing suitable habitat within the floodplain and surrounding uplands. In the short term, however, implementation of the Project may potentially result in minor direct and indirect impacts to these species. These potential impacts, and mitigation measures proposed to avoid or minimize these impacts to less than significant levels, are described below.

Southern Long-toed Salamander

There is a low potential for southern long-toed salamanders to be present in burrows within upland habitats in the Project area (Barry 2018). Restoration and enhancement of the floodplain and adjacent uplands as part of the Proposed Project would have a beneficial indirect impact on native amphibians, including southern long-toed salamander, over the long term. However, ground-disturbing activities and use of heavy equipment during implementation of the Project could potentially result in direct impacts to southern long-toed salamander through crushing or blockage of burrows. NID will minimize the potential for impacts to this species through implementation of **Mitigation Measure BIO-1, BIO-2, and BIO-8**. Mitigation Measure BIO-1 requires environmental awareness training for work crews that covers special-status amphibians

potentially occurring on the site and measures that are required to avoid or minimize impacts to these species. Mitigation Measure BIO-2 includes requirements to have a qualified biologist with stop-work authority on site during all ground- and habitat-disturbing activities, limit work to define work areas, and to locate staging areas and access routes in areas that have been previously disturbed. Mitigation Measure BIO-8 requires a qualified biologist to conduct a clearance survey prior to each week's work to determine whether animal burrows are present in areas where floodplain treatments, floodplain vegetation treatments, or forest treatments are proposed; animal burrows would be flagged and avoided to the degree possible. Any burrows that cannot be avoided would be inspected by the qualified biologist to determine whether they are actively inhabited. Uninhabited burrows that cannot be avoided shall be collapsed by or in the presence of the biologist to avoid future occupation.

If a burrow is inhabited and cannot be avoided, NID would consult with CDFW to determine alternative avoidance, protection, and/or exclusion measures. Such measures would depend on the species involved, site-specific conditions and nature and extent of work activities to be implemented near the burrow. Measures could include, but are not limited to, implementation of a protective buffer around the burrow or exclusion/evacuation and collapse of the burrow by a CDFW-approved biologist. With implementation of **Mitigation Measures BIO-1, BIO-2, and BIO-8**, potential direct impacts to southern long-toed salamander would be less than significant.

Sierra Nevada Yellow-legged Frog

Over the long term, the Project may potentially benefit aquatic species, including SNYLF, through improving aquatic habitat within the Middle Yuba River and its tributaries within the Project area. In the case of SNYLF, this benefit may be off-set by the fact that the Project may also potentially benefit predatory trout. In the short term, implementation of the Project may result in direct and indirect impacts to these species. These potential impacts are described below.

Direct Impacts

Breeding populations of SNYLF are considered unlikely to occur in the Project area due to the current habitat conditions and presence of predatory trout; there is low potential for dispersing individuals to be present (Barry 2018). In the unlikely case that an SNLYF individual is present in the Project area, dewatering of the Middle Yuba River and bank stabilization activities could potentially result in stranding or crushing of individuals under equipment.

To avoid any individual present in the Project area, NID will implement **Mitigation Measures BIO-1, BIO-7, and BIO-9**. Mitigation Measure BIO-1 requires environmental awareness training for work crews that covers special-status amphibians potentially occurring on the site and measures that are required to avoid or minimize impacts to these species.

Mitigation Measure BIO-7 requires NID to obtain relevant permits required under the Clean Water Act (e.g., Sections 401 and 404) and the California Fish and Game Code (e.g., Section 1602 Lake or Streambed Alteration Agreement); and to implement all permit conditions, including those pertaining to avoidance and protection of aquatic species such as SNYLF. In addition, as part of the Clean Water Act Section 404 permitting process, USACE would conduct informal Section 7 consultation with USFWS regarding the potential for the Project to affect SNYLF. The consultation would reiterate that 1) the Project is intended to enhance aquatic habitat for aquatic species such as SNYLF; 2) there is a low likelihood for SNYLF to be present

in the Project area; and 3) impacts to the species, if present, would be less than significant with incorporation of mitigation.

Mitigation Measure BIO-9 states that perennial riverine features (i.e., the Middle Fork Yuba River, R3UB2-1, and R3UB2-2) will be surveyed for SNYLF (by a qualified biologist) immediately prior to dewatering and ground-disturbing work within the bed and/or along the bank of the river/stream. If SNYLF are observed, all activity within 100 feet upstream and downstream of the observation shall be suspended, and CDFW will be contacted within 24 hours to determine appropriate measures to avoid and minimize potential impacts. Such measures may include, but are not limited to, altering the location or timing of Project activities and/or having a qualified biological monitor present during activities that may potentially affect the species. All agreed-upon measures would be implemented as part of the Project. In addition, to minimize the potential for direct injury of frogs, intake piping used for dewatering will be fitted with a screen or similar device, and plastic mono-filament netting or similar materials will not be used (e.g., when installing erosion control materials).

Considering implementation of Mitigation Measures BIO-1 BIO-7, and BIO-9, impacts to SNYLF would be less than significant.

Indirect Impacts

Overall, the Project would benefit aquatic species, including SNYLF, through improving aquatic habitat within the Middle Yuba River and its tributaries within the Project area. In the long-term, the Project is designed to raise the water table and to restore the watershed/floodplain function. As described previously, the Project area does not represent breeding habitat for the species; there is low potential for dispersing individuals to be present. The debris jams and riffles are constructed of on-site materials such as coarse gravel, cobble, and wood debris, which are structural features normally found within riverine habitats. Following installation, the portions of the Middle Yuba River and its tributaries in which these structures are installed would continue to provide foraging habitat and increased structural complexity for aquatic species, including amphibians. The debris jams and riffle structures are permeable, and would continue to allow water and small animals such as amphibians and aquatic macroinvertebrates, to move freely and forage. Pool habitat is expected to expand. As stated previously, predatory trout may also benefit as a result of increased woody debris and increased retention of water across the floodplain may create suitable breeding pools for this species.

Considering that SNYLF is almost fully aquatic, Project activities implemented in the broader floodplain, away from the Middle Yuba River and perennial tributaries, would not affect habitat for dispersing SNYLF.

The Project may also result in short-term temporary impacts to water quality due to increased sedimentation from ground disturbance, or the runoff of hazardous materials from use of heavy equipment. The potential for degradation of water quality would be avoided through implementation of **Mitigation Measures HYD-1, HYD-2, and BIO-7**. Mitigation Measures HYD-1 requires preparation and implementation of a SWPPP in accordance with RWQCB requirements. The SWPPP will include BMPs to address potential release of fuels, oil, and/or lubricants. Mitigation Measures HYD-2 states that NID will develop a detailed Dewatering and Diversion Plan that would be reviewed/approved by USACE, RWQCB, and CDFW as part of Clean Water Act and California Fish and Game Code permit issuance. The approved plan will be

implemented as part of the Project. As described above, Mitigation Measure BIO-7 requires NID to obtain all obtain relevant agency permits; and to implement all permit conditions, including those pertaining to maintenance of water quality, as part of the Project.

With implementation of **Mitigation Measures HYD-1, HYD-2, and BIO-7**, indirect impacts to SNYLF would be **less than significant**.

Birds

The Project area provides habitat for a variety of special-status birds, which are grouped into forest and meadow birds for simplicity of analysis. Forest birds include northern goshawk, bald eagle, great gray owl, California spotted owl, Vaux's swift, and olive-sided flycatcher. Meadow birds include the greater sandhill crane, willow flycatcher, and yellow warbler. Overall, the Project is intended to restore and enhance forest and meadow habitats in the Project area, as well as reducing the potential for catastrophic wildfire that can negatively affect nesting and foraging birds and their habitats. Provided below is a brief discussion of potential short-term direct and indirect impacts that implementation of the Project may have on forest and meadow birds.

Forest Birds

Direct Impacts

Forest birds could potentially be affected by the removal of trees in the upland forests surrounding the meadow, and/or disturbed by human presence and the operation of heavy equipment near nests. The special-status forest-dwelling species described are unlikely to choose trees smaller than 24 inches DBH for nesting, and therefore nest trees are unlikely to be removed. However, operation of heavy equipment around a nest tree could potentially result in the disturbance of nesting birds. NID will implement **Mitigation Measures BIO-1, BIO-2, and BIO-10** to reduce the potential for loss or disturbance of bird nests. Mitigation Measure BIO-1 requires environmental awareness training for work crews, including training regarding special-status birds and measures in place to protect them. Mitigation Measure BIO-2 includes requirements to have a qualified biologist with stop-work authority on site during all ground- and habitat-disturbing activities, limit work to define work areas, and to locate staging areas and access routes in areas that have been previously disturbed. Mitigation Measure BIO-10 states that, if work is proposed during the breeding season (February 1 – September 1) the Project area and a 0.25-mile radius will be surveyed for forest birds. The survey will take place no more than 2 weeks before initiation of forest treatments. The results of the survey will be provided to CDFW, and a species-appropriate buffer implemented. No Project activities shall occur within the protective buffers until the breeding season has ended; a qualified biologist has determined that the young have fledged.

With implementation of **Mitigation Measures BIO-1 and BIO-10**, direct impacts to Forest birds would be **less than significant**.

Indirect Impacts

The Proposed Project will result in the removal of trees under 24 inches DBH within approximately 200 acres of upland forest habitat. This tree removal will result a minor reduction of canopy cover, primarily in the understory. Trees larger than 24 inches will be retained during forest treatments, and large snags would be retained or created (between three and seven per

acre). A brief species-specific assessment of indirect impacts to nesting and foraging habitat for forest-dwelling bird species is provided below.

Nesting Habitat: Bald eagle, Vaux's swift, and olive-sided flycatcher nesting habitat is unlikely to be affected by the project as these species prefer to nest in the largest trees or snags but do not require dense canopy cover. However, some of the forest raptor species (including northern goshawk, California spotted owl and great gray owl) prefer to nest in forest stands with dense canopy cover. Therefore, implementation of the Project may result in some alteration in the quality of nesting habitat as the density of trees will be reduced. The area proposed for forest treatment are in close proximity to English Meadow, and under existing conditions represent only marginal nesting habitat for northern goshawk and California spotted owl. The opening of the meadow and restoration of the floodplain dynamics is expected to improve meadow foraging habitat for great gray owl. In the long-term, the Project is expected to protect nesting habitat for all these species because forest thinning will reduce the likelihood of severe wildfire in the forests surrounding the meadow. Therefore, indirect impacts to nesting habitat would be **less than significant**.

Foraging Habitat: California spotted owl and northern goshawk have been shown to avoid foraging in forests with dense growth of small trees and shrubs in the understory (Williams et al. 2011; Woodbridge and Hargis 2006); therefore, removal of small trees and understory growth may improve foraging conditions for these species. Removal of conifers within English Meadow and restoration of natural floodplain dynamics is also expected to increase the quality of foraging habitat for great gray owl in the long-term. In the short-term, work within the mainstem Middle Yuba River could result in impacts to water quality that could affect aquatic foraging habitat for bald eagle. However, water quality impacts would be minor and short-term, and reduced to less than significant levels by implementation of measures **Mitigation Measures HYD-1, HYD-2, and BIO-7**. Additionally, as described above under resident fish, improvement of perennial flow and decreased water temperatures should improve conditions for fish species that provide the prey base for bald eagles.

Therefore, with implementation of mitigation, potential short-term impacts to foraging habitat for forest birds would be **less than significant**, and beneficial in the long-term.

Meadow birds

Direct Impacts

Birds that use meadow habitats could potentially be affected by the operation of equipment within the meadow, which could result in removal of nests or disturbance to meadow birds. Greater sandhill cranes nest directly on the ground and nests could be crushed by heavy equipment operating in tall grasses and/or noise disturbance could result in abandonment of the nest. Willow flycatcher and yellow warbler nest in riparian vegetation and could be disturbed by trimming of riparian vegetation or noise disturbance, resulting in nest abandonment.

To avoid and minimize potential impacts to these species, NID will implement **Mitigation Measures BIO-1, BIO-2, BIO-11, and BIO-12**. Mitigation Measure BIO-1 requires environmental awareness training for work crews, including training regarding special-status birds and measures in place to protect them. Mitigation Measure BIO-2 includes requirements to have a qualified biologist with stop-work authority on site during all ground- and habitat-

disturbing activities, limit work to define work areas, and to locate staging areas and access routes in areas that have been previously disturbed.

Mitigation Measure BIO-11 states that floodplain vegetation treatments will take place outside the breeding season for the meadow species potentially occurring in the Project area (February 1 – September 1). If work must take place within the breeding season, the Project area and a 0.25-mile radius will be surveyed by a qualified biologist for meadow-nesting birds no more than 2 weeks prior to floodplain vegetation treatments. Active nests will be reported to CDFW and appropriate protective buffers developed, considering the species, location of nest, and the nature of activities proposed within the vicinity of the nest. No Project activities would occur within the protective buffers until the breeding season has ended or the qualified biologist has determined that the young have fledged.

Finally, Mitigation Measure BIO-12 states that, riparian vegetation will be avoided to the greatest extent possible during implementation of floodplain restoration and enhancement activities. Exceptions may include, but are not limited to, removal of riparian shrubs for replanting as part of revegetation or for use in construction of restoration/enhancement structures (i.e., debris jams or riffles); or trimming of shrubs as needed to allow for installation of these structures. This measure would minimize the potential for impacts to riparian-nesting species such as willow flycatcher and yellow warbler.

With implementation of **Mitigation Measure BIO-1, BIO-2, BIO-11, and BIO-12**, direct impacts to meadow birds would be **less than significant**.

Indirect Impacts

In the long-term, the Proposed Project will result in the restoration of watershed/floodplain function and may increase the availability of wet meadow and riparian habitat for meadow birds. Floodplain vegetation treatments will be limited to removal of encroaching conifers and associated upland understory. The Project does not include removal of hardwood tree species, and, as described in **Mitigation Measure BIO-12**, with the exception of riparian shrubs to be removed or trimmed during restoration/enhancement activities, no riparian vegetation will be removed or trimmed during implementation of the Project. Therefore, short-term indirect impacts to meadow birds would be **less than significant with incorporation of mitigation**. In the long term, the Project is expected to increase the availability of nesting and foraging habitat for meadow-nesting bird species.

Mammals

The Project area provides habitat for a variety of special-status mammals, which are grouped for simplicity of analysis as follows: mammals associated with riparian habitats (riparian mammals), bats, and mesocarnivores. Riparian mammals include the Sierra Nevada mountain beaver and the Sierra Nevada snowshoe hare. Bats include the pallid bat, Townsend's big-eared bat, spotted bat, western red bat, and western mastiff bat. Mesocarnivores include the California wolverine and American badger.

The Project is intended to restore and enhance meadow and forest habitats within the Project area and would represent an overall benefit to native mammalian species over the long term. In the short term, implementation of the Project may result in minor direct and indirect impacts. These

impacts, and mitigation measures proposed to avoid or minimize these impacts, are briefly described below.

Riparian Mammals

Direct and Indirect Impacts

Operation of heavy equipment has the potential to crush or disturb Sierra Nevada mountain beaver and snowshoe hare individuals. Sierra Nevada mountain beavers spend most of their lives in close association with burrows located in riparian areas within close proximity to water. Sierra Nevada snowshoe hares do not use underground burrows and could more easily avoid machinery. A preliminary survey of the project area indicated that underground burrows were not very common in the Project area (Barry 2018); therefore, Sierra Nevada mountain beaver are not expected to occur at high density. The following mitigation measures would be implemented to minimize the potential for impacts to riparian mammals. **Mitigation Measure BIO-1** requires environmental awareness training for work crews, including training regarding special-status mammals, and measures that are required to avoid and protect them.

Mitigation Measures BIO-2 includes a number of standard construction measures that require use of designated work areas, state that staging areas will be located on previously disturbed land, and that limit activities to the hours between sunrise and sunset (to minimize the potential for impacts to crepuscular species that forage at dusk and dawn). **Mitigation Measure BIO-8**, described in detail under impacts to salamanders, requires a qualified biologist to conduct a clearance survey prior to each week's work to identify, flag, burrows that may provide habitat for animals such as Sierra Nevada mountain beaver. Any burrows that cannot be avoided would be inspected by the qualified biologist to determine whether they are actively inhabited. Uninhabited burrows that cannot be avoided shall be collapsed by or in the presence of the biologist to avoid future occupation. Finally, **Mitigation Measure BIO-12** states that, riparian vegetation will be avoided to the greatest extent possible during implementation of floodplain restoration and enhancement activities. Exceptions may include, but are not limited to, removal of riparian shrubs for replanting as part of revegetation or for use in construction of restoration/enhancement structures (i.e., debris jams or riffles); or trimming of shrubs as needed to allow for installation of these structures.

In the long-term, meadow restoration/enhancement activities would be expected to restore the ecological function and connectivity of riparian areas within English Meadow, thereby improving the habitat quality for Sierra Nevada mountain beaver and snowshoe hare in the long-term.

Considering that the objective of the Project is to improve habitat within the Project area, including riparian habitat, and with implementation of mitigation measures, impacts to riparian mammals would be considered **less than significant**.

Bats

Direct Impacts

The Project area does not include, and therefore will not affect, structures such as cliffs, mines, and buildings and therefore will not affect species such as spotted bats, western mastiff bats, and Townsend's bats that prefer to roost in these structures.

While tree-roosting bats, such as pallid bats, Townsend's big-eared bats, and western red bats, could potentially be affected by removal of trees, the Proposed Project is unlikely to affect tree roosting species for several reasons. These bat species tend to select the largest available trees and snags in a given area; with the exception of select lodgepole pines that are encroaching within meadow habitats, the Project does not include the removal of trees larger than 24 inches DBH; and would retain/create large snags (three to seven per acre) that would provide suitable roosting habitat for these species. Removal of smaller trees would allow more resources (e.g., water and sun) for the retention and growth of large trees, which would also benefit special-status bats. Western red bats also select roost trees within riparian habitats. Implementation of **Mitigation Measure BIO-12** would minimize the removal of riparian trees that may provide roosting habitat for this species.

Considering that the Project requires minimal removal of trees and snags that are preferred roosting habitat, and with implementation of **Mitigation Measure BIO-12**, direct impacts are **less than significant**.

Indirect Impacts

The Project is expected to maintain or improve roosting habitat for bats by retaining snag availability on the landscape and by reducing the likelihood of catastrophic wildfire replacing forest stands. Many bat species prefer to forage over open and aquatic habitats, as these habitats provide more abundant invertebrate prey. In the long-term, implementation of the Project will create more open habitats by thinning tree cover, improving the floodplain function, and restoring aquatic habitat function in the Project area. Indirect impacts to bats are therefore considered **less than significant**.

Mesocarnivores

Direct Impacts

Human presence, use of construction vehicles and equipment, and vegetation removal could potentially result in disturbance of California wolverine and American badger, if present during implementation of the Project. In addition, ground disturbing activities could directly affect burrows that represent habitat for American badger. During surveys conducted in support of the Project, it was noted that meadows in the Project area support few burrows (Barry 2018). However, there is some potential for creation of new burrows in friable soils within the Project area. The following measures would minimize the potential for disturbance of California wolverine and American badger during implementation of the Project.

Mitigation Measures BIO-1, BIO-2, BIO-8, and BIO-14 would be implemented to minimize the potential for direct impacts to mammals, including California wolverine and American badger. Mitigation Measure BIO-1 states that work crews will attend an environmental awareness training prior to initiation of each work season, which will include a review of special-status mammals occurring at the site, and applicable protective measures. Mitigation Measure BIO-2 includes general construction measures such as limiting activities to designated work areas; locating staging areas on previously disturbed land; and limiting vegetation disturbance to those areas where such activities are necessary to achieve Project objectives.

Mitigation Measure BIO-8 requires a qualified biologist to conduct a clearance survey prior to each week's work; and to flag and avoid any burrows. Burrows that cannot be avoided would be inspected by a qualified biologist to determine whether they are actively inhabited. Uninhabited

burrows that cannot be avoided shall be collapsed by or in the presence of the biologist to avoid future occupation. Agreed-upon measures would be implemented as part of the Project.

Finally, Mitigation Measure BIO-14 states that, if special-status wildlife such as California wolverine and American badger are observed that may potentially be disturbed or harmed by Project activities, all such activities will cease until the animal has moved out of harm's way on its own accord.

With implementation of **Mitigation Measures BIO-1, BIO-2, BIO-8, and BIO-14**, direct impacts to California wolverine and American badger would be considered **less than significant**.

Indirect Impacts

Indirect impacts to California wolverine and American badger would be insignificant and short-term. Wolverines are habitat generalists, and American badgers primarily use grassland and meadow habitats. Minor changes in density, cover, and vegetation structure within the meadow and forest habitats in the Project area would not significantly impact these species. As described above for direct impacts, the Project includes environmental awareness training (Mitigation Measure BIO-1), general construction measures that limit the extent of work areas and timing of work (Mitigation Measure BIO-2), and protect burrows during implementation of Project activities (Mitigation Measure BIO-8). Over the long term, the Project would restore and enhance meadow and forest habitats representing habitat for these species, as well as minimizing the potential for catastrophic wildfire. Considering that the Project would result in a benefit to California wolverine and American badger over the long term, and with implementation of mitigation measures that would minimize the potential for habitat-related impacts in the short term, indirect impacts to these species would be **less than significant**.

b) *With implementation of mitigation, the Proposed Project will not have a substantial adverse impact on any riparian habitat or other sensitive natural communities identified in local or regional plans, policies, and regulations or by the CDFW or USFWS.*

The Project area supports 11 wet meadows (also called palustrine emergent wetlands) that are WOUS/WOS. Refer to Table 3.4-2 for a list and a brief description of each wetland. Portions of three of these wet meadows (i.e., Pem1-2, Pem1-5, and Pem1-10) are defined as fens, which are considered a sensitive natural community by CDFW. Montane riparian habitats scattered along the Middle Yuba River are also considered sensitive by CDFW.

The purpose of the Project is to restore floodplain function and raise the groundwater table within English Meadow, which would represent a potential benefit for wet meadows, fens, and riparian habitats in the Project area over the long term. However, the operation of heavy equipment, ground disturbance, and vegetation removal associated with floodplain restoration and enhancement activities could potentially result in short, minor adverse impacts to these habitats in the short term. These activities could also result in the introduction or spread of noxious weeds, which could degrade the quality of sensitive habitats over time. NID will implement **Mitigation Measures BIO-1, BIO-2, BIO-4, BIO-5, BIO-7, BIO-12, and BIO-13** to minimize the potential for impacts to sensitive habitats.

- Mitigation Measure BIO-1 states that work crews will attend environmental awareness training, which includes information on sensitive habitats, including wet meadows, fens, and riparian habitats, as well as measures required to avoid and protect these habitats.

-
- Mitigation Measure BIO-2 includes standard construction measures that would protect sensitive communities by requiring a qualified biologist with stop-work authority on site during all ground- and habitat-disturbing activities, requiring activities to be conducted within designated work areas, staging areas, and access routes, and limiting ground disturbance to those areas necessary to achieve Project objectives. In addition, a Project manager or representative on site at all times during work within the floodplain or along stream channels, where sensitive resources are present.
 - Mitigation Measure BIO-4 includes standard measures to minimize the potential for introduction or spread of noxious weeds.
 - Mitigation Measure BIO-5 states that areas subject to ground disturbance, excavation, and/or removal of herbaceous vegetation as part of Project restoration/enhancement activities will be monitored, and noxious weeds shall be controlled, annually for 3 years following each work season.
 - Mitigation Measure BIO-7 requires NID to obtain relevant permits required under the Clean Water Act and the California Fish and Game Code and to implement all conditions identified in the permits as part of the Project, including measures for the protection of wetlands and riparian habitats.
 - Mitigation Measure BIO-12 states that, riparian vegetation will be avoided to the greatest extent possible during implementation of floodplain restoration and enhancement activities. Exceptions may include, but are not limited to, removal of riparian shrubs for replanting as part of revegetation or for use in construction of restoration/enhancement structures (i.e., debris jams or riffles); or trimming of shrubs as needed to allow for installation of these structures.
 - Mitigation Measure BIO-13 states that fens will be flagged to delineated a 10-foot buffer from the edge of the fen; and that no Project activities will occur within the flagged protective buffer.

In addition, during the Tribal consultation conducted for the Proposed Project, Tribal representatives identified a spring associated with the NRHP-eligible resource. Refer to Section 3.18 for a complete description of the Tribal consultation. While the spring is located just outside the Project boundaries, Tribal representatives requested protection of the spring during implementation of the Project. Therefore, Mitigation Measure BIO-13 also includes flagging of the spring to delineated a 50-foot protective buffer and states that no Project activities (e.g., vegetation removal) will occur within the flagged protective buffer.

Considering that the purpose of the Project is to restore and enhance the English Meadow floodplain, including sensitive habitats within the floodplain, and with implementation of **Mitigation Measures BIO-1, BIO-2, BIO-4, BIO-5, BIO-7, BIO-12, and BIO-13**, the Project will have a **less than significant impact** on riparian habitat and other sensitive natural communities.

c) *With implementation of mitigation, the Proposed Project will not have a substantial adverse impact on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.*

In addition to the Middle Yuba River, the Project area supports riverine and wet meadow features that are considered WOUS/WOS. Refer to Table 3.4-1 and Table 3.4-2 for a list and a brief description of each feature.

The purpose of the Project is to improve watershed/floodplain function and resilience of English Meadow and the surrounding forest to achieve a number of benefits within the watershed including reducing the transport of bedload and fine sediment from the upper watershed into Jackson Meadows Reservoir; increasing seasonal retention and release of precipitation in the meadow floodplain aquifer; and enhancing habitat for meadow-dependent species. In order to achieve these objectives, NID would implement site preparation activities and restoration/enhancement treatments that would require excavation and fill within the mainstem Middle Yuba River and several additional perennial and intermittent streams in the Project area.

- Temporary fill would include:
- Materials required for dewatering within the Middle Yuba River, in French Creek and/or Secret Creek (along Meadow Lake Road), and/or in seven additional locations along the logging access road.
- Work within intermittent tributaries within English Meadow will be implemented during the dry season when no water is present. Therefore, dewatering will not be required within these features.
- Installation of river crossings in the mainstem Middle Yuba River Channel; and
- Installation of temporary culverts within French Creek and/or Secret Creek (if required).
- Permanent excavation/fill would include:
- Construction of debris jams and riffles within the mainstem Middle Yuba River and intermittent streams within the floodplain. Specifically, NID proposes to install 38 debris jams and nine riffles within the mainstem channel; and an additional four debris jams and approximately 20 riffles within intermittent streams.
- Implementation of bank stabilization (slope cut-back and plantings) to mitigate an active erosional feature along the mainstem.

In addition, the following treatments would require permanent excavation and/or fill within wet meadows:

- Log barriers would be placed in or adjacent to wet meadows, as necessary, to minimize unauthorized grazing and limit creation of cattle trails within these features; and
- Bank stabilization would be implemented to treat an area of active erosion within a portion of wet meadow Pem1-5.

NID would implement the following mitigation measures to minimize short-term impacts potentially occurring during implementation of restoration/enhancement treatments within WOUS/WOS:

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- Mitigation Measure BIO-1 states that work crews will attend environmental awareness training, which includes information on sensitive habitats, including WOUS/WOS, as well as measures required to avoid and protect these habitats.
 - Mitigation Measure BIO-2 includes standard construction measures that would protect sensitive communities by requiring a qualified biologist with stop-work authority on site during all ground- and habitat-disturbing activities, requiring activities to be conducted within designated work areas, staging areas, and access routes, and limiting ground disturbance to those areas necessary to achieve Project objectives. In addition, a Project manager or representative on site at all times during work within the floodplain or along stream channels, where sensitive resources are present.
 - Mitigation Measure BIO-7 requires NID to obtain relevant permits required under the Clean Water Act and the California Fish and Game Code and to implement all conditions identified in the permits as part of the Project, including measures for the protection of aquatic features and water quality within these features. All measures included as conditions of the permits would be implemented as part of the Project.
 - Mitigation Measure BIO-13 states that fens will be flagged to delineate a 10-foot buffer around the edge of the fen; and that no Project activities will occur within the flagged protective buffer.
 - Mitigation Measures HAZ-1, HAZ-2, HYD-1, and HYD-2, would minimize the potential for short-term impacts to water quality through contractor and subcontractor training regarding appropriate work practices, including hazardous material spill prevention and response; preparation and implementation of a Spill Prevention, Control, and Countermeasures Plan (SPCCP); implementation of a SWPPP and associated water quality BMPS; and development and implementation of an agency-approved Dewatering and Diversion Plan.
 - Mitigation Measure HYD-3 commits NID to monitoring of hydrological conditions in the Middle Yuba River and the associated floodplain following completion of treatments. This includes, but is not limited to, evaluation of the elevation of the thalweg over time; comparison of streamflow hydrographs; monitoring of water temperature; obtaining groundwater elevation data from California State University groundwater wells, if possible; inventory of stream conditions (large woody debris, fish habitat and bank stability); and monitoring of headcut locations. NID will adaptively manage the project and make in-field adjustments, as necessary. Such adjustments may include, but are not limited to, adding additional woody debris; altering the configuration of debris jams and riffles; and/or re-seeding of revegetation areas. The results of monitoring shall be documented and submitted to appropriate resource agencies annually.

Considering that the Project is designed to restore riverine and wet meadow ecological function within the Project area, and with implementation of **Mitigation Measures BIO-1, BIO-2, BIO-7, BIO-13, HAZ-1, HAZ-2, HYD-1, HYD-2, and HYD-3** to minimize the potential for temporary Project-related impacts, any impacts to WOUS/WOS, including wetlands, would be **less than significant** and beneficial in the long-term.

d) *With implementation of mitigation, the Proposed Project would not interfere substantially with the movement of any native resident or migratory species or with established native resident or migratory wildlife corridors because the Project is not located in a known migration corridor or recognized flyway; and the Proposed Project would not impede the use of native wildlife nursery sites.*

The Project area is not located in a known migration corridor or recognized flyway and would not impede the use of native wildlife nursery sites.

The movement of terrestrial species (e.g., mammals such as deer or mesocarnivores, or birds) would not be significantly affected during implementation of restoration/enhancement activities. The work crews would be small (between two and ten people), and activities at any given time would be focused in relatively small areas in relation to the large size of the Project area. As described in **Mitigation Measure BIO-2**, activities would be limited to a designated work area (including the work corridor and staging area); and staging areas and access routes will be located on developed roads and areas that have already been disturbed. Furthermore, work would be limited to the hours between sunrise (but no earlier than 7:00 a.m.) and sunset (but no later than 7:00 p.m.), avoiding the period after sunset and before sunrise when many wildlife species are active. Impacts to nesting birds would be minimized through implementation of **Mitigation Measures BIO-10** and **BIO-11**, which require nesting bird surveys prior to work activities scheduled during the breeding season (February 1 to September 1); and implementation of protective buffers around active nests. Finally, **Mitigation Measure BIO-14** states that, if special-status wildlife are observed that may potentially be disturbed or harmed by Project activities, all such activities will cease until the animal has moved out of harm's way on its own accord.

Under existing conditions, an impassible barrier located 400 feet downstream of English Meadow prevents the movement of fish between Jackson Meadows Reservoir upstream into the Project area (Vander Meer, pers. comm., 2021). Within the Middle Yuba River in the Project area, rainbow trout are able to move freely within the river only during periods of high flow, from mid-September through early July (approximately). Conversely, trout are typically constrained within deep pools during low-flow periods (from late July to mid-September, approximately) (Barry 2018, Mink, pers. comm., 2021b).

The movement of fish (e.g., trout) within the mainstem Middle Yuba River could be temporarily affected by the dewatering of portions of the channel required for installation of river crossings or construction of debris jams and riffles. Similarly, the movement of fish, if present within French Creek and Secret Creek, may be temporarily affected by dewatering and installation of culverts, if required. To minimize impacts to fish, NID would implement **Mitigation Measure BIO-6**, which states that, during dewatering, a team of qualified biologists will capture and relocate any stranded fish to watered areas downstream of the work area. A record will be maintained of all fish that are captured and relocated, which will be provided to CDFW following completion of each work season. **Mitigation Measure BIO-7** requires NID to obtain relevant permits required under the Clean Water Act, the Porter-Cologne Water Quality Control Act, and the California Fish and Game Code and to implement all conditions identified in the permits as part of the Project, including measures for the protection of fish and other aquatic species.

Following completion of the Project, movement of fish within the Middle Yuba River is expected to be similar to existing conditions. While the debris jams and riffles are intended to raise the thalweg of the river, thus potentially decreasing depth of flows in some areas, the structures will integrate natural materials (e.g., trees and woody debris) that are permeable and will allow for the movement of water and organisms through the structure during high flows. In addition, the structures will provide cover for smaller fish or other organisms from predators and would result in the creation of larger pools for fish to over-summer in (Fink, pers. comm., 2021).

Considering that purpose of the Project is intended to restore and enhance aquatic and terrestrial habitats in the Project area; that implementation of treatments would be short-term and temporary; and with implementation of **Mitigation Measures BIO-2, BIO-6, BIO-7, BIO-10, BIO-11, and BIO-14**, any impacts on the movement of wildlife would be **less than significant**.

e) *With implementation of mitigation, the Proposed Project will not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.*

Both Nevada and Sierra counties have a several policies and ordinances that protect riparian corridors. These policies are detailed in the Wildlife and Vegetation Element of the Nevada County General Plan (Nevada County 2014) and the Plants and Wildlife Element of the Sierra County General Plan (Sierra County 2012). These policies are generally only applicable to ministerial Projects that require approval by the counties. The Proposed Project is subject to approval by the NID Board of Directors, rather than the counties. The Project is, nevertheless, consistent with the goals, objectives and policies for these plans. For example, the Wildlife and Vegetation Element of the Nevada County General Plan requires the management of significant areas to achieve sustainable habitat (Goal 13.1); discourages intrusion and encroachment by incompatible land uses in significant and sensitive habitats (Objective 13.1); provides for the integrity and continuity of wildlife environments (Objective 13.3); supports the acquisition, development, maintenance and restoration, where feasible, of habitat lands for wildlife enhancement (Objective 13.4); and supports the continued diversity and sustainability of the habitat resource through restoration and protection (Objective 13.5). Similarly, the objective of the Plants and Wildlife Element of the Sierra County General Plan is to protect and defend the County's abundant and diverse plant and animal species. General Guideline E for Wildlife Habitat, states that "the ideal model for preserving or restoring a terrestrial wildlife habitat will be to mimic the historic conditions of that habitat in the local area."

Considering that the purpose of the Project is to restore and enhance English Meadow and the surrounding forests, the Project would not conflict with any local policies or ordinances protecting biological resources. Therefore, there is **no impact**.

f) *The Proposed Project will not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.*

The Proposed Project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan because the Proposed Project does not occur in an area covered by any of these types of plans (CDFW 2019, USFWS 2021). Therefore, there would be **no impact**.

3.4.4 Mitigation Measures

BIO-1. Environmental Awareness Training.

- Work crews shall attend an environmental awareness training prior to initiation of each work season. The training shall be conducted by a qualified biologist and shall include a review of:
- Habitat requirements and natural history of special-status plant and wildlife species and resident fish known to occur or potentially occurring on site;
- Descriptions of noxious weeds known to occur or potentially occurring on site;
- Location of sensitive habitats occurring on site;
- Legal protections for special-status species or sensitive habitats and associated penalties; and
- Mitigation measures, Project-specific protective measures, and conditions required by agency permits to be implemented as part of the Project.
- Interpretation shall be provided for non-English speaking workers.
- The training shall be provided for any new workers prior to their performing work in the Project area.
- Upon completion of the training, attendees shall sign a form stating they attended the program and understand all protection measures. The forms shall be kept in Project records.

BIO-2. General Construction Measures.

The District shall implement the following to minimize disturbance of sensitive resources in the Project area:

- A qualified biologist shall be on site prior to and during all ground- and habitat-disturbing activities, and shall have authority to immediately stop any activity that is not consistent with Project mitigation measures or agency permit conditions, and/or to order any reasonable measure to avoid or minimize impacts to fish and wildlife resources.
 - The qualified biologist shall be knowledgeable about/experienced in the biological and natural history of local birds, fish, and wildlife resources present in the Project area.
- Restoration/enhancement activities shall be limited to a designated work area (including the work corridor and staging area). The work area shall be clearly identified on the construction drawings and shall be staked and flagged where necessary prior to initiation of restoration/enhancement activities.
- All staging areas and access routes shall be located on developed roads and areas that have already been disturbed. Access routes shall be planned carefully and shall utilize previously disturbed areas or areas of proposed Project-related disturbance, to the degree possible.

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- Restoration/enhancement activities, including activities within equipment staging areas, shall be limited to the hours between sunrise (but no earlier than 7:00 a.m.) and sunset (but no later than 7:00 p.m.).
 - The District shall ensure that all equipment and vehicles shall be removed from the Project site following completion of the Project.
 - Ground and vegetation disturbance shall be limited to those areas where such activities are necessary to achieve Project objectives.
 - Stockpiled materials shall be covered if the National Weather Service declares a 50 percent or greater chance of precipitation.
 - Stockpiled materials or other construction materials/equipment that may provide shelter for wildlife shall be inspected for the presence of wildlife at the beginning of each workday. If wildlife species are observed, they shall be allowed to leave on their own accord.
 - A Project manager or representative shall be on site at all times during work within the floodplain or stream channels.

BIO-3. Special-Status Plant Protection.

- Known populations of special-status plants (e.g., woolly-fruited sedge and starved daisy) shall be flagged with a 25-foot buffer. No ground-disturbing activities or vegetation removal would occur within this buffer.
- Surveys for special-status plants were conducted in 2018 and 2019. Based on the CDFW survey protocol (CDFW 2010), surveys within forest habitats are considered viable for a period of 5 years, while surveys within wetland and grassland habitats should be conducted annually. Accordingly:
- Surveys within upland forest habitats where forest treatments shall be implemented do not need to be repeated over the term of the Proposed Project (2021–2024).
- Surveys within wetland and grassland habitats where mainstem and floodplain treatments and floodplain vegetation treatments shall be implemented shall be surveyed annually over the term of the Proposed Project. Prior to each work season, a qualified biologist shall survey areas where mainstem and floodplain treatments and floodplain vegetation treatments shall be implemented.
- If new populations of special-status plants are observed, they shall be flagged with a 25-foot buffer. No ground-disturbing activities or vegetation removal would occur within this buffer.

BIO-4. Noxious Weed Prevention.

- To the extent practicable, known populations of noxious weeds shall be flagged and avoided during Project implementation.
- All equipment shall be cleaned and inspected by NID staff or an authorized individual for the presence of mud or vegetative debris (including noxious weed seed) prior to entry to the Project area.

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- Only certified weed-free materials shall be used for erosion control and site stabilization.
 - Construction crews shall periodically inspect for, remove, bag, and properly dispose of weed seed on clothing and boots.
 - The following measures shall be implemented to minimize the potential for the introduction or spread of noxious weeds associated with borrow sites or other areas where soils shall be excavated and used for fill:
 - Noxious weeds and/or their seed heads shall be removed prior to ground disturbance or removal of herbaceous vegetation. Weeds and/or seed heads shall be bagged and disposed of properly.
 - Certified weed-free erosion control and soil stabilization measures shall be installed, where necessary, immediately following completion of ground disturbance, excavation, or removal of herbaceous vegetation.
 - Where appropriate, these sites shall be mulched and revegetated.
 - NID shall continue to work with the USFS Range Managers and the USFS permittee to discourage unauthorized grazing on NID lands in the Project area.

BIO-5. Noxious Weed Monitoring.

- All areas subject to ground disturbance, excavation, and/or removal of herbaceous vegetation (resulting in a denuded condition) as part of Project restoration/enhancement activities shall be monitored for the presence of noxious weeds annually for 3 years following each work season (i.e., areas where Project restoration/enhancement activities are completed in 2021 shall be monitored in 2022, 2023, and 2024; areas where Project restoration/enhancement activities are completed in 2022 shall be monitored in 2023, 2024, and 2025, etc.)
- Any noxious weeds present in these areas shall be controlled using best management practices.

BIO-6. Fish Capture and Relocation.

- NID shall implement the following to avoid potential impacts to resident fish within the Middle Fork Yuba River, or within French Creek and/or Secret Creek (located along Meadow Lake Road):
- During dewatering, a team of qualified biologists shall use electrofishing and /or seines to capture and relocate any stranded fish. Fish shall be placed in the mainstem downstream of the work area.
- A record shall be maintained of all fish that are captured and relocated. This shall include biologist names, date, number and species of fish, lengths, and method of capture. The completed record shall be provided to CDFW following completion of each work season.

BIO-7. Clean Water Act, Porter Cologne Water Quality Control Act, and California Fish and Game Code Permitting and Compliance.

- NID shall obtain relevant permits required under the Clean Water Act (e.g., Sections 401, 402, and 404), the Porter-Cologne Water Quality Control Act, and the California Fish and Game Code (e.g., Section 1602 Lake or Streambed Alteration Agreement).
- All conditions identified in the permits shall be implemented as part of the Project.

BIO-8: Protection of Burrows.

- A qualified biologist shall conduct a clearance survey prior to each week's work to determine whether animal burrows are present in areas where floodplain treatments, floodplain vegetation treatments, or forest treatments are proposed.
- Animal burrows shall be flagged and avoided to the degree possible.
- Any burrows that cannot be avoided shall be inspected by a qualified biologist to determine whether they are actively inhabited.
- Uninhabited burrows that cannot be avoided shall be collapsed by or in the presence of the biologist to avoid future occupation.
- If a burrow is inhabited and cannot be avoided, the biologist shall determine alternative avoidance, protection, and/or exclusion measures. Such measures would depend on the species involved, site-specific conditions and nature and extent of work activities to be implemented near the burrow. Measures could include, but are not limited to, implementation of a protective buffer around the burrow or exclusion/evacuation and collapse of the burrow.

BIO-9. Sierra Nevada Yellow-Legged Frog Protection.

- Based on studies conducted by a species expert and agency consultation, there is low potential for SNYLF to be present in the Project area, and therefore a low potential for the Project to affect this species. The following measures are provided to describe methods for avoiding the species, in the unlikely event that individuals are present.
- Perennial riverine features (i.e., the Middle Fork Yuba River, R3UB2-1, and R3UB2-2) shall be surveyed by a qualified biologist for SNYLF immediately prior to dewatering and ground-disturbing work within the bed and/or along the bank of the feature.
- If SNYLF are observed, the following steps shall be taken to avoid the species:
- Any proposed activities within 100 feet upstream and downstream of the observation shall be postponed until appropriate measures are developed to avoid the individuals considering the location of the observation, number of individuals involved, and proposed work activities. Such measures may include, but are not limited to, altering the location or timing of Project activities.
- NID shall notify resource agencies (USFWS, CDFW) within 24 hours of the presence of SNYLF and shall provide a description of proposed measures to be implemented to avoid the species.

- Upon approval, all measures shall be implemented as part of the Project.
- No handling or relocation of SNYLF shall occur as part of the Project.
- Intake piping used dewatering shall be fitted with a screen or similar device (e.g., sock filter).
- Plastic mono-filament netting or similar materials shall not be used as part of the Project.

BIO-10. Protection of Forest-Nesting Birds.

- If practicable, forest treatments shall take place outside the breeding for the forest-nesting species potentially occurring in the Project area (February 1 – September 1).
- If work must take place during the breeding season, the Project area and a 0.25-mile radius shall be surveyed by a qualified biologist for forest-nesting birds no more than 2 weeks prior to forest treatments.
- If an active nest is observed, the following species-appropriate protective buffers shall be implemented around the nest site:

Species	Protective Buffer Size
Northern goshawk, California spotted owl, great gray owl	0.25 mile
Bald eagle	660 feet
Other raptors	500 feet
All other migratory birds	Avoidance of nest tree

- The results of the nest surveys shall be provided to CDFW.
- No Project activities shall occur within the protective buffers until the breeding season has ended or the qualified biologist has determined that the young have fledged.

BIO-11. Protection of Meadow-Nesting Birds.

- If practicable, floodplain vegetation treatments shall take place outside the breeding season for the meadow-nesting species potentially occurring in the Project area (February 1 – September 1).
- If work must take place within the breeding season, the Project area and a 0.25-mile radius shall be surveyed by a qualified biologist for meadow-nesting birds no more than 2 weeks prior to floodplain vegetation treatments.
- If active nests are identified, the biologist shall develop and implement appropriate protective buffers, considering the species, location of nest, and the nature of activities proposed within the vicinity of the nest.
- The results of the nest surveys shall be provided to CDFW.

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- No Project activities shall occur within the protective buffers until the breeding season has ended or the qualified biologist has determined that the young have fledged.

BIO-12. Protection of Riparian Habitat.

- Riparian vegetation will be avoided to the greatest extent practicable. Exceptions may include (but are not limited to):
- Removal of riparian shrubs and sod may be required for use restoration/enhancement structures and revegetation;
- Trimming of riparian shrubs/trees to allow for installation of restoration/enhancement structures.

BIO-13. Protection of Fens and Springs.

- Fens shall be flagged (using pins flags, wooden stakes, and/or plastic flagging tape) to delineate a 10-foot buffer from the edge of the fen;
- During the Tribal consultation conducted for the Proposed Project, it was identified that there is a spring associated with the NRHP-eligible resource located within the Project area. This spring (which is located adjacent to, but outside the Project area) shall be flagged using pins flags, wooden stakes, and/or plastic flagging tape) to delineate a 50-foot buffer from edge of the spring or limits of wetland vegetation associated with the spring, whichever is greater.
- No Project activities shall occur within the flagged protective buffers.

BIO-14. General Wildlife Protection.

- If special-status wildlife are observed that may potentially be disturbed or harmed by Project activities, all such activities shall cease until the animal has moved out of harm's way on its own accord.

Refer also to **Mitigation Measures HAZ-1** and **HAZ-2** in Section 3.9, Hazards and Hazardous Materials, and to **Mitigation Measures HYD-1, HYD-2, and HYD-3** in Section 3.10, Hydrology and Water Quality.

3.5 Cultural Resources

Would the Project...	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains , including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.5.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact on the environment related to cultural resources if the Project would:

- Cause a substantial adverse change in the significance of a unique historical or archaeological resource pursuant to Section 15064.5 of the State CEQA Guidelines, respectively; or
- Disturb any human remains, including those interred outside of formal cemeteries.
- Section 15064.5 of the State CEQA Guidelines defines “substantial adverse change” as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings.

3.5.2 Setting

Information in this section is based on a confidential Cultural Resource Inventory covering the Project area that provides an analysis of cultural resources were present in or adjacent to the Project area and assesses the sensitivity of the Project area for undiscovered or buried cultural resources (Giambastiani et al. 2019). The confidential report and continuation sheet can be made available to qualified individuals by contacting NID.

This section provides a summary of the methods used to obtain information on cultural and historical resources in the Project area, and the resulting description of those resources.

3.5.2.1 Methods

Literature Review

Prior to fieldwork, G2 Archaeology (G2) conducted a literature review for the project Area of Potential Effect (APE) and a one-mile radius⁴. Records were obtained from the North Central Information Center in Chico, Northeast Information Center in Sacramento, and Tahoe National Forest, Sierraville and Truckee Ranger District Offices. Historic topographic, survey, and patent maps were also consulted, including General Land Office survey plats, historic and modern U.S. Geological Survey 7.5-minute, 15-minute, and 30-minute topographic quadrangles.

The sources listed above were reviewed to assess the presence of cultural resources and the potential for buried archaeological sites within the Project area. Assessing the sensitivity for an area to contain buried archaeological sites takes into consideration the potential for the presence of buried cultural deposits by examining past use of the study area; factors that support human occupations such as access to resources and water; slope; and the underlying geomorphology of the area. Generally speaking, a large proportion of archaeological sites are located within 150 meters of perennial water sources and on relatively flat ground.

Pedestrian Surveys

Cultural pedestrian surveys were conducted within the APE between July 30 and August 3, 2018 (Giambastiani et al. 2019). Surveys were conducted consistent with Section 106 of the National Historic Preservation Act (NHPA) and CEQA. All sites were evaluated for their eligibility to be listed in the National Register of Historic Places (NRHP) per the 2014 *U.S. Army Corps of Engineers Guidelines for Compliance with Section 106 of the NHPA*,

Surveys were conducted by three to four archaeologists walking parallel transects at 25-meter intervals. Access to the Project area was restricted by unmaintained logging roads, felled trees, and young tree stands. Crews used nearby Forest Service roads to get close to particular survey areas and traveled the remaining distance on foot. Ground surface visibility varied depending on vegetation. Portions of the survey within forested stands were limited by extensive duff and downed timber, well-watered areas within the meadow supported stands of tall grasses, while ground surfaces along the river and along the edge of the tree line were relatively clear of debris and vegetation.

During survey fieldwork, archaeological sites were generally recorded as encountered. All newly identified sites were fully recorded, and all previously recorded sites were re-recorded and updated. Artifacts were analyzed to determine production trends, manufacturing date ranges, and other diagnostic attributes, and to identify functional and use-related characteristics. All sites were plotted on project maps in NAD 83 using a Trimble Geo 7x Series GPS receiver with sub-meter accuracy; Pathfinder 5.1 was used for post-processing and ArcGIS 10.5 was employed to manage the data. At least two 16-megapixel digital photographs were taken as overviews of each

⁴ The APE was originally defined to include a 560-acre area encompassing the Project area, plus several areas that have since been excluded from the Project. This section describes only those resources that fall within the current Project area shown in Map 2-3.

site, and all photos were compiled and prepared for long term data storage. No arbitrary or natural datums were set in the field; instead, UTM datum centroids were generated post-field using GIS analysis. Isolated finds were defined as single artifacts of either prehistoric or historic age. Each isolate was plotted and briefly described on an isolate log.

3.5.2.2 Results

Cultural History of the Project Area

Ethnohistory

The English Meadow project area is in the northern Sierra Nevada Mountains, northwest of Lake Tahoe and the Truckee River Basin. The history of human presence in the Sierra Nevada has generally been divided into several temporal intervals reflecting a series of adaptive shifts in the context of changing climate, variable environmental productivity, and long-term human population growth. As summarized by Elston et al. (1994) and Zeier et al. (2002), these intervals include the Pre-Archaic (~11,500 to 8000 years before present [B.P.]), the Early Archaic (8000 to 5000 B.P.), the Middle Archaic (5000 to 1300 B.P.), and Late Archaic (1300 to 150 B.P. [historic contact]).

The Pre-Archaic interval (~11,500 to 8000 B.P.) encompasses the Terminal Pleistocene-early Holocene transition, which was initially marked by cool, moist conditions and gradually shifted toward a somewhat drier climate. As pluvial lakes desiccated, the earliest human populations in the West may have focused subsistence pursuits on a variety of game, including small mammals, and on lowland lakeshore resources. Upland areas in the Sierra Nevada were likely used only seasonally and for brief periods of time. Population densities were low and human groups were highly mobile, moving from place-to-place following game herds and ripening plant resources.

Archaeological data from upland Early Archaic sites reflect the relatively limited use of upper Sierran landscapes, presumably due to the limitations imposed by seasonal climate. At the onset of the Middle Archaic around 4000 B.P., environmental conditions again changed considerably. Increases in effective precipitation resulted in the greater productivity of resources associated with lakes and marshes. Human populations increased dramatically during the Middle Archaic, a change leading to pronounced cultural elaborations that included an “explosive” increase in rock art (Delacorte 1997:15), an increase in settlement centralization, and a greater complexity of site types.

The transition from the Middle to the Late Archaic, sometime between 1500 and 1300 B.P., is marked archaeologically by changes in technology, subsistence patterns, and settlement. Technologically, the Late Archaic saw the introduction of the bow and arrow; a diversification in ground stone implements and a shift toward the use of mortar-and-pestle; and a greater emphasis on the use of small flake tools. Subsistence and settlement changes reflect the continued growth of local and regional populations.

During historic times, the Upper Yuba River area was occupied by the Nisenan or Southern Maidu of the Penutian language group (Beals 1933; Kroeber 1925; Littlejohn 1928; Wilson and Towne 1978), and by the Washoe immediately to the east near Lake Tahoe and the crest of the Sierra Nevada. In addition, during the Assembly Bill (AB) 52 Tribal consultation conducted for this Project, the Project area was specifically identified as an aboriginal land of the Washoe

(Darrel Cruz, pers. comm., 2021). Refer to Section 3.18 for a detailed discussion of the results of the Tribal consultation.

Spanish missionization (ca. 1769-1833) had a dramatic effect on many Native Californian populations, but the Hill Nisenan appear to have been spared the forced removal to faraway coastal locations. The well-documented 1833 epidemic decimated many native groups in the greater Sacramento Valley, including the Valley Nisenan, but bypassed the Hill Nisenan, perhaps due to their remote location in the foothills and higher elevations.

The Nisenan were not impacted by the intrusion of early Euro-American trappers and fur traders. However, their existence was dramatically altered by the Gold Rush of 1848 and the subsequent influx of Euro-American miners (Beals 1933). Widespread persecution, destruction of villages, and outright killings by White settlers devastated the Hill Nisenan. By 1850, the few remaining Hill Nisenan lived at the edges of towns, supporting themselves and their families through wage labor in agricultural, ranching, logging, and domestic pursuits.

Washoe territory encompassed the area just south of Honey Lake in the north, to the Pine Nut Mountains in the east, to somewhere near Antelope Valley in the south, and up along the west side of Lake Tahoe. The geographic variance in this territory, along with its diverse and ubiquitous distribution of subsistence resources, afforded the Washoe a somewhat more sedentary lifestyle than other Great Basin peoples. Washoe settlement-subsistence patterns indicates that winter camps were located at lower elevations on valley bottoms and that the peripheral, higher elevation valleys and surrounding hills were targeted in the late summer and fall for logistical forays. Several permanent settlement sites were established throughout Washoe territory, providing elders and young children a place to reside while temporary groups mobilized in search of food. Procurement activities depended on the availability of resources in proximity to habitation areas.

The social, ceremonial, and religious life of the Washoe included summer gatherings at Lake Tahoe and the fall pinyon harvest, both important times for social interaction, information sharing, teaching and learning, storytelling and games, ceremonies, gift and other economic exchanges, and various religious activities.

Washoe lifeways were not severely affected by Euro-American incursions until after the discovery of the Comstock Lode in 1858. Gold and silver booms brought many settlers to the Sierra Nevada, including miners, farmers, and ranchers. Ranching and mining activities had devastating effects on traditional settlement and subsistence practices. Both activities denuded the landscape, altered the ecology of the area, and deterred large game from visiting valleys and marshlands. During this period, many Washoe adapted in ways that required only slight changes to traditional subsistence and settlement cycles (Tucker et al. 1992).

Euro-American History

In 1849, Henness Pass Road, the lowest pass over the Sierra, became the primary emigrant trail from the Comstock mines in Virginia City to California gold country. It became a toll road in 1852, connecting Verdi, Nevada to Yuba and Nevada counties via Henness Pass (6,700 ft) and down the ridge between the North and Middle forks of the Yuba River (Tahoe National Forest 2014).

Between 1848 and 1859, the mining industry dominated the region, and all other pursuits were accomplished in support of mining and mining towns. English Meadow lies in an area that was

referred to as the “Northern Mines,” characterized by a high population of miners, extremely productive mines, and availability of water, especially compared with the mines of the southern Sierra Nevada. The current APE was originally incorporated into Yuba County in 1850, although the current boundaries for Nevada and Sierra counties were delineated in 1851 and 1852 (Wells 1880).

The Sierra Nevada Lake Water & Mining Company constructed the Rudyard, or English Reservoir, within the APE from 1854 to 1858 to provide water to support their hydraulic mining operations. The Rudyard (English) Reservoir was the largest reservoir in the state by the time that the North Bloomfield Gravel Mining Company (NBGMC) purchased it in 1867. In 1872, The Milton Mining and Water Company purchased the reservoir in 1872.

Although hydraulic mining proved a boon to mining companies and their investors, it was environmentally scarring and had profound effects on the hydrology of the immediate area and downstream communities. In addition to shearing off bluffs, destroying rocks, and contributing to erosion, permanently marring the environment, hydraulic mining resulted in extensive tailings piles, which were often dumped into local creeks and rivers.

In 1882 litigation was brought against the NBGMC by a farmer in Marysville to stop hydraulic mining. The clash between mining and anti-hydraulic mining groups was brought to a head with the destruction of the Rudyard (English) dam. On Monday, June 18, 1883, at about 5:00 am, the dam tender heard two loud explosions and the crashing of the central (main) English Dam (Bowie 1885b; Foley and Morley 1949; Ziebarth 1983). A 175-foot length of the dam was carried away by rushing water, and within one-and-a-half hours, the reservoir was fully emptied. The torrent of water was described as a 75- to 80-foot-high wall of water, timber, and trees that had been ripped from the ground. Flooding took out dams, canals, houses, and bridge crossings as it traveled downriver towards Marysville. Thanks to the first long-distance telephone line, built in 1878 by a group of mining companies (including North Bloomfield Mining and Gravel Company, Milton Mining and Water Company, and the Eureka Ditch Company), N.C. Miller, the water agent in French Corral, was able to call and warn downstream communities. The townspeople were prepared for the inundation, some even excited by the prospect of a “roaring flood,” but the water breached the Linda Township levee to the east, saving Marysville from destruction (Ellis 1939; Foley and Morley 1949).

Just over six months later, on January 7, 1884, Judge Lorenzo Sawyer, formerly of Nevada County (Wells 1880), ruled in favor of anti-debris leagues in the case of *Woodruff v. North Bloomfield Gravel Mining Company*, effectively ending hydraulic mining in California.

Regional timber and logging activities paralleled the mining boom, supplying essential lumber for buildings, structures, and towns, as well as canals, flumes, and dams. By the 1900s, however, many of the primary forests in the Truckee area had been harvested and, one by one, lumbering companies began to shut down. By the 1920s only the operation at Hobart Mills had substantial holdings of timber and was still producing lumber. The mill continued to operate until 1936 (Wilson 1992).

The history of livestock grazing in the northern Sierra Nevada dates back to the decade of the California Gold Rush (1850s) when early ranchers had free, unregulated use of the mountain ranges. Cattle and sheep were driven to the area from coastal and southern California ranches and Texas with the sole purpose of providing sustenance to the many mine camps in the area.

The need for agriculture in this area was further perpetuated by the discovery on the Comstock (1859-1876) and subsequent development of Virginia City, Nevada, the construction of the transcontinental railroad (1868), and the associated increase in logging needed to supply all of these efforts. By 1880, there were 2,791 head of sheep in Nevada County, which paled in comparison to the 58,805 sheep grazing in neighboring Placer County, and 4,053 head of cattle (Burcham 1956:414-416).

Records Search and Pedestrian Survey Results

Twelve cultural resources were documented during pedestrian surveys. Of these 12, five are located within the Project area.

One prehistoric site, a bedrock milling feature was identified. The site is recommended eligible for NRHP listing under Criterion D. The remaining four sites are isolated finds, including two prehistoric secondary basalt flakes, an historic aluminum hardhat, and an historic rectangular aqua medicine bottle.

3.5.3 Discussion

- a) *The Proposed Project would not cause a substantial adverse change in the significance of an historical or archeological resource as defined in Section 15064.5 of the State CEQA Guidelines.*

The Project area includes one archeological site, a bedrock milling station, that is recommended eligible for NRHP listing under Criterion D. Adverse changes to the significance of this site would be avoided through implementation of **Mitigation Measures CULT/TRIB-1, CULT/TRIB-2, and CULT/TRIB-3**. Mitigation Measure CULT/TRIB-1 states that NID will design and implement a Worker Education Program for Cultural Awareness for all workers involved in field operations. The Program will include a review of archeology, history, and Native American cultures associated with cultural and Tribal cultural resources (TCRs) in the Project vicinity; and a review of applicable ordinances, laws, and regulations, as well as Project-specific measures and procedures, pertaining to cultural resources and TCRs, etc. Refer to Section 3.5.4 for a complete description of the Program.

Mitigation Measure CULT/TRIB-2 states that NID will, in consultation with interested Tribes, develop educational signage informing the public regarding federal and state regulations prohibiting the removal or destruction of Tribal cultural resources. The signage will be posted in locations where it is most likely to be viewed by the public (e.g., at potential entrance points to Project area). Finally, NID will flag the boundaries of the NRHP-eligible cultural resource occurring within the Project APE as a Special Treatment Area. With the exception of vegetation management, Project activities will be excluded from the flagged boundary. Vegetation management within 50 feet of the flagged boundary shall be conducted using hand tools only, and no use of mechanical equipment (e.g., masticator) or other ground-disturbing activities will be permitted.

As described in the Cultural Resources Inventory developed for the Project (Giambastiani 2019), ground surface visibility varies depending on density of vegetation and presence of extensive duff and downed timber. Therefore, previously unidentified archaeological resources may be encountered during work within heavily vegetated portions of Project area; and subsurface

resources may be uncovered during ground disturbance activities. Mitigation Measure CULT/TRIB-3 sets forth a protocol that will be implemented if an inadvertent discovery of TCRs, archaeological resources, or other cultural resources/materials is made during Project-related construction activities. The protocol includes pausing work within 100 feet of the discovery; contacting the NID Project Manager, NID Qualified Professional Archaeologist, and the Tribal Representative from consulting Tribes; determining whether the resource is potentially significant; and, if necessary, developing appropriate measures to protect the site.

With implementation of **Mitigation Measures CULT/TRIB-1, CULT/TRIB-2 and CULT/TRIB-3**, impacts to historical or archeological resources would be **less than significant**.

b) The Proposed Project would not disturb any human remains, including those interred outside of formal cemeteries with implementation of mitigation.

Human remains were not discovered during the current field investigation' however, there is some potential for buried human remains to be encountered during ground disturbing activities associated with the Project. **Mitigation Measure CULT/TRIB-4** sets forth protocols that will be implemented in the case of human remains discovery including, but not limited to, ceasing work; contacting the NID Program Manager, who will notify the appropriate County sheriff and Coroner to determine whether the remains are those of Native American descent. If the remains are those of Native American descent, the Native American Heritage Commission will be contacted to contact the most likely descendant (MLD) and to develop appropriate treatments. Refer to Section 3.5.4, below, for the full text of the measure and protocol details.

With implementation of mitigation, this impact would be **less than significant**.

3.5.4 Mitigation Measures

NID has consulted with local affiliated tribes as part of the AB 52 process, and shall 1) continue to work with Tribal Cultural Resources Officers as part of the interdisciplinary Project team, and 2) implement the following agreed-upon mitigation measures:

CULT/TRIB-1. Worker Education Program for Cultural Awareness

- NID shall design and implement a Worker Education Program for Cultural Awareness, in coordination with consulting Tribes, that shall be provided to all Project personnel who may encounter and/or alter historical resources, unique archaeological properties, or Tribal Cultural Resources (TCRs) including construction supervisors and field personnel. No worker shall be involved in field operations without having participated in the Worker Education Program for Cultural Awareness. This Program shall include, at a minimum:
- A review of archaeology, history and Native American cultures associated with cultural and TCRs in the Project vicinity;
- TCRs are defined under PRC Section 21074(a)(1) and (2) as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe” that are either included or determined to be eligible for inclusion in the California Register or included in a local register of historical resources, or a resource that is determined to be a Tribal cultural resource by a lead agency, in its discretion and supported by substantial evidence.

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- The NAHC further defines TCRs to include:
 - Prehistoric sites representing the material remains of Native American societies and their activities.
 - Ethnohistoric sites, defined as Native American settlements occupied after the arrival of European settlers in California.
 - Areas of traditional cultural significance which have been, and continue to be important to the Native peoples today. They include Native American sacred areas where religious ceremonies are practiced or which are central to their origins as a people. They also include areas where Native Americans gather plants for food, medicinal, or economic purposes.
 - A review of applicable local, state and federal ordinances, laws and regulations pertaining to historic preservation;
 - A discussion on confidentiality of cultural sites and item locations;
 - A discussion of procedures to be followed in the event that unanticipated cultural and/or Tribal Cultural resources are discovered during implementation of the Project;
 - A discussion of disciplinary, fines, and other actions that could be taken against persons violating historic, cultural, and Tribal preservation laws and NID policies which may include immediate termination of contracts and associated legal penalties and consequences;
 - Review of appropriate avoidance and minimization measures for resources that have the potential to be located on the project site and will outline what to do and whom to contact if any potential TCRs or archaeological resources are encountered. The program will underscore the requirement for confidentiality and culturally appropriate treatment of any find with cultural significance to Native Americans Tribal values;
 - A statement by the contractor or applicable employer agreeing to abide by the Worker Education Program for Cultural Awareness, NID policies and other applicable laws and regulations; and
 - All personnel receiving the Cultural Awareness Program training shall be required to sign a form that acknowledges receipt of the training.
 - The Worker Education Program may be conducted in concert with other environmental or safety awareness and education programs for the Project, provided that the program elements pertaining to cultural resources are provided by a qualified instructor meeting applicable professional qualifications standards.

CULT/TRIB-2. Protection of NRHP-Eligible Cultural Resources

- NID shall, in consultation with interested Tribes, develop educational signage informing the public regarding federal and state regulations prohibiting the removal or destruction of Tribal cultural resources. The signage shall be posted in locations where it is most likely to be viewed by the public (e.g., at potential entrance points to Project area).

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- NID shall flag the boundaries of the NRHP-eligible cultural resource occurring within the Project APE as a Special Treatment Area. Vegetation management shall be permitted within the flagged boundaries, as described below. No other Project activities shall be permitted within the flagged boundaries.
 - A Tribal monitor shall be present during all vegetation management activities conducted within 50 feet of the flagged boundary.
 - Vegetation management within 50 feet of the flagged boundary shall be conducted using hand tools only.
 - No use of mechanical equipment (e.g., masticator) or other ground-disturbing activities shall be permitted within the flagged boundaries.

CULT/TRIB-3. Inadvertent Discovery of Cultural or Tribal Resources

- If an inadvertent discovery of Tribal cultural resources, archaeological resources, or other cultural resources/materials (e.g., unusual amounts of shell, animal bone, glass, ceramics, structure/building remains, etc.) is made during Project-related construction activities, the following steps shall be implemented:
- Contractor shall pause all work within 100 feet of the discovery and shall immediately contact the NID Project Manager, who will notify the NID Qualified Professional Archaeologist and the Tribal Representative from consulting Tribes.
- No additional work shall take place within 100 feet of the discovery until approval is obtained from NID Qualified Professional Archaeologist, Tribal Representative from consulting Tribes, and/or the State Historic Properties Officer, as applicable.
- The archaeologist, in consultation with the Tribal Representative from consulting Tribes (as applicable), shall determine whether the resource is potentially significant per the CRHR and develop appropriate mitigation in consultation with NID, the SHPO, and Native American Tribal representatives to protect the integrity of the resource and ensure that no additional resources are impacted. Mitigation could include, but not necessarily be limited to preservation in-place, archival research, subsurface testing, or data recovery.
- NID or its contractor shall record the location and keep notes of all calls and events.
- NID or its contractor shall treat the find as confidential and shall not publicly disclose the location. Only authorized personnel, or individuals with the permission of NID (and the landowner if different from NID) shall be allowed on the site.

CULT/TRIB-4. Unanticipated Discovery of Human Remains

- In accordance with the California Health and Safety Code and NID Cultural Resources Policy (No. 6085.2 Discovery of Human Remains), if human remains are uncovered during ground-disturbing activities, all work shall be halted. The NID Project manager shall be notified immediately, who in turn shall notify the Nevada or Sierra County sheriff and Coroner to determine the nature and extent of the remains.
- The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code

Section 7050.5[b]). If the coroner determines that the remains are those of Native American descent, the coroner must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). The NAHC shall identify the most likely descendant (MLD). Once given permission by NID and landowner, the MLD shall be allowed on-site. The MLD shall complete their inspection and make their recommendation to NID 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.

- No additional work shall take place within the immediate vicinity of the find until the qualified archaeologist and/or Tribal Historic Preservation Officer (as applicable) give approval to resume work in that area.
- A range of possible treatments for the remains, including nondestructive removal and analysis, preservation in-place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment, may be discussed. AB 2641 suggests that the concerned parties may extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. AB 2641(e) includes a list of site protection measures and states that the landowner shall comply with one or more of the following:
 - Record the site with the NAHC or the appropriate Information Center;
 - Utilize an open space or conservation zoning designation or easement; and/or
 - Record a document with the county in which the property is located.
- If the NAHC is unable to identify a MLD or the MLD fails to make a recommendation within 48 hours after being granted access to the site, the landowner or their authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. The landowner or their authorized representative may also re-inter the remains in a location not subject to further disturbance if they reject the recommendation of the MLD, and mediation by the NAHC fails to provide measures acceptable to the landowner.

3.6 Energy

Would the Project...	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.6.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact on the environment related to energy if the Project would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

3.6.2 Setting

In January 2018, the Governor of California’s Office of Planning and Research transmitted its proposal for the comprehensive updates to the CEQA guidelines to the California Natural Resources Agency. This included an update to Section 15126.2(a) in response to the California Supreme Court’s decision in California Building Industry Association v. Bay Area Air Quality Management District (2015) 62 Cal.4th 369. In late 2018, the Natural Resources Agency finalized the updates to the CEQA guidelines, including an addition of an Energy Section into the sample environmental checklist in Appendix G, in addition to the stand-alone Appendix F, to better integrate the energy analysis with the rest of CEQA. These updated Guidelines became effective on December 28, 2018.

3.6.2.1 State and Local Regulations and Plans

Relevant state and local energy-related regulations and plans are summarized below.

Warren-Alquist Act

The California Legislature passed the Warren-Alquist Act in 1974. The Warren-Alquist Act created the California Energy Commission (CEC). The Act also incorporated the following key provisions designed to address energy demand:

- It directed the CEC to formulate and adopt the nation’s first energy conservation standards for buildings constructed and appliances sold in California;

-
- The act removed the responsibility of electricity demand forecasting from the utilities, which had a financial interest in high demand projects, and transferred it to the CEC; and
 - The CEC was directed to embark on a research and development program, focused on fostering non-conventional energy sources.

Assembly Bill 1007 (2007)

Assembly Bill 1007, passed in 2005, required the CEC to prepare a statewide plan to increase the use of alternative fuels in California (State Alternative Fuels Plan). The CEC prepared the plan in partnership with the California ARB and in consultation with other state, federal, and local agencies. The plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce greenhouse gas (GHG) emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Assembly Bill 32 (2006) and Senate Bill 32 (2016)

In 2006, the Legislature enacted Assembly Bill 32, the California Global Warming Solutions Act of 2006. Assembly Bill 32 requires California to reduce its GHG emissions to 1990 levels by 2020. In 2016, the Legislature enacted Senate Bill 32, which extended the horizon year of the state's codified GHG reduction planning targets from 2020 to 2030, requiring California to reduce its GHG emissions to 40% below 1990 levels by 2030. In accordance with Assembly Bill and Senate Bill 32, California ARB prepares scoping plans to guide the development of statewide policies and regulations for the reduction of GHG emissions. Many of the of the policy and regulatory concepts identified in the scoping plans focus on increasing energy efficiencies and the use of renewable resources, as well as reducing the consumption of petroleum-based fuels such as gasoline and diesel.

State Vehicle Standards

In response to the transportation sector accounting for more than half of California's CO₂ emissions, Assembly Bill 1493 was enacted in 2002. Assembly Bill 1493 required the California ARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles whose primary use is noncommercial personal transportation in the state. The bill required that ARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. The 2009-2012 standards resulted in a reduction in approximately 22% GHG emissions compared to emissions from the 2002 fleet, and the 2013-2016 standards resulted in a reduction of approximately 30%.

In 2012, ARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards called Advanced Clean Cars. By 2025, when the rules would be fully implemented, new automobiles would emit 34% fewer global warming gases and 75% fewer smog-forming emissions (CARB 2011).

Although the focus of the state’s vehicle standards is on the reduction of air pollutants and GHG emissions, one co-benefit of implementation of these standards is a reduced demand for petroleum-based fuels.

3.6.2.2 Local Regulations and Plans

Nevada County Energy Action Plan

On February 12, 2019, the Nevada County Board of Supervisors approved the Energy Action Plan (EAP) as the County’s unincorporated area’s roadmap for expanding energy-efficiency, water-efficiency, and renewable-energy, and the cost-savings that accompany these efforts (Nevada County 2019). Nevada County EAP was developed to provide a broad view of energy use in the City, set energy and water-energy saving goals, recommend actions that result in short and long-term energy savings, and educate the community on existing resources designed to save utility customers money, energy, and water. The goals of the EAP are as follows:

- Goal 1: Improve Energy Efficiency in Buildings, Facilities, and County Operations
- Goal 2: Expand the Utilization of Renewable Energy and Resilience Measures
- Goal 3: Encourage the Efficient and Safe Transportation and Use of Water Resources

Sierra County Energy Action Plan

The Sierra County EAP (2016) focuses on three community energy use sectors within unincorporated Sierra County – residential, non-residential, and municipal (which is a subset of non-residential). The report only evaluates energy consumed by buildings and municipal operations within unincorporated Sierra County; other energy consuming sectors such as transportation have not yet been addressed. The plan addresses five key areas of energy use: 1. Existing Structures - Energy efficiency in existing homes, offices, etc.; 2. New Construction - Energy performance in new and planned construction; 3. Renewable Energy - Expansion of local renewable energy generation and use; 4. County Operations - Energy efficiency in municipal operations; and 5. Water Energy - Reduction in water waste and its embedded energy use.

3.6.3 Discussion

a) The Project would not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation.

Energy use resulting from implementation of the Project would increase slightly relative to existing conditions. Fuel consumption would increase slightly above the baseline due to the operation of gas and diesel-powered equipment. Workers would commute to the site from nearby communities (e.g., Truckee and Sierra City); most staff would stay on-site in a trailer or at nearby campgrounds during the work week. The minor increase in energy use resulting from implementation of the restoration/enhancement activities described in this IS-MND would not be considered wasteful, inefficient, or unnecessary consumption of energy, and the impact of the Project is considered **less than significant**.

Following completion of the Project, all vehicles and equipment would be permanently removed from the site, and NID will place barriers on the logging access road to discourage vehicular access to the meadow; therefore, there would be **no impact** related to energy use in the long-term.

b) The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

State guidelines on renewable energy or energy efficiency do not set any specific thresholds for determining the energy efficiency of construction projects. The Nevada and Sierra county EAPs do not set any specific thresholds for determining the energy efficiency of construction projects. Considering that the Project is short-term, remote, and includes the use of onsite materials for restoration/enhancement activities rather than importing material, GHG emission levels are expected to be minimal. Therefore, there would be **no impact**.

3.6.4 Mitigation Measures

No significant impacts would occur; therefore, no mitigation is required.

3.7 Geology and Soils

Would the Project...	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.7.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact on the environment related to geology, soils, or seismicity if the Project would:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - 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;
 - Strong seismic ground shaking;
 - Seismic-related ground failure, including liquefaction; or
 - Landslides.
- Result in substantial soil erosion or the loss of topsoil;

-
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
 - Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property;
 - 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; or
 - Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

3.7.2 Setting

3.7.2.1 Soils

The Project area occurs at a confluence zone of several tributaries and springs, with a very narrow valley outlet that has resulted in natural and anthropogenic dam-induced alluvial deposition over geologic time. Field sampling from the aquatic resources delineation (Fink 2021) revealed a mosaic of wetland and upland soils in the meadow, with upland soils along the intermittent streams at the upper end of the Project area and along the meadow margins. The USDA Web Soil Survey (USDA 2021) indicates that there are Aquolls and Borolls soils (0–5% slopes) in the meadow; and Celio-Gefo-Aquolls complex soils (2–30% slopes) on the alluvial fan at the upper end of the Project area. Aquolls are found in marshes, and borolls are found in swales. Celio and Gefo soils are found on alluvial fans. The meadow soils are very poorly drained, and the alluvial fan soils are poorly drained to somewhat excessively drained. The following soil observations are excerpted from Cornwell (2016):

The predominant sediments throughout the meadow were fine-grained silty clays (CL), silty clays with sand and gravel (CL w/s&g), poorly graded sands (SP) and poorly graded sands with some gravel (SP w/g).

Generally, fine grained silty clays (CL's) make up the upper three to seven foot of the meadow. Occasionally these silty clays contain sands and gravel seams, which is consistent with frequent overbank flooding and reservoir ponding on the meadow surface. Sand and gravel materials were commonly encountered below the silty clay sediment.

Geologically, the meadow rests in an alluvial valley that is surrounded by mountains that are generally Mesozoic-age granodiorites and quartz monzonites (Saucedo et al., 2000). Drainage into the meadow from the surrounding mountain slopes though cuts through Mesozoic intermediate volcanic rocks and younger volcanic of Tertiary-age (volcanic andesites and rhyolites).

3.7.2.2 Regional Seismicity, Fault Zones, and Landslide History

According to the Fault Activity Map of California from the California Geological Survey (<https://maps.conservation.ca.gov/cgs/fam/app/>), there is a Pre-Quaternary (older than 1.6 million years) concealed fault that runs in a NW–SE direction almost parallel to Jackson

Meadow Reservoir. The fault touches the upstream extent of the reservoir, crosses the river, and extends about another half mile up the NE side of the Middle Yuba canyon, ending just down-valley of English meadow. However, the Project area does not contain any active faults (defined, for the purposes of the Alquist-Priolo Act, as one that has ruptured in the past 11,000 years) (<https://www.conservation.ca.gov/cgs/geohazards/eq-zapp>).

Cornwell (2016) identified a large landslide complex that occurs in the slopes that drain to the southeast corner of English Meadow, just where the Middle Yuba River enters the meadow. The age of this complex is unknown but there is evidence of at least two different episodes of movement. In the area where the landslide complex exists, the channel widens to more than 300 feet and looks like a braided channel with gravel- to boulder-sized channel clasts. The proximal location of this landslide complex to the river channel and the channel condition suggests that these landslide movements may have played a role in destabilizing the Middle Yuba River channel in this section of the Project Area.

3.7.3 Discussion

The Project area is not located in the vicinity of an active fault. Therefore, there would be **no impact** from (a)(i) ground rupture at the Project area; (a)(ii) increased exposure or risk due to seismic ground shaking; or (a)(iii) seismic-related ground failure, including liquefaction. Cornwell identified the slopes above southeast corner of English Meadow as potentially unstable and prone to landslides (2016). No Projects treatments will occur in this area; therefore the Project will not increase potential for (a)(iv) landslides.

Ground-disturbing activities (e.g., removal of material from borrow sites, mastication and removal of vegetation, construction of temporary crossings) associated with the Proposed Project could result in temporary Project-related erosion. The District will implement **Mitigation Measure HYD-1** to minimize the potential for Project-related erosion. This measure states that NID will develop and implement a SWPPP in accordance RWQCB requirements. The SWPPP shall specify BMPs necessary to prevent stormwater runoff from carrying construction-related pollutants, including sediments resulting from Project-related ground disturbance. With **implementation of mitigation**, impacts associated with (b) erosion would be considered **less than significant**.

The Proposed Project is not located on a (c) geologic unit or soil that is considered unstable. Forest treatments to be implemented on slopes around the meadow would be limited to the removal of select small trees and understory vegetation. Larger trees (24 inches DBH or greater) would be retained, and the root systems of these trees would continue to stabilize soils. The Project, therefore, would not result in increased risks of landslides or collapse; this impact would be **less than significant**.

The Proposed Project is not located on a (d) expansive soil type and would not create substantial risks to life or property; therefore, there would be **no impact**. The Proposed Project does not (e) include the use of septic tanks or the development of wastewater treatment systems; therefore, there would be **no impact**.

No unique paleontological resources or unique geologic features are known to occur in the Project area. Ground disturbing activities have the potential to disturb (f) unknown or unidentified buried paleontological resources within the Project area. **Mitigation Measure**

CULT/TRIB-3 sets forth a protocol that will be implemented if an inadvertent discovery of TCRs, archaeological resources (including paleontological resources), or other cultural resources/materials is made during Project-related construction activities. The protocol includes pausing work within 100 feet of the discovery; contacting the NID Project Manager, NID Qualified Professional Archaeologist, and the Tribal Representative from consulting Tribes; determining whether the resource is potentially significant; and, if necessary, developing appropriate measures to protect the site.

Therefore, **with implementation of mitigation**, this impact is **less than significant**.

3.7.4 Mitigation Measures

Refer to **Mitigation Measure CULT/TRIB-3** in Section 3.5, Cultural Resources, and to **Mitigation Measure HYD-1** in Section 3.9, Hydrology and Water Quality.

3.8 Greenhouse Gas Emissions

Would the Project	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.8.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact on the environment related to GHG and climate change if the Project would:

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

3.8.2 Setting

Several state and local actions have been taken to limit GHG emissions implicated in global warming. Those actions are described below.

3.8.2.1 Executive Order S-3-05

On June 1, 2005, California Governor Arnold Schwarzenegger issued Executive Order S-3-05. It included the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80% below 1990 levels. To meet the targets, the governor directed several state agencies to cooperate in the development of a climate action plan. The secretary of the California Environmental Protection Agency (Cal-EPA) leads the Climate Action Team (CAT), whose goal is to implement global warming emission reduction programs identified in the climate action plan and to report on the progress made toward meeting the emission reduction targets established in the executive order.

The first report to the governor and the legislature was released in March 2006, to be issued bi-annually thereafter. The CAT report to the governor contains recommendations and strategies to help ensure the targets in Executive Order S-3-05 are met (Cal-EPA 2010).

California Global Warming Solutions Act of 2006 (Assembly Bill 32)

In 2006, the California state legislature adopted the California Global Warming Solutions Act of 2006 (AB 32). AB 32 establishes a cap on statewide GHG emissions and sets forth the regulatory framework to achieve the corresponding reduction in statewide emission levels. Under AB 32,

GHGs are defined as carbon dioxide (CO₂), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. AB 32 requires that ARB:

- Adopt early action measures to reduce GHGs;
- Establish a statewide GHG emissions cap for 2020 based on 1990 emissions;
- Adopt mandatory report rules for significant GHG sources;
- Adopt a scoping plan indicating how emission reductions will be achieved via regulations, market mechanisms, and other actions; and
- Adopt regulations needed to achieve the maximum technologically feasible and cost-effective reductions in GHGs.

On April 23, 2009, the ARB adopted a low carbon fuel standard (LCFS). This standard requires that all fuels sold in California must have a reduced carbon content that will lower emissions by 10% by 2020.

3.8.2.2 Senate Bill 97

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an important environmental issue that requires analysis under CEQA. The bill directed the OPR to prepare, develop, and transmit to the California Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, by July 1, 2009. The California Resources Agency adopted those guidelines on December 30, 2009 and they became effective on March 18, 2010.

3.8.2.3 Senate Bill 32

SB 32 was signed on September 8, 2016 to establish a California GHG reduction target of 40% below 1990 levels by 2030. California is on track to meet or exceed this current target, as established in AB 32. This new emission reduction target will make it possible to reach the ultimate goal of reducing emissions 80% under 1990 levels by 2050.

Actions Taken by the Governor's Office of Planning and Research

In June 2008, the Governor's Office of Planning and Research (OPR) issued a Technical Advisory on CEQA and Climate Change (OPR 2008). This document recommends that, for Projects subject to CEQA, emissions be calculated, and mitigation measures be identified to reduce those emissions. The OPR report does not identify emission thresholds for GHGs, but instead recommends that each lead agency develop its own thresholds.

On April 13, 2009, OPR submitted to the Secretary for Natural Resources its proposed amendments to the state CEQA Guidelines for GHG emissions, as required by Senate Bill 97 (Chapter 185, 2007). These Guideline amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. The Natural Resources Agency conducted formal rulemaking in 2009, prior to certifying and adopting the amendments, as required by SB 97. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for

inclusion in the California Code of Regulations. The Amendments became effective on March 18, 2010.

Actions Taken by California Attorney General's Office

The California Attorney General (AG) has filed comment letters under CEQA about a number of Proposed Projects. The AG has also filed several complaints and obtained settlement agreements for CEQA documents covering general plans and individual programs that the AG found either failed to analyze GHG emissions or failed to provide adequate GHG mitigation. The AG's office has prepared a report that lists measures that local agencies should consider under CEQA to offset or reduce global warming impacts. The AG's office also has prepared a chart of modeling tools to estimate GHG emissions impacts of Projects and plans. Information on the AG's actions can be found on at the California Department of Justice Office of Attorney General web site (California Department of Justice 2021).

3.8.3 Discussion

a) The Proposed Project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

The Proposed Project would result in minor, short-term increases in GHGs. The Proposed Project would generate intermittent and short-term carbon dioxide (CO₂) and NO_x emissions associated with combustion of gasoline and diesel fuel resulting from the operation of the equipment identified in the Project Description. In addition, between 2 and 5 workers would use personal vehicles to commute to the site from nearby communities throughout each work season. These short-term effects would cease upon completion of the Project.

Project-related GHG emissions would be intermittent and substantially less than the lower reporting limit for major stationary sources established by the ARB. That reporting limit requires that stationary sources that generate more than 25,000 metric tons per year of CO₂ equivalent (CO₂e) to report GHG emissions to ARB. Implementation of the Proposed Project does not include stationary emission sources; therefore there is no conflict with this requirement.

Furthermore, implementation of the Project would have an indirect net beneficial effect on GHG emissions that cause climate change by improving carbon sequestration in the wet meadow soils as a function of improved meadow floodplain hydrology (Reed et al. 2020). Wet meadows have been shown to sequester carbon at a rate of approximately 300–800 grams of carbon/ square meter/year (Reed et al. 2020). Based on a conservative estimate of 30 acres of improved hydrology in the first year after implementation of the Project, at least 36 metric tons of carbon could be sequestered in the first year post-Project alone. Over time, the hydrologic improvements in the Middle Yuba River would trap more sediment behind debris jams, and flows would be expected to spill more frequently onto the floodplain. The annual sequestration of carbon in the soil is expected to last in perpetuity, as long as the hydrology of the meadow remains in a functioning condition. In addition, the forest treatments planned around the meadow will indirectly and cumulatively ameliorate GHG emissions by reducing the risk of catastrophic wildfire that would release large amounts of carbon into the atmosphere. The forest treatments are also expected to build soil carbon stocks because masticated material would be left in place to decompose into the soil in the long-term.

Thus, while the Proposed Project may result in a short-term increase in GHG emissions, in the long-term, restoration of the meadow and surrounding forests is expected to result in improved carbon sequestration. Therefore, this impact would be **less than significant**.

b) The Proposed Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

State guidelines for GHG emissions do not establish any specific thresholds for determining whether those emissions are significant. Nevada County and Sierra County have not developed local climate action plans or climate change strategies to which the Project would be subject. The Proposed Project would not conflict with any existing GHG laws, plans, policies, or regulations adopted by the California legislature, the ARB, the California AG, or the California OPR. Therefore, this impact would be **less than significant**.

3.8.4 Mitigation Measures

No significant impacts related to GHGs and climate change would result from implementation of the Proposed Project. Therefore, no mitigation is required.

3.9 Hazards and Hazardous Materials

Would the Project...	Potentially Significant Impact	Less than Significant with Mitigation	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.9.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to hazards and hazardous materials if the Project would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- 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;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- 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, create a significant hazard to the public or the environment;

-
- 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, result in a safety hazard or excessive noise for people residing or working in the Project area;
 - Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
 - Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

3.9.2 Setting

A query of the EnviroStor database yielded no hazardous waste sites within 5 miles of the Project area. (California Department of Toxic Substances Control [DTSC] 2021).

Hazardous materials and wastes are regulated by federal and state laws and are required to be recycled or properly disposed. In the state of California, the Hazardous Materials Certified Unified Program Agency protects public health and the environment by promoting compliance with applicable laws and regulations. The CUPA program is implemented at the local level by 83 government agencies known as certified unified program agencies (CUPA).

3.9.2.1 Nevada County

The Nevada County Department of Environmental Health (NCDEH) is the CUPA for all cities and unincorporated areas within Nevada County. The NCDEH is responsible for carrying out a diverse range of programs with environmental protection and public health as their focus. The NCDEH uses California Health and Safety Codes as guidance, as well as county codes, when conducting plan reviews and inspections.

The Nevada County Office of Emergency Services (NCOES) is responsible for coordinating with their respective county departments, municipalities, key stakeholders, and special districts to mitigate against, prepare for, respond to, and recover from all disasters. NCOES designs and conducts simulated disaster response exercises, evaluates emergency staff training, creates evacuation strategies, and maintains the County Emergency Operations Center in a state of readiness. NCOES also educates the community on preparedness, facilitates stakeholder collaboration, and seeks additional funding through grants and strategic partnerships.

3.9.2.2 Sierra County

The Sierra County Department of Environmental Health (SCDEH) is the CUPA for all cities and unincorporated areas within Sierra County. SCDEH is the local implementing agency for a diverse range of state and local laws affecting the public health of the citizens and visitors of Sierra County. The SCDEH promotes compliance with applicable statewide environmental and emergency response programs.

The Sierra County Office of Emergency Services (SCOES) is responsible for emergency response in Sierra County, with the specific goal of assisting first responders to help manage resources. Because Sierra County is so small, the office works closely with the statewide California Office of Emergency Services (CalOES).

3.9.3 Discussion

- a) *With implementation of mitigation, the Proposed Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.*

The Project does not pose a significant hazard related to routine transport, use, or disposal of hazardous materials. Although flammable and combustible materials such as diesel fuel would be used during Project implementation, their use is short-term, and limited to the duration of implementation of the Project. All materials would be used and stored in accordance with applicable federal, state, and local laws, and will be removed from the site upon completion of each work season. Fuel will be trucked in and stored in dual-walled 1,000-gallon fuel tank that will be staged at NID's Woodcamp Campground. The tank will be secured behind a locked gate, and will be placed on an appropriate containment structure (as specified in Project permits [e.g., SWPPP]). Refer to **Map 1** for potential fuel tank staging locations. Fuel will be transported by pick-up trucks to the Project area in 70- to 90-gallon tanks once per day, or as required depending on use. Refer to **Map 1** for the location of potential staging areas where fueling will occur.

To further minimize the potential for hazards related to transport, use, and disposal of hazardous materials, the District will implement **Mitigation Measures HAZ-1, HAZ-2, and HYD-1**. Mitigation Measure HAZ-1 requires that all contractor and subcontractor personnel receive training regarding appropriate work practices, including hazardous material spill prevention and response. Mitigation Measure HAZ-2 requires the preparation and implementation of a SPCCP, which will detail fuel storage areas; identify measures to limit and control fuel spills, including fueling and refueling procedures; describe the use and placement of spill kits; and specify reporting requirements in the event of a spill. Mitigation Measure HYD-1 required NID to develop and implement a SWPPP that specifies BMPs to prevent stormwater runoff from carrying construction-related pollutants.

With implementation of **Mitigation Measure HAZ-1, HAZ-2, and HYD-1** impacts related to short-term transport, use, and disposal of hazardous materials would be **less than significant**.

- b) *With implementation of mitigation, the Proposed Project would not 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.*

Although flammable and combustible materials such as gasoline and diesel fuel would be used during Project implementation, their use is temporary and all materials would be used in accordance with applicable federal, state, and local laws, including manufacturer's instructions. As described above in **Mitigation Measure HAZ-2**, the District and/or its contractor would prepare a SPCCP for the Proposed Project that would be implemented in the case that spills occurred during implementation of the Project.

With implementation of **Mitigation Measure HAZ-2**, this impact would be **less than significant**.

- c) *The Proposed Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.*

The Project area is not located within 0.25 mile of an existing or proposed school. Therefore, there is **no impact**.

d) The Proposed Project is not located on a site which is included on a list of hazardous materials sites and would not create a significant hazard to the public or the environment.

Based on a search of the DTSC EnviroStor database, the Project area is not located on, or near, any federal-, state-, or local-designated hazardous wastes site (DTSC 2021). Therefore, there would be **no impact**.

e) The Proposed Project is not located within an airport land use plan or within two miles of a public airport or public use airport and would not result in a safety hazard or excessive noise for people residing or working in the Project area.

The Proposed Project is not located within an airport land use plan or within 2 miles of a public airport. Implementation of the Proposed Project would not result in a safety hazard or excessive noise and there are no residences near the Project area. Therefore, there would be **no impact**.

f) The Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

The Proposed Project is located on NID-owned land that is managed for its watershed value. There are no residences in the vicinity of the Project, and nearby roads are used mostly for forestry and recreational purposes. The Project would not significantly increase traffic on local roads, and would not interfere with an adopted emergency response or evacuation plan. The logging access road to the Project area is not public and will be barricaded post-Project. No public roads will be affected by Project activities. Therefore, there would be **no impact**.

g) With implementation of mitigation, the Proposed Project would not expose people or structures, either directly or indirectly, 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 with implementation of mitigation.

The Project will be located on NID-owned lands with minimal development: the closest urbanized area is Sierra City, approximately 9 miles to the northwest. The Project area is located in a State Responsibility Area (SRA) in a Fire Hazard Severity Zone (FHSZ) with a “Very High” rating. Refer to Section 3.20, Wildfire, for a more detailed analysis of wildland fires. In the short-term, restoration/enhancement activities will require use of flammable fuels and combustion engines, and there is some risk that fire could result from refueling and operating vehicles or other construction equipment. However, one of the overall objectives of the Project is to reduce the risk of catastrophic wildfire by reducing fuel loads in English Meadow, and in the long-term, the Project is expected to reduce the risk of wildland fires.

To further reduce fire risks during restoration/enhancement activities, the District would implement **Mitigation Measure HAZ-3** which states that NID and/or its contractor will implement fire prevention measures as described in the Middle Yuba River Headwaters English Meadow Forest Management Plan (NID 2020), including but not limited to, requiring fire prevention equipment to be available at all times, identifying construction sites as non-smoking areas, and providing fire prevention training to work crews. Also included are measures for fuel modification along roads, pile burning requirements, and understory thinning practices. Portable

communication devices (i.e., radio or mobile telephones) would be made available to all work crews to allow for prompt notification to the District or other local authorities in case of a fire. With implementation of this mitigation measure, potential Project-related fire hazard impacts would be **less than significant**.

3.9.4 Mitigation Measures

HAZ-1. Hazard Training

- Annually, prior to Project implementation, all contractor and subcontractor personnel shall receive training regarding the appropriate work practices necessary to effectively comply with the applicable environmental laws and regulations, including hazardous materials spill prevention and response measures.

HAZ-2. Spill Prevention, Control, and Countermeasures Plan

A SPCCP will be prepared and implemented. The SPCCP will be consistent with Nevada County and Sierra County requirements and will incorporate industry standard best management practices (e.g., Department of Water Resources' best management practices). The plan will include the following:

- Staging and storage areas for equipment, materials, fuels, lubricants, and solvents shall be located outside of Waters of the U.S./State (including wetlands) or other sensitive habitats.
- The plan will identify measures to limit and control fuel spills, including use of bermed storage areas, equipment inspections, fueling and refueling procedures.
- The plan will describe the use and placement of spill kits and will specify reporting requirements in the event of a spill.
- All equipment and fuel stored on site shall be properly contained and protected from rain.

HAZ-3. Standard Fire Prevention Measures.

The District and/or its contractor will implement fire prevention measures as described in the Middle Yuba River Headwaters English Meadow Forest Management Plan (NID 2020), including but not limited to, requiring fire prevention equipment to be available at all times, identifying construction sites as non-smoking areas, and providing fire prevention training to work crews. Also included are measures for fuel modification along roads, pile burning requirements, and understory thinning practices. Portable communication devices (i.e., radio or mobile telephones) would be made available to all work crews to allow for prompt notification to the District or other local authorities in case of a fire.

Refer also to **Mitigation Measure HYD-1** in Section 3.9, Hydrology and Water Quality.

3.10 Hydrology and Water Quality

Would the Project...	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.10.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to hydrology and water quality if the Project would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

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- result in substantial erosion or siltation on- or off-site,
 - substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite,
 - create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or
 - impede or redirect flood flows;
 - In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or
 - Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.10.2 Setting

English Meadow lies at an elevation of about 6,167 feet msl and is surrounded by peaks reaching up to 8,373 feet msl. The meadow covers an area of approximately 0.27 square mile. The meadow receives approximately 60 to 70 inches of precipitation a year as a mix of rain and snow. The soils in this alluvial valley consist of silty and sandy clays, clayey sands, sand and gravel with some calcareous concretions locally as well as some mixed in organics (Middendorf and Cornwell 2017). These soils make up the entire aquifer within the meadow, this shallow aquifer ranges in depth from 0.76 to 2.79 meters (2.49 to 9.15 feet) (Middendorf and Cornwell 2016).

3.10.2.1 Water Quality

The Proposed Project is located in the Sacramento Hydrologic Basin, the Yuba River Hydrologic Unit, and the Middle Yuba Hydrologic Area. Existing water quality objectives for the physical, chemical, and bacterial constituents are established in the “Sacramento River Basin and San Joaquin River Basin Water Quality Control Plan” (Basin Plan) (Central Valley Regional Water Quality Control Board [CVRWQCB], Fifth Edition revised May 2018), “Water Quality Standards: Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California” (Federal Register, 65 FR 31682, EPA 2000), and the “Water Quality Standards: Establishment of Numeric Criteria for Priority Toxic Pollutants” (Federal Register, 57 FR 60848, EPA 1992).

The designated beneficial uses applicable to the Middle Yuba River include municipal and domestic water supply; agricultural supply; hydropower generation; water contact and non-contact recreation; cold freshwater habitat; warm freshwater habitat; wildlife habitat; and migration, spawning, reproduction, and/or early development of aquatic organisms (FERC 2014). Water quality in the river is generally high and in accordance with most of the objectives listed in the Basin Plan, which include bacteria, biostimulatory substances, chemical constituents, dissolved oxygen (DO), floating material, oil and grease, pH, sediment and settleables, tastes and odors, temperature, toxicity, turbidity, color, and pesticides. During studies conducted for the relicensing of the Yuba-Bear Project, several inconsistencies in water quality

objectives within Jackson Meadows downstream of the Project were noted including temporarily elevated levels of DO and concentrations of aluminum (FERC 2014).

3.10.2.2 Baseline Studies

During the design phase of the Proposed Project, NID initiated several studies to characterize existing hydrological conditions in the Project area. This includes:

Channel Conditions

Mink (2016) conducted field studies in 2016 to characterize geomorphology of the valley and channel conditions within the Middle Yuba River. Nine valley-wide cross-sections were surveyed using a laser level and hip chain. Ten additional cross-sections, and a valley profile were derived from June 2014 LiDAR data (obtained from the Tahoe National Forest, and completed by Dr. Qinghua Guo of UC Merced) using ArcGIS 3-D Analyst.

The study indicated a moderately incised channel, with a depth of approximately 4.5 feet and an estimated capacity to carry a 10-year flood event. The channel is generally located in the lowest point of the valley bottom. The valley head is characterized by an approximately 7 foot deep, nearly valley-wide incision, with bedload and bar D50⁵ particle sizes visually estimated at approximately 8 inches. There are numerous remnant channels on the lowest elevation terrace adjacent to the Middle Yuba River channel. There are gravel and small cobble deposits in the remnant channels. This material may have come from tributaries, or may have been transported from the head of the valley in high flow events. In a few locations, abrupt terrace steps may indicate wave action from when the meadow was inundated.

Groundwater

Cornwell (2016) installed a groundwater monitoring network in the meadow in 2016. Twelve piezometers were inserted into the ground throughout the meadow for the measurement of groundwater below the meadow surface. Nine of the piezometers were instrumented with a pressure transducer to record groundwater conditions on a daily basis.

Detailed soil corings were obtained during the installation of the piezometers. Samples were collected in approximately 30-centimeter lifts, laid out on a light-colored sheet to allow for the separation of samples and to keep them off of the ground for classification purposes. The predominant sediment throughout the Meadow were fine-grained silty clays, silty clays with sand and gravel, poorly graded sands and poorly graded sands with some gravel. Generally boreholes were terminated when either substantial gravels were encountered (because the hand driven auger could no longer be advanced in the borehole) or the groundwater table was encountered, and saturated sediments were returned to the surface.

In addition, two game cameras were installed in the upstream end of the Project area, where the Middle Yuba River enters the meadow, to document flow conditions throughout the winter and

⁵ D50 indicates the median diameter or the medium value of the particle size distribution: If D50=8 inches, then 50% of the particles in the sample are larger than 8 inches, and 50% are smaller than 8 inches.

spring rains and snow melt. The game cameras are set to record two photos per day (at 10:00 am and 4:00 pm).

Initial analysis of groundwater levels (Cornwell 2016) indicates that groundwater occurs at higher elevations in the Project area, as the topography increases going upstream in the meadow. Spring flow and surface runoff from the mountains that line the north and northeast side of the meadow cause groundwater levels to be higher in this area. The groundwater levels fall off sharply downstream between elevations from 1879 meters to 1875 meters, likely as a result of the manmade ditches excavated to drain the meadow.

In 2018, Cornwell constructed a ground water model using U.S. Geological Survey (USGS) groundwater modeling software MODFLOW-2005 and the graphic user interface ModelMuse. The model will be used to simulate how groundwater conditions may be affected by surface disturbances (e.g., restoration activities and tree thinning).

Water Temperature

Three (3) HOBO pendant temperature loggers were installed in the Project area in 2018 to record water temperatures in the Middle Yuba River (Mink 2018).

- The bottom (downstream) logger was installed in the channel near the NID gage located immediately downstream of the Project area (39.46242, -120.53137). Hourly temperatures June 1 to September 30, 2018 (a below average water year) ranged from a minimum of 40.7 °F to a maximum of 67.9 °F.
- The middle logger was placed at the top of perennial flow, near Plumas Corporation cross-section #1 (39.45671, -120.52086). Hourly temperatures from June 1 to September 7, 2018 ranged from a minimum of 40.5 °F to a maximum of 60.4 °F.
- The top (upstream) logger was placed at the upstream end of the project area, where the channel becomes intermittent during the summer (39.45482, -120.51661). The channel maintained flow through July 13, 2018 before drying out. Hourly temperatures during the June 1 to July 13, 2018 ranged from a minimum of 38.6 °F to a maximum of 74.3 °F.

Water temperatures will continued to be monitored over the course of the Proposed Project.

Flow Levels

An In-Situ Level TROLL data logger was deployed in the Middle Yuba River in 2017 at the NID gage plate below the meadow (39.46242, -120.53137) to record water levels (gage height) over time (Mink 2018). Data for the period between October 14, 2017 and September 18, 2018 showed a high of 4.838 ft (April 7, 2018) and as low as 0.06 ft (September 9, 2018). Flow levels will continued to be monitored over the course of the Proposed Project.

3.10.2.3 Regulatory Setting

Federal

Clean Water Act

Section 303 of the Clean Water Act requires states to adopt water quality standards for all surface waters of the United States. Water quality standards are typically numeric, although narrative criteria based on biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards (see the description of the Porter-Cologne Water Quality Control Act of 1969 [Porter-Cologne Act]). Standards are based on the designated beneficial use(s) of the water body. Where multiple uses exist, water quality standards must protect the most sensitive use.

Section 402 of the Clean Water Act mandates that certain types of construction activities comply with the requirements of National Pollutant Discharge Elimination System (NPDES) stormwater program. In California, gravel mining permitting occurs under the Industrial General Permit (IGP), issued by the State Water Board and implemented and enforced by the nine RWQCBs. The IGP requires stormwater dischargers to eliminate unauthorized non-stormwater discharges; develop and implement SWPPPs; implement best management practices (BMPs); conduct monitoring; compare monitoring results to numeric action levels; perform appropriate exceedance response actions when numeric action levels are exceeded; and certify and submit all permit registration documents.

In addition, storm water dischargers are required to: implement minimum BMPs; electronically file all permit registration documents via SMARTS; comply with new training expectations and roles for qualified industrial stormwater practitioners; sample to detect exceedance of annual and instantaneous numeric action levels; develop and implement exceedance response actions if annual or instantaneous numeric action levels are exceeded; monitor for parameters listed under Clean Water Act Section 303(d); design treatment control BMPs for flow- and volume- based criteria; and understand new criteria, sampling protocols, and sampling frequency for qualifying storm events.

Section 404 of the Clean Water Act requires that a permit be obtained from the U.S. Army Corps of Engineers prior to any activity associated with discharge of dredged or fill material into waters of the United States, including wetlands.

Section 401 of the Clean Water Act requires any person applying for a federal permit or license that may result in the discharge of pollutants into waters of the United States (including wetlands) to obtain a state certification administered by the State Water Board through the RWQCBs. In order to acquire certification, it must be demonstrated that the activity complies with all applicable water quality standards, limitations, and restrictions. No license or permit by a federal agency may be granted until Section 401 certification has been granted. Section 401 water quality certifications are typically required prior to obtaining a Section 404 permit from the U.S. Army Corps of Engineers.

National Flood Insurance Program

FEMA oversees floodplains and administers the National Flood Insurance Program adopted under the National Flood Insurance Act of 1968. The program makes federally subsidized flood

insurance available to property owners within communities that participate in the program. Areas of special flood hazard (i.e., subject to inundation by a 100-year flood) are identified by FEMA through regulatory flood maps titled Flood Insurance Rate Maps. The National Flood Insurance Program mandates that development cannot occur within the regulatory floodplain (typically the 100-year floodplain) if that development results in more than 1 foot increase in flood elevation. In addition, development is not allowed in delineated floodways within the regulatory floodplain.

Executive Order 11988 (Floodplain Management) addresses floodplain issues related to public safety, conservation, and economics. It generally requires federal agencies constructing, permitting, or funding a project in a floodplain to do the following:

- Avoid incompatible floodplain development;
- Be consistent with the standards and criteria of the National Flood Insurance Program; and
- Restore and preserve natural and beneficial floodplain values.

Executive Order 11990 requires federal agencies to follow avoidance, mitigation, and preservation procedures, with public input, before proposing new construction in wetlands. It generally requires:

- Avoidance of wetlands;
- Minimization of activities in wetlands; and
- Coordination with the U.S. Army Corps of Engineers and Clean Water Act Section 404 regarding wetlands mitigation.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act authorized the State Water Board to provide comprehensive protection for California's waters through water allocation and water quality protection. The State Water Board implements the requirement of the Clean Water Act Section 303, indicating that water quality standards have to be set for certain waters by adopting water quality control plans under the Porter-Cologne Act. The Porter-Cologne Act established the responsibilities and authorities of the nine RWQCBs, which include preparing water quality plans for areas in the region, identifying water quality objectives, and issuing NPDES permits and waste discharge requirements. Water quality objectives are defined as limits or levels of water quality constituents and characteristics established for reasonable protection of beneficial uses or prevention of nuisance. The Porter-Cologne Act was later amended to provide the authority delegated from the U.S. Environmental Protection Agency to issue NPDES permits.

Section 303(d) of the Clean Water Act requires that the State Water Board identify surface water bodies within California that do not meet established water quality standards. Once identified, the affected water body is included in the State Water Board's "303(d) Listing of Impaired Water Bodies" and a comprehensive program must then be developed to limit the amount of pollutant discharges into that water body. This program includes the establishment of total maximum daily

loads for pollutant discharges into the designated water body. The most recent 303(d) listing for California was approved by the U.S. Environmental Protection Agency in 2010.

California Fish and Game Code

Sections 1600–1616 of the California Fish and Game Code require that the California Department of Fish and Wildlife be notified of activity that will substantially divert or obstruct the natural flow of any river, stream, or lake; substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. If the California Department of Fish and Wildlife determines that the activity may substantially adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared that outlines reasonable conditions necessary to protect natural resources threatened by the proposed activity.

Sustainable Groundwater Management Act

On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package, composed of AB 1739, SB 1168, and SB 1319, collectively known as the Sustainable Groundwater Management Act (SGMA). The SGMA provides a framework for sustainable, groundwater management - “management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.” The SGMA requires governments and water agencies of high and medium priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically over-drafted basins, that will be 2040. For the remaining high and medium priority basins, 2042 is the deadline.

There are no medium or high priority groundwater basins in Nevada County. There is one low-priority groundwater basin in the county, the Martis Valley Groundwater Basin, located more than 20 miles to the southeast of the Project area.

There is one medium priority groundwater basin in Sierra County (Sierra Valley), which is located approximately 10 miles to the northwest of the Project area.

Local

Nevada County

General Plan

The Nevada County General Plan (Nevada County 1996) includes the following policies relevant to hydrology, geomorphology, and water quality:

- **Policy 11.4** Cooperate with State and local agencies in efforts to identify and reduce to acceptable levels all sources of existing and potential point- and non-point source pollution to ground and surface waters, including leaking fuel tanks, discharges from storm drains, auto dismantling and dump sites, sanitary waste systems, parking lots, roadways, logging and mining operations.
- **Policy 11.7** Through the development and application of Comprehensive Site Development Standards, and project environmental review, establish and enforce

minimum building setback lines from perennial streams and significant wetlands that are adequate to protect stream and wetland resource values.

- **Policy 11.9A** Approve only those grading applications and development proposals that are adequately protected from flood hazards and which do not add flood damage potential. This may include the requirement for foundation design which minimizes displacement of flood waters, as well as other mitigation measures.
- **Policy 11.10** Cooperate with State and Federal agencies and public and quasi-public organizations and agencies in the acquisition, restoration, and maintenance of habitat lands.
- **Policy 12.4** Require erosion control measures as an element of all County contracts, discretionary projects, and ministerial projects.
- **Policy 17.22** Aggregate extraction may be allowed in rivers and floodplains provided environmental impacts associated therewith are addressed through the CEQA process.
- **Policy 17.23** Prepare a comprehensive plan for river and floodplain development that ensures aggregate operations within rivers and floodplains which have the least impact on the environment are developed before more environmentally-sensitive areas are approved and to also ensure that the environmental impacts of proposed aggregate operations within rivers and floodplains may be more readily assessed.

Sierra County

General Plan

The Sierra County General Plan (Sierra County 2012) includes the following policies relevant to hydrology, geomorphology, and water quality:

- **Policy 6.** Encourage water conservation, require water saving fixtures, and encourage water suppliers to require water meters.
- **Policy 13.** Restrict large developments with impervious surfaces, and those with septic systems, in groundwater recharge areas.
- **Policy 19.** Request regulations to allow for County input on setbacks, post-project road closure, and other water quality protection measures with an eye toward avoiding cumulative impacts on water quality. Pursue and maintain high levels of water quality, including watershed values, to avoid deleterious, cumulative impacts from land uses.
- **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.

3.10.3 Discussion

- a) *With implementation of mitigation, the Proposed Project would not violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water.*

The purpose of the Proposed Project is to improve watershed/floodplain function and resilience within English Meadow and the surrounding forest to achieve a number of benefits, including the enhancing the quality and quantity of surface and groundwater in the watershed over the long term. However, implementation of restoration/enhancement activities within the bed and banks of the Middle Yuba River, or other intermittent streams within the floodplain, could result in minor short-term effects to water quality. A brief discussion of potential short-term water quality effects and potential longer-term water quality effects (including benefits), as well as mitigation measures proposed to minimize any adverse effects to less-than-significant levels, is provided below.

Short-term (Project-related) Impacts

Implementation of restoration/enhancement activities within the mainstem Middle Yuba River within the Project area may potentially result in short-term impacts to water quality⁶. For example, dewatering of the Middle Yuba River, French Creek, or Secret Creek; ground-disturbing activities associated with the removal of material from borrow sites; re-contouring of soil during bank stabilization activities; placement of debris jams and riffles; and operation of heavy equipment could result in effects to water quality through accidental release of fuels, lubricating oils, or other contaminants, or a temporary increase in sedimentation. Before stabilizing vegetation becomes established, exposed fine soil particles could be entrained in flowing water and settle on the streambed. The following mitigation measures would be implemented to minimize the potential for water quality impacts:

- **Mitigation Measure BIO-7** requires NID to obtain relevant permits required under the Clean Water Act (e.g., Sections 401 and 404) and the California Fish and Game Code (e.g., Section 1602 Lake or Streambed Alteration Agreement); and to implement all permit conditions, including those pertaining to protection of water quality.
- **Mitigation Measure HAZ-1** requires that all contractor and subcontractor personnel receive training regarding appropriate work practices, including hazardous material spill prevention and response.
- **Mitigation Measure HAZ-2** requires the preparation and implementation of a SPCCP, which will detail fuel storage areas; identify measures to limit and control fuel spills, including fueling and refueling procedures; describe the use and placement of spill kits; and specify reporting requirements in the event of a spill.

⁶ Intermittent streams located within the meadow will be dry during the work seasons. Therefore, water quality impacts would not occur within these streams.

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- **Mitigation Measure HYD-1** states that NID will obtain coverage under the General Permit for Discharges of Storm Water Associated with a Construction Activity (Construction General Permit Order 2009-0009-DWQ, or current permit), and will develop a SWPPP which includes pollution prevention measures and water quality BMPs. All applicable measures and BMPs will be implemented as part of the Project.
 - **Mitigation Measure HYD-2** requires NID to develop Dewatering and Diversion Plan that will be submitted with the applications for Section 401 and 404 permits and the Lake or Streambed Alteration Agreement. The agency-approved Dewatering and Diversion Plan shall be implemented as part of the Project.
 - **With implementation of mitigation**, short-term effects related to water quality within surface waters would be **less than significant**.

Long-term Impacts

Over time, implementation of the Project is expected to improve water quality conditions within the Middle Yuba River and associated floodplain. The debris jams and riffles are designed to allow water from the channel to more frequently access the floodplain, thus increasing infiltration into the shallow floodplain aquifer. Groundwater is expected to remain at higher elevations later into the season after the Project is completed, and as channel aggradation progresses over time (Sierra Meadows Partnership 2016).

Improved floodplain function is expected to attenuate flood flow peaks, and extend higher base season flows later into the season. The degree to which this beneficial effect is realized will depend on a number of factors, including time since implementation, climatic variability, and the underlying soils and geology of the site (Hoffman et al. 2013).

Water temperature response to the Project treatments is expected to change over time. There is a potential for an increase in water temperatures in the near term, because the debris jams are designed to increase slow-water habitats, which would increase the time that surface water is exposed to the sun. However, the debris jams and riffles would also increase hyporheic flow (exchange between subsurface and surface flow), which should have a long-term beneficial cooling effect on surface water temperatures. The cooling effect would likely increase over time as shading vegetation establishes and matures within the streamside zones.

To assess Project effects on water quality over time, NID will implement **Mitigation Measure HYD-3**, which requires monitoring of hydrological conditions in the Middle Yuba River and the associated floodplain following completion of treatments. This includes, but is not limited to, evaluation of the elevation of the thalweg over time; comparison of streamflow hydrographs; monitoring of water temperature; obtaining data on groundwater elevations from California State University's existing groundwater wells, if possible; inventory of stream conditions (large woody debris, fish habitat and bank stability); and monitoring of headcut locations. NID will adaptively manage the project and make in-field adjustments, as necessary. Such adjustments may include, but are not limited to, adding additional woody debris; altering the configuration of debris jams and riffles; and/or re-seeding of revegetation areas. The results of monitoring shall be documented and submitted to appropriate resource agencies annually.

Considering that the Project is intended to restore the floodplain function, and with implementation of mitigation measures that require monitoring to evaluate and adaptively

manage results for water quality parameters such as temperature and groundwater levels, the Project would have long-term **beneficial effects** on surface and groundwater over the long term.

b) *The Proposed Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.*

The Project would have no direct impact on groundwater in the short term.

In the long term, the project is expected to improve groundwater supplies and water quality due to improved function of the floodplain. Groundwater recharge and release are expected to improve over existing conditions because the channel is expected to more frequently access the floodplain, thus increasing infiltration into the shallow floodplain aquifer.

Initial groundwater monitoring was conducted between 2016 and 2018 by Dr. Cornwell, and the data were used to model groundwater conditions in the Project area. The model indicates that the groundwater system responds quickly to precipitation conditions, rising in elevation shortly after precipitation and dropping in elevation similarly. Compared to existing conditions, after the Project is completed groundwater elevations are expected to remain higher later into the season, and following precipitation events, as channel aggradation progresses over time. Another floodplain restoration Project, the Clarks Creek project, yielded a prolonged high water table following completion of the project. While the Clarks Creek project used a “pond and plug” technique, which differs from the treatment proposed at English Meadow, both projects are expected to have a similar end result of more consistent floodplain flow.

As described in **Mitigation Measure HYD-3**, changes in floodplain metrics, including evaluation of data obtained from California State University’s existing groundwater wells (if possible), will be evaluated following installation of the floodplain treatments. NID will adaptively manage the project and make in-field adjustments, as necessary. The results of monitoring shall be documented and submitted to appropriate resource agencies annually.

Considering that the Project would not directly impact groundwater in the short term, and that the purpose of the Project is to improve the function of the floodplain, including groundwater levels, over the long term, the Project would have a **neutral** or **beneficial impact** on groundwater and groundwater recharge.

c) *The Proposed Project would not substantially alter the existing drainage pattern of the Project area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would i) result in substantial erosion, siltation, or flooding on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; iii) create or contribute to runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows.*

The purpose of the Project is to implement treatments within the Middle Yuba River and associated floodplain that would intentionally alter the hydrology of the site to increase the frequency at which flows overbank the Middle Yuba River channel and the intermittent streams within the floodplain.

The restoration/enhancement treatments would result in a more natural drainage pattern, including a reduction in headcutting and incision, which would in turn i) reduce rates of erosion and sedimentation over the long term as compared to existing conditions. As described in detail under item a), short-term effects related to water quality within surface waters would be **less than significant with implementation of mitigation**. The Project would have long-term **beneficial effects** on surface and groundwater over the long term.

Effects related to surface runoff (ii) would vary. Removal of trees as part of forest treatments could potentially result in an increase surface runoff within the Project area. In general, reducing vegetative cover increases water yield (Hibbert 1967). In addition, removal of tree cover results in higher snowpack accumulation and decreases transpiration, leading to increased soil moisture storage and dry season runoff (Saksa et al. 2017). The magnitude and duration of such increases is unknown and is dependent on a number of factors. Troendle et al. (2007) note that, “In the case of fuels management activity, hydrologic impact is relatively small because only a portion of the forest canopy is usually removed.” Considering that forest treatments will focus on removing primarily smaller understory trees (i.e., 10 inches DBH or smaller), and that larger trees (and their associated canopy cover) would remain, any increases in runoff resulting from forest treatments anticipated to be relatively small.

The floodplain restoration treatments are expected to decrease the rate of surface runoff downstream by retaining water in the Middle Yuba River floodplain for longer periods following snowmelt. Debris jams and riffles would slow the movement of water through the channel and allow overflow to recharge the groundwater within the meadow, leading to greater establishment of wet meadow vegetation that will result in slowed movement of water through the English Meadow floodplain. As such, the Project would retain more water, for longer period of time, within the floodplain. Therefore, surface runoff would be captured within the wet meadow systems more effectively as a result of the Project.

As described in **Mitigation Measure HYD-3**, changes in the stream channel/thalweg, streamflow hydrograph, and groundwater levels (if data are available), and other metrics that would provide information on changes in surface runoff, will be evaluated following installation of the floodplain treatments. NID will adaptively manage the project and make in-field adjustments, as necessary. The results of monitoring shall be documented and submitted to appropriate resource agencies annually. Considering that increases in surface runoff are expected to be captured within the floodplain more effectively as a result of the Project, and with implementation of **Mitigation Measure HYD-3**, effects related to surface runoff (ii) would be **neutral** or **beneficial**.

The Project is located in a remote area that does not support any constructed features; and the Project does not involve creation of impervious surfaces or development of infrastructure to support human habitation. Therefore, Project would have iii) **no impact** related to existing or planned infrastructure (e.g., stormwater drainage systems) in the Project area.

The Project have **no impact** related to iv) impeding or redirecting flood flows. On the contrary, the Project seeks to restore the natural flood regime to improve floodplain function and restore the groundwater aquifer.

d) *The Project would not risk release of pollutants due to inundation because the Project area is not in a flood hazard, tsunami or seiche zone.*

The Proposed Project is not in a tsunami or seiche zone. The Project area is within a Zone A flood hazard zone (FEMA 2021). No human residences or structures are located within the flooding area. The Project does not propose any new structures that would increase pollution risk; all treatments will be composed of natural materials and temporary crossings would be removed post-construction. Therefore, the potential for impacts related to release of pollutants due to inundation would be **less than significant**.

e) *The Proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable ground water management plan with implementation of mitigation.*

Water quality in the Middle Yuba River watershed is managed by the Central Valley RWQCB under the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan). As described above, the purpose of the Project is to restore and enhance the English Meadow floodplain, which would enhance beneficial uses within the watershed. The Project will incorporate a number of mitigation measures to ensure consistency with Basin Plan standards during implementation of the proposed restoration/enhancement activities. These include **Mitigation Measures BIO-7, HAZ-1, HAZ-2, HYD-1, and HYD-2** which require obtaining and implementing permits required under the Clean Water Act and Fish and Game Code; conducting hazard training for work crews; preparing and implementing an SPCCP; implementing BMPs in accordance with a SWPPP; and preparing and implementation a Dewatering and Diversion Plan. Refer to the discussion under item a) for a more complete description of these measures. Considering that the Project is expected to improve watershed conditions in the long-term, and with implementation of mitigation measures to address short-term water quality effects, any conflict with the Basin Plan would be **less than significant**.

There are no state-level Groundwater Sustainability Plans or other local groundwater-related plans in effect within the Project area. Therefore, the Project will have **no impact** related to implementation of a sustainable ground water management plan. Refer to item b) for a discussion of potential benefits to groundwater resulting from implementation of the Project.

3.10.4 Mitigation Measures

HYD-1 Stormwater Pollution Prevention Plan

- NID shall obtain coverage under the General Permit for Discharges of Storm Water Associated with a Construction Activity (Construction General Permit Order 2009-0009-DWQ, or current permit). Measures included in the general construction permit and associated Stormwater Pollution Prevention Plan (SWPPP) shall implemented as part of the Project. The SWPPP shall include:
- Pollution prevention measures (erosion and sediment control measures and measures to control non-stormwater discharges and hazardous spills);
- Demonstration of compliance with all applicable local and regional erosion and sediment control standards;
- Identification of responsible parties; and
- A BMP monitoring and maintenance schedule.

HYD-2. Dewatering and Diversion Plan

- NID shall develop a detailed Dewatering and Diversion Plan that shall be submitted with the applications for permits required under the Clean Water Act (e.g., Sections 401 and 404), the Porter Cologne Water Quality Control Act, and the California Fish and Game Code (e.g., Section 1602 Lake or Streambed Alteration Agreement).
- The agency-approved Dewatering and Diversion Plan shall be implemented as part of the Project.

HYD-3. Middle Yuba River and Associated Floodplain Hydrology Monitoring

NID shall monitor hydrologic conditions in the Middle Yuba River and the associated floodplain following completion of treatments. This shall include the following:

- Evaluate pre-Project and post-Project channel conditions in the mainstem and intermittent tributaries at five sample locations for a minimum of 3 years. Trends to be evaluated include comparative elevations of the thalweg versus the floodplain, and whether the channels are trending toward aggradation versus incision. This will include:
 - Annual inspection of all debris jams and riffles. Adjust materials or add additional materials, as necessary to achieve net deposition (an aggradational trend).
 - Obtaining annual thalweg:floodplain elevations at sample locations. Criteria to be evaluated include comparative elevations of the thalweg versus the floodplain, and whether the channels are trending toward aggradation versus incision. Adjust or add additional materials (e.g., trees, branches, native cobble) to debris jams as needed.
- Conduct a one-time inventory large woody debris, fish habitat types, bank stability, and cover within a 1000-foot sample reach of the mainstem channel, comparing pre-Project and post-Project conditions, using a modified USFS Region 5 Stream Condition Inventory protocol (Frazier et al. 2005) to prepare pre- and post-Project conditions.
- Compare pre- and post-Project streamflow hydrographs (for large storms and spring melt) for a minimum of 3 years to determine whether there is an attenuation of peak flows and a flattened falling limb.
 - Obtain data from the A-Level TROLL pressure sensor in the Middle Yuba River below English Meadow annually to look for desired hydrographic trend (i.e., attenuation of peak flows and a flattened falling limb).
- Collect and analyze in-stream water temperature, measured with HOBO temperature continuous recorders for a minimum of 3 years.
 - Collect and analyze in-stream water temperature data annually, as measured at HOBO temperature continuous recorder locations and the A-Level TROLL temperature sensor in the Middle Yuba River below English Meadow, to determine whether maximum water temperatures and diurnal fluctuations are decreasing.

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- Obtain groundwater elevation data from California State University, Sacramento research partners' existing groundwater wells (Cornwell 2018), if possible, for a minimum of 3 years.
 - Monitor headcut locations using Geographic Positioning Systems (GPS) unit and photo points for a minimum of 3 years.
 - NID shall adaptively manage the project and make in-field adjustments, as necessary. Such adjustments may include, but are not limited to, adding additional woody debris; altering the configuration of debris jams and riffles; and/or re-seeding of revegetation areas.
 - The results of monitoring shall be documented in an annual report that shall include the following:
 - A brief write-up of the monitoring methods and results;
 - Summary of adaptive management actions taken to address any issues identified during monitoring;
 - Appendices providing any data sheets and pre- and post-Project photographs used in the evaluation.
 - The report shall be submitted to resource agencies for review by December 31 of each year in which monitoring is conducted.

Refer also to **Mitigation Measure BIO-7** in Section 3.4, Biological Resources.

3.11 Land Use and Planning

Would the Project...	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.11.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to land use and planning if the Project would:

- Physically divide an established community; or
- Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

3.11.2 Setting

The Proposed Project is located on NID-owned land on the border of unincorporated Nevada County and Sierra County, approximately 35 miles northwest of Lake Tahoe. The Project area is surrounded primarily by USFS forest lands, with a small portion of private timber land adjacent to the Project area to the north.

The land use designation for the southwest portion of the Project area on Nevada County lands is Forest (FOR) land (Nevada County 2014); and the site is zoned as Forest (FR) under the Nevada County Zoning Ordinance (Chapter II of the Nevada County Land Use and Development), defined as follows:

- **Forest (FR).** *Forest is intended to provide for production and management (including timber harvesting and related operations) of timber resources, and compatible recreational and low-density residential uses. Within the Forest designation, the minimum parcel size should be 40+ acres, in order to provide for preservation of the timber resource and protection of resource management needs and opportunities.*

The land use designation for the northeast portion of the Project area on Sierra County lands is Forest and Open Space (Sierra County 2012). Zoning has not been designated for the Project area.

3.11.3 Discussion

The Project is located in an undeveloped area; there are no buildings and no one living at the site. The Project would not (a) physically divide an established community; therefore, there would be **no impact**.

The proposed restoration activities are intended to enhance the existing ecological function of the site and would not result in the alteration of existing land uses. NID manages the land in the Project area for its watershed value. Implementation of the Project is intended to improve watershed conditions and reduce the potential for catastrophic wildfire. The Project shall not (b) cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation; therefore, there would be **no impact**.

3.11.4 Mitigation Measures

No significant impacts related to land use or planning would result from implementation of the Proposed Project. Therefore, no mitigation is required.

3.12 Mineral Resources

Would the Project...	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.12.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to land use and planning if the Project would:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
- 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.

3.12.2 Setting and Discussion

The Nevada County General Plan specifies the terms and conditions of mining activities permitted in Nevada County (Nevada County 2014). Recreational mining activities are generally allowed in all zoning designations and do not require permits. Commercial mining activities are permitted only in areas zoned as a Mineral Extraction Combining District (Nevada County 2014).

Similarly, the Sierra County General Plan specifies the terms and conditions of mining activities permitted in Sierra County (Sierra County 2012). Sierra County does not have a mining zone designation; surface mining operations are allowed only on Timberland Production Zones if a special-use permit is obtained from the County and a reclamation plan is developed (Sierra County 2021). The Planning Department implements the local Surface Mining and Reclamation Act (SMARA) and processes mining reclamation plans, inspects the mining operations, and enforces compliance with state regulations and local ordinances.

The portion of the Project that lies within Nevada County is not located in a Mineral Extraction Combining District; and the portion of the Project that lies within Sierra County is not zoned as a Timberland Product Zone. There are no known mineral resources extraction activities in the Project area. Therefore, the Project will not a) result in the loss of availability of a known mineral resource. Furthermore, there are b) no important mineral resource recovery sites delineated on a local general plan, specific plan, or other land use plan located in the Project vicinity (Sierra County 2012, Nevada County 2014). Therefore, there would be **no impact** on mineral resources.

3.12.3 Mitigation Measures

No significant impacts related to mineral resources would result from implementation of the Proposed Project. Therefore, no mitigation is required.

3.13 Noise

Would the Project result in:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.13.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to noise if the Project would result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Generation of excessive groundborne vibration or groundborne noise levels; or
- *A substantial temporary, periodic, or permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*
- *For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?*

3.13.2 Setting and Discussion

Both Nevada County and Sierra County General Plan Noise Elements specify requirements for noise analysis and mitigation depending on surrounding land uses. Areas near rural, residential and public, commercial and recreation, business park, and industrial land-uses are designated as

noise-sensitive under the Nevada County General Plan (Nevada County 2014). Areas near residential, transient lodging, hospitals, nursing homes, theaters, auditoriums, music halls, churches, meeting halls, office buildings, schools, libraries, museums, playgrounds, schools, and neighborhood parks are designated as noise-sensitive under the Sierra County General Plan (Sierra County 2012).

- a) The Proposed Project would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Land use in the Project area is designated as FR (forestland) by Nevada County and as Forest and Open Space by Sierra County. There are no permanent residences or other sensitive receptors in the Project area. The nearest recreational facilities are located around Jackson Meadows Reservoir, approximately 1 mile to the north; and the Pacific Crest Scenic Trail, located approximately 0.5 mile to the east. Use of motor-powered or mechanical equipment would result in a short-term increase in noise levels within the Project area as compared to the existing condition. However, the increase in noise would be minimal considering the remote location of the Project and surrounding forest which would act as a noise buffer and would attenuate any increase in noise before reaching potential receptors at recreation facilities near the reservoir or along the Pacific Crest Scenic Trail. Finally, Nevada and Sierra Counties have not assigned noise standards to the land uses associated with the Project. Therefore, the Project will not result in the generation of substantial temporary or permanent increase in ambient noise levels in excess of standards established in the Nevada County or Sierra County General Plans. This impact would be **less than significant**.

- b) The Proposed Project would not result in the generation of excessive groundborne vibration or groundborne noise levels.

There are no federal, state, or local regulatory standards for vibration. However, various criteria have been established to assist in the evaluation of vibration impacts. For instance, Caltrans has developed vibration criteria based on human perception and structural damage risks. Based on this analysis, vibrations of a peak particle velocity (ppv) of greater than 0.1 inch per second (in/sec) are the minimum level perceptible level for ground vibration; short periods of ground vibration in excess of 0.2 in/sec can be expected to result in increased levels of annoyance to people within buildings; and ppv levels greater than 0.4 in/sec may potentially cause structural damage (Caltrans 2002).

The Proposed Project would not involve the long-term use of any equipment or processes that would result in potentially significant levels of ground vibration. Construction activities associated with the Proposed Project would require the use of various types of equipment that might result in intermittent increases in ground vibration. Ground vibration generated by construction equipment spreads through the ground and diminishes in strength with distance. There are no nearby sensitive receptors that would be affected by ground vibration associated with use of equipment as part of the Project. In addition, the predicted ground vibration levels at nearby recreational facilities would not be anticipated to exceed the minimum perceptible threshold of 0.1 in/sec ppv for human annoyance. Therefore, this impact would be **less than significant**.

c) and d) The Proposed Project would not substantial temporary, periodic, or permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

As described above, operation of motor-powered vehicles and equipment may result in a temporary increase in ambient noise levels in the Project vicinity. The Project is remotely located and any increase in ambient noise levels would be localized, buffered by trees; and attenuated over the distance to any receptors (i.e., recreators at the reservoir or trails in the vicinity). Any increase in ambient noise would be limited to the duration of the Project; following completion of the Project, noise levels would return to existing levels. Therefore, this impact would be **less than significant**.

e) The Proposed Project is not located in the vicinity of a private airstrip or an airport land use plan or within 2 miles of a public airport or public use airport and would not expose people residing or working in the Project area to excessive noise levels.

The Project area is not located within the vicinity of a private airstrip, an airport land use plan, or within 2 miles of a public airport and would not expose people residing or working in the Project area to excessive noise levels. Therefore, there would be **no impact**.

3.13.3 Mitigation Measures

No significant impacts related to noise would result from implementation of the Proposed Project. Therefore, no mitigation is required.

3.14 Population and Housing

Would the Project...	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.14.1 Thresholds of Significance

Appendix G of the State CEQA Guidelines states that a Project could have a significant impact related to population and housing if the Project would:

- Induce substantial unplanned population growth in an area, either directly or indirectly; or
- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

3.14.2 Discussion

The Proposed Project is located in an unincorporated area on the border of Nevada County and Sierra County, approximately 35 miles northwest of Lake Tahoe. The nearest city is Truckee, in Nevada County, which is approximately 25 air miles southeast of the Project area. Based on a review of aerial photographs and maps of the Project area, there are no residences within a 5-mile radius of the Project area.

The purpose of the Project is to restore and enhance floodplain and forest resources in the Project area. Upon Project completion, NID would install a barrier across the logging access road to minimize public entrance into the Project area. Project activities would not (a) result in unplanned population growth; nor will the Project (b) displace any people or housing. Therefore, there will be **no impact** to population and housing in the Project vicinity.

3.14.3 Mitigation Measures

No significant impacts related to population and housing would result from implementation of the Proposed Project. Therefore, no mitigation is required.

3.15 Public Services

Would the Project...	Potentially Significant Impact	Less than Significant with Mitigation	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:				
i) Fire protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.15.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to public services if the Project would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
 - (i) fire protection,
 - (ii) police protection,
 - (iii) schools,
 - (iv) parks, or
 - (v) other public facilities.

3.15.2 Setting and Discussion

The Proposed Project would not (i) result in substantial impacts related to the provision of fire protection services. The USFS (TNF) is responsible for fire protection in the Project area within Nevada County (Nevada County 2020). The Project within Sierra County lies within the Sierra County Fire Protection District #1. The Proposed Project would not significantly affect the response times of fire protection or other public services or increase demand for such services.

Mitigation Measure HAZ-3 would reduce the likelihood of Project-related fires by requiring implementation of standard fire prevention measures during operation of equipment for forest and meadow restoration treatments. This impact would be considered **less than significant with mitigation incorporated**.

Restoration and enhancement of the Middle Yuba River and adjacent floodplain, as well as surrounding forest habitats, would not result in a significant increase in demand for police protection, school, park, or other public facility services, relative to the existing conditions (see thresholds of significance [ii, iii, iv, and v]). There are no schools within or adjacent to the Project area that would be affected by construction activities. Therefore, there would be **no impact** to public services resulting from the Project.

3.15.3 Mitigation Measures

Refer to **Mitigation Measure HAZ-3** in Section 3.8, Hazards and Hazardous Materials.

3.16 Recreation

Would the Project...	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.16.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to recreation if the Project would:

- 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, or
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse effect on the environment.

3.16.2 Setting and Discussion

The Project area is located on private land and is currently not accessible by vehicle. While the public may potentially access the Project area on foot, the Project area does not support any formal public recreation facilities such as parks, fishing access, or trails. The nearest public recreation opportunities include camping and reservoir-based recreation associated with Jackson Meadows Reservoir (approximately 1 mile downstream of the Project area); and the Pacific Crest Scenic Trail, located approximately 0.5 mile to the east. In addition, USFS lands surrounding the Project provide dispersed recreation opportunities.

The Project is intended to enhance and restore resources within the watershed and downstream within Jackson Meadows Reservoir. While improved ecological function and water quality may potentially enhance the experience of recreationists, it would not in itself induce growth or increase public use of facilities. During implementation of restoration and enhancement activities, small work crews (between two and ten people) may be housed at NID’s Woodcamp Campground and/or at the Aspen Group Camp during the work week (refer to **Map 2-1** for the location of these campgrounds). Campsites for the crew would be reserved in advance, and the remainder of the campground would continue to be available for public use. Use of these campsites would be short-term, limited to the duration of Project implementation (i.e., no more than five work seasons between June and November), and would not result in or accelerate

physical deterioration of the facilities. Therefore, the Project would have a **less than significant impact** related to a) use of an existing recreational facility.

The Proposed Project does not include or require the construction or expansion of new recreational facilities. Therefore, there would be **no impact** related to the construction or expansion of recreational facilities.

3.16.3 Mitigation Measures

No significant impacts related to recreation would result from implementation of the Proposed Project. Therefore, no mitigation is required.

3.17 Transportation/Traffic

Would the Project...	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.17.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to transportation or traffic if the Project would:

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities;
- Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b);
- Substantially increase hazards due to a geometric design feature or incompatible uses; or
- Result in inadequate emergency access.

3.17.2 Setting

Access to the Project site from Truckee, is via California Highway 89 to Bear Valley Road, Jackson Meadows Road/Henness Pass Road, and finally Graniteville Road and Meadow Lake Road. Direct access to English Meadow from Meadow Lake Road is via an Unclassified Forest Service Road (i.e., logging access road) that starts on TNF lands and then crosses onto private land owned by NID. Use of this road has been authorized by the TNF. NID will obtain a permit from Sierra County for the use of Meadow Lake Road, if required.

The Circulation Element of the Nevada County General Plan (Nevada County 2014) lists State Highway 89 to the Sierra County line as a minor arterial and does not classify any other roads used to access the Project area.

The Circulation Element of the Sierra County General Plan (Sierra County 2012) lists Highway 89 as a Level of Service⁷ (LOS) C, and projects that it could become LOS E, particularly south of Sierraville. The Sierra County General Plan also identifies Jackson Meadows Road, west of Highway 89, as an area that could experience an increase in LOS to C.

3.17.3 Discussion

- a) *The Project will not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.*

NID is proposing to implement various restoration/enhancement activities within the Project area over five work seasons (June to November), resulting in a short-term minor increase in local traffic. During this time, work crews of between two and ten people would use personal vehicles to commute to the site, and heavy equipment would be transported in and out of the site, primarily during initial mobilization/demobilization at the beginning and end of each work season. Following completion of the Project, all traffic-related effects resulting from implementation of the Project would cease.

There are no Nevada County or Sierra County programs, plans, ordinances or policies that pertain to short-term construction-related traffic along the access roads considered in this analysis. Therefore, there is **no impact**.

- b) *The Project will not conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).*

According to CEQA Guidelines Section 15064.3, subdivision (b), transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. The proposed Project is not a transportation project. In addition, any increase in vehicle miles travelled would be minor and short-term, lasting only for the duration of the Project. Therefore, the Project would have a **no impact** in the long-term with regard to conflicts with CEQA Guidelines Section 15064.3, subdivision (b).

- c) *With implementation of mitigation, the Project will not substantially increase hazards due to a geometric design feature or incompatible uses.*

The term “geometric design” refers to the layout and features of a road with consideration to site-specific characteristics such as gradient, sight distance, traffic volume and traffic speed. The Project does not include construction of a new road, nor would it alter the design of an existing road. As described in Section 2.6.1, Meadow Lake Road and the logging access road may require maintenance or repair prior to use. Maintenance activities would include grading or blading within the prism of the existing road, and installation of culverts, to allow for equipment access.

⁷ Level of Service (LOS) is a qualitative measure of traffic operating conditions whereby a letter grade A through F corresponds to progressively worsening traffic operating conditions. LOS C indicates a delay of 20 to 35 seconds at intersections and roadway segments; LOS E indicates a delay of 50 to 80 seconds. In 2019, the CEQA Guidelines were revised to use vehicle miles travelled (VMT), rather than LOS, as the most appropriate metric for evaluating a project’s transportation impacts. However, Sierra County policies (as available online) have not yet been updated to reflect the changes in State law.

These activities would not change any geometric design features on the roads; and may potentially minimize the potential for hazards by improving the currently rough and uneven surface of the road.

The Project is located in a popular recreational area where traffic is heaviest during the peak recreation season (typically Memorial Day through Labor Day), which coincides with the proposed work season for the Project (June to November). Therefore, hauling of large, heavy equipment to and from the Project area could potentially temporarily increase hazards along Highway 89, Bear Valley Road, Jackson Meadows Road/Heness Pass Road, or Graniteville Road/Meadow Lake Road during the peak use season. For example, large trucks pulling out from the logging access road to Meadow Lake road could pose a potential hazard for other cars along Meadow Lake Road.

Any such increase in hazard levels would be considered minimal because hauling of heavy equipment would be limited primarily to mobilization/demobilization, during which time no more than two or three haul trucks per day would be present on local access roads for up to 4 days at the beginning of the work season and 4 days at the end of the work season. Meadow Lake Road in the vicinity of the logging access road (which provides direct access to the Project area) is unpaved and currently passable only to high-clearance and/or four-wheel drive vehicles. Therefore, traffic volumes along this road are low under existing conditions, minimizing the potential for hazardous interactions with Project-related traffic. To further minimize this potential hazard, NID would implement **Mitigation Measure TRAF-1**. This measure states that, if Meadow Lake Road is experiencing heavy use during mobilization/demobilization of heavy equipment to the Project area, safety signage and/or flags will be placed along the road to warn motorists of truck traffic turning off/onto the Unclassified Forest Service Road (logging access road) that provides direct access to the Project area, and/or a work crew member will be assigned to monitor and direct traffic. In addition, a gate will be installed to block public access onto the Unclassified Forest Service Road. Following completion of the Project, any minimal increase in hazards posed by the presence of haul trucks would cease. With **implementation of mitigation**, the Project would have a **less than significant** impact related to geometric design features or incompatible uses.

d) *The Project will not result in inadequate emergency access.*

Considering that the Project will result in only minimal and short-term increases in traffic; that such effects will cease upon completion of the Project, and that NID would, if required by Sierra County, implement improvements that may ameliorate the condition of Meadow Lake Road, the Project would not impede access for emergency vehicles along Highway 89, Jackson Meadows Road, Henness Pass Road, Graniteville Road, or Meadow Lake Road. This impact would be **less than significant**.

3.17.4 Mitigation Measures

TRAF-1 Traffic Safety Measures

- NID will evaluate the volume of traffic on Meadow Lake Road during mobilization of heavy equipment to the Project area.
- Safety signage and/or flags will be placed along the road to warn motorists of truck traffic from the Unclassified Forest Service Road (logging access road) that provides

direct access to the Project area, and/or a work crew member will be assigned to monitor and direct traffic.

- In addition, a gate will be installed to block public access onto the Unclassified Forest Service Road.

3.18 Tribal Cultural Resources

Would the Project...	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
<p>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 and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:</p> <p>a) Listed or eligible for listing in the California Register of Historic Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or</p> <p>b) 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p>

3.18.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to tribal cultural resources if the Project would:

- 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 and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
- Listed or eligible for listing in the California Register of Historic Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
- 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

3.18.2 Setting

Assembly Bill 52 (AB-52) created a new category of environmental resources that must be considered under CEQA: “tribal cultural resources.” Tribal cultural resources are defined as either (1) “sites, features, places cultural landscapes, sacred places and objects with cultural value to a California Native American tribe” that are included in the state register of historical resources or a local register of historical resources, or that are determined to be eligible for inclusion in the state register; or (2) resources determined by the lead agency, in its discretion, to be significant based on the criteria for listing in the state register.

Recognizing that tribes may have expertise with regard to their tribal history and practices, AB-52 requires lead agencies to provide notice to tribes that are traditionally and culturally affiliated with the geographic area of a proposed project, and if they have requested notice of projects proposed within that area. If the tribe requests consultation within 30 days upon receipt of the notice, the lead agency must consult with the tribe. Consultation may include discussing the type of environmental review necessary, the significance of tribal cultural resources, the significance of the project’s impacts on the tribal cultural resources, and alternatives and mitigation measures recommended by the tribe. The parties must consult in good faith, and consultation is deemed concluded when either the parties agree to measures to mitigate or avoid a significant effect on a tribal cultural resource (if such a significant effect exists) or when a party concludes that mutual agreement cannot be reached.

3.18.3 Discussion

a) and b) With implementation of mitigation, the Project would not cause a substantial adverse change in the significance of a tribal cultural resource, including a) any listed or eligible for listing in the California Register of Historic Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or b) any 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

As described in Section 3.5, Cultural Resources, the review of cultural resources information and a pedestrian survey yielded one NRHP-eligible resource within the Project area, and four additional isolated resources.

In accordance with the consultation requirements of AB-52, NID initiated the consultation process with appropriate Native American groups with a possible interest in the Proposed Project. On February 18, 2021, NID sent letters and/or e-mails to each of the individuals listed below to solicit information regarding tribal cultural resources in and near the Project Site, and to determine whether their respective Tribal organizations had an interest in or concerns with the Proposed Project:

- Colfax-Todds Valley Consolidated Tribe–Pamela Cubbler and Clyde Prout
- Greenville Rancheria–Elijah Fisher, Kyle Self, and Alisha Wilson
- Nevada City Rancheria Nisenan Tribe–Shelly Covert

-
- Tsi Akim Maidu–Grayson Coney, Don Ryberg and Jason Ryburg⁸
 - United Auburn Indian Community (UAIC) of the Auburn Rancheria–Matthew Moore, Anna Starkey and Gene Whitehouse
 - Washoe Tribe of Nevada and California–Darrel Cruz and Neil Mortimer

The Colfax Todds Valley Consolidated Tribe (Pamela Cubbler) and the Washoe Tribe of Nevada and California (Darrel Cruz) both responded by e-mail on February 19, 2021, requesting additional information on the Project, including a copy of the archeological report. NID made follow-up phone calls to both individuals and provided the requested materials by e-mail on February 24 and February 25, 2021.

The UAIC (Anna Starkey) responded by e-mail on March 4, 2021, requesting consultation to discuss topics listed in Public Resources Code (PRC) §21080.3.2(a); requesting that NID allow UAIC Tribal representatives to observe and participate in all cultural resource surveys, including initial pedestrian surveys for the Project; and requesting copies of the draft cultural resources and biological resources reports. The requested materials were provided by e-mail on March 5, 2021.

Following this initial outreach, NID hosted two video meetings to discuss the Project, including known cultural and biological resources in the Project area, and to review draft mitigation measures. The first video conference was held on March 24, 2021 and was attended by Darrel Cruz of the Washoe Tribe of Nevada and California; the second was held on March 25, 2021 and was attended by Anna Starkey, Matthew Moore, and Anna Cheng of the UAIC. Based on feedback obtained during the video conferences:

- NID acknowledges that the Project area is considered to be ancestral land of the Washoe Tribe.
- The Project boundary was modified to include the known NRHP-eligible resource and to identify the area around the resource as a “special treatment area.” In addition, protections were added for a spring located adjacent to this resource (but outside the Project area) (refer to Section 3.4 Biological Resources and Mitigation Measure BIO-13).
- Mitigation measures related to noxious weeds were clarified and expanded (refer to Section 3.4 Biological Resources and Mitigation Measures BIO-4 and BIO-5).
- Mitigation measures related to cultural Tribal resources were significantly modified. Draft revised mitigation measures were provided to the video conference attendees on April 9, 2021, and additional comments and edits were received from Darrel Cruz and Anna Starkey on April 9 and 10, 2021. All comments and edits were addressed, and the final draft measures provided for Tribal review on April 13, 2021. Approval of the measures was obtained the same day, April 13, 2021. The approved mitigation

⁸ Hard copy mail provided to members of the Tsi Akim Maidu were returned to NID as “Not Deliverable as Addressed”. NID called the Tsi Akim Maidu Tribal Office, but the number was disconnected. NID also left a message at a number for Don Ryberg found online.

measures are memorialized in Section 3.5 Cultural Resources, Mitigation Measures CULT/TRIB-1, CULT/TRIB-2, CULT/TRIB-3, and CULT/TRIB-4.

Both the Washoe Tribe of Nevada and California and the UAIC expressed their desire for ongoing involvement and consultation over the course of the Proposed Project, beyond the minimum requirements of the AB-52 consultation. NID affirmed its commitment to include the Washoe Tribe of Nevada and California and the UAIC as part of the interdisciplinary team that will guide the Project throughout its implementation.

Considering implementation of **Mitigation Measures BIO-4, BIO-5, BIO-13, CULT/TRIB-1, CULT/TRIB-2, CULT/TRIB-3, and CULT/TRIB-4**; and anticipated ongoing monitoring and consultation with interested Tribes over the course of the Project, any effects to Tribal cultural resources would be **less than significant**.

3.18.4 Mitigation Measures

Refer to **Mitigation Measures BIO-4, BIO-5, and BIO-13** in Section 3.4, Biological Resources; and **Mitigation Measures CULT/TRIB-1, CULT/TRIB-2, CULT/TRIB-3, and CULT/TRIB-4** in Section 3.5, Cultural Resources.

3.19 Utilities and Service Systems

Would the Project...	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) 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 providers existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.19.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to utilities or service systems if the Project would:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment facilities or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects;
- Have insufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years;
- 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 providers existing commitments;
- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or
- Fail to comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

3.19.2 Setting and Discussion

Water from the Middle Yuba River within the Project area is impounded within Jackson Meadow Reservoir, which is part of the District's raw water storage and delivery system. There are no wastewater treatment facilities or storm water drainage, electric power, natural gas, or telecommunications facilities in the Project area. The Project does not propose new construction of such facilities. The Project will require the temporary installation of a porta-potty for workers' use during Project implementation. This porta-potty will be placed in a previously disturbed upland area adjacent to the logging access road at the southern border of English Meadow. This porta-potty will be regularly serviced during Project implementation and transported off site after each work season.

The Project would not (a) generate any new source of wastewater or result in the creation of or relocation of new private septic systems, nor would it require or result in the construction of new water or wastewater treatment, electric power, natural gas, or telecommunications facilities. The Proposed Project does not (b) require additional water supplies than are provided from existing resources. Because there are no residences or other human facilities nearby, the Project would not (c) alter existing private wastewater treatment systems. The nearest landfill has sufficient permitted capacity to accommodate the Project's solid waste disposal needs, which are minimal (d). The Project would comply with all statutes and regulations related to solid waste (e). Therefore, the Project would have no impact on water supply, wastewater treatment systems, or solid waste disposal standards.

Overall, the Project would have **no impact** on utilities and service systems.

3.19.3 Mitigation Measures

No significant impacts related to utilities and service systems would result from implementation of the Proposed Project. Therefore, no mitigation is required.

3.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project...	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.20.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact if located in or near state responsibility areas or lands classified as very high fire hazard severity zones if the Project would:

- Substantially impair an adopted emergency response plan or emergency evacuation plan;
- Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;
- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or
- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

3.20.2 Setting

California’s increasing population and expansion of development into previously undeveloped areas is creating more “wildland-urban interface” (WUI) issues with a corresponding increased risk of loss to human life, natural resources, and economic assets associated with wildland fires.

Rising temperatures and increasing temporal variability of water availability is substantially increasing wildfire risk in many areas.

The analysis in this section pertains specifically to 1) State Responsibility Areas (SRAs), which are non-federal lands outside of city boundaries within which California assumes financial responsibility for preventing and suppressing fires; and 2) other non-federal areas that have been designated by California Department of Forestry and Fire Protection (Calfire) as “very high” fire hazard severity areas. The boundaries of SRAs, which are reviewed and amended every 5 years, are further categorized by CALFIRE into Fire Hazard Severity Zones (FHSZs) with associated hazard levels classified as “moderate”, “high”, or “very high.” These ratings are based on predictions of fire behavior in response to local weather patterns, fuel availability, and surrounding terrain (Calfire 2012). While the FHSZ designations are applicable primarily in SRAs, some local responsibility areas have been designated as very high FHSZs. Local governments assume responsibility for fire prevention and suppression in these very high FHSZs.

The Project within is located on lands that are classified by the State Board of Forestry as SRAs under California Public Resource Code (PRC) 4126; and within a “very high” FHSZ. Protection of these lands from wildland fire is the direct responsibility of CAL FIRE. The closest CAL FIRE station is in Truckee CA.

Federal lands immediately adjacent to the Project are located within Federal Responsibility Areas (FRAs) and are under the jurisdiction of the Tahoe National Forest.

3.20.2.1 Regulatory Setting

Responsibility for fire prevention, suppression, and post-fire mitigation in California includes a nexus of policies and plans at the federal, state, and local level. Each of these levels is outlined below.

Federal Level

The federal government pays for wildland fire protection on federal lands in California, and in certain circumstances, provides federal funding for fire suppression and relief lands on non-federal lands.

Disaster Mitigation Act of 2000

The Federal Disaster Mitigation Act of 2000 enacted a number of changes to the Robert T. Stafford Disaster Relief and Emergency Assistance Act related to pre-disaster mitigation, streamlining the administration of disaster relief, and controlling the costs of federal disaster assistance. These changes have collectively brought greater focus on pre-disaster planning and activities as a means for reducing response and post-disaster costs. In accordance with the Act, local governments must have a Local Hazard Mitigation Plan that is reviewed by the State Mitigation Officer and then approved by FEMA as this is a required condition of receiving FEMA mitigation project assistance. These Local Hazard Mitigation Plans must be revised, reviewed, and approved every 5 years.

Fire Safe Councils can play an important role in the development of Local Hazard Mitigation Plans. The typical Council consists of state and federal fire agencies, local fire districts,

businesses, local government, and local concerned citizens. Some Councils have also combined with neighboring fire safe councils to develop countywide wildfire hazard mitigation plans.

State Level

Senate Bill 1241, Kehoe 2012

To address the increasing risk of wildfire in the WUI, Senate Bill 1241 revised the safety element requirements for SRAs and very high FHSZs (Government Code Sections 65302 and 65302.5). SB 1241 requires that the draft element or draft amendment to the safety element of a county or a city's general plan be submitted to the State Board of Forestry and Fire Protection and to every local agency that provides fire protection to territory in the city or county at least 90 days prior to either: 1) the adoption or amendment to the safety element of its general plan for each county that contains state responsibility areas; or 2) the adoption or amendment to the safety element of its general plan for each city or county that contains a very high FHSZ.

Cities and counties are required to adopt a general plan to guide major land use decisions. Each plan includes seven mandatory elements: land use, circulation, housing, conservation, open space, noise, and safety. SB 1241 requires cities and counties to review and update their safety elements to address fire risks on SRA lands and very high FHSZs.

A set of feasible implementation measures designed to carry out the goals, policies and objectives of the general plan must include measures designed to minimize fire risk if a project falls within a SRA or very high FHSZ, including:

- 1) *Avoiding or minimizing the wildfire hazards associated with new uses of land.*
- 2) *Locating, whenever feasible, new essential public facilities (i.e., hospitals and health care facilities, emergency shelters, etc.) outside an SRA or a very high FHSZ. If a facility must be placed within SRAs or very high FHSZs, construction and operation methods must be implemented to minimize potential damage of wildland fire.*
- 3) *Designing adequate infrastructure for new developments, including safe access for emergency response vehicles, visible street signs, and water supplies for structural fire suppression.*
- 4) *Working cooperatively with public agencies with responsibility for fire protection.*

Government Code Section 66474.02, as added by SB 1241, requires that a legislative body of a county make three findings before approving a tentative map or parcel map, for an area located in an SRA or very high FHSZ. These findings must include evidence that 1) the design and location of each lot in the subdivision is consistent with any applicable regulations adopted by the State Board of Forestry and Fire Protection; 2) structural fire protection and suppression services will be available for the subdivision from a) the county, or b) the Department of Forestry and Fire Protection by contract; and 3) ingress and egress for the subdivision meets the regulations regarding road standards for fire equipment.

Local Level

A summary of fire hazard planning requirements for local governments, based on federal and state regulation, is provided below:

-
- In order to be eligible for FEMA mitigation project funding, local governments must adopt a Local Hazard Mitigation Plan, and then review and revise that plan every 5 years.
 - In order to influence where and how federal agencies implement fuel reduction projects on federal land, as well as how additional federal funds may be distributed for projects on non-federal lands, local governments may develop Community Wildfire Protection Plans.
 - Safety elements of local general plans must be revised, upon the next update to the Housing Element to address SRAs and very high fire hazard severity zones. The revision must include information about wildfire hazards, as well as goals, policies, and objectives and feasible implementation measures for the protection of the community from the unreasonable risk of wildfire.
 - Before approving a tentative subdivision map or parcel map within a state responsibility area or a very high fire hazard severity zone, a city or county must make certain findings. Those findings include that the subdivision is consistent with CAL FIRE regulations and that fire protection and suppression services are available for the subdivision.

Community Wildfire Protection Plans

Community Wildfire Protection Plans (CWPPs) are generally developed by local governments with assistance from state and federal agencies and other interested partners. This provides communities with an opportunity to influence where and how federal agencies implement fuel reduction projects on federal land, as well as how additional federal funds may be distributed for projects on non-federal lands.

Nevada County

A CWPP for Nevada County was initially developed in 2006 and was updated in April 2016 (Fire Safe Council of Nevada County 2016). The primary goal of the Nevada County CWPP is to protect human life, private property, essential infrastructure, and natural resources through the implementation of fire prevention projects that work to increase public awareness, improve forest health, sustain local wildlife and preserve the natural beauty of the area through a shared responsibility concept.

Sierra County

The CWPP for Sierra County, updated in 2014, includes and updates the Sierra County Fire Plan of 2002 and is intended to provide a comprehensive, scientifically based assessment of the wildfire hazards and risks and provide potential projects to mitigate those hazards within the Sierra County Fire Protection Districts responsibility areas.

3.20.3 Discussion

- a) *The Project will not substantially impair an adopted emergency response plan or emergency evacuation plan.*

Based on a review of the Nevada County Wildfire and Evaluation Incident Dashboard (Nevada County 2021), the main evacuation route from the Project area within Nevada County is via

Graniteville/Meadow Lake Road, west to Gaston Road, south to Highway 20. Based on a review of the Sierra County CWPP (Map 10, Sierra County 2014), the main evacuation route from the Project area within Sierra County is via Graniteville/Meadow Lake Road, north to Henness Pass Road/Jackson Meadows Road, east to Highway 89.

During implementation of the Project, additional traffic will be limited to personal vehicles for a two-to ten-person work crew over a maximum of five work seasons (June to November). It is assumed that the crews will commute in at the beginning of the work week, will stay at Aspen Group Camp or Woodcamp Campground during the week, and will commute home at the end of the work week. A slight increase in vehicle/equipment use of local roads may be required during mobilization/ demobilization activities at the beginning and conclusion of each work season. The slight increase in traffic will not significantly impede use of the evacuation routes noted above.

- b) *With implementation of mitigation, the Project will not exacerbate wildfire risks and thereby expose occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors.*

Use of vehicles and equipment powered by combustion engines will be required for implementation of the restoration/enhancement activities. The Project area features a relatively flat floodplain (i.e., English Meadow) surrounded by sloping forest lands. Wildfires burn up-slope faster and more intensely than along flat ground, and a steeper slope will result in a faster moving fire, with longer flame lengths. Fire danger would increase with wind speed. Therefore, should a fire be accidentally ignited during implementation of the Project, the topography of the Project area combined with the fact that it is densely forested, would contribute to an increased risk for severe or uncontrolled spread of the fire. To reduce risk of wildfire, the District will implement **Mitigation Measure HAZ-3**, which requires the District and/or its contractor to implement standard fire prevention measures, including requiring fire prevention equipment to be available at all times, identifying construction sites as non-smoking areas, and providing fire prevention training to construction personnel. Thus, with implementation of Mitigation Measure HAZ-1, the Project would have a **less than significant** impact on wildfire risk.

- c) *The Project will not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.*

The Project does not require installation or maintenance of infrastructure. The logging access road, an existing Forest Service Road (unclassified) will be graded/bladed to allow vehicles and machinery to safely access the Project area. Maintenance of this road would not exacerbate fire risk. Furthermore, the Project includes forest treatments that are intended to improve forest health and minimize the potential for catastrophic fire over the long term. The Project, therefore, would have **no impact** related to increased risk due to installation or maintenance of associated infrastructure.

- d) *With implementation of mitigation, the Proposed Project will not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.*

As described under item a), the Project is surrounded by upslope forest habitats, which poses an increased risk for the rapid spread and severity of wildfire, if sparked during construction. Loss of vegetation as a result of severe fire could, in turn, increase the risk for slope instability and

landslides during the rainy season post-fire. However, there are no residences within or near the Project area; and dispersed recreational use by the public is minimal. Overall, the Project poses minimal risk to residential structures from flooding, slope instability, or landslides. The District will further minimize any potential for risk through implementation of **Mitigation Measure HAZ-3** to minimize the risk of ignition of wildfire during construction. Therefore, with implementation of mitigation, the risk of exposure of people or structures from flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes is **less than significant**.

3.20.4 Mitigation Measures

Refer to **Mitigation Measure HAZ-3** in Section 3.9, Hazards and Hazardous Materials.

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4 AGENCIES AND PERSONS CONSULTED

- **Colfax-Todds Valley Consolidated Tribe**, Pamela Cubbler
- **G2 Archeology**, Dayna Giambastiani
- **Nevada Irrigation District**, Neysa King and Cameron Townsend.
- **Native American Heritage Commission**
- **Plumas Corporation**, Leslie Mink
- **UAIC of the Auburn Rancheria**, Anna Cheng, Anna Starkey, Matthew Moore
- **Under the Trees, Inc.**, Kevin Whitlock
- **Washoe Tribe of Nevada and California**, Darrel Cruz

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Appendix A

Photographs of the Project Area Under Existing Conditions.

Appendix A. Photographs of the Project Area Under Existing Conditions.



Photographs of headcutting within the two perennial streams (R3UB2-1 and R3UB2-2) that are tributaries to the mainstem Middle Yuba River.



Two photographs showing the existing conditions in the northeast portion of the floodplain. The upper photo shows the poor condition of vegetation in the vicinity of several manmade ditches. The lower photo the exaggerated meander bend, in the vicinity of wet meadow Pem1-5. The floodplain in the bend is 6 feet below the meadow floodplain, and the channel of the Middle Yuba River (not visible in the photo) is 3 feet below that.



This photograph shows an incised channel in the southwest portion of the floodplain.



This photograph shows healthy meadow vegetation on the southwest side of the Middle Yuba River, in the western portion of the Project area.

Appendix B

Special-Status Plant Species Known to Occur or Potentially Occurring in the Project Vicinity.

APPENDIX B. SPECIAL-STATUS PLANTS KNOWN OR POTENTIALLY OCCURRING IN THE PROJECT VICINITY.

Scientific Name	Common Name	Federal/State Status/CRPR	Habitat Associations	Potential to Occur in the Project area
Plants – Known to Occur				
Carex lasiocarpa	woolly-fruited sedge	None/None/2 B.3	Perennial rhizomatous herb. Bogs and fens, freshwater marshes and swamps, lake margins. Elevation (ft): 5,650–7,000	<ul style="list-style-type: none"> • Known to occur. Two populations were observed in the fens at the northwest end of the Project area, and one population in riparian habitat along the Yuba river in the middle of the Project area (Stevens and Dolan 2018, 2019). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Erigeron miser	starved daisy	None/None/1 B.3	Perennial herb. Rocky soils in upper montane coniferous forest. Elevation (ft): 6,100–8,750	<ul style="list-style-type: none"> • Known to occur. Eight populations were observed in rocky outcrops in the southwestern portion of the Project area (Stevens and Dolan 2018, 2019). • CNDDDB query: A population is known approximately 1 mile southwest of the Project area.
Plants – May Potentially Occur, Not Observed During Surveys				
Botrychium crenulatum	scalloped moonwort	None/None/2 B.2	Perennial rhizomatous herb. Bogs and fens, lower montane coniferous forest, meadows and seeps, freshwater marshes and swamps, and upper montane coniferous forest. Elevation (ft): 4,200–10,950	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat for this species is present within the Project area. Not observed during protocol-level botanical surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Botrychium minganense	Mingan moonwort	None/None/2 B.2	Perennial rhizomatous herb. Bogs and fens, lower montane coniferous forest, meadows and seeps, and upper montane coniferous forest. Elevation (ft): 4,850–7,270	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat for this species is present within the Project area. Not observed during protocol-level botanical surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Botrychium montanum	western goblin	None/None/2 B.1	Perennial rhizomatous herb. Mesic soils in lower and upper montane coniferous forest, meadows and seeps. Elevation (ft): 4,880–7,270	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat for this species is present within the Project area. Not observed during protocol-level botanical surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.

APPENDIX B. SPECIAL-STATUS PLANTS KNOWN OR POTENTIALLY OCCURRING IN THE PROJECT VICINITY.

Scientific Name	Common Name	Federal/State Status/CRPR	Habitat Associations	Potential to Occur in the Project area
Carex davyi	Davy's sedge	None/None/1 B.3	Perennial herb. Subalpine and upper montane coniferous forest. Elevation (ft): 5,000–10,670	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat for this species is present within the Project area. Not observed during protocol-level botanical surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019). • CNDDDB query: The nearest occurrence is approximately 1 mile west of the Project area (CNDDDB 2021).
Carex limosa	mud sedge	None/None/2 B.2	Perennial rhizomatous herb. Bogs and fens, lower montane coniferous forest, meadows and seeps, freshwater marshes and swamps, and upper montane coniferous forest. Elevation (ft): 4,000–9,000	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat for this species is present within the Project area. Not observed during protocol-level botanical surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Eriogonum umbellatum var. torreyanum	Donner Pass buckwheat	None/None/1 B.2	Perennial herb. Volcanic and rocky soils in meadows and seeps and upper montane coniferous forest. Elevation (ft): 6,180–8,740	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat for this species is present within the Project area. Not observed during protocol-level botanical surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019). • CNDDDB query: There are two documented occurrences within 1 mile of the Project area. A population is known about 0.5 mile west of the Project area and 1 mile south of the Project area.
Ivesia sericoleuca	Plumas ivesia	None/None/1 B.2	Perennial herb. Vernal mesic and volcanic soils in Great Basin scrub, lower montane coniferous forest, meadows and seeps and vernal pools. Elevation (ft): 4,370–7,340	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat for this species is present within the Project area. Not observed during protocol-level botanical surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.

APPENDIX B. SPECIAL-STATUS PLANTS KNOWN OR POTENTIALLY OCCURRING IN THE PROJECT VICINITY.

Scientific Name	Common Name	Federal/State Status/CRPR	Habitat Associations	Potential to Occur in the Project area
Meesia longiseta	long seta hump moss	None/None/2 B.3	Moss. Carbonate soils in bogs and fens, meadows and seeps, and upper montane coniferous forest. Elevation (ft): 5,830–10,150	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat for this species is present within the Project area. Not observed during protocol-level botanical surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Oreostemma elatum	tall alpine-aster	None/None/1 B.2	Perennial herb. Mesic soils in bogs and fens, meadows and seeps, and upper montane coniferous forest. Elevation (ft): 3,350–7,000	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat for this species is present within the Project area. Not observed during protocol-level botanical surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Packera indecora	rayless mountain ragwort	None/None/2 B.2	Perennial herb. Mesic soils in meadows and seeps. Elevation (ft): 5,330–6,670	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat for this species is present within the Project area. Not observed during protocol-level botanical surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Penstemon personatus	closed-throated beardtongue	None/None/1 B.2	Perennial herb. Metavolcanic soils in chaparral, lower and upper montane coniferous forest. Elevation (ft): 3,550–7,070	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat for this species is present within the Project area. Not observed during protocol-level botanical surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Phacelia stebbinsii	Stebbins' phacelia	None/None/1 B.2	Annual herb. Cismontane woodland, lower montane coniferous forest, meadows and seeps. Elevation (ft): 2,030–6,700	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat for this species is present within the Project area. Not observed during protocol-level botanical surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.

APPENDIX B. SPECIAL-STATUS PLANTS KNOWN OR POTENTIALLY OCCURRING IN THE PROJECT VICINITY.

Scientific Name	Common Name	Federal/State Status/CRPR	Habitat Associations	Potential to Occur in the Project area
<i>Pyrrocoma lucida</i>	sticky pyrrocoma	None/None/1 B.2	Perennial herb. Alkaline clay soils in Great Basin scrub, lower montane coniferous forest, and meadows and seeps. Elevation (ft): 2,330–6,500	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat for this species is present within the Project area. Not observed during protocol-level botanical surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
<i>Rhamnus alnifolia</i>	alder buckthorn	None/None/2 B.2	Perennial deciduous shrub. Lower and upper montane coniferous forest, meadows and seeps, and riparian scrub. Elevation (ft): 4,560–7,100	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat for this species is present within the Project area. Not observed during protocol-level botanical surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
<i>Schoenoplectus subterminalis</i>	water bulrush	None/None/2 B.3	Perennial rhizomatous aquatic herb. Bogs and fens, marshes, swamps, and montane lake margins. Elevation (ft): 2,500–7,500	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat for this species is present within the Project area. Not observed during protocol-level botanical surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
<i>Stuckenia filiformis</i> ssp. <i>alpina</i>	slender-leaved pondweed	None/None/2 B.2	Perennial rhizomatous aquatic herb. Shallow freshwater habitats in marshes and swamps. Elevation (ft): 1,000–7,170	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat for this species is present within the Project area. Not observed during protocol-level botanical surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
<i>Tauschia howellii</i>	Howell's tauschia	None/None/1 B.3	Perennial herb. Granitic and gravelly soils in upper and subalpine coniferous forest. Elevation (ft): 5,680–8,340	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat for this species is present within the Project area. Not observed during protocol-level botanical surveys conducted in 2018 and 2019 (Stevens and Dolan 2018, 2019). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.

APPENDIX B. SPECIAL-STATUS PLANTS KNOWN OR POTENTIALLY OCCURRING IN THE PROJECT VICINITY.

Scientific Name	Common Name	Federal/State Status/CRPR	Habitat Associations	Potential to Occur in the Project area
Plants – Unlikely to Occur				
Brasenia schreberi	watershield	None/None/2 B.3	Perennial rhizomatous aquatic herb. Freshwater marshes and swamps. Elevation (ft): 100–7,340	<ul style="list-style-type: none"> • Unlikely to occur. The Project area does not contain suitable habitat for this species. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Corallorhiza trifida	northern coral root	None/None/2 B.1	Perennial rhizomatous herb. Mesic soils in lower montane coniferous forest and edges of meadows and seeps. Elevation (ft): 4,560–5,820	<ul style="list-style-type: none"> • Unlikely to occur. The Project area is outside the elevation range of this species. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Crepis runcinata	fiddleleaf hawksbeard	None/None/2 B.2	Perennial herb. Mesic, alkaline soils in Mojavean desert scrub and pinyon and juniper woodland. Elevation (ft): 4,160–7,320	<ul style="list-style-type: none"> • Unlikely to occur. The Project area does not contain suitable habitat for this species. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Poa sierrae	Sierra blue grass	None/None/1 B.3	Perennial rhizomatous herb. Openings in lower montane coniferous forest. Elevation (ft): 1,210–5,000	<ul style="list-style-type: none"> • Unlikely to occur. The Project area is outside the elevation range of this species. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Potamogeton praelongus	white-stemmed pondweed	None/None/2 B.3	Perennial aquatic rhizomatous herb. Deep water in marshes, swamps, and lakes. Elevation (ft): 6,000–10,000	<ul style="list-style-type: none"> • Unlikely to occur. The Project area does not contain suitable habitat for this species; wet meadow areas lack sufficient water depth. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.

Appendix C

**Special-Status Wildlife Species Known to Occur or Potentially Occurring
in the Project Vicinity.**

APPENDIX C. SPECIAL-STATUS WILDLIFE SPECIES KNOWN OR POTENTIALLY OCCURRING IN THE PROJECT VICINITY.

Scientific Name	Common Name	Federal/State Status	Habitat Associations	Potential to Occur in the Project Area
<i>Invertebrates</i>				
Bombus occidentalis	western bumble bee	–/SCE	This species is dependent on continuous access to meadows or other open areas with floral resources from spring through late summer within 0.3 to 0.5 mile of burrowing nests.	<ul style="list-style-type: none"> • May potentially occur. The Project area contains suitable open foraging habitat for this species. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Fish				
Hypomesus transpacificus	delta smelt	FT/SE	Breeds on tidally-influenced backwater sloughs and channel edgewaters of the San Francisco Estuary.	<ul style="list-style-type: none"> • Unlikely to occur. The Project area does not contain suitable habitat for this species. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Oncorhynchus clarki henshawi	Lahontan cutthroat trout	FT/–	This species cannot tolerate the presence of other salmonid species. Found in cool flowing waters such as alkaline lakes; alpine lakes; slow, meandering rivers; and small headwater tributary streams. Prefers well-vegetated areas where there are relatively silt-free, rocky riffle-run areas.	<ul style="list-style-type: none"> • Unlikely to occur. Occasional Lahontan cutthroat trout individuals have been observed downstream of the Project area in Jackson Meadows Reservoir, which is hydrologically connected to the Middle Yuba River. However, the Project area contains other trout species that are predators of cutthroat trout and there are no known occurrences in the Middle Yuba River. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Amphibians				
Ambystoma macrodactylum sigillatum	southern long-toed salamander	–/SSC	This species is found in high elevation lakes and meadows in the Sierra Nevada. Larvae occur in ponds and lakes with perennial sources of water. Outside the breeding season, adults are terrestrial and associate with underground mammal burrows and moist areas under logs and rocks.	<ul style="list-style-type: none"> • May potentially occur. Suitable terrestrial habitat is present in forested areas in the Project area, though surveys indicated rodent burrows were relatively scarce (Barry 2018). Wet meadow and ponded habitat is present in the Project, but is not considered suitable due to water depth and hydroperiod (Barry 2018).

APPENDIX C. SPECIAL-STATUS WILDLIFE SPECIES KNOWN OR POTENTIALLY OCCURRING IN THE PROJECT VICINITY.

Scientific Name	Common Name	Federal/State Status	Habitat Associations	Potential to Occur in the Project Area
				<ul style="list-style-type: none"> • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
<i>Rana boylli</i>	foothill yellow-legged frog	–/ST	The foothill yellow-legged frog is found in or near perennial or seasonal streams with boulder and cobble substrates in a variety of habitats including valley–foothill hardwood, valley–foothill hardwood/conifer, valley–foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types. Breeding generally occurs from late March to June near the end of the spring runoff period. This aquatic species is rarely found far from water.	<ul style="list-style-type: none"> • Unlikely to occur. The Project area is outside the elevation range of this species. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
<i>Rana sierrae</i>	Sierra Nevada yellow-legged frog	FE/ST	The Sierra Nevada yellow-legged frog is found in streams, lakes, and ponds, in montane riparian, lodgepole pine, subalpine conifer, and wet meadows habitats. Breeds in shallow water in low gradient perennial streams and lakes free of predatory trout species. Typically found at elevations between 4,500 to 12,000 feet.	<ul style="list-style-type: none"> • Unlikely to occur. The Project area contains suitable habitat for this species in the Yuba River; however, predatory trout species were observed in the Yuba River during surveys conducted in the Project area in 2018 and likely prevent breeding and dispersal (Barry 2018). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area. The nearest known occurrence is approximately 2 miles south of the Project area in Tollhouse Lake, where frogs were collected in 1968. • Critical Habitat: The nearest critical habitat (Subunit 2C/ Black Buttes) is approximately 1.2 mile west of the Project area.
Birds				
<i>Grus canadensis tabida</i>	greater sandhill crane	–/ST	Summers and breeds in open terrain near shallow lakes or freshwater marshes and wet	<ul style="list-style-type: none"> • Known to occur. A pair was observed in English Meadow in 2017 and 2018 during wetland surveys (Beedy 2018), but no juveniles were

APPENDIX C. SPECIAL-STATUS WILDLIFE SPECIES KNOWN OR POTENTIALLY OCCURRING IN THE PROJECT VICINITY.

Scientific Name	Common Name	Federal/State Status	Habitat Associations	Potential to Occur in the Project Area
			meadows. Winters in plains and valleys in flooded rice fields or near bodies of fresh water.	observed. Known to breed in Lacey Valley and Sierra Valley. <ul style="list-style-type: none"> • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Accipiter gentilis	northern goshawk	–/SSC	Nests and roosts in older stands of mixed conifer, red fir, Jeffrey pine, lodgepole pine, and aspen forests; hunts in forests and in forest clearings and meadows. Nests are usually in large trees, often on north-facing slopes, and situated near a source of water (Beedy and Pandolfino 2013).	<ul style="list-style-type: none"> • Known to occur. Nesting pairs and juveniles were observed within the Project area (Beedy 2018). A designated U.S. Forest Service Protected Activity Center (PAC) is located on the slope above the Project area in Sierra County. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Haliaeetus leucocephalus	bald eagle	BAGEPA / SE, CFP	Lives near large bodies of open water such as lakes, marshes, estuaries, seacoasts, and rivers, where fish are abundant. Usually nests within 1 mile of water in tall trees with open branchwork bordering lakes or large rivers (Zeiner et al. 1988; Fix and Bezener 2000). In Central California, bald eagles prefer foothill pines for nesting.	<ul style="list-style-type: none"> • May potentially occur. Suitable riverine foraging habitat is present in the Project area, potential for nesting is low (Beedy 2018). An adult was observed at nearby Jackson Meadow Reservoir in July 2018 (Beedy 2018). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Falco peregrinum anatum	American peregrine falcon	–/CFP	Nests on cliffs and buildings that offer expansive views of the surrounding landscape. Forages over open and aquatic habitats near nesting sites.	<ul style="list-style-type: none"> • May potentially occur. Suitable foraging habitat is present in the Project area, but no suitable cliff-nesting habitat is present. An adult was observed at nearby Jackson Meadow Reservoir in July 2018 (Beedy 2018). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Strix nebulosa	great gray owl	–/SE	Nests in old-growth coniferous forests and forages in montane meadows. Distribution includes the high elevations of the Sierra	<ul style="list-style-type: none"> • May potentially occur. The Project area contains suitable nesting and foraging habitat in English Meadow and surrounding forests.

APPENDIX C. SPECIAL-STATUS WILDLIFE SPECIES KNOWN OR POTENTIALLY OCCURRING IN THE PROJECT VICINITY.

Scientific Name	Common Name	Federal/State Status	Habitat Associations	Potential to Occur in the Project Area
			Nevada and Cascade ranges, from 4,500 to 7,500 feet in elevation.	<ul style="list-style-type: none"> • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area. The nearest documented occurrences are near Independence Lake and Yuba Pass.
<i>Strix occidentalis occidentalis</i>	California spotted owl	-/SSC	Nests in old-growth, dense, coniferous forests. Forages in multi-layered mixed conifer, redwood, Douglas fir, and oak woodland habitats, from sea level to elevations of approximately 7,600 feet.	<ul style="list-style-type: none"> • May potentially occur. Foraging habitat is present in the Project area; however, the Project area generally lacks suitable breeding habitat since it is primarily dominated by lodgepole pine forest. • CNDDDB query: There are two activity centers (SIE0076 and SIE0087) within 1 mile of the Project area. Owls were last observed in SIE0076 in 2004 and in SIE0087 in 1993.
<i>Chaetura vauxi</i>	Vaux's swift	-/SSC	Nests in redwood and Douglas-fir habitats in large hollow trees and snags. Forages in open areas and over water.	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat is present in the Project area. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
<i>Cyseloides niger</i>	black swift	-/SSC	Breeds in steep canyons on cliffs behind or adjacent to waterfalls in deep river canyons. Forages over open habitats.	<ul style="list-style-type: none"> • May potentially occur. Suitable foraging habitat is present in the Project area. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
<i>Contopus cooperi</i>	olive-sided flycatcher	-/SSC	Uncommon to common summer resident in a wide variety of forest and woodland habitats. Nesting habitats include mixed conifer, montane hardwood-conifer, Douglas fir, redwood, red fir, and lodgepole pine forests from 3,000 to 7,000 feet in elevation.	<ul style="list-style-type: none"> • Known to occur. Suitable nesting and foraging habitat is present in the Project area. This species was observed during previous surveys (Beedy 2018). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
<i>Empidonax traillii</i>	willow flycatcher	-/SE	Nests in riparian areas dominated by willow and/or alder, typically with permanent or	<ul style="list-style-type: none"> • May potentially occur. Suitable nesting and foraging habitat is present in the Project area, though the quality of the nesting habitat is

APPENDIX C. SPECIAL-STATUS WILDLIFE SPECIES KNOWN OR POTENTIALLY OCCURRING IN THE PROJECT VICINITY.

Scientific Name	Common Name	Federal/State Status	Habitat Associations	Potential to Occur in the Project Area
			standing water. Breeding is typically in wet meadows at least 10 acres in total size (Green et al. 2003), though meadows larger than 1 acre may be considered suitable.	marginal because of the dryness of the meadow system (Beedy 2018). <ul style="list-style-type: none"> • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Setophaga petechia	yellow warbler	–/SSC	Breeds in riparian woodlands from coastal and desert lowlands up to elevations of 8,000 feet in the Sierra Nevada. Also breeds in montane chaparral, open ponderosa pine, and mixed conifer habitats with substantial amounts of brush.	<ul style="list-style-type: none"> • Known to occur. Suitable habitat is present in the Project area. Several breeding individuals were observed during previous surveys (Beedy 2018). • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Mammals				
Aplodontia rufa californica	Sierra Nevada mountain beaver	–/SSC	Wooded, moist habitats with herbaceous plants along slopes of ridges and gullies; brushy successional stages of most coniferous communities. Riparian woodland and scrub.	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat is present in the Project area. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Lepus americanus tahoensis	Sierra Nevada snowshoe hare	–/SSC	Found in moist montane riparian thickets, brushy areas in conifer habitats, or alpine chaparral.	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat is present in the Project area. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Antrozous pallidus	pallid bat	–/SSC	Inhabits variety of habitats, including coniferous forests. Rock outcroppings, caves, buildings, bridges, and sometimes hollow trees are used for roost sites. Pallid bats are year-round residents that hibernate during the winter months.	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat is present in the Project area. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Corynorhinus townsendii	Townsend's big-eared bat	–/SSC	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also	<ul style="list-style-type: none"> • May potentially occur. Suitable foraging habitat is present in the Project area.

APPENDIX C. SPECIAL-STATUS WILDLIFE SPECIES KNOWN OR POTENTIALLY OCCURRING IN THE PROJECT VICINITY.

Scientific Name	Common Name	Federal/State Status	Habitat Associations	Potential to Occur in the Project Area
			xeric areas; roosts in limestone caves and lava tubes, also man-made structures and tunnels	<ul style="list-style-type: none"> • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
<i>Euderma maculatum</i>	spotted bat	–/SSC	Roosts in horizontal rock crevices on cliffs and canyons, occasionally roosts in caves and buildings. Forages over a variety of brushy, woodland, and forested habitats.	<ul style="list-style-type: none"> • May potentially occur. Suitable foraging habitat is present in the Project area. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
<i>Lasiurus blossevillii</i>	western red bat	–/SSC	Roosts in forests and woodlands from seal level up through mixed mesic conifer forests in coastal ranges and the Sierra Nevada. Forages in a variety of habitats including croplands, grasslands, shrublands, and open woodlands and forests. Prefers solitary roosts in trees and occasionally shrubs.	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat is present in the Project area. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
<i>Eumops perotis californicus</i>	western mastiff bat	–/SSC	Roosts in crevices or vertical cliffs in mountainous regions. Forages over deserts, scrub, shrub, woodlands, and other open habitats.	<ul style="list-style-type: none"> • May potentially occur. Suitable foraging habitat is present in the Project area. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
<i>Gulo gulo</i>	California wolverine	FPT/CT, CFP	Found in a variety of habitat types up to 14,200. Prefers areas of low human disturbance. Uses caves, hollows in cliffs, logs, and burrows for cover, generally in dense forest stages and forages in open areas.	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat is present in the Project area. An individual is known to occur near Sagehen Creek in Sierra County. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
<i>Pekania pennanti</i>	Fisher – West Coast DPS	–/ST, SSC	North coast coniferous forest with intermediate to large- tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. Uses cavities, snags, logs, and	<ul style="list-style-type: none"> • Unlikely to occur. The Project area is outside the geographic range of this species. An unconfirmed sighting of fisher was recorded during wetland surveys (Beedy 2018).

APPENDIX C. SPECIAL-STATUS WILDLIFE SPECIES KNOWN OR POTENTIALLY OCCURRING IN THE PROJECT VICINITY.

Scientific Name	Common Name	Federal/State Status	Habitat Associations	Potential to Occur in the Project Area
			rocky areas for cover and denning. Needs large areas of mature, dense forest.	<ul style="list-style-type: none"> • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Taxidea taxus	American badger	–/SSC	Found in herbaceous dry meadows, shrub communities, or other open habitat stages with dry, friable soils for burrowing.	<ul style="list-style-type: none"> • May potentially occur. Suitable habitat is present in the Project area. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.
Vulpes vulpes necator	Sierra Nevada red fox	FPE/ST	Occurs throughout the Sierra Nevada at elevations above 7,000 feet in forests interspersed with meadows or alpine forests. Open areas are used for hunting, and forested habitats are used for cover and reproduction.	<ul style="list-style-type: none"> • Unlikely to occur. The Project area is outside the geographic range of this species. • CNDDDB query: There are no documented occurrences of this species within 1 mile of the Project area.