MIGIGATED NEGATIVE DECLARATION AND
ENVIRONMENTAL CHECKLIST FORM

**Project Title:**
Childs Meadows Head Cut Stabilization and Repair Project

**Contact person and phone number:**
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CEQA Project Manager
Resource Conservation District of Tehama County
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**Project Location:** Eastern Tehama County
(See Map A and Map B). The project area is approximately 2 miles Southeast of Childs Meadows Community along State Route 36E.

**Legal Description:** T29N R4E Section 25 (40 20 54 North 121 21 00)

**Project Sponsor:**
Resource Conservation District of Tehama county
2 Sutter Street, Suite D
Red Bluff, CA 96080
Attn: Victoria Dawley/RCDTC District Manager

**Lead Agency Under CEQA:**
Resource Conservation District of Tehama County
2 Sutter Street, Suite D
Red Bluff, CA 96080
Attn: Thomas McCubbins/CEQA Project’s Manager

**Funder of CEQA Analysis:**
Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603
Attn: Chris Dallas/ Mt. Lassen Area Representative

**General plan designation:** Timber Mountain

**Zoning:** Agriculture Rural Residential Timber Preserve Zone
**Introduction and Project History**

In October 2012, the Resource Conservation District of Tehama County (RCDTC) was awarded funding by the Sierra Nevada Conservancy to design a bio-engineered solution to stabilize and repair a large head cut that continues to expand upstream within a small tributary to Gurnsey Creek which flows through the southeast portion of Childs Meadows (See Map A, Map B, Map C and Map D). Gurnsey Creek is a major tributary to Deer Creek which is considered significant habitat for anadromous species including the listed Spring Run Chinook Salmon. This meadow restoration and water quality improvement project was the outcome of collaborative efforts between the RCDTC, The Nature Conservancy upon whose lands the erosion feature is located (See Map D) and Pacific Watershed Associates who conducted hydrological, geomorphic analysis and engineering design services to this effort. In addition to developing a design for stabilization and repair, this project also entails the analysis of environmental impacts related to implementation of project work that is documented in this California Environmental Quality Act Initial Study/Mitigated Negative Declaration as well as preparing necessary draft environmental and construction permit requests which would be finalized when funding for project implementation had been secured and a construction contractor selected. It has been determined by the RCDTC CEQA Project Manager that final versions of these documents could not be completed prior to project implementation as a specific project schedule cannot be developed until construction contracts have been executed and a site specific construction schedule prepared.

**Project Description**

**Overview**

The final treatment plan and project design developed for the Childs Meadows Head Cut Stabilization and Repair Project is based on a detailed field inventory conducted by Pacific Watershed Associates (PWA) during project assessment in 2013. These pre-design efforts included observations of site conditions, risks of erosion, review of the USFWS surveys and a development of a proposed course of action for implementation of the head cut stabilization project. In preparation for the development of a construction plan, PWA evaluated the project area with a team of meadow restorationists, including geologists, biologists, hydrologists, and soil scientists from Lassen National Forest. Existing U.S. Fish and Wildlife Service (USFWS) conceptual treatment plans, surveys, and plan view maps (See Map E and Map F) of the head cut site that had been developed in 2010 were reviewed and portions of the agency’s design criteria were incorporated into the PWA’s final construction plans and maps. These steps allowed PWA to update the USFWS treatment plans, logistics, and access routes based on the current road conditions. Discussions were held with CDFW staff biologist, Steve Baumgartner regarding the species of fish that presently exist within
the project area and the agency provided clarity on the design specifications and permits required to work Childs Meadows unique meadow habitat.

Implementation of project work will be completed by covering several discrete work elements which must be undertaken to provide the best chance that the active head cut is arrested from future migration, erosion, and sediment delivery. Installation of the head cut control structure project will be undertaken in several phases that will take approximately 4 weeks to complete, including staging the equipment and materials, construction of the structures, and final landscaping. The exact timing of the phases, in relation to each other, will be determined in consultation with the heavy equipment and restoration contractor(s) at the time of project implementation. Initial construction logistics will involve the evaluation and protection of important site characteristics and construction access. During construction of the erosion control structure a stream diversion plan will be in place that minimizes downstream turbidity. The specific requirements of the plan along with Best Management Practices and specific Mitigation Measures will be designed in a manner that reduces water quality impacts to a less than significant level.

Pre-Construction Project Layout and Planning

Pre-implementation layout will include reviewing the final detailed treatment plans and maps with the heavy equipment and labor teams; confirmation and final staking of the work features in the field; surveying geomorphic features to establish pre-excavation longitudinal profiles and cross sections; finalizing lists of needed materials and photographing selected areas to gauge the success of final treatment plans throughout the project site.

Site Access

Project access for heavy equipment, fuel and materials is proposed along the access route alignment shown in Map G Area of Expected Disturbance. Agreements or permits for use of the proposed access route will need to be obtained from the landowner and permitting agencies prior to beginning construction. The proposed route alignment will need to be prepared for construction and temporarily opened or reopened while project work is undertaken. The proposed access route is located on a right bank terrace of Gurnsey Creek near the edge of the forest and will require minor road opening, grading and a temporary stream crossing construction to allow unimpeded access to the construction site.
Dewatering of Gurnsey Creek Stream Channel at the Project Site

**Water Diversion Plan**

Once access routes to the project area have been developed and temporary erosion control BMP’s are place, coffer dams will be installed within Gurnsey Creek above and below the project’s impact area in order to capture both surface and intergravel flow. The dam will also prevent sediment contaminated transient flows from moving off site and into the natural stream channel below the project area. The coffer dams will be watertight and impound flowing water so it can be diverted around the restoration site or pumped to adjacent areas. Coffer dam construction will utilize excavated streambed alluvium. Silt fences, straw bales or other flow-filtering measures will be installed in the channel downstream of each coffer dam to reduce turbidity and suspended sediment.

With the coffer dams in place, dewatering will be performed to allow implementation of construction activities; keep soils and excavated materials dry during work activities and reduce the potential for construction related erosion and downstream water quality impacts. Any equipment work within the Gurnsey Creek stream channel will be performed within the dewatered stream segment, in isolation from the flowing stream. During excavation operations, gravity diversion and gas-powered pumps will be used to lift water out and around the work site. A pump with an attached fire hose will be installed at each coffer dam. The upstream pump will drain any clean water from the upstream coffer dam; the second pump will drain turbid water from the downstream coffer dam. Diverted clean water will be conveyed by pump hoses or gravity fed through a 6 inch or 8 inch diameter flex-pipe back to the natural stream channel downstream of the work site. Diverted turbid water will be conveyed to off-site stable hillslopes or gentle sloping forest floor where it can infiltrate into the soil. All turbid water will be pumped to an area far away from the stream channel using gas powered 2 inch diameter trash pumps and several hundred feet of fire hose, so that turbid water does not discharge back into the stream. One laborer will be employed to manage the pumping system and designated personnel will monitor and maintain the dewatering system so as to minimize the potential for construction-related sediment releases. All dewatering activities will occur when streams have minimum flow.

Backup pumps and hoses will be available on-site in case of equipment breakdown. During non-work hours, gravity fed flex pipes will be employed to transmit clean water through the work area and back into the natural channel downstream from the project site. The contractor shall install silt fences, straw bales or other flow-filtering measures in the channel to reduce turbidity and suspended sediment when flow is reestablished through the work site. Upon completion, all silt fences, pumps and equipment will be removed from the stream and each coffer dam will be breached returning streamflow to its natural channel. As designed, all
project work will occur within the dewatered stream channel and not on sensitive wet meadow surfaces. All construction equipment used in connection with this project will have rubber tires to reduce impacts to the stream bed within work areas.

Due to the possibility that anadromous fish may inhabit Gurnsey Creek within and above the project area, California Department of Fish and Wildlife Biologist Steve Baumgartner conducted an electrofish survey of Gurnsey Creek during July 2013. Survey activities were conducted within a 200 yard reach immediately downstream from the head cut. Survey results included 24 small non-native brook trout which were measured and returned to the stream waters. Approximately 100 Cascades frog (\textit{Rana cascadae}) tadpoles and one adult frog were also seen in the immediate vicinity. As result of these findings, the CDFW made a determination that fish passage through the proposed head cut control structure would not be required. Related to these survey results, a number of the Mitigation Measures (see below and \textit{Appendix A Mitigation Monitoring and Reporting Plan (MMRP) for the Childs Meadows Head Cut Stabilization and Repair Project Initial Study/Mitigated Negative Declaration Tehama County California} for details regarding Mitigation Measures) and Best Management Practices (see \textit{Appendix B Best Management Practices Developed and Selected for the Childs Meadows Head Cut Stabilization and Repair Project Impact Area}) were developed in order to either reduce any unavoidable impacts to the Cascades frog or other resources to a less than significant level or prevent impacts altogether. These measures will also allow for dewatering of the project area with no negative impacts to aquatic or riparian species. The site will require fish and amphibian relocation by a qualified fisheries biologist, as required by regulatory authorities.

The erosion and sediment control techniques implemented will conform to \textit{CDFW California Salmonid Stream Habitat Restoration, Manual Parts IX and X}, or other acceptable BMPs employed for restoring mountain meadows and protecting water quality. Construction of the erosion control infrastructure and all impactive activities to occur in connection with this project shall be implemented under the Mitigation Measures established in this IS/MND and will strictly follow all of the requirements stated in the CDFW Streambed Alteration Agreement and other water quality protection permits and agreements.

\textbf{Timing}

Impacts to Gurnsey Creek’s stream flows along with its bed and bank, all construction activities will be conducted during the summer dry season (June 15 to October 31) as late as is feasible. The work plan includes stabilizing the head cut area; recontouring and stabilizing disturbed hill slopes along the access route; strategically placing erosion control structures; distributing temporary cover with straw mulch, slash and other protective measures; and planting vegetative species to provide both short term and permanent
ground cover. Construction within or near the stream will not begin until all temporary water quality
diversions are functioning and all protective erosion control measures are in-place.

Pre-Project Work
Before construction, all permits and agreements will be reviewed by the construction manager and
restoration contractor, including the equipment operators. The project access routes, temporary stream
crossing and dewatering techniques will be discussed during a site walk-through with the heavy equipment
operator. Perimeter fencing and temporary sediment control structures will be placed to prevent unwanted
damage to the riparian area and sediment delivery to streams. Access routes and staging areas will be flagged
to minimize disturbance and removal of soil and native vegetation.

Temporary Stream Crossings
After installation of water quality protection Mitigation Measure’s downstream of the construction site, the
contractor will install a temporary stream crossing at the confluence of Gurnsey Creek and a seasonally dry
eastern tributary to allow heavy equipment access to the construction area (see Figure 1, Figure 1-B and
Figure 2 which show the location of major current and proposed features in and around the project area.
Approximately 80% of the temporary stream crossing will be formed of wood and clean organic debris over
an 18 inch diameter low flow culvert set in the streambed to carry any seepage within the construction site.
A low volume cap of clean gravel on top of road fabric will be constructed to form the driving surface over
the temporary stream crossing. The temporary crossing will be maintained throughout the construction
period to prevent downstream impacts and removed at the end of the project work.

Erosion Control During Construction
During construction, temporary sediment control structures will be strategically placed to prevent or limit the
development and transport of sediment inside and outside the designated work area. These structures will
also be used to prevent or detain overland surface runoff. Erosion control structures will include water bars,
straw bales, clean native slash, sediment basins, mulch and other measures. Erosion control measures will be
installed and maintained as necessary to remain functional and effective.

Additional road drainage techniques will be implemented on the temporary access road shown on Map E,
and in detail on Figure 1-B. Upon completion of operations, the temporary access road will be ripped with
cross road drainage installed at a frequent spacing. If necessary, complete recontouring of access routes will
be completed in order to disperse runoff and blend the former roadway with undisturbed adjacent terrain.
Any disturbed areas including stream banks, will be fully regraded and restored upon completion of the
project. Any branches and woody debris from trees felled pursuant to this project’s construction plans will be
left on the access road for erosion control. Large stems will be left if they can serve as useful habitat within the project area.

End of Season Site Stabilization

It is anticipated that all project work will be completed within one work season. When operations are completed, any excess materials or debris will be removed from the work area. Structures and associated materials not designed to withstand high seasonal flows (i.e. temporary access structures) will be removed as well. If unforeseen circumstances require that project work will need to be completed during the following work season, all materials, debris, structures and associated materials will be removed and stored in areas above the ordinary high water mark before such flows occur. The contractor will provide site maintenance including, but not limited to, re-applying erosion control to minimize surface erosion or adding new or existing erosion control structures to ensure streambeds and banks remain sufficiently armored and/or stable. Per CDFW standards, an approved, native mix of meadow erosion control seed shall be applied at 50 lbs/acre then certified weed-free straw mulch will be spread at 3,000-4,000lbs/acre (2 to 4 inches thick) to achieve coverage of all areas of bare soil that would otherwise erode and deliver sediment to the stream channel. Final erosion control will follow the construction work and removal of the temporary erosion control measures.

Spoils Management Plan

It is estimated that approximately (80 yd3) of excavated spoil material will be generated in connection with project work. This material will be excavated removed from the stream crossing site and end hauled approximately 1,500 feet to the planned spoil disposal site using a 10 yd3 dump truck. All spoil will be field- compacted in 6-12 inch lifts by a bulldozer to meet field compaction requirements. The spoil site will be graded with a gentle outslope, with a design slope face of approximately 2:1, or less. Upon completion of the stream crossing decommissioning and spoil site grading, all bare soil areas will be seeded and then mulched with certified weed free straw mulch, or with another approved mulch material. Final tree planting, fencing and landscaping will follow the construction work. Any spoils generated during construction will be loaded directly into a dump truck to avoid disturbance of the wet meadow area and reduce post-construction turbidity. Laborers will control noxious or invasive weeds following the appropriate Best Management Practices shown in Appendix B.

Site Access

Primary ingress and egress to the project site will be from USFS Road 29N25A (see Map E, Figure 1 and Figure 1-B) which is accessible from U.S. Highway 36E just north of the Childs Meadow area. A lowbed truck can be used to bring in heavy equipment and materials to the staging area delineated on Map E and
Figure 2. From this point an excavator, which will be the primary required heavy equipment for construction, can be driven to the project site along the route shown in Map F and Figure 1-B. The excavator will be required to construct this access route to allow access for dump trucks and service vehicles that will import and export erosion control materials, and fuel. The proposed access route’s final approach to the construction area is through a relatively dry section of the meadow (see Figure 1-B), where a temporary wet crossing will be constructed across the eastern tributary, delineated on (Figure 1, Figure 1-B and Figure 2), which will allow equipment access to the construction area up the existing channel. It is important to note that during the time of year when project work is anticipated to be completed, the channel of the eastern tributary is normally dry and the wet crossing will be installed in order to allow access if the construction period follows and abnormally wet winter season or an usual dry season storm causes stream flow into the channel.

Head Cut Control Structure

The head cut control structure is designed to provide a maximum assurance that the head cut will be arrested in place while providing an esthetically pleasing, biotechnical component that is consistent with existing conditions in the Childs Meadow area. The grade control structure will include 4 design elements: (1) a vegetated rock grade control structure, (2) several rootwad revetments, (3) Live fascine willow plantings, and (4) log cored willow baffles. Figure 3 Topographic Survey Map of Project Area and Figure 4 Longitudinal Profile of the Project Area provide topographic detail within the project area while Figure 5 Proposed Head Cut Control Plan displays the location of these features in relation to one another within the project site. Each of these design elements and their intended function are described below:

Vegetated Rock Control Structure

Figures 6 Proposed Section View of Rock Armor shows section views of the existing channel with rock armor. Figure 7 Vegetated Rip Rap Schematic shows in detail the design of this vegetated hard point which will be the primary structure intended to arrest active head cut erosion. The vegetated rock will be placed in a planimetric “U” shape constructed keyway excavated into the existing head cut and upper gully margins (see Figure 5). The current gully shape will be incorporated into the design, to encourage stream and flood flow to enter the protected head cut area, as before. This component of the project will require 70 yd3 of a mix of 6”-24” rip rap. The center of the grade control structure along the alignment of the thalwag will not be vegetated, however the lateral margins will be installed in a manner that will encourage stream flow that will maintain its current alignment and minimize the likelihood of its flanking the structure (see Figure 5). The biotechnical portion of the rip-rap will be vegetated with local willow species in the style of
the bent pole method (Figure 7). Details of the construction specification, methods, and pertinent notes are included on Figure 7 and Figure 8.

Rootwad Revetment
The rootwad revetment component of the grade control structure will be placed as a transition from the hard rip-rap component at the head cut to the softer willow planting component of the grade control structure downstream (Figure 5). The rootwad revetment is designed to prevent lateral scour of the channel margins downstream of the high energy plunge the creek will encounter at the rock component of the head cut grade control structure. It will also provide habitat for macroinvertebrates and other aquatic organisms. The rootwad revetment will be constructed as per Figure 8, by embedding whole tree material into the margin of the channel and anchoring it with logs and rootwads. This will be accomplished by either injecting them into the soft channel margins using an excavator, or by trenching and backfilling.

Live Fascines
Live willow fascines will create the final transition from the grade control structure to the existing, untreated downstream channel (see Figure 5). The purpose of the fascines is to protect the channel margins and begin the creation of a functional riparian zone along the creek within the head cut area. The live fascines will be installed as per Figure 8.

Log Cored Willow Baffles
Log cored baffle will be installed on the meadow surface to reduce the risk of Gurnsey Creek flanking the grade control structure on its left margin (see Figure 5 and Figure 9). Baffles would be constructed as per Figure 10.

Material requirements
The proposed project will require several types of natural materials to complete head cut stabilization. The types and amounts of materials are listed below. Most of the material can be procured locally.

- **Rock (rip-rap)**- 70 yd3 of 6”-24” diameter rip-rap.
- **Whole trees**- 6 whole trees up 2’ dbh including rootwads, preferably Douglas fir or cedar.
- **Willow sprigs**- 250 willow sprigs ¾”-2” diameter and 6’-15’ long

Controlling active head cuts in wet meadows can be complicated. This type of project also has inherent
uncertainty and risk. One important limitation to the proposed head cut design is the possibility that the grade control structure will be flanked by Gurnsey Creek. Given the observations of varying flow paths that were documented through time (Figure 11) it is conceivable that the channel could change course again within the next several decades. If this occurred, the grade control structure would no longer be in the active channel and a new head cut could form where the flow reenters the Gurnsey Creek channel downstream of the proposed head cut control structure.

In arresting the Childs Meadow head cut, the level of disturbance to the meadow is proportional to the effectiveness of the grade control structure. In order to reduce the potential for the proposed head cut infrastructure to be flanked by stream channel moment, additional log cored baffles outside the immediate head cut area will be installed to deflect flow into the current channel along those flow paths where flanking is most likely to occur (see Figure 9). Doing this however will reduce the natural meadow flooding that maintains and is natural in the wet meadow environment.

Project Monitoring:
See “Appendix A Mitigation Monitoring and Reporting Plan (MMRP) for the Tramway Road/A Line Shaded Fuel Break Project Initial Study/Mitigated Negative Declaration Tehama County, California”. This project will be monitored for adherence to project Mitigation Measures and infestation of noxious plants. This phase of project work will be completed by the RCDTC Project Manager, other qualified Tehama County Resource Conservation District personnel, the Contractor’s Construction Manager, staff from the Tehama County Air Pollution Control District or other Federal and State agency personnel as designated in the MMRP.

Surrounding Land Uses and Environmental Setting:
The project area is located within the 1,272 acre Childs Meadows complex owned in fee title by The Nature Conservancy (see Photo 1). This high elevation meadow is located approximately 10 miles southwest of the Lassen Volcanic National Park in Eastern Tehama County at an elevation of approximately 5,000’ (See Map 1 and Map 2). The meadow consists of a series of broad wet planar surfaces dominated by wetland plant species, punctuated by isolated dry meadow areas and relatively higher elevation bedrock promontories dominated by coniferous forest. Gurnsey Creek, flows through Childs Meadow from north to south inside a 2.7 square mile watershed that flows into Deer Creek, an important tributary to the Upper Sacramento River. Childs Meadows contains 4.5 miles of the Gurnsey Creek stream channel along with a number of that stream’s tributaries one of which is being impacted by the head cut site. Land use in the area generally
consists of grazing, recreation and timber harvesting. The area has also undergone several cycles of timber harvest over the last several decades.

Childs Meadows provides habitat for the largest migratory deer herd in California along with a wide variety of bird species. The entire meadow area is covered under a TNC managed conservation easement that prevents subdivision, mining, and the introduction of non-native species. The conservation easement does allow limited grazing under requirements established by The Nature Conservancy. With the exception of several wildland roads used to access adjacent timberlands along with an underground utility line, the project area contains no development and there are no structure within or adjacent to the project site. The small resort community of Childs Meadows is located approximately 1.5 miles northeast of the project area immediately adjacent to State Route 36E. Current head cutting and related erosion impacts approximately one acre of the meadow and immediately adjacent mixed conifer forest related downstream impacts affect several additional acers outside the meadow complex. Stream flows out of Childs Meadows form the headwaters of Deer Creek, which is considered important anadromous species habitat within the Southern Cascade range. Consequently water quality impacts within the meadow can have a significant impact on Deer Creek's aquatic habitat. Mitigation Measures (Appendix A) and construction related Best Management Practices (Appendix B) have been developed for this stream restoration effort that will control or limit impacts to water quality and meadow soils related to implementation of project work. These are described later in this Initial Study/Mitigated Negative Declaration.

Description of Head Cut Area

The head cut to be treated in connection with this project is located at the upper end of the Gurnsey Creek watershed and is observed as a vertical knickpoint along the longitudinal thalweg profile of Gurnsey Creek. The knickpoint is actively migrating upstream into highly erodible silt and clay deposits of the valley floor. The knickpoint moves intermittently, mostly during high runoff events. Estimates from air photo analysis review of previous studies, and conversations with staff familiar with the area indicate the head cut is migrating upstream at rate of approximately 5 feet per year. Currently the upstream migration of the head cut is partially controlled by a thin cohesive clay layer observed in the exposed upper stratigraphic section of the incised channel. Other than the thin clay layer there is nothing observable to indicate the ongoing headward migration of the head cut will halt in the near future, as past and present geomorphic processes appear to be similar.

The 2.7 square mile Gurnsey Creek watershed provides runoff that triggers head cut erosion and migration each year. Upstream of the head cut, the meadow is relatively undisturbed and the channel is unincised. The
active stream channel averages 3.5 feet wide, with streambanks that are moderately defined and less than 1.0” tall. The meadow is saturated or wet for much of the year and contains an abundant and diverse variety of hydrophilic plant species. At the head cut, the knickpoint has near vertical banks with little vegetative cover or protection from future erosion. The head cut has a vertical knickpoint that is locally nearly 7 feet in height, including the plunge pool at its base.

Downstream of the head cut observable erosion increases and then decreases over a distance of approximately 1,200’. Observations of past erosion indicate the erosional process is not exclusively head cutting. In the center section of the observed channel erosion area, the existing topography suggests lateral migration of the stream channel was the dominant process following head cut migration through the channel reach, with head cutting now being more dominant at the upstream and downstream areas. In addition to the head cut on the active channel of Gurnsey Creek there are two other proximal channels downstream that exhibit some degree of channel incision. The first is roughly 120 feet downstream of the active head cut. This channel is the mainstem Gurnsey Creek flow path that was abandoned sometime after the late 1980’s aerial photo sets was prepared. Along this channel most of the incision is observed at the lower portions where it confluences with the active channel of Gurnsey Creek. The incision diminishes up the channel over a distance of approximately 100 feet, until it is no longer observable along the alignment of the abandoned channel. The second channel exhibiting accelerated incision is approximately 300 downstream of the active head cut and flows into Gurnsey Creek from the northwest. This channel exhibits a high degree of incision with 15’ vertical channel walls near the confluence with Gurnsey Creek. Similar to the other side channel exhibiting channel incision, the observable incision decreases upstream and diminishes to no observable incision over a linear distance of approximately 400 feet.

Historic Flow Paths of Gurnsey Creek through Childs Meadow

To better understand the migration of the head cut, management activities within the general area, and the limitations to any proposed head cut control design, Pacific Watershed Associates (PWA) conducted an air photo analysis of the Childs Meadow area. Seven sets of stereo air photos including photo sets from 1941, 1967, 1978, 1983, 1988, 1998, and 2004. (Figure 11:Childs Meadows Air Photo Analysis of Historic Channel conditions between 1941 and 2012) shows the results of the air photo analysis which includes pertinent road construction history, limits of erosional features associated with the head cut, and stream flow paths through time. Of particular significance is the observed multitude of flow paths the Gurnsey Creek channel has occupied on the Childs Meadow valley floor over the last several decades. There are likely many factors that have contributed to the instability of the channel flow path through time including: (1) The relatively broad flat nature of the valley which allows for many flow paths to be equally viable through time; and (2) Local aggradation or woody debris accumulations within the channel are likely a common reason for
flow paths avulsions through time. An obvious example of this is approximately 200’ northwest of the current head cut location. From the 1978 and 1983 photo sets channel and overbank deposits along the margin of the channel can be observed. In 2004 the channel subsequently avulsed to its current location, presumably due to a loss of channel capacity caused by channel deposition.

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

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

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

X 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

Tom McCubbins/CEQA Projects Manager       RCDTC
Printed Name                                     For

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Map A.
Aerial Photograph of Project Site and Surrounding Area
Childs Meadows Head Cut Stabilization and Repair Project
Map B.
Topographic Map of Childs Meadows Head Cut Stabilization and Repair Project Site and Surrounding Area
Map C.
Detailed Topographic Map of
Childs Meadows Head Cut Stabilization and Repair Project Site
Map D.
Parcel Map of Project Site and Surrounding Area
Childs Meadows Head Cut Stabilization and Repair Project Site
Map E.
Photomap of Childs Meadows Head Cut Stabilization and Repair Project Site
Map F.
Aerial Photo Plan View of Existing Conditions Within the Childs Meadows Head Cut Stabilization and Repair Project Site And Surrounding Area
Map G.
Area of Expected Disturbance
Childs Meadows Head Cut Stabilization and Repair Project
Map H.
Detailed Air Photo Map of Stream Alignments
Other Hydrologic Features and Roads
Map I.
Air Photo Analysis of Historic Channel Conditions
Within Childs Meadows Between 1941 and 2012
Figure 1.
Overview Map of Major Erosion Control Infrastructure
Figure 2.
Project Site Topographic Survey and Location of Major Erosion Control Infrastructure
Figure 3.
Longitudinal Profile of Project Site
Figure 4.
Vegetated Rip-Rap Schematic
Figure 5.
Section Views of Vegetated Rock Armor Structure
Figure 6.
Schematic of Rootwad Revetment and Live Fascines
Figure 7.
Detailed Location Map of Rootwad Revetment and Live Fascines
Figure 8.
Detailed Schematic of Log Cored Willow Baffle Infrastructure
Figure 9.
Location of Proposed Log Cored Willow Baffle Infrastructure
Photo 1. Overview photograph of Childs Meadows complex just north of the project area. The head cut site is to right of the photograph.
Photo2. View of Childs Meadows complex showing a wet area that drains into Gurnsey Creek Near the Head Cut Site.
Photo 3. View of one small channel feeding into Gurnsey Creek Near the Head Cut Site. The head cut area is located several hundred feet downstream from the lower right corner of the photograph.
Photo 4. Overview of the head cut and surrounding impacted area. Note the significant amount of scour along both banks of the channel and the surface above. The channel shown in Photo 3 is up stream and to the left of the head cut just off of this photograph’s left border.
Photo 5. Close up of head cut.
Photo 6. Close up of downstream channel immediately adjacent to the head cut. Note the considerable amount of fine sediment within this portion of the stream channel.
Photo 7. Stream flood plain downstream of head cut site which is several hundred feet behind the photographer. The wetted portion of the channel is against the bank and road cut in the foreground.
Photo 8. Close up of stream bank and road cut shown in Photo 7. Note the extensive amount of channel side cutting occurring along this portion of the stream channel. Photo 7 was taken just to the upper right of this photograph.
Photo 9. Close up of widened channel just downstream from head cut site.
Photo 10. Example of side cutting into forest area immediately downstream from head cut site
Photo 11. Close-up View of side cutting into forested area and impacts to adjacent vegetation.
Photo 12. Narrow incised channel within forested area.
Photo 13. Reduced amount of side cutting and channel incising within a portion of forested area having moderate slopes. This photograph was taken approximately 1000’ downstream from head cut site.
Conclusion of the Mitigated Negative Declaration

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

1. California Department of Fish and Game:
   Streamside Alteration Agreement (1600 Permit)

2. State Water Board:
   401 Certification

3. Army Core of Engineers:
   404 Permit

4. Lassen National Forest
   Access Agreement for the use of Forest Road 28N88

Mitigation Measures

The following Mitigation Measures will be implemented by the Resource Conservation District of Tehama County to avoid or minimize environmental impacts. Implementation of these Mitigation Measures will reduce the environmental impacts of the proposed project to a less than significant level.

Mitigation Measures

Proposed Mitigation Measures: The following is a list of Mitigation Measures that will be implemented by the RCDTC, its contractor, subcontractors if any along with responsible agencies in order to avoid or minimize potential environmental impacts during the execution of project work. Through the implementation of these Mitigation Measures the potential for environmental impacts related to this project will be reduced to a less-than-significant level. Responsibly for the required monitoring and reporting established for these Mitigation Measures are shown in Appendix A Mitigation Monitoring and Reporting Plan (MMRP) for the Childs Meadows Head Cut Stabilization and Repair Project Initial Study/Mitigated Negative Declaration Tehama County California.

Biological Resources (Biological Resource Surveys and Protection Measures)

Mitigation Measure BIO 1 (Pre Project Implementation Plant Surveys):
Personnel specifically trained in the identification of California Rare Plant Ranking (CRPR) List 1, List 2 and List 3 species and any others shown in Appendix C (Results of Database Inquiry and Species Review) shall be required to evaluate potential habitat for these species prior to implementation of impactive activities within the project area during the appropriate blooming or identification period. Such personnel shall also evaluate potential findings of any
such plants within treatment areas during the execution of project work per the provisions of Mitigation Measured #BIO 2 Protection of Previously Unidentified Listed Plants below.

All sightings shall be documented using the California Natural Diversely Data Base (CNDDB) field survey form a copy of which shall be submitted to the CNDDB and the RCDTC Project Manager. A copy shall also be incorporated into the RCDTC project files. Qualifications for personnel who shall make evaluations of sites include those found in the California Department of Fish and Wildlife’s 2009 document entitled “Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities” (Appendix E)*. If any Federal or State listed threatened or endangered species are detected in the project area that may be impacted by the project work, a flagged 25’ “No Treatment Area” shall be established. Within such exclusion zones, no project work shall be conducted until consultation with California Department of Fish and Wildlife or United States Fish and Wildlife Service personnel as appropriate have been made and their recommendation for protection incorporated into the project work scope. Biological surveys shall also map invasive plant species listed by the California Department of Food and Agriculture

(http://www.cdfa.ca.gov/phpps/ipc/weedinfo/winfo_list-pestrating.htm)

and the California Invasive Plant Council (Cal-IPC)

(http://www.cal-ipc.org/)

located within the project area. If invasive plants are found, the provisions of Mitigation Measure BIO 7: Identification and Isolation of Invasive Plants shown below shall also be implemented.

*This measure is only applicable if surveys for listed plant and animal species are not conducted prior to implementation of project work.

Mitigation Measure #BIO 2 (Protection of Previously Unidentified Listed Plants):

If during the implementation of project work, any previously unidentified listed plants shown in Appendix C (Results of Database Inquiry and Species Review) are detected by the RCDTC Project Manager, the Construction Manager or the qualified individuals described in Mitigation Measure # BIO 1 (Pre Project Implementation Plant Surveys), all project related activities shall immediately stop and a 25’ “No Treatment Area” shall be established and flagged around the perimeter of any occurrence by these individuals.

Mitigation Measure #BIO 3 (Protection of Migratory Bird Treaty Act Species):

In order to protect any species covered by the Migratory Bird Treaty Act (MBTA), no project work of any kind shall occur between March and August, unless the following is implemented: 1). A survey is conducted by a biologist or other persons with knowledge of and ability to recognize species protected by the MBTA within 0.5 miles of the project area during the nesting season of listed species and it is determined that there are no occupied nests within the
proposed project area. 2). If an occupied nest is found, then the biologist or other person with knowledge of, and ability to recognize, species protected by the MBTA shall determine if the birds present are those protected by the MBTA. If an MBTA species is located then a 100’ “No Treatment Area” shall be established around the nest during the breeding season. If raptor species are found, the provisions of Mitigation Measure BIO 4 (Raptor Protection) related to raptor protection shall apply. Modifications and possible reduction in “No Treatment Area” size may be made after consultation with the California Department of Fish and Wildlife personnel. If project work is delayed or suspended for more than 15 days after surveys have been completed, the project area shall be resurveyed for MBTA or raptor species prior to reinitiating of project work.

Mitigation Measure #BIO 4 (Raptor Protection):
A wildlife biologist with appropriate training in the identification of raptors shall perform a walk-through survey of treatment areas shortly before any project work is implemented. This walk-through survey shall include examination of nests for raptor activity, visual searches for whitewash, listening for calls, and any other evidence of nesting raptors in the harvest unit. If field personnel detect raptor presence, appropriate protection measures as described below for that particular species shall be established. Upon discovery of an occupied raptor nest or any unknown large bird, the RCDTC’s Project Manager or a wildlife biologist (after conferring with the RCDTC’s Project Manager) shall inform all personnel involved with project work of such sightings. Upon notification, vegetation disturbing activities shall be suspended within one mile of the nest. Activities may resume after the species using the nest is identified and the appropriate measures described below to protect the nest are implemented on the ground.

Raptor Protection Measures

Listed Raptors
If an occupied nest of a Endangered Species Act or California Endangered Species Act listed raptor is discovered during project work, the Contractor shall protect the nest tree, screening trees, perch trees, and replacement trees from any project work including, (1) suspension of project work within one mile of the nest, (2) suspension of all project work within a 375-foot radius buffer of the occupied nest, and (3) immediate notification and consultation by the of the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service as appropriate. Modifications and possible reduction in “No Treatment Area” size may be made after such consultation has been completed.
Non-Listed Raptors
If an occupied nest of a non-listed raptor is discovered during project work, all vegetation disturbing activities within one mile of the occupied nest shall be suspended. Upon such suspension, the RCDTC Project Manager or a professional biologist shall designate the nest trees, perch trees(s), screening tree(s), and replacement trees(s), for which a “No Treatment Area” shall be established.

Mitigation Measure #BIO 5 (Fisher Protection):
Prior to project implementation, the RCDTC Project Manager or biologist shall look for freshly excavated cavities suitable for fisher dens on snags between 10” and 12” in diameter located 6’ to 12’ above ground level. In addition, within the project area, a potential den structure is defined as any hardwood with visible indicators of cavity formation (dead or alive) ≥15 inches DBH, a conifer snag ≥22 inches DBH, or a live green cull or green wildlife conifer ≥22 inches DBH. A live green cull is a conifer tree with less than 25% merchantable wood by volume. A green wildlife conifer is considered a potential den structure when it has mistletoe brooms, large rest ranches, and visible signs of fungus or other indications of cavity formation or visible cavity openings. The RCDTC Project Manager or biologist shall contact CDFW for consultation if site-specific avoidance measures are needed that differs from those described above. Any additional site specific avoidance measures developed through consultation with CDFW shall provide greater or equal protection to those stated here.

Den snags shall be protected by flagging the snag itself and establishing a flagged 375’ radius “No Treatment Area”. If a fisher is sighted in treatment areas by equipment operators or other project personnel during any project work, all vegetation disturbing activities shall be suspended within that area and the RCDTC Project Manager or biologist shall be notified. If a den or habitation of a fisher is discovered, all operations shall be suspended and a survey for a fisher den shall be completed. If a den is found a, flagged 375’ radius “No Treatment Area” shall be established around the identified den or habitation. The Department of Fish and Wildlife shall then be immediately notified.

Biological Resources (Invasive Plants)

Mitigation Measure BIO 6 (Equipment Cleaning):
In order to prevent the spread of invasive plant species all heavy equipment to be used in the execution of project work shall cleaned off site prior to use within the project area. The RCDTC Project Manager shall assure and document equipment cleaning. Documentation of cleaning shall be incorporated into the RCDTC project files.
Mitigation Measure #BIO 7 (Identification and Isolation of Invasive Plants):  
Populations of invasive plants listed by CDFA having the potential to be spread or otherwise impact project work and identified during the invasive plant surveys described in Mitigation Measure BIO 1 (Pre Project Implementation Plant Surveys): above shall be either 1.) flagged and avoided during project implementation, or 2.) treated prior to project implementation. Populations of invasive plants listed by Cal-IPC shall be evaluated for the risk of further infestation due to project activities and treatments or other mitigation shall be applied as needed. If discrete patches of Cal-IPC invasives are located, (e.g. species that are not already common in the project area) staging sites shall be located outside of these discrete infestations.

Mitigation Measure# BIO 8 (Protection of Riparian Vegetation):  
Prior to construction, the RCDTC Project Manager shall determine and identify the exact location of equipment access points along with stream course crossings using those sites that are stable and that will minimize riparian disturbance. During implementation of project work as much understory vegetation will be retained as possible in order to maximize shade producing and bank stabilizing vegetation during project implementation. Soil compaction will be minimized through the use of equipment with a greater reach or that exerts less pressure per square inch on the ground, resulting in less overall area disturbed or less compaction of disturbed areas. Disturbed soils will be decompacted at the project’s completion as mobile equipment exits the construction area. Disturbed and decompacted areas will be revegetated, with native species specific to the project location that comprise a diverse community of woody and herbaceous species.

Mitigation Measures BIO 9 (Minimizing Injury and Mortality of Fish and Amphibian Species During Dewatering Operations):  
Prior to dewatering the construction site, fish and amphibian species shall be captured and relocated to avoid direct mortality and minimize take. This is especially important if listed species are present within the project site. The following measures are consistent with those defined as reasonable and prudent by NOAA for projects concerning several northern California Evolutionary Significant Units for Coho salmon, Chinook salmon, and steelhead trout:

- Fish relocation activities must be performed only by qualified fisheries biologists, with a current DFG collectors permit, and experience with fish capture and handling.

- Relocation activities will be conducted during morning periods when air temperatures are cooler.

- Air and water temperatures shall be measures periodically and collection activities shall cease when water temperatures exceed those allowed by DFG and NOAA. Fish and amphibians excluded from the project site
shall be prevented from re-entering by blocking the stream channel above and below the work area with fine-meshed net or screens. Mesh shall be no greater than 1/8 inch and the bottom edge of which shall be secured to the channel bed to prevent fish from re-entering the work area at the bottom of the screen. Exclusion screening shall be placed in areas of low water velocity to minimize impingement of fish. Screens shall be checked periodically and cleaned of debris to permit free flow of water.

• Prior to capturing fish, a determination shall be made of the most appropriate release location(s). The following shall be considered when selecting release site(s): a. Similar water temperature as capture location b. Ample habitat for captured fish c. Low likelihood of fish re-entering work site or becoming impinged on exclusion net or screen.

• Determination of the most efficient means for capturing fish:

  o Complex stream habitat generally requires the use of electrofishing equipment, whereas in outlet pools, fish may be concentrated by pumping-down pool and then seining or dipnetting fish.

  o Electrofishing will only be conducted by properly trained personnel following DFG and NOAA guidelines.

• Minimize handling of salmonids. When handling is necessary, always wet hands or nets prior to touching fish.

• Temporarily hold fish in cool, shaded, aerated water in a container with a lid. Provide aeration with a battery-powered external bubbler. Protect fish from jostling and noise and do not remove fish from the container until time of release.

• Place a thermometer in holding containers and, if necessary, periodically conduct partial water changes to maintain a stable water temperature. If water temperature reaches or exceeds those allowed by DFG and NOAA, fish will be released and rescue operations ceased.

• Avoid overcrowding in containers.

• Visually identify species and estimate year-classes of fish at time of release. Count and record the number of fish captured. Avoid anesthetizing or measuring fish.
• Submit reports of fish relocation activities to DFG and NOAA in a timely fashion.

• If feasible, plan on performing initial fish relocation efforts several days prior to the start of construction. This provides the fisheries biologist an opportunity to return to the work area and perform additional electrofishing passes immediately prior to construction. In many instances, additional fish may be captured that eluded the previous day’s efforts.

• If mortality during relocation exceeds 5 percent, stop efforts and immediately contact the appropriate agencies.

Mitigation Measures BIO 10: Minimizing of Impacts to Aquatic Habitat and Species during Dewatering of the Project Site:
When construction work occurs within a year-round flowing channel, the project site must be dewatered. In order to prevent or minimize impacts including the temporary loss of aquatic habitat; stranding, displacement, or crushing of fish and amphibian species along with increased turbidity from disturbance of the channel bed, the following measures will be implemented during dewatering operations:

• Determination by the Construction Manager in consultation with the RCDTC Project Manager and CDFW personnel as to the most appropriate specific means of bypassing flow around the work area in order to minimize channel disturbance and avoid direct mortality of fish and other aquatic vertebrates.

• Coordinate project site dewatering with a fisheries biologist qualified to perform fish and amphibian relocation activities.

• Minimize the length of the dewatered stream channel and duration of dewatering.

• Bypass stream flow around work area, but maintain stream flow to channel below construction site.

• Periodically pump the dewatered stream segment dry of seepage.

• Place pumps in flat areas, well away from the stream channel.

• Secure pump units by tying off to a tree or staking in place to prevent movement by vibration.
• Refuel pump units in an area well away from stream channels and place fuel absorbent mats under pumps while refueling.

• Cover pump intakes with 1/8" mesh to prevent entrainment of fish or amphibians that fail to be removed prior to dewatering operations.

• Check pump intakes periodically for impingement of fish or amphibians that fail to be removed prior to dewatering operations.

• Discharge wastewater from construction area to an upland location where it will not drain sediment-laden water back to stream channel.

Cultural Resources

Mitigation Measure #CUL 1 (Protection of Identified Cultural Resources):

All new and previously recorded archeological sites identified during field surveys completed in connection with the preparation of this Initial Study/Mitigated Negative Declaration and documented in the report entitled “Cultural Resources Assessment of the Childs Meadows Head Cut Stabilization and Repair Project Area, Tehama County, California (Peak and Associates) dated October 2014 shall be protected through complete avoidance. A flagged 50' “No Treatment Area” shall be established around each of these sites by the RCDTC Project Manager or prior to implementation of any project work.

Mitigation Measure #CUL 2: Protection of Newly Discovered Archeological, Prehistoric, Historic or Paleontological Resource

Within areas of ground or vegetation disturbing activities, if project work appears to expose any previously unknown archeological, prehistoric, historic or paleontological resource sites along the path of the fuel break or within 50 feet beyond the project boundary, the site shall be avoided. Work may continue elsewhere within the overall project area. Exposed cultural or paleontological resources shall be appropriately flagged in order to immediately establish a “No treatment Area” of at least 100 feet. A professional archeologist shall examine the site, evaluate found objects and make a finding of their significance. The archeologist shall also develop recommendations for the permanent protection of objects and site treatments as necessary. Identified sites shall be permanently protected through avoidance. These sites shall be made off limits to personnel, equipment, and project impacts of any kind. A professional archeologist shall determine an appropriate permanent flagged exclusion zone once the site has been adequately assessed for significance. Findings of significance shall be prepared and submitted to appropriate agencies.
and Native American groups at the discretion of the professional archeologist. As appropriate, findings shall be recorded in the RCDTC project files.

**Mitigation Measure #CUL 3: Discovery of Human Remains**

If during the execution of project work human remains are found, the RCDTC Project Manager or Construction Manager after having informed the RCDTC Project Manger of such findings shall halt work at that location until a professional archaeologist visits the site in order to assess their significance, process the remains and immediately notify the County coroner. If the remains are determined by the County coroner to be Native American, the Native American Heritage Commission (NAHC) and Native American groups at the discretion of the professional archeologist shall be notified within 24 hours and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. Findings of significance shall be prepared and submitted to appropriate agencies at the discretion of the professional archeologist. Findings shall also be recorded in the project files by the RCDTC Project Manager. Project work may continue on other non-impacted portions of the project area.

**Hydrology and Water Quality**

**Mitigation Measure HYDRO-1** A Stormwater Pollution Prevention Plan (SWPPP) shall be implemented prior to initiation of project work. All construction contractors and subcontractors shall be required to implement BMPs identified in the SWPPP and those Shown in Appendix B for controlling soil erosion and discharges of other construction-related contaminants. Such BMP’s shall be in addition to the specific Mitigation Measures listed in this Initial Study/Mitigated Negative Declaration. Routine monitoring and inspection of BMPs shall be conducted by the RCDTC Project Manager to ensure that the quality of storm water discharges is in compliance with the permit. BMPs required to be incorporated into the SWPPP include:

- Soil stabilization measures, such as preservation of existing vegetation and use of mulch or temporary plantings to minimize soil disturbance;
- Sediment control measures to prevent disturbed soils from entering waterways;
- Tracking control measures to reduce sediments that leave the construction site on vehicle or equipment tires;
- Non-stormwater discharge control measures, such as monitoring water quality of dewatering operations and hazardous material delivery along with storage, and emergency spill response requirements.
The RCDTC Project Manager shall ensure that the BMPs are implemented as appropriate throughout the duration of construction and shall be responsible for contractor and subcontractor compliance with the SWPPP requirements. In addition, the SWPPP shall include information on:

- The project’s Implementation schedule
- Pollutant source identification
- Storm water BMPs
- Erosion control
- Sedimentation control
- Maintenance and Inspections
- Post-construction storm water management

**Mitigation Measure #HYDRO 2 (Protection of Existing Drainage Features):** Any existing drainage features shall be protected from project related impacts and shall remain free of obstruction.

**Summary of Findings**
This IS/MND has been prepared to assess the project’s potential effects on the environment and an appraisal of the significance of those effects. Based on this IS/MND, it has been determined that the proposed project will not have any significant effects on the environment after implementation of Mitigation Measures. This conclusion is supported by the following findings:

1. The proposed project will have no effect related to Aesthetics, Agricultural and Forest Resources, Air Quality, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, Recreation, Transportation and Traffic, along with Utilities and Service Systems as well as Public Services.

2. The proposed project will have a less than significant impact on Geology and Soils, Greenhouse Gas Emissions Hazards and Hazardous Materials, and Noise.

3. Mitigation is required to reduce potentially significant impacts related to Biological Resources, Cultural Resources, along with Hydrology and Water Quality.

The Initial Study/Environmental Checklist included in this document discusses the results of resource-specific environmental impact analyses that were conducted by the Resource Conservation District of Tehama County with assistance provided by various State agencies and other organizations. This Initial Study revealed that potentially significant environmental affects that could result from the proposed project. The project’s proponent, the Resource Conservation District of Tehama County revised its project plans and has developed Mitigation Measures which will eliminate impact or reduce environmental impacts to a less than significant level. The Resource Conservation District of Tehama County has found, in consideration of the entire record, that there is no substantial evidence that the proposed project as currently revised and mitigated would result in a significant effect upon the environment. The IS/MND is therefore the appropriate document for CEQA compliance.
## PROJECT INFORMATION

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>1. Project Title:</strong></td>
<td>Childs Meadows Head Cut and Repair Project</td>
</tr>
<tr>
<td><strong>2. Lead Agency Name and Address:</strong></td>
<td>Resource Conservation District of Tehama County 2 Sutter Street, Suite D Red Bluff, CA 96080</td>
</tr>
<tr>
<td><strong>3. Contact Person and Phone Number:</strong></td>
<td>Thomas McCubbins/CEQA Project Manager (530) 527-3013 x120</td>
</tr>
<tr>
<td><strong>4. Project Location:</strong></td>
<td><strong>Project Location:</strong> Eastern Tehama County (see Map A and Map B). The project area is approximately 2 miles Southeast of Childs Meadows Community along State Route 36E. <strong>Legal Description:</strong> T29N R4E Section 25 (40 20 54 North 121 21 00)</td>
</tr>
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<td><strong>5. Project Sponsor’s Name and Address:</strong></td>
<td>Sierra Nevada Conservancy 11521 Blocker Drive, Suite 205 Auburn, CA 95603</td>
</tr>
<tr>
<td><strong>6. General Plan Designation:</strong></td>
<td>Timber Mountain</td>
</tr>
<tr>
<td><strong>7. Zoning:</strong></td>
<td>Timber Preserve Zone</td>
</tr>
<tr>
<td><strong>8. Project Description:</strong></td>
<td>Refer to pages 5 of this document</td>
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<tr>
<td><strong>9. Surrounding Land Uses and Setting:</strong></td>
<td>Refer to page 7 of this document</td>
</tr>
</tbody>
</table>
| **10. Other public agencies whose approval may be required:** | 1. California Department of Fish and Game: Streamside Alteration Agreement (1600 Permit)  
2. State Water Board: 401 Certification  
3. Army Core of Engineers: 404 Permit  
4. Lassen National Forest Access Agreement for the use of Forest Road 28N88 |
**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:**

The environmental factors checked below are the ones which would potentially be affected by this proposed project and were more rigorously analyzed than the factors which were not checked. The results of this analysis are presented in the detailed Environmental Checklist which follows.

<table>
<thead>
<tr>
<th></th>
<th>Aesthetics</th>
<th>Agriculture and Forestry Resources</th>
<th>Air Quality</th>
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<td>Biological Resources</td>
<td>Cultural Resources</td>
<td>Geology / Soils</td>
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<td>☐️</td>
<td>Transportation / Traffic</td>
<td>Utilities / Service Systems</td>
<td>☐️ Mandatory Findings of Significance</td>
</tr>
</tbody>
</table>
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.

______________________________  ________________________
Victoria Dawley, Manager  Date Signed
Resource Conservation District of Tehama County
2 Sutter Street, Suite D
Red Bluff, CA 96080
ANALYSIS OF POTENTIAL ENVIRONMENTAL IMPACTS

<table>
<thead>
<tr>
<th>ENVIRONMENTAL ISSUES</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
</tr>
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</table>

I. Aesthetics. Will the project:

a) Have a substantial adverse effect on a scenic vista?

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

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

Discussion

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

The project area is located within a remote portion of eastern Tehama County used primarily for timber production, ranching, hunting, wildlife management and winter snow sports activities. The Childs Meadows Head Cut Stabilization and Repair project area is located on private meadowlands zoned for ranching operations and has restricted access. The project area is approximately ½ mile west from State Route 36E and is screened from passing traffic by roadside forest stands. State Route 36E is not formally classified as a Scenic Route. In addition, all project work will be completed during the summer months when the meadow is used exclusively for cattle grazing and thus will have no impact on those using the meadow for approved recreation activities. Given these factors, the project will not damage any scenic resources that are visible to travelers along State Route 36E.

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

State Route 36E is not a formally recognized State Scenic Highway. Project work will consist of short term meadow restoration work which will entail the use of small power equipment and hand tools in order to restore impacted meadowlands and stream channels into more natural hydraulic and visual conditions. No other natural or manmade resources will be impacted.
c) **Would the project substantially degrade the existing visual character or quality of the site and its surroundings?**

In the short term, and only during the late spring thought early fall period, the visual character of the project area would change through the removal or introduction of soil and rock along within a minor amount of tree and vegetation removal. In addition equipment and personnel will be in the project area during stabilization and construction work. All equipment and materials will be removed once project work has been completed during a single construction season. Any excavated material removed from the stream channel such as minor amounts of soil, stream sediments and small rocks will be spread thinly over adjoining forestlands. After one growing seasons, it is anticipated that needle cast will cover this material. In addition, grasses and shrubs will return to the site creating natural visual conditions. With the implementation of head cut control measures, it is anticipated that natural stream bed channel, slope and flow conditions will return to the stream channel now being impacted by head cutting.


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

No new sources of light or glare would be created by the implementation and completion of project work.

*No impacts to Aesthetics are anticipated.*
II. Agriculture and Forest Resources.

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

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

b) Conflict with existing zoning for agricultural use or a Williamson Act contract? ☐ ☐ ☐ ☒

c) Conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104(g))? ☐ ☐ ☐ ☒

d) Result in the loss of forest land or conversion of forest land to non-forest use? ☐ ☐ ☐ ☒

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

Discussion

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

None of the land within the project area is classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.
b) **Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?**

Project work would not change land use within the project area or on surrounding lands and thus would not conflict with existing zoning for agricultural activities or Williamson Act contracts.

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

Project work would entail the reestablishment of natural meadow topography along with stream bed and bank conditions within a very small portion of Childs Meadows. This would be followed by necessary revegetation of the project site attributable to earth movement. As a result, this project would not conflict with existing zoning or cause rezoning of meadowlands, forest lands, timberlands or timberland zoned Timberland Production.

d) **Result in the loss of forest land or conversion of forest land to non-forest use?**

The majority of project work will be conducted within meadowlands or stream channels. Little if any project activities will impact adjacent forest stands or result in the removal of trees. As a result, project work will not result in forestlands being converted to non forestland uses.

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

The stream course and meadow restoration work to be completed in connection with this project will return an impacted area of Childs Meadows to more natural hydraulic and visual conditions. Project work would not result in the area being converted from current uses to non-agricultural or non-timber land use nor would its completion lead to future development that could result in this kind of land use conversion.

*No impacts to Agricultural and Forest Resources are anticipated*
Childs Meadows Head Cut Stabilization and Repair Project
Tehama County Resource Conservation District

III. Air Quality.

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations. Will the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

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

d) Expose sensitive receptors to substantial pollutant concentrations?

e) Create objectionable odors affecting a substantial number of people?

Discussion

Air Quality standards are based on provisions of the Federal and State Clean Air Acts. The Tehama County Air Quality Pollution Control District (TCAPCD) is responsible for the planning, maintenance and attainment of these standards at the local level. Tehama County has been designated as a non-attainment area for state and federal ambient ozone standards and California inhalable particulate matter (PM$_{10}$) standards. This project entails the placement of bio-engineered head cut control infrastructure and reshaping of an eroded stream bank. These erosion and sediment control activities will occur within a remote area of southeastern Tehama County.

Would the Project

a) Conflict with or obstruct implementation of the applicable air quality plan?

The construction activities to be conducted in connection with the implementation of project work entail the use of small mechanical equipment, small power tools and hand tools. All tools utilizing an internal combustion engine of any size will be operated under current Californian air regulations as enforced by the TCAPCD. Best Management Practices related to fugitive dust and other pollutants listed in Appendix B Best Management Practices Developed and Selected for the Childs Meadows Head Cut Stabilization and Repair Project Impact Area have been established for project work. These practices will be implemented and implemented and enforced by the RCDTC, TCAPCD and other entities. Consequently execution of
project work will not conflict with or obstruct the implementation of the Tehama County Air Quality Plan nor will it conflict with any State Air Quality Plans.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Equipment to be used in the execution of project work will be operated under current Californian Air Regulations as enforced by the Tehama County Air Quality Management District.

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

Equipment to be used in the execution of project work will be operated under current Californian Air Regulations as enforced by the Tehama County Air Quality Management District in accordance with State and County air regulations along with the provision of the Tehama County Air Quality Plan.

d) Expose sensitive receptors to substantial pollutant concentrations?

The Childs Meadows Head Cut project area is located in a remote portion of Tehama County. The nearest sensitive receptor is the community of Childs Meadows located approximately two miles northeast of the project area and the USFS Gurnsey Creek Campground located approximately 3.5 miles southeast of the project site. There are no residential structures located near the project’s impact area or within a mile around it. The only air pollutants that will be generated in connection with project work will be from dust generated in connection with construction activities along with the exhaust of small mechanical equipment and power hand tools used in the installation of the bio-engineered erosion control structure and reforming of the now eroded stream bank. This equipment will be operated under current Californian air regulations as enforced by the TCAPCD. Fugitive dust generated by construction activities will be controlled through the mitigation measures shown in Appendix B related to Best Management Practices established for this project.
e) Create objectionable odors affecting a substantial number of people?

Execution of project work will result in minor releases of dust generated by construction activities as well as exhaust smoke from regulated small mechanical and hand tools used in the completion of project work. Given that these activities and equipment operation will occurred only within remote locations, any odors or minor pollutants generated will not affect substantial numbers of people.

No impacts to Air Quality are anticipated.
ENVIRONMENTAL ISSUES

<table>
<thead>
<tr>
<th>IV. Biological Resources. Will the project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<tr>
<td>a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?</td>
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<td>b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?</td>
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<td>c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?</td>
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<td>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?</td>
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<td>e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?</td>
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<td>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?</td>
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Discussion and Potential Impacts

In developing the Childs Meadows Head Cut Stabilization and Repair Project work scope and analyzing its impact on the project site and surrounding area, the Resource Conservation District of Tehama County has attempted to address the specific environmental constrains and requirements of various federal and State regulatory entities having jurisdiction over the resources found within the project area. In preparing the Biological Resources component of this IS/MND, the RCDTC utilized State and federally maintained resource and species information. Initially, Resource Conservation District of Tehama County personnel conducted a query of the California Natural Diversity Database (CNDDB) during May of 2014 in order to identify listed species which might be found within the project area. In addition, the Cal Fish database and State of California Wildlife Habitat Relationship System were reviewed. Other sources of botanical and wildlife information as well as correspondence with DFW personnel were also utilized in determining the possible occurrence of special status species.
Special Status Species

Resources within the project area include special status mammals, fishes, reptiles, birds, and plants. “Special Status Species” include all species tracked by CNDDB that could potentially occur in the project area, and include all those which meet the CEQA definition of Endangered, Rare, or Threatened (see CEQA Guidelines, § 15380). The special-status plants listed in *Appendix C Results of Biological Database Inquires and Species Review of Listed Species Found Within the Childs Meadows Head Cut Stabilization and Repair Project Impact Area* have been identified either within or near to the project area.

Mitigation Measure and Best Management Practices Developed in Order to Reduce Impacts to Biological Resources to a Less than Significant Level

A number of Mitigation Measures (*Appendix A*) and Best Management Practices (*Appendix B*) were developed to reduce or prevent potential impacts to species that may inhabit the project site or surrounding area. A number of these measures and practices were developed in order protect aquatic and terrestrial species from related impacts such as soil erosion, the generation and introduction of sediment into streams and other sensitive areas along with spilling of fuel and other hazardous material.

Positive Impact of Project Work

The goal of the Childs Meadows Head Cut Stabilization and Repair Project is to stabilize currently developing head cut erosion inside a stream channel within the Childs Meadows complex. Once work is completed, current head cutting of the stream channel will be arrested thus preventing erosion of meadow soils which support an array of grasses, forbs and rushes along with various aquatic and terrestrial wildlife species. In addition, accelerated rates of erosion within this stream channel related to head cutting have resulted in increased rates of sediments found within Gurnsey Creek, a significant tributary of Deer Creek which supports the currently listed Spring Run Chinook Salmon.

a) *Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?*

Head cut stabilization efforts to be completed in connection with this project are expected to return natural stream channel condition and functioning within Gurnsey Creek which flows through Childs Meadows. Project work is expected to have a direct positive impact on listed and unlisted plant, mammal, bird, fish and amphibian species that utilize the meadow complex, stream channel and now denuded and highly eroded stream banks. In addition, the anticipated reduction in erosion and related sediment rates into Gurnsey Creek will improve conditions for the currently listed Spring Run Chinook Salmon that are found within the Deer Creek watershed, a major component of the Sacramento River watershed system. Given the short timeframe of project work, any negative impacts such
as noise or the minor disturbance of bank and creek bottom sediments will be short term in nature and reduced to a less than significant level through the implementation of the Mitigation Measures shown above and listed in the project’s Mitigation Monitoring Plan found in Attachment A of this Initial Study/Mitigated Negative Declaration document. Potential impacts will also be reduced through the implementation of those Best Management Practices described in Attachment B.

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

No formally designated riparian habitats or sensitive natural communities have been established within the project area. Mitigation Measure #BIO 8 was developed and incorporated into the project’s work scope in order to directly reduce potential impacts on riparian areas and wet sites to a less than significant level. Mitigation Measures #BIO 6 (Equipment Cleaning) and #BIO 7 (Identification and Isolation of Invasive Plants) were developed as measures that will indirectly protect riparian and aquatic habitats thought the prevention of invasive plant infestation attributable to construction activities and equipment use. In addition the various Best Management Practices established for this project will prevent the occurrence of most construction related impacts.

c) Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Prior to project implementation, the entity implementing this project will be required to obtain a Department of Fish and Wildlife Streamside Alteration Agreement (1600 Permit), State Water Board 401 Certification and Army Core of Engineers 404 Permit. The provisions of these permits along with the implementation of various Mitigation Measures and Best Management Practices will prevent impacts to meadow resources or reduce them to a less than significant level. Once completed, it is anticipated that project work will improve conditions for aquatic and meadow species found within and around the project area.

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

No negative impacts to migratory terrestrial, aquatic or avian species are anticipated in connection with implementation or completion of the Childs Meadows Head Cut Stabilization and Repair Project. In addition to project work being completed in a short time frame the project’s impact area will cover a very small segment of stream channel (approximately 170 linear feet). The Mitigation Measures formally established for the project particularly #BIO 8 (Protection of Riparian Vegetation), #BIO 9 (Minimizing Injury and Mortality of Fish and Amphibian
Species During Dewatering Operations) and #BIO 10 (Minimizing of Impacts to Aquatic Habitat and Species during Dewatering of the Project Site) will reduce potential direct impacts to biological resources within the project area’s aquatic and riparian habitats to a less than significant level. Mitigation Measures #BIO 6 (Equipment Cleaning) and #BIO 7 (Identification of Invasive Plants) will indirectly protect the project these resources by preventing the spread of noxious plants through the use of mechanized equipment or identifying the occurrence of such species within the project area so that they can be isolated from construction and other project related activities.

In addition, Mitigation Measure #BIO 3 (Protection of Migratory Bird Treaty Act Species) was developed specifically to address potential impacts to those species covered under the MBTA that may utilize the Childs Meadows complex during migration periods.

More specifically, the Spring Run Chinook Salmon is an important migratory aquatic species found within the Deer Creek watershed in which Gurnsey Creek and its small tributaries are located. In July 2013, USFWS biologist Steven Baumgartner performed a biological assessment within Gurnsey Creek in order to determine if habitat for Spring Run Chinook Salmon, other anadromous fish or listed frog species such as the Cascades Frog were present. The survey utilized backpack electro-fish equipment and techniques within the Gurnsey Creek’s downstream reach from the head cut for about two hundred yards. Only one small brook trout was found. In addition 24 brook trout were measured and returned to the creek along with one hundred Cascades frog tadpoles and one adult frog which were found there as well. Based upon this field assessment Steven Baumgartner indicated that the DFW would not require fish passage through the proposed head cut infrastructure since the Brook trout is not biologically significant and migration or access to upstream habitat of listed aquatic species is not an issue.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Other than the requirements and standards found within The Nature Conservancy’s conservation easement document for the Childs Meadows area, there are no local policies, ordinances or other formalized restrictions protecting biological resources that apply to the project area.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The only habitat or conservation plan that is applicable to the project area relates to The Nature Conservancy’s conservation easement that has been established for that portion of Childs Meadows in which project work will be completed.
Mitigation Measures Related to Biological Resources

Biological Resource Surveys and Protection Measures

Mitigation Measure BIO 1 (Pre Project Implementation Plant Surveys):
Personnel specifically trained in the identification of California Rare Plant Ranking (CRPR) List 1, List 2 and List 3 species and any others shown in Appendix C (Results of Database Inquiry and Species Review) shall be required to evaluate potential habitat for these species prior to implementation of impactive activities within the project area during the appropriate blooming or identification period. Such personnel shall also evaluate potential findings of any such plants within treatment areas during the execution of project work per the provisions of Mitigation Measure #BIO 2 Protection of Previously Unidentified Listed Plants below.

All sightings shall be documented using the California Natural Diversely Data Base (CNDDB) field survey form a copy of which shall be submitted to the CNDDB and the RCDTC Project Manager. A copy shall also be incorporated into the RCDTC project files. Qualifications for personnel who shall make evaluations of sites include those found in the California Department of Fish and Wildlife’s 2009 document entitled “Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities” (Appendix D)*. If any Federal or State listed threatened or endangered species are detected in the project area that may be impacted by the project work, a flagged 25’ “No Treatment Area” shall be established. Within such exclusion zones, no project work shall be conducted until consultation with California Department of Fish and Wildlife or United States Fish and Wildlife Service personnel as appropriate have been made and their recommendation for protection incorporated into the project work scope. Biological surveys shall also map invasive plant species listed by the California Department of Food and Agriculture

(http://www.cdfa.ca.gov/phpps/ipc/weedinfo/winfo_list-pestrating.htm)

and the California Invasive Plant Council (Cal-IPC)

(http://www.cal-ipc.org/)

located within the project area. If invasive plants are found, the provisions of Mitigation Measure BIO 7: Identification and Isolation of Invasive Plants shown below shall also be implemented.

*This measure is only applicable if surveys for listed plant and animal species are not conducted prior to implementation of project work.

Mitigation Measure #BIO 2 (Protection of Previously Unidentified Listed Plants):
If during the implementation of project work, any previously unidentified listed plants shown in Appendix C (Results of Database Inquiry and Species Review) are detected by the RCDTC Project Manager, the Construction
Manager or the qualified individuals described in Mitigation Measure # BIO 1 (Pre Project Implementation Plant Surveys), all project related activities shall immediately stop and a 25’ “No Treatment Area” shall be established and flagged around the perimeter of any occurrence by these individuals.

Mitigation Measure #BIO 3 (Protection of Migratory Bird Treaty Act Species):
In order to protect any species covered by the Migratory Bird Treaty Act (MBTA), no project work of any kind shall occur between March and August, unless the following is implemented: 1). A survey is conducted by a biologist or other persons with knowledge of and ability to recognize species protected by the MBTA within 0.5 miles of the project area during the nesting season of listed species and it is determined that there are no occupied nests within the proposed project area. 2). If an occupied nest is found, then the biologist or other person with knowledge of, and ability to recognize, species protected by the MBTA shall determine if the birds present are those protected by the MBTA. If an MBTA species is located the a 100’ “No Treatment Area” shall be established around the nest during the breeding season. If raptor species are found, the provisions of Mitigation Measure BIO 4 (Raptor Protection) related to raptor protection shall apply. Modifications and possible reduction in “No Treatment Area” size may be made after consultation with the California Department of Fish and Wildlife personnel. If project work is delayed or suspended for more than 15 days after surveys have been completed, the project area shall be resurveyed for MBTA or raptor species prior to reinitiating of project work.

Mitigation Measure #BIO 4 (Raptor Protection):
A wildlife biologist with appropriate training in the identification of raptors shall perform a walk-through survey of treatment areas shortly before any project work is implemented. This walk-through survey shall include examination of nests for raptor activity, visual searches for whitewash, listening for calls, and any other evidence of nesting raptors in the harvest unit. If field personnel detect raptor presence, appropriate protection measures as described below for that particular species shall be established. Upon discovery of an occupied raptor nest or any unknown large bird, the RCDTC’s Project Manager or a wildlife biologist (after conferring with the RCDTC’s Project Manager) shall inform all personnel involved with project work of such sightings. Upon notification, vegetation disturbing activities shall be suspended within one mile of the nest. Activities may resume after the species using the nest is identified and the appropriate measures described below to protect the nest are implemented on the ground.
Raptor Protection Measures

Listed Raptors

If an occupied nest of a Endangered Species Act or California Endangered Species Act listed raptor is discovered during project work, the Contractor shall protect the nest tree, screening trees, perch trees, and replacement trees from any project work including, (1) suspension of project work within one mile of the nest, (2) suspension of all project work within a 375-foot radius buffer of the occupied nest, and (3) immediate notification and consultation by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service as appropriate. Modifications and possible reduction in “No Treatment Area” size may be made after such consultation has been completed.

Non-Listed Raptors

If an occupied nest of a non-listed raptor is discovered during project work, all vegetation disturbing activities within one mile of the occupied nest shall be suspended. Upon such suspension, the RCDTC Project Manager or a professional biologist shall designate the nest trees, perch trees(s), screening tree(s), and replacement trees(s), for which a “No Treatment Area” shall be established.

Mitigation Measure #BIO 5 (Fisher Protection):

Prior to project implementation, the RCDTC Project Manager or biologist shall look for freshly excavated cavities suitable for fisher dens on snags between 10” and 12” in diameter located 6’ to 12’ above ground level. In addition, within the project area, a potential den structure is defined as any hardwood with visible indicators of cavity formation (dead or alive) ≥15 inches DBH, a conifer snag ≥22 inches DBH, or a live green cull or green wildlife conifer ≥22 inches DBH. A live green cull is a conifer tree with less than 25% merchantable wood by volume. A green wildlife conifer is considered a potential den structure when it has mistletoe brooms, large rest ranches, and visible signs of fungus or other indications of cavity formation or visible cavity openings. The RCDTC Project Manager or biologist shall contact CDFW for consultation if site-specific avoidance measures are needed that differs from those described above. Any additional site specific avoidance measures developed through consultation with CDFW shall provide greater or equal protection to those stated here.

Den snags shall be protected by flagging the snag itself and establishing a flagged 375’ radius “No Treatment Area”. If a fisher is sighted in treatment areas by equipment operators or other project personnel during any project work, all vegetation disturbing activities shall be suspended within that area and the RCDTC Project Manager or biologist shall be notified. If a den or habitation of a fisher is discovered, all operations shall be suspended and a survey for a fisher den shall be completed. If a den is found a, flagged 375’ radius “No Treatment Area” shall be established around the identified den or habitation. The Department of Fish and Wildlife shall then be immediately notified.
Invasive Plants

**Mitigation Measure BIO 6 (Equipment Cleaning):**
In order to prevent the spread of invasive plant species all heavy equipment to be used in the execution of project work shall cleaned off site prior to use within the project area. The RCDTC Project Manager shall assure and document equipment cleaning. Documentation of cleaning shall be incorporated into the RCDTC project files.

**Mitigation Measure #BIO 7 (Identification and Isolation of Invasive Plants):**
Populations of invasive plants listed by CDFA having the potential to be spread or otherwise impact project work and identified during the invasive plant surveys described in Mitigation Measure BIO 1 (Pre Project Implementation Plant Surveys): above shall be either 1.) flagged and avoided during project implementation, or 2.) treated prior to project implementation. Populations of invasive plants listed by Cal-IPC shall be evaluated for the risk of further infestation due to project activities and treatments or other mitigation shall be applied as needed. If discrete patches of Cal-IPC invasives are located, (e.g. species that are not already common in the project area) staging sites shall be located outside of these discrete infestations.

Protection of Riparian Vegetation and Species Protection During Dewatering Operations

**Mitigation Measure# BIO 8 (Protection of Riparian Vegetation):**
Prior to construction, the RCDTC Project Manager shall determine and identify the exact location of equipment access points along with stream course crossings using those sites that are stable and that will minimize riparian disturbance. During implementation of project work as much understory vegetation will be retained as possible in order to maximize shade producing and bank stabilizing vegetation during project implementation. Soil compaction will be minimized through the use of equipment with a greater reach or that exerts less pressure per square inch on the ground, resulting in less overall area disturbed or less compaction of disturbed areas. Disturbed soils will be decompacted at the project’s completion as mobile equipment exits the construction area. Disturbed and decompacted areas will be revegetated, with native species specific to the project location that comprise a diverse community of woody and herbaceous species.

**Mitigation Measures BIO 9 (Minimizing Injury and Mortality of Fish and Amphibian Species During Dewatering Operations):**
Prior to dewatering the construction site, fish and amphibian species shall be captured and relocated to avoid direct mortality and minimize take. This is especially important if listed species are present within the project site. The
following measures are consistent with those defined as reasonable and prudent by NOAA for projects concerning several northern California Evolutionary Significant Units for Coho salmon, Chinook salmon, and steelhead trout:

- Fish relocation activities must be performed only by qualified fisheries biologists, with a current DFG collectors permit, and experience with fish capture and handling.

- Relocation activities will be conducted during morning periods when air temperatures are cooler.

- Air and water temperatures shall be measures periodically and collection activities shall cease when water temperatures exceed those allowed by DFG and NOAA. Fish and amphibians excluded from the project site shall be prevented from re-entering by blocking the stream channel above and below the work area with fine-meshed net or screens. Mesh shall be no greater than 1/8 inch and the bottom edge of which shall be secured to the channel bed to prevent fish from re-entering the work area at the bottom of the screen. Exclusion screening shall be placed in areas of low water velocity to minimize impingement of fish. Screens shall be checked periodically and cleaned of debris to permit free flow of water.

- Prior to capturing fish, a determination shall be made of the most appropriate release location(s). The following shall be considered when selecting release site(s): a. Similar water temperature as capture location b. Ample habitat for captured fish c. Low likelihood of fish re-entering work site or becoming impinged on exclusion net or screen.

- Determination of the most efficient means for capturing fish:
  - Complex stream habitat generally requires the use of electrofishing equipment, whereas in outlet pools, fish may be concentrated by pumping-down pool and then seining or dipnetting fish.
  - Electrofishing will only be conducted by properly trained personnel following DFG and NOAA guidelines.

- Minimize handling of salmonids. When handling is necessary, always wet hands or nets prior to touching fish.

- Temporarily hold fish in cool, shaded, aerated water in a container with a lid. Provide aeration with a battery-powered external bubbler. Protect fish from jostling and noise and do not remove fish from the container until time of release.
• Place a thermometer in holding containers and, if necessary, periodically conduct partial water changes to maintain a stable water temperature. If water temperature reaches or exceeds those allowed by DFG and NOAA, fish will be released and rescue operations ceased.

• Avoid overcrowding in containers.

• Visually identify species and estimate year-classes of fish at time of release. Count and record the number of fish captured. Avoid anesthetizing or measuring fish.

• Submit reports of fish relocation activities to DFG and NOAA in a timely fashion.

• If feasible, plan on performing initial fish relocation efforts several days prior to the start of construction. This provides the fisheries biologist an opportunity to return to the work area and perform additional electrofishing passes immediately prior to construction. In many instances, additional fish may be captured that eluded the previous day’s efforts.

• If mortality during relocation exceeds 5 percent, stop efforts and immediately contact the appropriate agencies.

Mitigation Measures BIO 10: Minimizing of Impacts to Aquatic Habitat and Species during Dewatering of the Project Site:
When construction work occurs within a year-round flowing channel, the project site must be dewatered. In order to prevent or minimize impacts including the temporary loss of aquatic habitat; stranding, displacement, or crushing of fish and amphibian species along with increased turbidity from disturbance of the channel bed, the following measures will be implemented during dewatering operations:

• Determination by the Construction Manager in consultation with the RCDTC Project Manager and CDFW personnel as to the most appropriate specific means of bypassing flow around the work area in order to minimize channel disturbance and avoid direct mortality of fish and other aquatic vertebrates.

• Coordinate project site dewatering with a fisheries biologist qualified to perform fish and amphibian relocation activities.

• Minimize the length of the dewatered stream channel and duration of dewatering.
• Bypass stream flow around work area, but maintain stream flow to channel below construction site.

• Periodically pump the dewatered stream segment dry of seepage.

• Place pumps in flat areas, well away from the stream channel.

• Secure pump units by tying off to a tree or staking in place to prevent movement by vibration.

• Refuel pump units in an area well away from stream channels and place fuel absorbent mats under pumps while refueling.

• Cover pump intakes with 1/8" mesh to prevent entrainment of fish or amphibians that fail to be removed prior to dewatering operations.
• Check pump intakes periodically for impingement of fish or amphibians that fail to be removed prior to dewatering operations.

• Discharge wastewater from construction area to an upland location where it will not drain sediment-laden water back to stream channel.

*No significant adverse impacts to Biological Resources are anticipated with the implementation of the above mitigation measures.*
ENVIRONMENTAL ISSUES

V. Cultural Resources. Will the project:

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<th>a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?</th>
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<th>c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?</th>
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<th>d) Disturb any human remains, including those interred outside of formal cemeteries?</th>
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Discussion

**Information about Cultural Resources**

Research

A review of the files maintained at the Northeast Information Center of the California Historical Resources Information System (CHRIS) was conducted on September 23, 2014 (I.C. File # DI4-83, Appendix 2). According to this review, Registered Professional Forester Barry K. Ford, Collins Pine Company, inspected most of the project area during the preparation of the Doe Mountain Timber Harvest Plan (Ford 2000). A prehistoric period cultural resource located adjacent to the project area was identified by Mr. Ford during the 2000 inspection. This resource was assigned the trinomial CA-TEH-1954 by the Northeast Information Center. Seven other prehistoric period sites were noted by the Northeast Information Center to exist within a one mile radius of the project (Appendix 2).

Native American Consultation

A letter was sent to the Native American Heritage Commission (NAHC) requesting a check of the Sacred Lands files. Their reply, dated August 22, 2014 indicated that no properties listed as Sacred Lands were present in the project area. The NAHC provided a list of individuals and groups to contact regarding the project. Letters requesting comment and/or information concerning the project area along with a topographic map and aerial photograph delineating the project were sent on August 30, 2014 to: Kyle Self, Chairperson, Greenville Rancheria of Maidu Indians; Andrew Freeman, Chairperson, Paskenta Band of Nomlaki Indians; Jason Hart, Chairperson, Redding Rancheria; Tracy Edwards, Chief Executive Officer, Redding Rancheria; James Hayward, Sr. Cultural Resources Program, Redding Rancheria; Glenda Nelson, Chairperson, Enterprise Rancheria of Maidu Indians; Art Angle, Vice Chairperson, Enterprise Rancheria of Maidu Indians; Kelli Hayward, Wintu Tribe of Northern California; and, Beverly Ogle.
On September 8, 2014, an email message from Enterprise Rancheria of Maidu Indians was received saying this was outside their territory and suggested we contact Susanville and Greenville groups. The second reply was a phone call September 11, 2014 from Beverly Ogle. Ms Ogle expressed concerned about the project because of the "highly sensitive" nature of Childs Meadow for cultural resources and recommended that a monitor be present during excavation.

A second round of letters was sent October 2, 2014 with details concerning the results of the Northeast Information Center's record search and field inspection and with a second request for comment and/or information. Ms. Ogle called again on October 7, 2014 and once again requested that a monitor be present during ground disturbing activities. No other replies have been received as of October 13, 2014.

Field Inspection Results
A complete, intensive pedestrian inspection of the project area was conducted by Peak & Associates, Inc. Staff Archeologist Neal Neuenschwander on September 29, 2014 (Figure 3). Transect spacing averaged less than 10 meters in width. The forested portion of the project area was being logged on September 29, 2014, so in addition to existing roads and trails, new skid trails and areas of duff clearance were being produced concurrent with the field inspection. In the non-forested portions of the project area, ground visibility was generally excellent. The head cut feature itself provided a large area of subsoil to examine.

Site CA-THE-1954 was found to be as identified by Barry Ford with surface artifacts confined to south of the existing dirt road and outside the project area.

Despite near perfect surface visibility within nearly the entire project area, no evidence of prehistoric or historic period cultural resources was observed.

In order to address the local concerns mentioned above regarding the potential impact to unknown cultural resource sites that may be within the Childs Meadows Head Cut Stabilization and Repair Project impact area, Mitigation Measure #CUL 1 (Protection of Identified Cultural Resources): Mitigation Measure #CUL 2: Protection of Newly Discovered Archeological, Prehistoric, Historic or Paleontological Resource Mitigation Measure #CUL 3: Discovery of Human Remains shown below will be incorporated into project implementation efforts and its work scope.
Mitigation Measures Related to Cultural Resources

Mitigation Measure #CUL 1 (Protection of Identified Cultural Resources):
All new and previously recorded archeological sites identified during field surveys completed in connection with the preparation of this Initial Study/Mitigated Negative Declaration and documented in the report entitled “Cultural Resources Assessment of the Childs Meadows Head Cut Stabilization and Repair Project Area, Tehama County, California” (Peak and Associates) dated October 2014 shall be protected through complete avoidance. A flagged 50’ “No Treatment Area” shall be established around each of these sites by the RCDTC Project Manager or prior to implementation of any project work.

Mitigation Measure #CUL 2: Protection of Newly Discovered Archeological, Prehistoric, Historic or Paleontological Resource
Within areas of ground or vegetation disturbing activities, if project work appears to expose any previously unknown archeological, prehistoric, historic or paleontological resource sites along the path of the fuel break or within 50 feet beyond the project boundary, the site shall be avoided. Work may continue elsewhere within the overall project area. Exposed cultural or paleontological resources shall be appropriately flagged in order to immediately establish a “No treatment Area” of at least 100 feet. A professional archeologist shall examine the site, evaluate found objects and make a finding of their significance. The archeologist shall also develop recommendations for the permanent protection of objects and site treatments as necessary. Identified sites shall be permanently protected through avoidance. These sites shall be made off limits to personnel, equipment, and project impacts of any kind. A professional archeologist shall determine an appropriate permanent flagged exclusion zone once the site has been adequately assessed for significance. Findings of significance shall be prepared and submitted to appropriate agencies and Native American groups at the discretion of the professional archeologist. As appropriate, findings shall be recorded in the RCDTC project files.

Mitigation Measure #CUL 3: Discovery of Human Remains
If during the execution of project work human remains are found, the RCDTC Project Manager or Construction Manager after having informed the RCDTC Project Manger of such findings shall halt work at that location until a professional archaeologist visits the site in order to assess their significance, process the remains and immediately notify the County coroner. If the remains are determined by the County coroner to be Native American, the Native American Heritage Commission (NAHC) and Native American groups at the discretion of the professional archeologist shall be notified within 24 hours and the guidelines of the NAHC shall be adhered to in the treatment and
disposition of the remains. Findings of significance shall be prepared and submitted to appropriate agencies at the discretion of the professional archeologist. Findings shall also be recorded in the project files by the RCDTC Project Manager. Project work may continue on other non-impacted portions of the project area.

No significant adverse impacts to Cultural Resources are anticipated with the implementation of the above Mitigation Measures.
VI. Geology and Soils. Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

   i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)

   ii) Strong seismic ground shaking?

   iii) Seismic-related ground failure, including liquefaction?

   iv) Landslides?

b) Result in substantial soil erosion or the loss of topsoil?

c) Be located on a geologic unit or soil that is unstable, or that will become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

Discussion

Geology and soils

The geology and soils observed within the project area are primarily a result of its proximity to the Mt. Lassen volcano. Lassen volcano is an active Holocene volcano and is part of the southern volcanic arc associated with the Cascadia subduction zone. The volcano has erupted historically and will likely be a continuing source of new rock and ash for the foreseeable future. The Gurnsey Creek valley itself is bounded by several different bedrock formations ranging in age from Late Pliocene to Holocene (Clynne and Muffler, 2010). The following descriptions are brief summaries of the geologic units proximal to the project area and are derived from Clynne and Muffler, 2010:

Units Bounding the Valley

Andesite of Wild Cattle Mountain (tauw)

Bounding the north east side of the valley is the Late Pliocene Andesite of Wild Cattle Mountain. This unit comprises a south-dipping series of andesite lava flows of poorly defined origin. Flow contacts and interflow breccias are rarely exposed. The unit holds relatively steep slopes and locally is covered with a coniferous forest.
Rhyolite of Mill Creek Plateau (rmp)
Exposed in relatively small patches along the south western side of the valley is the early Pleistocene Rhyolite of Mill Creek Plateau. This formation is a thick (to 150m) lava flow that erupted from a buried vent near the flow’s west margin. The surface morphology of the flow and pumiceous carapace have been completely removed by erosion. The flow is now covered by a thick very light colored soil.

Andesite of Doe Mountain (adm)
The most extensive geologic unit exposed on the western side of the valley is the early Pleistocene Andesite of Doe Mountain. The unit is characterized as a small dome-shaped mass of porphyritic aug-hyp andesite correlated with the Dittmar Volcanic Center. Glaciation and erosion have modified the original morphology of the dome. The unit currently has a thin soil mantle and is only poorly exposed.

Tholeiitic Basalts of Mill Creek Plateau (bmc)
Exposed in relatively small patches on the western side of the valley is the middle to late Pleistocene Tholeiitic Basalts of Mill Creek Plateau. Lava flows of this unit entered the Gurnsey Creek drainage and flowed linearly for 8 km downstream. Most of the flow is buried beneath alluvium and colluvium.

Holocene and Pleistocene Colluvium and Talus (Qc)
Exposed on the margins of the Gurnsey Creek valley in the immediate vicinity of the observed head cut is a unit mapped as Holocene and Pleistocene Colluvium and Talus. The unit consists of nonsorted to laterally sorted, unconsolidated, nonbedded, course to fine rubble. It consists mainly talus at the base of slopes but locally occurs as slopewash or thin, local debris flows. This is the unit that makes up the bedrock promontories that bound and confine the wet portions of Childs Meadow.

Units within the valley
Outwash gravel from older glaciations (Qoo)
Within the confinement of the Gurnsey Creek watershed, in the northern Childs Meadow area, lay a series of late Pleistocene glacial outwash gravels. These gravels are mapped from approximately the location of the observed head cut in Gurnsey Creek to the northern extent of the meadow. Observations on the ground made by Pacific Watershed Associates personnel indicate there is little gravel exposed in this area and that the surface exposures are predominantly fine grained non-cohesive silts with minor clay content. These deposits are consistent with glacial outwash but gravel appears to be a very minor component of the unit within the project area.
Quaternary Alluvium (Qf)

Mapped throughout the valley floor in the Childs Meadow area are Holocene and Pleistocene Alluvium deposits. They are characterized as moderately well sorted, unconsolidated, lenticular-bedded sand and gravel in modern stream channels. The unit includes terraces and reworked glacial outwash in some locations, and extensive marsh deposits in other areas. Soils found within the project area consist of those which are moderately deep, rocky, gently sloping to steep and underlain by volcanic rock.

Soils Descriptions

Soil types found within the project area are described below:

Chummy soils, 0 to 3% Slope

This soil type represents the largest portion of the project area which includes meadows both wet and dry. The Chummy series is a gray strongly acid, silty clay loam developed from fine textured alluvium. It is a Fine-loamy, soil containing a mat of roots and decaying organic matter with little mineral soil material. This soil then becomes a silty clay loam strongly acid (pH 5.5); at 10 to 23”. The texture of Chummy soils in the project area range from silty clay loam, clay loam, and loam. In reaction they are slightly acid to strongly acid as sediments are from a wide range of volcanic rocks, including basalt, andesite, and rhyolite. This is a poorly and very poorly drained soil resulting in slow runoff rates while permeability is moderate. The depth of the water table varies but is usually within 10 inches of the surface in the early summer and may drop below 5 feet in the fall. During the winter months the soil is saturated and partly frozen. Chummy soils within Childs meadows support dense vegetative complex forbs including sedges rushes, Spanish clover and other water loving plants. Grasse species within the meadow include blue joint, slender muhly, and alpine timothy and provide excellent summer range for cattle and sheep.

Nanny stony loam, 0 to 8 percent slopes

Within those portions of the project area out of the meadow complex are found Nanny stony loom 0 to 8% slope soils. This very deep, well drained soil is formed in alluvium from basic igneous rock. Within the project area Nanny gravelly loam is under a cover of Douglas fir, ponderosa pine, sugar pine, and white fir. Reaction is slightly to strongly acid. This soil is well drained has slow runoff and moderately rapid permeability. Project work will be conducted on several small sites with slopes from 0 to 8%.

The goal of this project is to reduce in stream cutting and generation of sediments and as a result of project work erosion and related sediment generation will be reduced. In order to prevent erosion related to construction activity,
only small mechanical equipment and hand power tools will be utilized to install head cut stabilization infrastructure and to contour steep cut banks that have been created by head cutting. In addition, various Best Management Practices as shown in Appendix B have developed and will be implemented during project implementation in order to reduce impacts to soil resources within the project’s impact area.

a) Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)

A review of the current Alquist-Priolo Earthquake Fault Zone Maps indicates that there are no faults within that portion of eastern Tehama County where project work will occur. No indication of rupturing is indicated within the Childs Meadows Head Cut Stabilization and Repair project’s impact area.

ii) Strong seismic ground shaking?

See comments under VI. a) i) above

iii) Seismic-related ground failure, including liquefaction?

See comments under VI. a) i) above

iv) Landslides?

Soils within the project area are either poorly drained in meadow sites, (Chummy Soils) or well drained soils on those portions of the project area outside of the meadow complex (Nanny Soils). The majority of project work will occur within the Gurnsey Creek stream channel inside the meadow complex. Project work will entail the installation of natural materials into a stream channel on a flat slope. The head cut control measures developed for this project are intended to reestablish the natural stream bed slope at the head cut knick point and downstream from this area which will result in increased water percolation into the meadow soils and a reduction in erosion generated sediments into Gurnsey Creek and Deer Creek.

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

As mentioned in the above discussion, soil types within the project area have a moderate to high potential for erosion. Project work will be conducted on flat slopes or nearly so and will entail the installation of bio-engineered head cut stabilization infrastructure within a 170’ segment of the Gurnesy Creek stream channel. Various Best Management Practices have been established that will prevent impacts to soil stability and reduce the potential for generation of stream bed and bank related sediments.
d) **Would the project 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?**

All project work will be conducted on flat areas of a meadow complex as well as the bank and stream bed of Gurnsey Creek. Project work will impact about 170 linear feet of stream bank. Once head cut infrastructure has been installed, not only will head cutting cease, but currently steep sided cut banks will be contoured and shored up reducing the potential for landslides, lateral spreading and collapse which now threatens stream flows and water quality within this degraded stream channel. In addition, various Best Management Practices have been developed and will be implemented that are related to the protection of meadow soils and related plant communities.

d) **Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?**

There are no expansive soils as defined in Table 18-1-B of the Uniform Building Code within the project area. In addition project work does not entail the construction of buildings that could be at risk from expansive soils.

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

The project area is not zone for urban development uses. No septic tanks or alternative waste water disposal systems are located within the project’s immediate impact area and none will be developed in connection with the completion of this fuel break.

**Impacts related to Geology and Soils will be less than significant.**
ENVIRONMENTAL ISSUES

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<thead>
<tr>
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<th>Potentially Significant Impact</th>
<th>Less Than Significant with Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<tr>
<td>VII. Greenhouse Gas Emissions. Would the project:</td>
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<tr>
<td>a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?</td>
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<td>b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?</td>
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Discussion

Greenhouse Gas (GHG) Emissions Related to Diesel and Gasoline Consumption

The Proposed Project would generate greenhouse gas (GHG) emissions from the exhaust of vehicles used to transport construction crews and equipment along with the engines of small construction equipment and power hand tools. This project’s implementation would be short-term and minor in nature. Furthermore, native riparian species of grass and other plants are expected to quickly re-colonize the project’s impact area and surrounding site. Once fully developed, this vegetation will sequester carbon and prevent the continued erosion of productive meadow soils which support meadow plant species.

a) **Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

   (See comments above)

b) **Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gas?**

   (See comments above)

**Impacts related to Greenhouse Gas Emissions will be less than significant.**
ENVIRONMENTAL ISSUES

<table>
<thead>
<tr>
<th>VIII. Hazards and Hazardous Materials. Would the project:</th>
<th>Potentially Significant Impact</th>
<th>Less Than Significant Impact with Mitigation Incorporated</th>
<th>Less Than Significant Impact</th>
<th>No Impact</th>
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<tr>
<td>a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?</td>
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<td>b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?</td>
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<tr>
<td>c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?</td>
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<tr>
<td>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, will it create a significant hazard to the public or the environment?</td>
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<tr>
<td>e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, Would the project result in a safety hazard for people residing or working in the project area?</td>
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<td>f) For a project within the vicinity of a private airstrip, Would the project result in a safety hazard for people residing or working in the project area?</td>
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<tr>
<td>g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?</td>
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<tr>
<td>h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?</td>
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Discussion:
The only hazardous materials that will be used in connection with project work will be diesel fuel, gasoline and lubricants for equipment used to place logs and boulders in the stream channel along with transportation vehicles. Gasoline will be used to fuel transportation equipment for construction personnel along with small mechanical and power tools. There is a chance that a spill could occur if equipment overturned or during equipment fueling and maintenance operations. This is unlikely however and the risk would not be significant with the implementation various Best Management Practices related to the use of Hazardous Materials (see Attachment B)
a) **Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

Project work poses a potential hazard related to the transport and use of fuel and lubricants. The risks related to this hazard will be reduced through the implementation of those Best Management Practices related to the establishment of no treatment buffers around wet areas, those addressing the location of refueling areas and containment of hazardous materials along with those related to inspection of equipment which will provide additional protection to streamside habitats and water quality.

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

See comments under VII. a) above.

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

There are no existing or proposed schools within one-quarter mile of the project area.

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

The project area is not located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5.

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

The project area does not lie within an airport land use plan area or within two miles of a public airport or public use airport.
f) **For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?**

There are no currently operating private airstrips within or immediately adjacent to the project area.


d) **Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

The Childs Meadows Head Cut Stabilization and Repair Project is located within a remote portion of eastern Tehama County. The only project related impacts to traffic along public or private roads in the area that could be used as an evacuation route would be the transport of equipment and personnel to the project site over State Route 36E or along the Lassen National Forest maintained Forest Roads 28N88. The occurrence of equipment transport would be rare however daily trips to the project site by construction personnel are anticipated. Due to the limited amount of road use expected in connection with this project, impacts to or interference with an adopted emergency response plan or emergency evacuation plan are not anticipated.


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

The execution of project work has the potential to ignite a fire within a wildland area. Due to low standing meadow vegetation surrounding the project site, the availability of water from Gurnsey Creek and several of its small tributaries along with the site’s remote location, the risk of wildfire to people and structures is significantly reduced. In addition, implementation of project work will occur when fuel moisture and humidity are at adequate levels as determined by Cal Fire or other local fire fighting authorities. Finally, firefighting equipment and portable fire water will be made available at work sites as per Best Management Practices established for this project related to Hazards and Hazardous Materials.

**Impacts related to Hazards and Hazardous Materials will be less than significant.**
ENVIRONMENTAL ISSUES

IX. Hydrology and Water Quality. Would the project:

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

Discussion:

The Gurnsey Creek channel head cut is located at an elevation of 4,900’ and is within the upper portion of its watershed south of Mt. Lassen. The drainage area that flows into Gurnsey Creek above the knick point and eroded area is approximately 2.7 square miles or roughly 1,735 acres. The subbasin is shaped radially, with two main catchments upstream of the state highway that confluence downstream from there into the meadow. The headwaters of Gurnsey Creek are located at an elevation of 6,235’ and drain steep snowcapped mountains dominated by a coniferous forest while the meadow is gently sloping, wet, and dominated by wetland plants. There is little development and limited impervious areas in the basin, excluding some resort cabins located several miles to the Northeast, State Highway 36/89, along with various gravel and native surface forest roads. Activities and features around the project area that
Childs Meadows Head Cut Stabilization and Repair Project
Tehama County Resource Conservation District

may impact water quality within the watershed of Gurnsey Creek and its small tributaries include selective timber harvests within surrounding forest lands over the past 20 years along with several small fires. In addition, past cattle and sheep grazing prior to the development of a conservation easement by The Nature Conservancy may have also impacted levels of vegetation and related water quality. According to data recorded at the rainfall gage in the nearby community of Mineral (DWR #A40), the mean annual average precipitation in the vicinity of Childs Meadow is 54 inches. Rainfall occurs during the winter and spring and snow levels frequently exceed 10 ft depth between December and February. The expected 24 -hr. rainfall intensity is 2.1 in/hr. for the 100 yr. storm event. Peak storm runoff for Q100 (100 year return interval runoff) was calculated to be 514 cfs.

a) **Would the project violate any water quality standards or waste discharge requirements?**

Project work poses a potential for impacts to water quality standards related to the short term generation of soil sediments as well as the release of diesel fuel and equipment lubricants through the accidental spill of lubricants or fuel. This potential will be reduced to a less than significant level thought the implementation of various Best Management Practices related to Hazards and Hazardous Materials. Introduction of construction related sediments into Gurnsey Creek and ultimately Deer Creek will be minimized or reduced thought the implementation of BMPS related to sediment catchment and control as well as equipment operations in around riparian areas and stream courses. In addition, per the requirements established in Mitigation Measure #Hydro 1, *(Storm Water Pollution Prevention Plan)* a storm water plan will be developed and implemented prior to the initiation of project work. In addition, Mitigation Measures #HYDRO 2 *(Protection of Existing Drainage Features)* requires that all existing drainage structures if any within the project’s impact site or the surrounding project area be protected from project related impacts and remain e of obstructions.

b) **Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?**

The only surface water to be used in connection with project work would be a minimal amount related to compacting soil and other construction needs as well as for dust control and fire suppression in the event of an ignition. Within several years of completion, the Childs Meadows Head Cut Stabilization and Repair Project will result in the reestablishment of Gurnsey Creek’s natural stream bed topographic profile within that stream segment containing the project site. It is anticipated that project work will result in decreased down cutting and stream flow velocity along with a resultant increase in percolation of water into the aquifer beneath the Childs Meadows complex. As a result, no negative impacts to groundwater supplies or groundwater recharge will occur.
c) **Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?**

As proposed, the installation of head cut and bank stabilization infrastructure will generally utilize the current stream channel alignment at the head cut site as well the installation of bio engineered sediment control structures further down the stream’s channel course. Some minor bank contouring will occur in order to remove cut banks which currently erode into stream flows during high water events and this may slightly change stream course direction. Such contouring will only occur along very small segments of the stream channel downstream of the head cut site. Once completed, project work will result in a significant reduction of stream generated erosion and siltation related to the current stream head cut.

d) **Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?**

The goal of this head cut control project is to reestablish natural channel stability, form and function including its ability to efficiently transport natural flow volumes out of the meadow complex and into the downstream channel of Gurnsey Creek. In addition, it is anticipated that a reduction in the grade of Gurnsey Creek’s stream channel within the stream segment now impacted by head cutting and down cutting of the channel bottom will result in reduced stream flow velocity within the meadow complex allowing more water to be absorbed into meadow soils.

e) **Would the project 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?**

The project area is within a wildland area where there is no residential developments and related storm water drainage systems.

f) **Would the project otherwise substantially degrade water quality?**

The Mitigation Measures mentioned under IX.a above along with various Best Management Practices as shown in Attachment B will reduce potential overall water quality impacts to a less than significant level.

g) **Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?**

There will be no housing constructed in connection with project work.
h) **Would the project place within a 100-year flood hazard area structures that would impede or redirect flood flows?**
No structures will be developed that would impede or redirect flood flows.

i) **Would the project expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?**
No levees or permanent dams will be constructed in connection with this project.

j) **Would the project result in inundation by seiche, tsunami, or mudflow?**
There is no potential for seiches or tsunamis within the project area.

**Mitigation Measures Related to Hydrology and Water Quality**

**Mitigation Measure HYDRO-1** a Stormwater Pollution Prevention Plan (SWPPP) shall be implemented prior to initiation of project work. All construction contractors and subcontractors shall be required to implement BMPs identified in the SWPPP and those Shown in Appendix B for controlling soil erosion and discharges of other construction-related contaminants. Such BMP’s shall be in addition to the specific Mitigation Measures listed in this Initial Study/Mitigated Negative Declaration. Routine monitoring and inspection of BMPs shall be conducted by the RCDTC Project Manager to ensure that the quality of storm water discharges is in compliance with the permit. BMPs required to be incorporated into the SWPPP include:

- Soil stabilization measures, such as preservation of existing vegetation and use of mulch or temporary plantings to minimize soil disturbance;

- Sediment control measures to prevent disturbed soils from entering waterways;

- Tracking control measures to reduce sediments that leave the construction site on vehicle or equipment tires;

- Non-stormwater discharge control measures, such as monitoring water quality of dewatering operations and hazardous material delivery along with storage, and emergency spill response requirements.
The RCDTC Project Manager shall ensure that the BMPs are implemented as appropriate throughout the duration of construction and shall be responsible for contractor and subcontractor compliance with the SWPPP requirements. In addition, the SWPPP shall include information on:

- The project’s Implementation schedule
- Pollutant source identification
- Storm water BMPs
- Erosion control
- Sedimentation control
- Maintenance and Inspections
- Post-construction storm water management

**Mitigation Measure #HYDRO 2 (Protection of Existing Drainage Features):** Any existing drainage features shall be protected from project related impacts and shall remain free of obstruction.

**No significant adverse impacts related to hydrology and water quality are anticipated with the implementation of the above Mitigation Measures.**
X. Land Use and Planning. Would the project:

- a) Physically divide an established community? ☒ ☐ ☐ ☒
- b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? ☐ ☐ ☐ ☒
- c) Conflict with any applicable habitat conservation plan or natural community conservation plan? ☒ ☐ ☐ ☒

Discussion

a) *Would the project physically divide an established community?*

The only developed areas near the Childs Meadows Head Cut Stabilization and Repair Project is the Childs Meadows Resort located approximately 2 miles northeast of the project site, the Gurnsey Creek Campground located about 3.5 miles southeast of the area and Fire Mountain Lodge which is located approximately 5.5 miles southeast of the project site. These developed sites are located outside the project’s impact area and as a result; no established communities will be physically divided by project work.

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

The Tehama County General Plan designates land use within that portion of the County where project work will occur for timber production, ranching and wildlife management. This project does not conflict with any Federal, State, or County land use plan.

c) *Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?*

Other than a conservation easement established by The Nature Conservancy which allows for this type of stream habitat improvement, no habitat conservation plans or natural community plans have been formally established for the lands within the project area.

No impacts to land use and planning are anticipated.
ENVIRONMENTAL ISSUES

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XI. Mineral Resources. Would the project:

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?

☐ ☐ ☐ ☒

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?

☐ ☐ ☐ ☒

Discussion

a) *Would the project 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?*

The Childs Meadows Head Cut Stabilization and Repair Project entails the installation of erosion and sediment control infrastructure within a stream channel. Approximately 70yd³ of 6” to 24” in diameter rip-rap rock will be used in connection with construction activities and will thus not result in the loss of any mineral resources.

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

Project work will not result in the loss of any locally important mineral resource recovery site.

No impacts to mineral resources are anticipated.
### ENVIRONMENTAL ISSUES

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<tr>
<th>XI. Noise. Would the project result in:</th>
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<tr>
<td>a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?</td>
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<tr>
<td>b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?</td>
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<tr>
<td>c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?</td>
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<tr>
<td>d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?</td>
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<tr>
<td>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, will the project expose people residing or working in the project area to excessive noise levels?</td>
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<tr>
<td>f) For a project within the vicinity of a private airstrip, will the project expose people residing or working in the project area to excessive noise levels?</td>
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#### Discussion

During the implementation of project work, a temporary increase in ambient noise levels will be created by transportation and small mechanical equipment along with small power hand tools used in the development of erosion and sediment control infrastructure. All work will be completed during daylight hours. It is anticipated that work will progress at a rapid rate with noise generating equipment on site for a very limited period of time. As a result only short term impacts to the surrounding area are anticipated. There are no permanent residents within the area that would be impacted by short term noise attributable to project work. No long term impacts to ambient noise levels or to noise standards established in the Tehama County General Plan are anticipated.

a) **Would the project create exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?**

During the implementation of project work, a temporary increase in ambient noise levels will be created by small construction, transportation and other types of equipment as well as small power hand tools used in the development of erosion and sediment control infrastructure. This will be minimal and created only during daylight hours. Work is anticipated to progress at a rapid rate and as a consequence noise generating equipment will be on site for a very
limited period of time resulting in short term impacts to the surrounding area. No long term impacts to wildlife or to noise standards established in the Tehama County General Plan are anticipated.

b) **Would the project create exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?**

The majority of project work will be completed using small construction, transportation and other types of equipment as well as small power hand tools. The only permanently occupied rural residential dwellings within the general project area are those located at the Childs Meadows Resort located approximately 2 miles to the northeast of the project site and Fire Mountain Lodge located approximately 5.5 miles to the southeast. In addition the Gurnsey Creek Campground is occupied during the months when project work would be completed and is located about 3.5 miles southeast project area. Any equipment creating ground borner vibration or noise will operate for a short period of time. Consequently impacts related to ground borne vibration or noise levels will be less than significant.

b) **Would the project create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**

Increases in noise levels related to project work will be minor and temporary. Once project work is complete, ambient noise will return to their pre-project levels.

d) **Would the project create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?**

Within that portion of the project area immediately adjacent to where small construction equipment and power hand tools are being used, ambient noise levels will increased above existing levels but only for a short period of time. Once project work has been completed, ambient noise levels will return to their pre-project levels. Impacts to temporary ambient noise levels will be less than significant.

e) **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

There are no public airports within the project area and no noise impacts related to airport operations are anticipated.
e) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

There are no private airstrips within or adjacent to any of the project impact sites or the overall project area.

Impacts related to Noise will be less than significant.
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<th>ENVIRONMENTAL ISSUES</th>
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### XIII. Population and Housing. Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

b) Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

#### Discussion

**a) Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

This project will not entail the development of any structures or activities that would induce population growth. No impacts related to population growth are anticipated.

**b) Would the project displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?**

Other than those at the Childs Meadows Resort and Fire Mountain Lodge there are no homes or permanently occupied structures in or adjacent to the Childs Meadows Head Cut Stabilization and Repair Project area. Consequently, there will be no displacement of homes attributable to project work which would necessitate the construction of replacement housing elsewhere.

**c) Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?**

There will be no displacement of local residents related to the implementation of this project. No impacts related to displacement of residents are anticipated.

No impacts to population and housing are anticipated.
**ENVIROMENTAL ISSUES**

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**XIV. Public Services. Would the project:**

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

| Fire protection? | ☐ | ☐ | ☐ | ☒ |
| Police protection? | ☐ | ☐ | ☐ | ☒ |
| Schools? | ☐ | ☐ | ☐ | ☒ |
| Parks? | ☐ | ☐ | ☐ | ☒ |
| Other public facilities? | ☐ | ☐ | ☐ | ☒ |

**Discussion**

a) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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:*

The overall project area is located in a very rural portion of eastern Tehama County where there are few public services. No negative impacts to the provision of Fire Protection Police Protection, Schools, Parks or Other public facilities will occur.

*Fire protection?*

*Police protection?*

*Schools?*

*Parks?*

*Other Public Facilities?*

No impacts to public services are anticipated.
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XV. Recreation. Would the project:

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?

[ ] Yes [ ] No [ ] Inconclusive [ ] N/A

b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

[ ] Yes [ ] No [ ] Inconclusive [ ] N/A

Discussion

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No increase in the use of parks or other recreational facilities is anticipated in connection with the implementation of this meadow restoration project.

b) Would the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No recreational facilities will be constructed or expanded as a result of project work.

No impacts to recreation are anticipated.
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<th>ENVIRONMENTAL ISSUES</th>
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<tr>
<td>XVI. Transportation/Traffic. Would the project:</td>
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<tr>
<td>a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?</td>
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<tr>
<td>b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?</td>
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<td>c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?</td>
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<tr>
<td>d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?</td>
<td>☐</td>
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<tr>
<td>e) Result in inadequate emergency access?</td>
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<tr>
<td>f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?</td>
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**Discussion**

All components of project work will be conducted off of roadways with the exception of trucks transporting construction equipment and crews using State Route 36E or Forest Service Road 28N88.

a) **Would the project cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?**
   
   Project work will not result in an increase of traffic.

b) **Would the project exceed, individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?**
   
   Project work will not result in an exceedence of any level of service standard for roads and highways.

c) **Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?**
   
   No impacts to air traffic patterns will result from the execution and completion of project work.
d) Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
This project does not affect the design of any roads.

e) Would the project result in inadequate emergency access?
All project work will be implemented completely off of any public or private road. As a result no negative impacts to emergency access will occur.

f) Would the project result in inadequate parking capacity?
This project will not impact parking capacity.

g) Would the project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?
This project will not conflict with any polices plans or programs supporting alternative transportation.

No impacts to transportation and traffic are anticipated.
ENVIRONMENTAL ISSUES

XVII. Utilities and Service Systems. Would the project:

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<tr>
<td>a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?</td>
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<tr>
<td>b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?</td>
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<tr>
<td>c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?</td>
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<tr>
<td>d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?</td>
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<tr>
<td>e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project’s projected demand, in addition to the provider’s existing commitments?</td>
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<tr>
<td>f) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?</td>
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<tr>
<td>g) Comply with federal, state, and local statutes and regulations related to solid waste?</td>
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Discussion

a) Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

The project is located in a remote portion of eastern Tehama County that has no wastewater collection or treatment facilities.

b) Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No new wastewater facilities will be constructed nor will there be an expansion of water facilities attributable to project work.

c) Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No new storm water facilities will be constructed nor there be a necessity for expanding such infrastructure.
d) **Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?**

No new or expanded water entitlements will be required in order to complete or maintain project work.

e) **Would the project result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project’s projected demand, in addition to the provider’s existing commitments?**

There are no wastewater treatment providers operating within the project area.

f) **Would the project be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?**

Project work will not result in the need for a landfill.

---

**g) Would the project comply with federal, state, and local statutes and regulations related to solid waste?**

Project work will not result in the development of solid waste as defined in federal state and local statutes.

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No impacts to utilities and public service systems are anticipated.
ENVIRONMENTAL ISSUES

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XVIII. Mandatory Findings of Significance.

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?

☐ ☒ ☐ ☐

b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

☐ ☐ ☒ ☐

c) Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?

☑ ☐ ☒ ☐

Authority: Public Resources Code Sections 21083 and 21083.05.

Discussion

a) Would the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?

As discussed in the preceding sections, the proposed project has a potential to result in adverse effects on the project area’s biological resources, cultural resources as well as hydrology and water quality. These potential impacts and required mitigation measures are discussed in the corresponding sections above. With implementation of the required mitigation measures, potential impacts would be reduced to a less-than-significant level. The proposed project is being implemented in order to control head cutting and related sediment production as well as to improve stream habitat conditions within a significant tributary of Deer Creek which is considered significant anadromous fish habitat. Project work will be completed on lands now under a conservation easement developed by The Nature Conservancy whose terms and conditions focus on protecting the proper functioning of this significant high meadow habitat. The proposed project intends to improve water quality and the quality of aquatic and riparian wildlife habitat thus benefitting a broad range of sensitive plant and animal species. It is also
expected to create more natural hydrologic operations within the Gurnsey Creek stream channel and consequently groundwater conditions within the Childs Meadows complex. The project is not anticipated to contribute to significant adverse cumulative impacts.

b) Would the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

As discussed in this Initial Study, implementation of the proposed project would result in no significant environmental impacts following implementation of the identified mitigation measures. Based on the small size of the overall project and that project work is expected to return stream channel and riparian functioning of Gurnsey Creek to more natural conditions, the Childs Meadows Head Cut Stabilization and Repair Project is not expected to contribute cumulatively considerable impacts to the local area.

c) Would the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?

The proposed project would not involve any actions that would have a substantial adverse direct or indirect effect on the human environment.
Appendices
Appendix A
Mitigation Monitoring and Reporting Plan (MMRP)
for the
Childs Meadows Head Cut Stabilization and Repair Project
Initial Study/Mitigated Negative Declaration
Tehama County California

In accordance with CEQA Guidelines Section 15074(d), when adopting a mitigated negative declaration, the lead agency will adopt a Mitigation Monitoring and Reporting Plan (MMRP) that ensures compliance with Mitigation Measures required for project approval. The Resource Conservation District of Tehama County (RCDTC) is the lead agency for the Childs Meadows Head Cut Stabilization and Repair Project and has approved this MMRP as a part of the final Initial Study/Mitigated Negative Declaration (IS/MND) supporting the project. Monitoring activities will be completed by the Project Manager listed in this IS/MND. The MMRP lists the Mitigation Measures developed in the IS/MND which were designed to reduce environmental impacts to a less-than-significant level. This MMRP also identifies the party responsible for implementing the measure, defines when the Mitigation Measure must be implemented, and which party or public agency is responsible for ensuring compliance with the measure.

Potentially Significant Effects and Mitigation Measures
The following is a list of the resources that will be potentially affected by the project and the Mitigation Measures made part of the Initial Study/Mitigated Negative Declaration. Included are Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials along with Hydrology and Water Quality.

Biological Resources (Biological Resource Surveys and Protection Measures)

Mitigation Measure BIO 1 (Pre Project Implementation Plant Surveys):
Personnel specifically trained in the identification of California Rare Plant Ranking (CRPR) List 1, List 2 and List 3 species and any others shown in Appendix C (Results of Database Inquiry and Species Review) shall be required to evaluate potential habitat for these species prior to implementation of impactive activities within the project area during the appropriate blooming or identification period. Such personnel shall also evaluate potential findings of any such plants within treatment areas during the execution of project work per the provisions of Mitigation Measure #BIO 2 Protection of Previously Unidentified Listed Plants below.

All sightings shall be documented using the California Natural Diversely Data Base (CNDDDB) field survey form a copy of which shall be submitted to the CNDDDB and the RCDTC Project Manager. A copy shall also be incorporated into the RCDTC project files. Qualifications for personnel who shall make evaluations of sites include those found in the California Department of Fish and Wildlife’s 2009 document entitled “Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities” (Appendix E)*. If any Federal or State listed threatened or endangered species are detected in the project area that may be impacted by the project work, a flagged 25’ “No Treatment Area” shall be established. Within such exclusion zones, no project work shall be conducted until consultation with California Department of Fish and Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS) personnel as appropriate have been made and their recommendation for protection.
incorporated into the project work scope. Biological surveys shall also map invasive plant species listed by the California Department of Food and Agriculture located within the project area. If invasive plants are found, the provisions of Mitigation Measure BIO 7: Identification and Isolation of Invasive Plants shown below shall also be implemented.

*This measure is only applicable if surveys for listed plant and animal species are not conducted prior to implementation of project work.

**Mitigation Measure #BIO 2 (Protection of Previously Unidentified Listed Plants):**

If during the implementation of project work, any previously unidentified listed plants shown in Appendix C (Results of Database Inquiry and Species Review) are detected by the RCDTC Project Manager, the Construction Manager or the qualified individuals described in Mitigation Measure # BIO 1 (Pre Project Implementation Plant Surveys), all project related activities shall immediately stop and a 25’ “No Treatment Area” shall be established and flagged around the perimeter of any occurrence by these individuals.

**Mitigation Measure #BIO 3 (Protection of Migratory Bird Treaty Act Species):**

In order to protect any species covered by the Migratory Bird Treaty Act (MBTA), no project work of any kind shall occur between March and August, unless the following is implemented: 1). A survey is conducted by a biologist or other persons with knowledge of and ability to recognize species protected by the MBTA within 0.5 miles of the project area during the nesting season of listed species and it is determined that there are no occupied nests within the proposed project area. 2). If an occupied nest is found, then the biologist or other person with knowledge of, and ability to recognize, species protected by the MBTA shall determine if the birds present are those protected by the MBTA. If an MBTA species is located then a 100’ “No Treatment Area” shall be established around the nest during the breeding
season. If raptor species are found, the provisions of Mitigation Measure **BIO 4 (Raptor Protection)** related to raptor protection shall apply. Modifications and possible reduction in “No Treatment Area” size may be made after consultation with the California Department of Fish and Wildlife personnel. If project work is delayed or suspended for more than 15 days after surveys have been completed, the project area shall be resurveyed for MBTA or raptor species prior to reinitiating of project work.

**Schedule:**

**Responsible Party:**

**Verification of Compliance:**

Monitoring Party: RCDTC/CDFW  
Initials: ____________  
Date: ____________

**Mitigation Measure #BIO 4 (Raptor Protection):**

A wildlife biologist with appropriate training in the identification of raptors shall perform a walk-through survey of treatment areas shortly before any project work is implemented. This walk-through survey shall include examination of nests for raptor activity, visual searches for whitewash, listening for calls, and any other evidence of nesting raptors in the harvest unit. If field personnel detect raptor presence, appropriate protection measures as described below for that particular species shall be established. Upon discovery of an occupied raptor nest or any unknown large bird, the RCDTC’s Project Manager or a wildlife biologist (after conferring with the RCDTC’s Project Manager) shall inform all personnel involved with project work of such sightings. Upon notification, vegetation disturbing activities shall be suspended within one mile of the nest. Activities may resume after the species using the nest is identified and the appropriate measures described below to protect the nest are implemented on the ground.

**Raptor Protection Measures**

**Listed Raptors**

If an occupied nest of a Endangered Species Act or California Endangered Species Act listed raptor is discovered during project work, the Contractor shall protect the nest tree, screening trees, perch trees, and replacement trees from any project work including, (1) suspension of project work within one mile of the nest, (2) suspension of all project work within a 375-foot radius buffer of the occupied nest, and (3) immediate notification and consultation by the of the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service as appropriate. Modifications and possible reduction in “No Treatment Area” size may be made after such consultation has been completed.
Non-Listed Raptors
If an occupied nest of a non-listed raptor is discovered during project work, all vegetation disturbing activities within one mile of the occupied nest shall be suspended. Upon such suspension, the RCDTC Project Manager or a professional biologist shall designate the nest trees, perch trees(s), screening tree(s), and replacement trees(s), for which a “No Treatment Area” shall be established.

Schedule:
Responsible Party:
Verification of Compliance:
Monitoring Party: RCDTC (CDFW or USFWS as appropriate)
Initials: ____________
Date: ____________

Mitigation Measure #BIO 5 (Fisher Protection):
Prior to project implementation, the RCDTC Project Manager or biologist shall look for freshly excavated cavities suitable for fisher dens on snags between 10” and 12” in diameter located 6’ to 12’ above ground level. In addition, within the project area, a potential den structure is defined as any hardwood with visible indicators of cavity formation (dead or alive) ≥15 inches DBH, a conifer snag ≥22 inches DBH, or a live green cull or green wildlife conifer ≥22 inches DBH. A live green cull is a conifer tree with less than 25% merchantable wood by volume. A green wildlife conifer is considered a potential den structure when it has mistletoe brooms, large rest ranches, and visible signs of fungus or other indications of cavity formation or visible cavity openings. The RCDTC Project Manager or biologist shall contact CDFW for consultation if site-specific avoidance measures are needed that differs from those described above. Any additional site specific avoidance measures developed through consultation with CDFW shall provide greater or equal protection to those stated here.

Den snags shall be protected by flagging the snag itself and establishing a flagged 375’ radius “No Treatment Area”. If a fisher is sighted in treatment areas by equipment operators or other project personnel during any project work, all vegetation disturbing activities shall be suspended within that area and the RCDTC Project Manager or biologist shall be notified. If a den or habitation of a fisher is discovered, all operations shall be suspended and a survey for a fisher den shall be completed. If a den is found a, flagged 375’ radius “No Treatment Area” shall be established around the identified den or habitation. The Department of Fish and Wildlife shall then be immediately notified.

Schedule:
Responsible Party:
Verification of Compliance:
Monitoring Party: RCDTC/CDFW
Initials: ____________
Date: ____________
Mitigation Measure #BIO 6 (Equipment Cleaning):
In order to prevent the spread of invasive plant species all heavy equipment to be used in the execution of project work shall be cleaned off site prior to use within the project area. The RCDTC Project Manager shall assure and document equipment cleaning. Documentation of cleaning shall be incorporated into the RCDTC project files.

Schedule:
Responsible Party:
Verification of Compliance:
Monitoring Party: RCDTC
Initials: ____________
Date: ____________

Mitigation Measure #BIO 7 (Identification and Isolation of Invasive Plants):
Populations of invasive plants listed by CDFA having the potential to be spread or otherwise impact project work and identified during the invasive plant surveys described in Mitigation Measure BIO 1 (Pre Project Implementation Plant Surveys): above shall be either 1.) flagged and avoided during project implementation, or 2.) treated prior to project implementation. Populations of invasive plants listed by Cal-IPC shall be evaluated for the risk of further infestation due to project activities and treatments or other mitigation shall be applied as needed. If discrete patches of Cal-IPC invasives are located, (e.g. species that are not already common in the project area) staging sites shall be located outside of these discrete infestations.

Schedule:
Responsible Party:
Verification of Compliance:
Monitoring Party: RCDTC
Initials: ____________
Date: ____________

Mitigation Measure# BIO 8 (Protection of Riparian Vegetation):
Prior to construction, the RCDTC Project Manager shall determine and identify the exact location of equipment access points along with stream course crossings using those sites that are stable and that will minimize riparian disturbance. During implementation of project work as much understory vegetation will be retained as possible in order to maximize shade producing and bank stabilizing vegetation during project implementation. Soil compaction will be minimized through the use of equipment with a greater reach or that exerts less pressure per square inch on the ground, resulting in less overall area disturbed or less compaction of disturbed areas. Disturbed soils will be decompacted at the project’s completion as mobile equipment exits the construction area. Disturbed and decompacted areas will be revegetated, with native species specific to the project location that comprise a diverse community of woody and herbaceous species.
Mitigation Measures BIO 9 (Minimizing Injury and Mortality of Fish and Amphibian Species During Dewatering Operations):

Prior to dewatering the construction site, fish and amphibian species shall be captured and relocated to avoid direct mortality and minimize take. This is especially important if listed species are present within the project site. The following measures are consistent with those defined as reasonable and prudent by NOAA for projects concerning several northern California Evolutionary Significant Units for coho salmon, Chinook salmon, and steelhead trout:

- Fish relocation activities must be performed only by qualified fisheries biologists, with a current DFG collectors permit, and experience with fish capture and handling.

- Relocation activities will be conducted during morning periods when air temperatures are cooler.

- Air and water temperatures shall be measures periodically and collection activities shall cease when water temperatures exceed those allowed by DFG and NOAA. Fish and amphibians excluded from the project site shall be prevented from re-entering by blocking the stream channel above and below the work area with fine-meshed net or screens. Mesh shall be no greater than 1/8 inch and the bottom edge of which shall be secured to the channel bed to prevent fish from re-entering the work area at the bottom of the screen. Exclusion screening shall be placed in areas of low water velocity to minimize impingement of fish. Screens shall be checked periodically and cleaned of debris to permit free flow of water.

- Prior to capturing fish, a determination shall be made of the most appropriate release location(s). The following shall be considered when selecting release site(s): a. Similar water temperature as capture location b. Ample habitat for captured fish c. Low likelihood of fish re-entering work site or becoming impinged on exclusion net or screen.

- Determination of the most efficient means for capturing fish:
  
  - Complex stream habitat generally requires the use of electrofishing equipment, whereas in outlet pools, fish may be concentrated by pumping-down pool and then seining or dipnetting fish.
Electrofishing will only be conducted by properly trained personnel following DFG and NOAA guidelines.

- Minimize handling of salmonids. When handling is necessary, always wet hands or nets prior to touching fish.
- Temporarily hold fish in cool, shaded, aerated water in a container with a lid. Provide aeration with a battery-powered external bubbler. Protect fish from jostling and noise and do not remove fish from the container until time of release.
- Place a thermometer in holding containers and, if necessary, periodically conduct partial water changes to maintain a stable water temperature. If water temperature reaches or exceeds those allowed by DFG and NOAA, fish will be released and rescue operations ceased.
- Avoid overcrowding in containers.
- Visually identify species and estimate year-classes of fish at time of release. Count and record the number of fish captured. Avoid anesthetizing or measuring fish.
- Submit reports of fish relocation activities to DFG and NOAA in a timely fashion.
- If feasible, plan on performing initial fish relocation efforts several days prior to the start of construction. This provides the fisheries biologist an opportunity to return to the work area and perform additional electrofishing passes immediately prior to construction. In many instances, additional fish may be captured that eluded the previous day's efforts.
- If mortality during relocation exceeds 5 percent, stop efforts and immediately contact the appropriate agencies.

Schedule:
Responsible Party:
Verification of Compliance:
Monitoring Party: RCDTC/ (CDFW or National Marine Fisheries Service as appropriate)
Initials: ____________
Date: ____________
Mitigation Measures BIO 10: Minimizing of Impacts to Aquatic Habitat and Species during Dewatering of the Project Site:

When construction work occurs within a year-round flowing channel, the project site must be dewatered. In order to prevent or minimize impacts including the temporary loss of aquatic habitat; stranding, displacement, or crushing of fish and amphibian species along with increased turbidity from disturbance of the channel bed, the following measures will be implemented during dewatering operations:

- Determination by the Construction Manager in consultation with the RCDTC Project Manager and CDFW personnel as to the most appropriate specific means of bypassing flow around the work area in order to minimize channel disturbance and avoid direct mortality of fish and other aquatic vertebrates.

- Coordinate project site dewatering with a fisheries biologist qualified to perform fish and amphibian relocation activities.

- Minimize the length of the dewatered stream channel and duration of dewatering.

- Bypass stream flow around work area, but maintain stream flow to channel below construction site.

- Periodically pump the dewatered stream segment dry of seepage.

- Place pumps in flat areas, well away from the stream channel.

- Secure pump units by tying off to a tree or staking in place to prevent movement by vibration.

- Refuel pump units in an area well away from stream channels and place fuel absorbent mats under pumps while refueling.

- Cover pump intakes with 1/8" mesh to prevent entrainment of fish or amphibians that fail to be removed prior to dewatering operations.

- Check pump intakes periodically for impingement of fish or amphibians that fail to be removed prior to dewatering operations.

- Discharge wastewater from construction area to an upland location where it will not drain sediment-laden water back to stream channel.
Cultural Resources

Mitigation Measure #CUL 1 (Protection of Identified Cultural Resources):

All new and previously recorded archeological sites identified during field surveys completed in connection with the preparation of this Initial Study/Mitigated Negative Declaration and documented in the report entitled “Cultural Resources Assessment of the Childs Meadows Head Cut Stabilization and Repair Project Area, Tehama County, California” (Peak and Associates) dated October 2014 shall be protected through complete avoidance. A flagged 50’ “No Treatment Area” shall be established around each of these sites by the RCDTC Project Manager or prior to implementation of any project work.

Mitigation Measure #CUL 2: Protection of Newly Discovered Archeological, Prehistoric, Historic or Paleontological Resource

Within areas of ground or vegetation disturbing activities, if project work appears to expose any previously unknown archeological, prehistoric, historic or paleontological resource sites along the path of the fuel break or within 50 feet beyond the project boundary, the site shall be avoided. Work may continue elsewhere within the overall project area. Exposed cultural or paleontological resources shall be appropriately flagged in order to immediately establish a “No treatment Area” of at least 100 feet. A professional archeologist shall examine the site, evaluate found objects and make a finding of their significance. The archeologist shall also develop recommendations for the permanent protection of objects and site treatments as necessary. Identified sites shall be permanently protected through avoidance. These sites shall be made off limits to personnel, equipment, and project impacts of any kind. A professional archeologist shall determine an appropriate permanent flagged exclusion zone once the site has been adequately assessed for significance. Findings of significance shall be prepared and submitted to appropriate agencies and Native American groups at the discretion of the professional archeologist. As appropriate, findings shall be recorded in the RCDTC project files.
Mitigation Measure #CUL 3: Discovery of Human Remains

If during the execution of project work human remains are found, the RCDTC Project Manager or Construction Manager after having informed the RCDTC Project Manager of such findings shall halt work at that location until a professional archaeologist visits the site in order to assess their significance, process the remains and immediately notify the County coroner. If the remains are determined by the County coroner to be Native American, the Native American Heritage Commission (NAHC) and Native American groups at the discretion of the professional archeologist shall be notified within 24 hours and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. Findings of significance shall be prepared and submitted to appropriate agencies at the discretion of the professional archeologist. Findings shall also be recorded in the project files by the RCDTC Project Manager. Project work may continue on other non-impacted portions of the project area.

Hydrology and Water Quality

Mitigation Measure HYDRO-1 a Stormwater Pollution Prevention Plan (SWPPP) shall be implemented prior to initiation of project work. All construction contractors and subcontractors shall be required to implement BMPs identified in the SWPPP and those Shown in Appendix B for controlling soil erosion and discharges of other construction-related contaminants. Such BMP’s shall be in addition to the specific Mitigation Measures listed in this Initial Study/Mitigated Negative Declaration. Routine monitoring and inspection of BMPs shall be conducted by the RCDTC Project Manager to ensure that the quality of storm water discharges is in compliance with the permit. BMPs required to be incorporated into the SWPPP include:

- Soil stabilization measures, such as preservation of existing vegetation and use of mulch or temporary plantings to minimize soil disturbance;
• Sediment control measures to prevent disturbed soils from entering waterways;
• Tracking control measures to reduce sediments that leave the construction site on vehicle or equipment tires;
• Non-stormwater discharge control measures, such as monitoring water quality of dewatering operations and hazardous material delivery along with storage, and emergency spill response requirements.

The RCDTC Project Manager shall ensure that the BMPs are implemented as appropriate throughout the duration of construction and shall be responsible for contractor and subcontractor compliance with the SWPPP requirements. In addition, the SWPPP shall include information on:

• The project’s Implementation schedule
• Pollutant source identification
• Storm water BMPs
• Erosion control
• Sedimentation control
• Maintenance and Inspections
• Post-construction storm water management

Schedule:
Responsible Party:
Verification of Compliance:
Monitoring Party: RCDTC
Initials: ____________
Date: ____________

Mitigation Measure #HYDRO 2 (Protection of Existing Drainage Features): Any existing drainage features shall be protected from project related impacts and shall remain free of obstruction.

Schedule:
Responsible Party:
Verification of Compliance:
Monitoring Party: RCDTC
Initials: ____________
Date: ____________
Appendix B  
Best Management Practices Developed and Selected for the Childs Meadows Head Cut stabilization and Repair Project

The following Best Management Practices (BMP) will be utilized during project implementation and construction efforts related to the Childs Meadows Head Cut Stabilization and Repair Project. These BMPs have been developed and incorporated into this project’s work scope in order to reduce or eliminate impacts to the aquatic, riparian, wetland and upland areas found within the project area. Construction related BMPs can be temporary measures that are only applied and effective during construction activities and/or permanent measures that work to control erosion and sedimentation and improve storm water quality during and after construction. The erosion and sediment control techniques to be utilized during implementation of the Childs Meadows Head Cut Stabilization and Repair Project will conform to *CDFW California Salmonid Stream Habitat Restoration, Manual Parts IX and X*, or to other acceptable BMP programs that are employed for restoration of mountain meadows and protecting water quality. Construction of the erosion control infrastructure and all impactive activities to occur in connection with this project will strictly follow all of the requirements stated in the CDFW Streambed Alteration Agreement and other water quality protection permits and agreements.

It is anticipated that all project work will be completed within one work season during the dry summer months (approximately June 15 through October 31) or as late as feasible. When operations are completed, any excess materials or debris will be removed from the work area. Structures and associated materials not designed to withstand high seasonal flows (i.e. temporary access structures) will be removed as well. If unforeseen circumstances require that project work will need to be completed during the following work season, all materials, debris, structures and associated materials will be removed from the project site or stored in areas above the ordinary high water mark before such wet period flows occur.

BMP Selection Criteria

The selection of Best Management Practices for the Childs Meadows Head Cut Stabilization and Repair Project were based the following criteria:

- Formally delineated limits of clearing and grading activities.

- A determination that buffer strips or natural vegetation can be utilized as a control measure.

- The arrangement of all project components within and around Childs Meadows that impact their physical surroundings.
• Identified opportunities for staging or sequencing construction activities to minimize the amount and period of exposure of disturbed soils.

• A determination that most existing vegetation can be preserved.

• The incorporation of scheduling and/or phased construction into the project.
Scheduling

Purpose:
To encourage the sequencing of construction activities and minimize the exposure of un-stabilized soils to erosion by wind, rain, and runoff.

Applications:
All locations that include grading, earthwork or any other construction related impacts.

Standards and Specifications:
- The Construction Manager will provide to the RCDTC Project Manager a project site check list and schedule for completion of work that will be approved by the RCDTC Project Manager. The checklist and schedule will provide the date that each construction task will begin and be completed. All erosion and sediment control measures will be incorporated into the construction schedule.

- No earthwork will be completed during the local wet season (October 31st to May 1st).

- Work will be scheduled in order to minimize the extent of site disturbance at any one time.

Inspection and Maintenance:
- On a bi-weekly basis, the Construction Manager will verify to the RCDTC Project Manager’s satisfaction that project work is on schedule according to the project plan.

- The Construction Manager will request revisions to the originally established project schedule well in advance of the events requiring such changes in order to prevent problems and to maintain control when changes to the schedule are unavoidable. Significant changes to the original project schedule will be communicated to appropriate government agencies as determined necessary by the RCDTC project manager.
Phased Construction

Purpose:
To reduce on-site erosion and sediment transport off-site by sequencing land disturbance and erosion and sediment control measures.

Applications:
Locations where water quality might be impacted by erosion from earthwork.

Limitations:
Weather and other unforeseen conditions that may affect construction phasing.

Standards and Specifications:
Construction phasing schedules will include at a minimum the following:

- A schedule for the installation of erosion and sediment controls.
- A schedule that is compatible with the general construction schedule.

The following table lists the Childs Meadows Head Cut Stabilization and Repair Project's anticipated major site sequencing events:

<table>
<thead>
<tr>
<th>Major Event</th>
<th>Activity Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Construction Access</td>
<td>Install stabilized construction entrances/exits before earth disturbing construction activities begin.</td>
</tr>
<tr>
<td>2. Sediment traps and basins</td>
<td>Design and construct sediment traps and basins prior to stripping and grading.</td>
</tr>
<tr>
<td>3. Runoff control</td>
<td>Install diversion channels and dikes before the onset of grading activities.</td>
</tr>
<tr>
<td>4. Sediment Control</td>
<td>Install sediment control BMPs along downhill border of site.</td>
</tr>
<tr>
<td>5. Erosion control</td>
<td>Stabilize disturbed soils as soon as possible.</td>
</tr>
<tr>
<td>6. Land clearing and grading</td>
<td>Clear and grade the site after sediment and runoff control measures have been installed.</td>
</tr>
<tr>
<td>7. Maintenance</td>
<td>Conduct frequent inspections and remove accumulated sediments from the BMPs.</td>
</tr>
<tr>
<td>8. Surface stabilization</td>
<td>Apply immediately to any disturbed areas to control dust and erosion.</td>
</tr>
<tr>
<td>10. Maintenance</td>
<td>Conduct frequent inspections and remove accumulated sediments from the BMPs.</td>
</tr>
<tr>
<td>11. Landscaping and final</td>
<td>Stabilize the area and remove all temporary sediment control and construction wastes.</td>
</tr>
<tr>
<td>stabilization</td>
<td></td>
</tr>
</tbody>
</table>
Inspection and Maintenance

- Verify frequently that work is on schedule according to the project plan.
- Revise the plan before construction activities are implemented or when changes to the project schedule are unavoidable.
- Communicate significant schedule changes to appropriated federal, State and County staff personnel to assist with inspection efforts.
Topsoil Reuse

Purpose:
To encourage the salvaging, stockpiling and reapplication of native topsoil and other selected materials for reuse during revegetation activities. Reuse of native topsoil can be a critical factor to the success of revegetation efforts, particularly when attempting to reestablish native vegetation.

Applications:
Sites where revegetation with native plant species is desirable. Particularly applicable on cut slopes, floodplains, wetlands, stream banks, and sensitive habitat areas. Proper topsoil management can result in successful revegetation, enhanced productivity, reduced erosion, and permanent stabilization.

Limitations:
Requires advanced planning prior to grading and earthwork activities. Stockpiles may constrict the area available for construction activity. Stockpile runoff can negatively impact water quality.

Standards and Specifications:
- Soils information obtained in the site assessment related to the preparation of the CEQA Initial Study/Mitigated Negative Declaration will be utilized in order to identify the location, depth and amount of soils suitable for salvaging. Topsoil will be excavated carefully, avoiding large rocks and will be stockpile where it will not be contaminated construction activities.

- Topsoil will be screened to remove large rocks, roots and vegetation when necessary to establish a representative native growth medium.

- Shrubs will be carefully removed and stored with their roots covered with mulch or loose soil.

- Soil stockpiles will be covered or protected with temporary stabilization measures such as mulch or temporary vegetation.

- Temporary stabilization will be established no later than 21 days after stockpiles are created.
• Perimeters controls such as sandbag barriers will be installed as soon as practicable and will be in place prior to the onset of precipitation. The following elements will be considered when developing this project’s topsoil management plan:

  o The amount and quality of existing topsoil.

  o The area that topsoil will be reused, the required depth of application and methodology for salvaging topsoil.

  o Stockpile location, duration of storage and protection against erosion and sediment transport. Availability of additional amendments to supplement topsoil reclamation

**Inspection and Maintenance:**

• Covers and perimeter controls will be inspected weekly.

• Covers and temporary stabilization measures will be repaired, replaced or augmented as necessary.

• Perimeter controls will be repaired or replaced as needed.
Coffer Dams

Purpose
Coffer dams are watertight temporary structures enclosing a water body segment in order for it to be pumped dry for construction purposes. Coffer dams are typically comprised of sandbags, concrete barriers, sheet piles, or manufactured devices. Isolation and dewatering provides a dry working area and is often necessary to prevent adverse environmental impacts from the construction activities. Silt fences, straw bales or other flow-filtering measures will be installed in the channel downstream of each coffer dam to reduce turbidity and suspended sediment.

Applications
- In all water bodies to isolate the work area from the water resource.
- Where a dry construction work area is required.
- Is often use with other in-water work BMPs.

Limitations
In stream and river systems, high flows can cause overtopping or failure of cofferdams. Those that will be in place for an extended duration are designed to accommodate the likelihood of flooding. Coffer damming a stream channel requires that provisions be made to maintain stream flow around work site; (see Temporary Stream Diversion below). The permeability of the water body substrate needs to be considered when selecting the type of cofferdam to be used. Cofferdams are rarely completely watertight and will require continued maintenance dewatering (see Dewatering).

Standards and Specifications
There are three primary design criteria for cofferdams:
- Minimal seepage through, under, and around the cofferdam to the extent practical.
- Structural stability and integrity of the cofferdam.
- Sufficient freeboard to accommodate reasonably expected fluctuations in water levels.

Sandbag Cofferdams
Given the short term of construction activities and anticipated low stream flows within Gurnsey Creek during project work, a sandbag coffer dam or similar structure will be installed prior to implementation of the Childs Meadows Head Cut Stabilization and Repair Project.
Sandbag Material:
Sandbag material will be polypropylene, polyethylene, or polyamide woven fabric, minimum unit weight of four ounces per square yard, mullen burst strength exceeding 300 psi in conformance with the requirements in ASTM designation D3786, and ultraviolet stability exceeding 70 percent in conformance with the requirements in ASTM designation D4355. Use of burlap is not acceptable.

Sandbag Size:
Each sand-filled bag will have a length of 18 inches, width of 12 inches, thickness of 3 inches, and weight of approximately 33 lbs. Bag dimensions are nominal, and may vary based on locally available materials.

Grade of Sand:
All sandbag material will be coarse sand, free from deleterious materials and seed.

Plastic Sheeting:
Plastic sheeting will be utilized to minimize seepage through the cofferdam. Sheeting will be anchored under the base of the cofferdam and wrapped up and over the top of the cofferdam. Where there is an unacceptable level of seepage through the substrate, plastic sheeting will be extended upstream along the bottom of the water body perpendicular to the cofferdam.

Height of Dam:
Up to 3 feet, measured from the existing streambed to the top of berm. Sandbags will be placed to create a low spot within the top of the berm to direct possible overtopping flood flow.
Temporary Stream Diversions

PURPOSE
A temporary stream diversion diverts the base flow of a perennial stream around a construction site by use of a conduit (pipe) or small diversion ditch. Its purpose is:

- To maintain stream flow continuity, quality and habitat and provide a dry working environment for the construction activities.

- To allow the installation of a structure in a perennial stream with minimal impacts on stream turbidity. Through the temporary diversion of the stream's base flow away from the construction areas and into a stable pipe or channel system, clean water is kept out of the active construction area.

Application
This practice applies where flows are low enough and/or the watershed is small enough to allow normal base flows to be handled practically in a conduit (pipe) or small diversion ditch. It is intended for those situations where the temporary stream diversion will only be needed during the summer-fall months of low stream flow, where the time of construction can be minimized and the site can be stabilized before winter. For projects involving large streams or rivers that are expected to be under construction for a long period of time, more permanent engineered structures will be needed. Temporary Stream Diversions are required for any work within a stream that is subject to the rules and regulations of the U.S. Army Corps of Engineers for in-stream modifications (404 permits).

Timing:
Timing the installation of this measure is critical to minimize impacts on fisheries.

Phasing:
To minimize the impact to the stream, phasing the operations must be considered before the stream is diverted. This measure needs to be quickly and carefully installed, well maintained and removed as soon as possible when the construction area is stable.

Constriction of the channel:
These practices will increase the velocity of flow due to constriction of the channel and will create a higher potential for erosion and movement of sediments in the stream channel.
Flooding:
Any flood flows during the construction period can be expected to damage or destroy this practice. It may contribute to the flooding effects.

Standards and Specifications
The construction of any specific temporary stream diversion related to this project’s work scope will not cause a significant water level difference between the upstream and downstream water surface elevations (not to exceed 1%) and the velocity will be maintained at a rate similar to existing flow conditions.

Water Fluctuation:
The base flows of all streams will be maintained at all time.

Time of Operation:
All temporary stream diversions will be removed within 2 calendar days after the structure is no longer needed. Unless prior written approval is obtained from the RCDTC Project Manager, all structures will be removed and the area stabilized before winter.

Aggregate:
There will be no earth, sands, silts, clays or organic material used for construction within the waterway channel. Washed coarse aggregate (3/4 inch to 4 inches) referenced, as AASHTO designation No. 1 will be the minimum acceptable aggregate size for temporary stream diversions. Larger clean aggregates will be allowed.

Sandbags:
Sandbags will consist of materials, which are resistant to ultra-violet radiation, tearing and puncture, and woven tightly enough to prevent leakage of fill material (i.e., sand, fine gravel, etc.).

The following criterion has been considered when selecting the temporary stream diversion method:

Time of year:
The time of year may preclude the selection of one or more of the standard methods due to fish spawning or migration restrictions.
Site Location:
Locate the temporary stream diversion where there will be the least disturbance to the soils of the existing waterway banks.

Removal of the structure:
Ease of removal and subsequent damage to the waterway will be primary factors in considering the choice of a design of the stream diversion.

Maintenance:
This is a high maintenance item. Weather reports need to be monitored and the structure prepared for anticipated storm events.

Design Criteria
Provisions for temporary stabilization of the inlet, outlet, and return channel will be included in the design. The materials used in construction will be sound, and capable of withstanding the loads applied. The materials must also be durable and maintain their integrity for the life of the project. Other design criteria include:

- Excavation of the channel will begin at the downstream end and proceed upstream. All excavated materials will be stockpiled outside of the floodplain and temporarily stabilized to prevent re-entry into the stream channel.

- The height of the diversion structure will be one half the distance from the streambed to stream bank plus one foot.

- Clean water from the diversion will be returned to the channel downstream of the construction site, dirty water will be pumped into a dewatering basin or onto a vegetated hillside where the water can disperse and infiltrate the ground prior to reentering the channel through the groundwater.

- All excavation materials will be disposed of in an approved disposal area outside the 100-year floodplain unless otherwise approved.

- The downstream and upstream connection to the natural channel will be constructed under dry conditions. Sandbags will contain the stream.

- The process of excavation and stabilization will be a continuous (uninterrupted) operation.
• All materials will be on-site prior to channel construction.

Sandbag-Conduit Diversion:
This practice will be used only for very short time duration. Because the potential for wash out is high, it must be carefully monitored and not be left unattended for any 24-hour period. If a major storm event is expected, the site must be stabilized in preparation for it. The conduit will have the hydraulic capacity to handle the flow rate of 30 cubic feet per second per square mile of drainage area above the site.

Sandbag-Stone Diversion
The temporary channel will be able to convey the 2-year storm event. The diversion structure will be installed from upstream to downstream. Sheeting will be overlapped such that the upstream portion covers the downstream portion with at least an 18-inch overlap.

Fabric Based Channel Excavation:
The temporary channel will be sized to convey the 2-year storm event. All debris (rocks, sticks, etc.) will be removed and the channel surfaces made smooth so that the fabric will rest flush with the channel sides and bottom.

Stabilization with Geotextile Fabric
• The fabric will have a minimum width such that it is keyed in and anchored at the top of the stream bank.

• The fabric will be placed so that it rests flush with the channel at all points of contact.

• The fabric will be placed such that one piece will line the entire channel. If this is not possible, the fabric will be placed so that it overlaps along the channel’s transverse. Longitudinal overlaps will not be allowed. Upstream sections will overlap downstream sections. The overlap will equal 2 feet minimum.

• The fabric will be keyed into 2 x 2-foot trenches located at the upstream edge and at 50 feet intervals (the overlap nearest to each 50-foot increment). The key-in will be from top of channel to top of channel. Riprap will be carefully placed into the trench (without dropping onto the fabric).

• The fabric sections will be secured with pins (length of 18 inches minimum) and washer (diameter 1 inch minimum). Overlaps will be pinned along transverse and longitudinal axes with spacing equal to 3 feet maximum.
• The spacing of the pins must follow the manufacturer’s specification and is dependent on the anticipated velocities and thickness and type of geotextile fabric. The entire bottom of the channel could be rip rapped if high velocities were anticipated. When the area is rip rapped, it is not required that the geotextile fabric underneath the riprap be pinned.

• An impervious plastic lining can be used in lieu of geotextile fabric. The plastic liner will be 6 mil or thicker and will be capable of maintaining strength against the effects of ultraviolet light for a period of at least 60 days.

Removal of the Diversion
Water will not be allowed through the natural stream until all construction is completed. When the diversion is no longer needed, all structures will be removed within 2 calendar days.

Inspection and Maintenance:
Periodic inspection and maintenance will be performed as needed to ensure that the diversion infrastructure, streambed and stream banks are maintained and not damaged. Maintenance will include removal and disposal of any trapped sediment or debris. Sediment will be disposed of outside of the flood plain and stabilized. This practice is a high maintenance item, and will be considered for use in a cautious manner. The impact of failure on downstream facilities will be carefully considered.

Periodic inspection must be performed to ensure that the structure is maintained and not damaged, that sediment is not entering the stream or blocking fish passage or migration. Maintenance will be performed, as needed, to ensure that the structure complies with the standards and specifications. This will include removal and disposal of any trapped sediment or debris. Sediment will be disposed of outside of the floodplain and stabilized. Anticipate major storm events. If a major storm is predicted, emergency measures must be taken to minimize damage.
Dewatering

Purpose

The purpose of this BMP is to prevent water from entering and collecting in work areas. This practice is also incorporated into project implementation to:

- Allow work to be performed in dewatered conditions.
- Reducing the transport of soil particles by flowing water.
- Reducing the liquefaction of soils.

Applications

This BMP may be used in, but not limited to, ditches, watercourses or streams, channels, swales and excavations. It will generally be used in combination with other BMPs.

Limitations

This BMP will not be used where flows are greater than pump capacity.

Standards and Specifications

- Based upon pre-project analysis of stream flows and conditions within the overall project impact area, a determination has been made that project work will require continuous dewatering. As a result, pumping, monitoring, equipment use and maintenance activities will be scheduled accordingly.

- Site barriers will be installed prior to dewatering in order to prevent exterior water from entering construction area.

- Given the limited amount of turbid water anticipated to be collected through dewatering operations related to project work, it will be discharged onto course gained soils in upland areas outside the meadow complex.

- One laborer will be employed to manage the pumping system and designated personnel will monitor and maintain the dewatering system so as to minimize the potential for construction-related sediment releases. All dewatering activities will occur when streams have minimum flow.
• An adequate fuel supply and backup systems to be used in the event of mechanical failure will be maintained within or near the project area.

• During non-work hours, gravity fed flex pipes will be employed to transmit clean water through the work area and back into the natural channel downstream from the project site.

• The contractor will install silt fences, straw bales or other flow-filtering measures in the channel to reduce turbidity and suspended sediment when flow is reestablished through the work site.

• The site will require fish and amphibian relocation by a qualified fisheries biologist, as required by regulatory authorities.

• Construction within or near the stream will not begin until all temporary water quality diversions are functioning and all protective erosion control measures are in-place.

• Area disturbed by BMP removal will be revegetated.

• Upon completion of project work, all silt fences, pumps and equipment will be removed from the stream and each coffer dam will be breached returning stream flow to its natural channel. Stream flows will be reintroduced gradually into the dewatered portion of the project area in order to reduce sediment generation.

• The measures listed above will allow for dewatering of the project area with no negative impacts to aquatic or riparian species.

Inspection and Maintenance

• Pumping, monitoring, equipment and maintenance activities will be scheduled in accordance with dewatering needs.

• During construction, dewatering BMPs will be inspected daily during the workweek. Additional inspections will be schedule during storm events and any required repairs completed.

• Periodic inspections for soil erosion at discharge points will be made and water diversion equipment will be repaired or move as necessary.
Protection and Preservation of Existing Vegetation

Purpose:
To protect and preserve existing desirable plants and trees in and near areas that will be exposed to land-disturbing activities. Protecting and preserving native vegetation will reduce the amount of erodible area and provide buffer zones that assist with infiltrating runoff and trapping sediment so that it does not discharge to waterways or the storm drain system.

Applications:
Applicable on floodplains, steep slopes, next to wetlands, streams, rivers, lakes, and sensitive habitat areas that have existing desirable vegetation.

Limitations:
- Requires advanced planning.
- May constrict the area available for construction activity.
- Improper grading may negatively impact vegetation.

Standards and Specifications:
- Install high visibility temporary fencing to protect high value existing vegetation before beginning clearing or other soil-disturbing activities.
- Wherever possible, preserve native vegetation on steep slopes and near perennial and intermittent watercourses or swales.
- Wherever possible, preserve continuous areas or clumps of native or landscaped vegetation, instead of individual trees and shrubs.
- Consider the location, species, size, age, and vigor of existing vegetation.
- Consider tree health, age, species, space needed, aesthetic values, and wildlife benefits when deciding which trees to preserve.
Follow existing contours and avoid stands of trees when locating temporary roadways.

Do not place equipment, construction materials, topsoil, or fill dirt within the limits of preserved areas.

Extend limits of fencing to tree drip lines (end of tree branches) when protecting trees. Wherever possible, extend the limits of the no-dig root protection zone outward such that it is twice as large as the outer perimeter of the branches.

Do not cut tree roots within the tree drip line. Curve trenches around tree drip lines to avoid large root concentrations.

Smoothly cut off the ends of damaged roots.

Prior to the implantation of any project activities perimeter fencing and temporary sediment control structures will be placed to prevent unwanted damage to the riparian area and sediment delivery to streams.

Access routes and staging areas will be flagged to minimize disturbance and removal native vegetation and soil.

The Best Management Practices developed to protect and preserve vegetation are in addition to the required Mitigation Measures listed in this Initial Study/Mitigated Negative Declaration designed to protect Biological Resources.

Inspection and Maintenance:

Repair or replace damaged vegetation immediately. Smoothly cut off the ends of damaged roots.

Monitor the protected areas to ensure that new structures won’t compromise vegetation.

Loosen compacted soil around the tree root zone.

Cover exposed tree roots with soil or a wet burlap as soon as possible.
Mulching

Purpose:
To prevent erosion by protecting bare soil from rainfall, reducing runoff velocity, conserving moisture, and fostering plant growth. Mulches can be composed of organic materials, straw, wood chips, bark or other wood fibers that will protect seeds from predators while reducing evaporation and insulating the soil.

Applications:
- Applicable to all bare soil surfaces where construction activities will cease for 14 days or more and will not resume within 21 days.
- Provides a temporary cover and aids in stabilization measures.
- Immediately follow temporary and permanent seeding of an area with mulching.

Limitations:
- Additional control measures are necessary for the establishment of vegetation if the area is susceptible to erosion.
- Straw and wood mulch may need to be removed before soil stabilization or permanent seeding is to take place.
- Straw and wood mulch are prone to removal by runoff and wind.
- The use of grasses may cause a fire hazard and require regular maintenance.
- Not all soil conditions are appropriate.

Standards and Specifications:
- The type of mulch to be applied depends on soil type, site conditions, landscape requirements, and economics.
- Roughen embankments and fill areas before applying mulch.
- Use as a temporary or permanent surface cover on disturbed areas until vegetation can be established.
- Apply at a minimum rate of 4,000 lb/acre.
• Straw mulch can be applied to a slope by crimping or punch roller-type rollers.

• Hold straw in place on steep slopes or in small areas by plastic netting or jute.

• Apply straw mulch at a rate of 125 lb/acre if tackifier is to be used.

• Wood Mulch and Shredded Wood
  o Primarily used as a temporary ground cover around trees, shrubs, and landscaping.
  o Is applicable as a covering for revegetated plantings.
  o Apply by hand and distribute mulch as a layer 2-3 inches thick. Green Material/Compost

• Green material mulch will be composted to kill weed seeds.

• Apply mulch evenly to a maximum thickness of 2 inches.

• Typically applied by hand.

• Life span is less than that of the wood fiber mulches.

• Hydraulic Mulches made from wood fiber
  o Industry standard is composed of whole wood chips. Wood fiber mulch can also be made from lumber mill waste.

  o Good for planting large areas quickly and economically.

  o Offers better wet-dry characteristics than paper mulch.

**Inspection and Maintenance:**

• Inspect for failures and loss of mulch during the wet season.

• Replace lost mulch immediately
Wind Erosion and Dust Control

**Purpose:** Storm water runoff, wind, erosion, and vehicle track out from construction sites can re-disperse sediments to the air by high winds and traffic. Therefore, the purpose of dust control is to minimize these effects.

**Applications:**
- All construction sites having exposed soils must perform dust control measures.
- Wind erosion and dust control is important in arid and windy regions.
- Areas with soils of silts and clays are prone to dust.
- Dust control is a treatment between disturbance and construction or revegetation and is temporary in nature.

**Limitations:**
- Dust control measures are only temporary and therefore require reapplication.
- Discharges from the site can occur if excessive water is sprinkled on the soils.
- Factors such as soil type, temperature, humidity, and wind velocity will impact the effectiveness of the dust control measures.

**Standards and Specifications:**

**Fugitive Dust**
- The contractor will submit an application for and receive approval from the Tehama County Air Quality Management District of a Construction Emission/Dust Control plan prior to groundbreaking. A copy of the permit will be maintained in the RCDTC files.
- All dust generating project activities will be suspended when wind speeds exceed 20 miles per hour or when winds carry dust beyond the property line despite implementation of all feasible dust control measures.
- All areas subject to ground disturbance will be watered as necessary to prevent fugitive dust violations. Water will be applied at least twice daily or as needed to prevent off site dust impacts to all unpaved access roads,
parking areas and staging areas at construction sites. Chemical soil stabilizers will not be used to control dust anywhere within the project area or along any access roads

- All transfer processes involving free-fall of soil or other particulate matter will be operated in such a manner as to minimize the free-fall distance and fugitive dust emissions.

- All trucks hauling soil, sand, and other loose materials will be covered or required to maintain at least 2 ft (0.6 m) of freeboard.

- Onsite stockpiles of soil or other particulate material will be enclose or covered and watered as necessary in order to reduce windborne dust emissions. Non-toxic soil binders will not be used to reduce dust emissions from exposed stockpiles

- Traffic Speeds on all unpaved surfaces will be 15 miles per hour or less. Unnecessary vehicle traffic will be reducing by restricting access.

**Inspection and Maintenance:**

The party implementing project construction will be responsible for monitoring air quality at the site during construction. Results of such monitoring will be provided to the RCDTC Project Manager. Daily inspections will occur for areas experiencing excessive winds, vehicle traffic, or rains by the Construction Manager. If dust is observed to be leaving the site, corrective action will be taken immediately.
Riprap/Vegetated Rock Armor

**Purpose:** To stabilize and to protect soil from erosion in areas of concentrated runoff.

**Applications:**
Used on cut-and-fill slopes, channel side slopes, channel bottoms, inlets and outlets of culverts and slope drains, and stream banks.

**Limitations:**
- Slopes greater than 2H:1V may lose riprap under certain hydraulic conditions.
- Implement measures to minimize erosion and excess turbidity in flowing streams during construction.

**Standards and Specifications:**
- Use a well-graded mixture of rock sizes.
- Use durable stone that won’t quickly decompose from freeze/thaw cycles (i.e. granite).
- Construct riprap layers twice as thick as the maximum stone diameter.
- Use a filter cloth material or a layer of gravel as a filter between the riprap and the underlying soil surface.
- Extend riprap as high as the maximum flow depth in channels or streams (minimum of 4 feet) or to a height where vegetation will be satisfactory to control erosion.
- On curves, extend riprap through the curve to five times the upstream and downstream curve endpoints.
- Riprap size depends upon site-specific conditions.

**Inspection and Maintenance:**
- Inspect annually and after major storms.
- Repair and replace damaged riprap immediately.
- Keep channel clear of obstructions such as trees and sediment bars.
Revegetation

**Purpose:** To stabilize soils and slopes from raindrop impact and erosion, conserve soil moisture, decrease runoff, increase infiltration, and to provide wildlife habitat.

**Applications:**
Can be applied on slopes, adjacent to waterways, along right-of-ways, as buffer strips, on stream banks and in cut and fill areas.

**Limitations:**
Additional erosion control methods may be required if the site is prone to erosion and since it can take 3-5 years to establish adequate cover.

**Standards and Specifications:**
- With the exception of frozen ground conditions, permanent revegetation must be seeded or planted no later than 14 days after final grading, unless final grading takes places outside the planting window. In that case temporary erosion control is required until seeding can occur.

- Consider climate, soils, and topography when choosing the appropriate vegetation and seed mixes for installation. Develop seed mixes based on site-specific conditions. Soil testing is recommended and will include soil biology.

- Use variety of seed species, including grasses, forbs, and shrubs, when the objective is to re-establish native and adapted species that do not require irrigation.

- Fertilizers will not be applied.

- Germination is highly variable but normally begins in late March through mid-April.

- Final stabilization requires that perennial vegetation cover consist of 70 percent of the native background cover, determined from, a reference or baseline.

- Any newly-exposed soil of over 100 square feet in area outside of the stream channel will be mulched or seeded with at a minimum, an appropriate mix of grass seed to minimize the potential for erosion.
Inspection and Maintenance:
Examine seeded areas for failures. If failures have occurred, amend the soils, reseed and mulch as necessary.

Verification of proper installation and sufficiency of mulching, seeding and other revegetation practices will be made by the RCDTC Project Manager prior to and following the season’s first precipitation event and recorded in the RCDTC project files.
Live Fascines

Purpose:
Live fascine structures are cut branches of wetland or streamside materials, usually willow or other fast growing species that are bundled together. The bundles are placed into trenches along the stream bank and grow out perpendicular to the bank, providing protective vegetative cover and a root structure to stabilize banks. Fascines provide surface stability and prevent erosion by holding soil on the face of the stream bank. They also support the establishment of the surrounding aquatic, riparian, or upland slope vegetation.

Application:
- Stream banks that require immediate erosion protection and stream bank revegetation projects.
- Slopes where permanent vegetation is desired and where no mowing or other vegetation reduction efforts will occur.

Limitations:
Live fascines are generally unsuccessful at stabilizing improved or unimproved banks with a slope of 1:1 or greater.

Standards and Specifications
- Banks to be protected are normally graded back to a 3H: 1V or flatter slope, especially in less cohesive soils or soils with distinct material lenses.
- Ensure that the soils are moist and that plants are watered after installation.
- Assemble live fascines using fresh plant cuttings, with alternating basal (butt) ends. Live fascine bundles are 6 to 8 inches in diameter and tied securely with twine or rope every 12 to 15 inches.
- Install live fascines shallowly to follow the contour of banks, with a face length of 15 feet or less to prevent ground disturbance. Install live fascines in shallow trenches that are a shovel deep and a shovel wide. Install from the bottom of the slope and work up to the top of the slope.
- Live plant material stakes and dead stout or construction stakes are used to anchor the live fascine bundles. Live stakes are at least 24 inches long and between ½ and 2 inches wide. Dead stout stakes are made from 2x4-inch untreated lumber. Stakes are 30 to 36 inches long and cut diagonally across the 4-inch face, tapering to a 1/8- to 1/4-inch tip.
- Stakes must be installed directly through the live fascine bundle to ensure it will not lift up or allow water to move under the installation. Stakes are placed 3 feet apart. Best installation uses dead stout stakes for securing the fascine bundles, with live stakes installed between fascine rows.

- Place soil along the sides of the live fascines in and around the branches and at each stake to provide for growth media.

- Foot-compact all soils around all fascine bundles, dead stout stakes, and live stakes.

- Store vegetation in water until it is bound and installed.

- Install live fascines during the dormant season.

- Ensure that soil is adequately worked around the bundle.

- Do not completely bury the live fascine. The top branches will be visible. If a live fascine fails to grow, it still acts as a mechanical barrier to slope flows.

**Maintenance Specifications**

All plantings need water during the first 3 years of establishment. Removal of invasive plant species is also required. Ensure that there is a responsible party for ongoing plant maintenance. Various conditions at project sites can result in the unsuccessful development of live fascines. The table below describes indication of fascine failure and recommendations for improved plant establishment and survival.

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fascine has dislodged or is gone.</td>
<td>Fascine was not appropriately anchored.</td>
<td>• Replace fascine bundles and re-anchor with additional stakes and ensure that live fascines are secured into the trench. Repack soil.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Replace missing fascines with adequate anchoring.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Verify that the stream or runoff flow problem has been corrected.</td>
</tr>
<tr>
<td>Live fascines are not growing.</td>
<td>Lack of contact between live fascine and soil.</td>
<td>• Rebury, adding water and nutrients of needed</td>
</tr>
<tr>
<td></td>
<td>Fascines are dead due to a lack of water or nutrients or anaerobic soil conditions.</td>
<td>• Seed or add live stakes to the stream bank to provide for vegetative growth</td>
</tr>
</tbody>
</table>
Rootwad Revetment

**Purpose:**
Rootwad revetments consist of an appropriately sized tree root fan and trunk along with a footer log to hold it in place. Individual root wads are placed in series along the lower portion of the stream bank and provide immediate bank protection. These structures protect the stream bank from erosion along with in-stream and overhead cover for fish.

**Applications:**
The installation of rootwad revetments is beneficial if these types of structures are naturally occurring in adjacent stream reaches or in similar stream types as is the case within the Gurnsey Creek watershed. The installation of rootwads and other large woody debris is expected to enhance the fishery habitat within the project area as scour pools will be produced while the overhanging wood and vegetation will provide cover and shade. Through the combining of logs and live plant material it is anticipated that stream bank fish habitat will be enhance through the development of various aquatic habitats conditions in addition to creating a natural looking stabilization structure.

**Limitations:**
The woody materials of these structures will probably not have the durability of other structural components. It is anticipated however that the live woody vegetation that will be established along with its accompanying root reinforcement, will allow these structures to a have longer lasting positive impact on stream bank stability.

**Standards and Specifications:**
The rootwad will have the bole (trunk) attached to allow anchoring into the bank. The bole length is dependent upon site conditions such as stream flow velocity slope stability. It should however, be at a minimum 2-m (6’) in length. The length of the cuttings will depend on the depth through the riprap and filter layer to the native soil. Live cuttings can be included and will consist of relatively straight willow branches, 25-40 mm (1-1.5 inches) diameter and long enough to reach beyond the riprap and filter layer and into native ground. An excavator is used to install a "footer" log in a trench excavated below the thalweg (lowest point in the channel), running roughly parallel with the bank. A second log with the rootwad attached is set on top of the footer log diagonally, forming an "X". The rootwad end is set pointing upstream into the flow and the butt end lying downstream 45-60° degrees. The butt end of the root wad will be set in a trench excavated into the bank. Large boulders and willow poles will be used to secure the root wad, especially at the apex. Placement of the willow poles into the excavations will ensure they are deeply embedded and able to contact the water table.
Inspection and Maintenance:

Rootwad revetments will be inspected for placement stability along with current durability of woody root material as newly developing vegetation is created.
Log Cored Willow Baffles

**Purpose:**
The purpose of log cored willow baffles is to add natural roughness elements to a floodplain area that encourages, but does not force, the redirection of flood flows to an existing channel, they also provide riparian cover.

**Applications:**
Log cored willow baffles have been successfully used to reduce the likelihood of flanking of various instream projects such as grade control and fish habitat structures. They are also used to reduce lateral stream migration and loss of highly productive floodplain soils. They are used anywhere slowing the velocity of floodplain flows is primary concern.

**Limitations:**
- Log cored willow baffles lose their effectiveness when flood flows are extremely high
- They may take several years to establish willow growth and maximum stability
- The log will eventually rot away leaving only the willows

**Standards and Specifications:**
- Logs for the baffles will have minimum dimensions of 25’ long x 2’ dbh.
- Baffles will be located as per accompanying instructions.
- Logs will include 6”-9” subs from the cut off branches to facilitate anchoring.
- Logs will be buried ¾ of their diameter into the ground surface
- Live willow cuttings (6’-8’) will be installed within the trench for the baffle and protrude at least 1’ below the summer capillary fringe of the water table
Inspection and Maintenance:

Log cored willow baffles will require intermittent inspection to assure willow growth. If willows do not show signs of new growth early in the following growing season, watering may be required to assure the willow root successfully.
Fiber Rolls

Purpose:
Fiber rolls allow water to pass through while decreasing runoff velocity, increasing infiltration rates, and trapping sediments. Also known as sediment logs or straw wattles, they can provide temporary or permanent controls and biodegrade with time.

Applications:

• Along the top and face of slopes to reduce the slope length and to spread runoff as sheet flow.

• At grade breaks where transition from shallow to steep slopes.

• As check dams in drainage swales where flows will not exceed 1 cfs.

• Along stream banks

• Down-slope of exposed soil areas.

• Around temporary stockpiles.

• Along the perimeter of a project.

Limitations:

• Proper sighting and installation are critical to ensure effectiveness and to prevent exacerbated erosion and/or blockage of storm drain systems.

• Not to be used where surface flows are anticipated to exceed 1 cfs.

• Fiber rolls can be transported by high flows if not properly anchored.

• Fiber rolls are not to be used at the base of slopes in place of linear sediment barriers such as silt fences.
• Do not use fiber rolls on slopes subject to creep, slumping of landslides.

• Fiber rolls are difficult to move or remove when saturated.

**Standards and Specifications:**

• Fiber rolls consist of straw, flax, coconut fiber, or similar materials contained in tubular cylinders of synthetic netting.

• When placed along the face of slopes, spacing between rows of fiber rolls is determined by slope inclination and slope length as shown in the Table below.

<table>
<thead>
<tr>
<th>Slope Steepness</th>
<th>Fiber Roll Spacing:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2H:1V or steeper</td>
<td>10 feet or less</td>
</tr>
<tr>
<td>4H:1V to 2H:1V</td>
<td>15 feet or less</td>
</tr>
<tr>
<td>4H:1V or flatter</td>
<td>20 feet or less</td>
</tr>
</tbody>
</table>

• Create a 2-4 inch wide concave trench along the proposed installation route. Place the excavated soil on the uphill or downhill side of the roll to prevent undercutting.

• Remove debris and stones from the trench before installing fiber rolls. Lay the fiber roll into the trench, stake it on both sides of the roll at the ends, and continue to stake every 4 feet.

• Stakes will have a minimum dimension of ¾-inch X ¾-inch X 24-inches.

• Install stakes on alternating sides of the fiber roll.

• If more than one fiber roll is placed in a row, overlap the end sections. Do not abut the ends or leave gaps between the end sections.
Inspection and Maintenance:

- Repair and/or replace torn, split, unraveling, or slumping fiber rolls.

- Inspect fiber rolls before and after storm events. Check fiber rolls daily during prolonged rainfall events.

- Re-trench and stake down fiber rolls that are undercut by rills or gullies.

- Remove accumulated sediment when it reaches three quarters (3/4) of the barrier height. Properly disposed of collected sediment or move to a vegetated area or other place at the site where it will not wash into storm drains, ditches, channels, or streams.

- Fiber rolls are typically removed if part of the permanent erosion control and site stabilization. If fiber rolls are removed, collect and dispose of sediment accumulation, and fill and compact holes, trenches, depressions or any other ground disturbance to blend with adjacent ground. Seed and mulch, or otherwise stabilize, the regarded area where the fiber rolls were removed (apply seed during winter or fall months).
Silt Fences

**Purpose:** To slow and detain sediment laden sheet flow from disturbed areas, which allows the settlement of sediment and reduces or prevents sediment from discharging to storm drains, streams or other watercourses.

**Applications:**
- Along the construction site perimeter.
- Below the toe of slopes.
- Along stream banks and channels.
- Around temporary stockpiles.

**Limitations:**
- Not effective unless properly installed.
- Do not use on slopes greater than 4H:1V.
- Labor-intensive maintenance may be required.
- Fencing must be removed and disposed of properly upon completion of construction.

**Standards and Specifications:**
- Do not install silt fences across streams, channels, or in any location where flows may be concentrated.
- Fencing must be located where waters may temporarily pond and sediments can be deposited.
- Application in environmentally sensitive areas requires additional practices.
- Install the fencing along a level contour at the toe of a slope.
- Install fencing a minimum of 3 feet from the toe of the slope or at the top of the bank.
• Limit drainage area upstream of fence to 0.25 acre/100 feet of fence.

• Limit the length of the slope area draining to any point along the silt fence to 100 feet or less.

• Maximum length of any single run of fencing is 500 feet.

• Angle the last 8 feet of fence upslope in a “J” or “L” shape to allow for ponding.

• Silt fence material will be woven nylon reinforced polypropylene with a built in top chord running along the top of the fabric.

• Minimum requirements of fabric are: tensile strength (ASTM D4632) of 90 lbs, puncture rating (ASTM D4833) of 60 lbs, and mullen burst rating (ASTM D3786) of 280 psi.

• Fence posts will be free from decay, splits, or cracks, have a minimum thickness of 2 inches, and have a minimum length of 4 feet. Fence posts will be installed a minimum distance of 12 inches into the ground, and have a maximum spacing of 8 feet.

• Steel fence posts may also be used.

• Areas prone to high winds will require closer spacing of fence posts.

• Fence posts will be located on the downstream side of the fabric and mesh.

• Fabric must be stapled or wired to the posts.

• Locate a 6-inch X 6-inch trench on the upstream side of the fence.

• Overlap at least 6 inches of fabric into the trench. Key in the bottom of the fence.

• Fill the trench with tamped native soil or washed gravel.
Silt fence fabric sizing:

- If less than 50 percent of the soil by weight will pass through a U.S. Standard Sieve no. 200, select the equivalent opening size (EOS) to retain 85 percent of the soil. The EOS will not be finer than U.S. Standard Sieve no. 70.

- For all other soils, the EOS will not be finer than U.S. Standard Sieve no. 70, except where discharge to streams or wetlands occurs. In that case, the EOS will not be larger than U.S. Standard Sieve no. 100.

- If 85 percent of the soil by weight is finer than U.S. Standard Sieve no. 200, then filter fabric will not be used.

**Inspection and Maintenance:**

- Inspect before and after each rain event.

- Repair any damage caused by construction (undercutting of the fence, split, torn, and weathered fabrics, or slumping of the fence).

- Fabrics may have to be replaced every 5-8 months.

- Remove silt when the depth of the deposit reaches one-third the fence height.

- Remove silt and dispose of to avoid siltation problems.

- From May through October, do not allow water to pond behind silt fences for more than 7 days.

- Remove fencing at the completion of the construction project or when the site has been stabilized.

- Backfill any holes or depressions caused by the removal of the silt fence according to standard specifications.
Temporary Stream Crossing
(Stream Ford)

**Purpose:** As related to the Childs Meadows Head Cut Stabilization and Repair Project, a temporary stream crossing in the form of a ford will be placed within a dewatered portion of the project area. This structure will allow access to the stream channel to convey construction traffic and to complete the installation of erosion control infrastructure without the need to cross it. This structure stabilizes and minimizes erosion of the stream banks and channel.

**Applications:**
- At sites where construction vehicles will frequently cross a stream or waterway.
- At sites where duration of construction activities will not exceed one year.

**Limitations:**
- May require a CDFW Streamside Alteration Agreement (1600 Permit), U.S. Army Corps of Engineers 404 Permit, a 401 Water Quality Certification from NDEP, and other permits.
- Disturbance of the waterway will occur during the installation and removal of temporary stream crossings. Consequently, sediment control measures may need to be installed in the waterway during construction.
- Requires stabilization of disturbed areas both during construction and after removal of the structure.
- Structures may obstruct flow in the waterway during prolonged storm events causing flooding and/or washouts.
- Diversion or dewatering of the channel may be required during the installation of the stream crossing structure.

**Standards and Specifications:**

**General Considerations**
- A California registered civil or engineering geologist is required to design temporary stream crossing structures.
- Sediment traps need to be installed immediately downstream of crossings to capture sediments.
• Used in arid areas during the dry season for dry washes and ephemeral streams.

• Cannot be used on perennial streams.

• Approach roads must be designed with a maximum slope of 7H:1V.

• Use filter fabric and compacted aggregate to stabilize road surface.

• Oil or hazardous materials cannot be applied to the roadway.

**Inspection and Maintenance:**

• Inspect weekly as well as before and after significant rainfall events.

• Inspect for sediment buildup in the culverts or blockage of the channel.

• Inspect for structural weakening of the temporary crossing.

• Inspect for channel sour, erosion of the abutments, riprap displacement, or piping in the soil.

• Remove silt behind fords, in culverts, and under bridges.

• Repair stream bank erosion.

• Promptly remove temporary stream crossings when no longer needed.

• Proper management of stockpiled materials can reduce or eliminate pollution of storm water from these sources (see **Stockpile Management** below).
Stockpile Management

Applications:
All locations and projects where materials such as soils, composts, aggregates, and paving materials are stockpiled.

Limitations:
None have been identified.

Standards and Specifications:
- Locate stockpiles away from storm water flows, drainage courses and inlets.
- Use temporary berms, dikes, silt fences, fiber rolls, sandbags or gravel bag barriers to surround and contain stockpiles to prevent transport of materials offsite from storm water runoff.
- Apply wind erosion and dust control measures on the surface of stockpiles.
- Place bagged materials on pallets and cover.
- Install stockpile perimeter controls such as temporary berms, dikes, silt fences, fiber rolls, sandbags or gravel bag barriers as soon as possible after stockpiles are created. These temporary sediment transport barriers can be temporarily removed or moved to one side when materials are removed or added to the stockpile.
- If stockpiles are not to be used within 21 days, temporary covers (plastic covers, etc.) must be installed as soon as practicable and no later than 14 days after stockpiles are created. Covers will be placed on stockpiles as soon as practicable unless rain or wind events are anticipated. In such an occurrence, temporary covers will be placed immediately over stockpiles.

Inspection and Maintenance:
- Inspect perimeter controls and covers weekly as well as before and after storm events.
- Inspect temporary covers before, during and after windy weather.
- Replace or repair perimeter controls and covers as needed.
General Best Management Practices Related to Operations, Site and Materials Management, Hazards Air Protection, Equipment Use and Project Demobilization

- Keep waste storage areas clean, well organized, and well equipped.

- Post information on proper storage, clean up and spill response at a visible and accessible location at all times.

- Educate employees and subcontractors about what a “significant” and “insignificant” spill is for each chemical used on-site and train in spill prevention and cleanup.

- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).

- Locate chemical storage and handling areas away from storm drains, waterways, or reservoirs.

- Do not store chemicals in areas where they may be susceptible to rain.

- Provide a secondary containment structure in case of leaks or spills.

- Always use a secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.

- Place drip pans or absorbent material under paving equipment when not in use.

- Promptly transfer used fluids to the proper waste or recycling drums. Do not leave full drip pans or other open containers lying around.

- Oil filters disposed of in trashcans or dumpsters can leak oil and pollute storm water. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal.

- Store cracked batteries in a non-leaking secondary container.

- When vehicles and equipment are fueled on site:
  - Discourage “topping off”.
Use designated areas located away from waterways and drainages.

Use a secondary containment to catch drips or spills.

Place a stockpile of spill cleanup materials where it will be readily accessible.

Clean up spills immediately and dispose of contaminated soils and clean up materials properly.

- Sweep up dry spills. Do not wash or hose down the area.

- Use absorbents for wet spills on impermeable surfaces.

- Wet spills on soils require digging up and disposing of the contaminated soil.

- A secondary containment with enough capacity to contain a spill is required for fueling areas.

- Report significant spills to appropriate federal, State and Local agencies that may assist in the cleanup.

- Federal regulations require that any significant oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hours).

- Construction will generally occur during the lowest flow period of the year.

- Construction will occur during the dry period if the channel is seasonally dry.

- Prevent any construction debris from falling into the stream channel. Any material that does fall into a stream during construction will be immediately removed in a manner that has minimal impact to the streambed and water quality.

- Temporary fill must be removed in its entirety prior to close of work-window.

- Areas for fuel storage, refueling, and servicing of construction equipment must be located in an upland location.

- Prior to use, clean all equipment to remove external oil, grease, dirt, or mud. Wash sites must be located in upland locations so that dirty wash water does not flow into stream channel or wetlands.
• Petroleum products or deleterious materials must not enter the stream channel.

• Isolate the construction area from flowing water until project materials are installed and erosion protection is in place.

• Erosion control measures will be in place at all times during construction. Do not start construction until all temporary control devices (straw bales, silt fences, etc.) are in place down slope or downstream of project site.

• A potential for introducing weed-seed and unwanted plant material exists. Ensure that mulch is weed free. Impacts attributable to infestation of noxious weeds will be reduced through the implementation of Mitigation Measures #BIO 6 (Equipment Cleaning): #BIO 7 (Identification and Isolation of Invasive Plants).

• Exhaust emissions will be minimized by maintaining equipment in good repair and proper tune according to the manufacturer’s specifications. Proof of maintenance, repair and tuning will be provided to the RCDTC Project Manager.

• To the extent practicable, the use of diesel construction equipment meeting CARB’s 1996 or newer certification standard for off-road heavy-duty diesel engines will be maximized.

• Construction contracts will include language that prohibits the use of all pre-1996 heavy-duty off-road diesel equipment on forecast “Spare the Air” days

• Unnecessary vehicle idling will be restricted to 5 minutes or less.

• The use of gasoline-powered equipment in lieu of diesel powered equipment will be maximized where feasible.

• Visibility emissions from stationary diesel-powered equipment will not exceed 40% opacity for more than three minutes in any one hour.

• All construction equipment used in connection with this project will have rubber tires or rubber tracks to reduce impacts to the stream bed within work areas.
• Fuel, oil and other petroleum products will be stored only at designated staging areas. Staging areas will be located greater than 100 feet from any aquatic or riparian habitat. The use of hazardous materials will be avoided or minimized where possible. Material containment containers will be clearly labeled with the identity of the materials, handling and safety instructions, and emergency contact. Any soils contaminated by spills will be contained and will be removed to an approved disposal site.

• During fuel transfer and filling, absorbent pads, pillows, socks, booms or other spill containment materials will be available. Trained personnel will monitor the filling of equipment and will stop fuel flow immediately if a spill occurs. Fuel transfer/filling will not resume until the problem is resolved.

• All equipment used in connection with project work will be maintained in a manner that minimizes fuel and lubricant drippings. Stationary power equipment (e.g., engines, pumps, generators) will be positioned over drip pans. Equipment operators or other responsible parties will make daily inspection of equipment for leaks, correcting and repairing any such leaks prior to resuming their use. Inspection reports will be submitted to the RCDTC Project Manager along with evidence of any repairs required and completed. Inspection reports and evidence of repairs completed will be incorporated into the RCDTC project files.

• To reduce potential impacts associated with fuel spills in streams and riparian areas, the RCDTC Project Manager or Construction Manager will ensure that gasoline and lubricants are at no time transported across a live stream other than in the tank of equipment being moved or already applied to such equipment. Only existing roads will be used to move personnel, equipment and materials across stream courses as well as into and out of the project site unless previously approved and flagged by the RCDTC Project Manager.

• The RCDTC Project Manager or Construction Manager will select refueling and maintenance sites for all equipment including power hand tools on flat sites that are away from “No Treatment Areas” and other buffers related to dry or wet waterways along with areas that could potentially flow into a stream in the event of an accidental spill. Such sites will also be established on flat sites outside of “No Treatment Areas” and other exclusion zones established in order to protect wildlife and plant resources. Fuel containment equipment including absorbent sheets and waddles will be made available at all refueling and maintenance areas. Equipment operators will be responsible for the immediate containment and removal of any spilled material and will immediately inform the RCDTC Project Manager or Construction Manager of such spills. The RCDTC Project Manager or Construction Manager will then immediately contact appropriate authorities including the CDFW. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur. Equipment will be stored and maintained within properly
cleared areas. The RCDTC Project Manager or Construction Manager will inspect refueling areas to assure compliance with this Mitigation Measure. These inspections will also verify these sites’ adequacy in protecting riparian and terrestrial resources as well as the availability of containment equipment.

• All equipment used in connection with project work will be provided adequate fire protection equipment including fire extinguishers attached to all mechanized equipment. In addition, fire fighting hand tools and a water wagon will be available at all areas where equipment is operated.

**Demobilization/Site Restoration**

Upon completion of operations, the temporary access road will be ripped with cross road drainage installed at a frequent spacing. If necessary, complete recontouring of access routes will be completed in order to disperse runoff and blend the former roadway with undisturbed adjacent terrain. Any disturbed areas including stream banks, will be fully regraded and restored upon completion of the project. Any branches and woody debris from trees felled pursuant to this project’s construction plans will be left on the access road for erosion control. Large stems will be left if they can serve as useful habitat within the project area.
Appendix C
Results of Biological Resource Database Inquiries and Species Review of Listed Species Found within the Childs Meadows Head Cut Stabilization and Repair Project Area

Formally Listed Species Found in the Immediate Vicinity
The following results relate to the above mentioned query of the California Natural Diversity Database and other information sources related to listed Endangered, Threatened, or Sensitive Species (List 1 and List 2) that have been identified within the project area and that portion of eastern Tehama County adjacent to it.

California Department of Fish and Game Species of Special Concern
Under California law, Species of Special Concern are to be considered during the environmental review process. The California Environmental Quality Act (CEQA; California Public Resources Code §§ 21000-21177) requires State agencies, local governments, and special districts to evaluate and disclose impacts from "projects" in the State. Section 15380 of the CEQA Guidelines indicates that species of special concern should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined in State regulations.

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Mammals

PACIFIC FISHER (*Marten pennanti (pacific) DPS*): The Pacific fisher (*Martes pennanti*) is a specialized forest carnivore that is associated with closed-canopy, late-succession forests throughout its range. The Tramway Road/ A-Line Shaded Fuel Break project area is within second growth stands of relatively small young mixed conifer species as well as pockets of open chaparral. If the Pacific fisher is observed during project work, surveys will be made for observation areas as well as resting and denning sites by RCDTC personnel having the training and experience
described in Mitigation Measure #4. If such sites are identified, they will be flagged for avoidance by equipment and personnel.

**Fringed Myotis (Myotis thysanodes):** The fringed myotis is widespread in California. It occurs in a wide variety of habitats; records range in elevation from sea level to 2850 m (9350 ft). Optimal habitats are pinyon-juniper, valley foothill hardwood and hardwood-conifer, generally at 1300-2200 m (4000-7000 ft). Feeds mostly on beetles, and also on moths, arachnids, and orthopterans. The fringed myotis roosts in caves, mines, buildings, and crevices. Separate day and night roosts may be used. Maternity colonies of up to 200 individuals are located in caves, mines, buildings, or crevices. Adult males are absent from maternity colonies, which are occupied from late April through September. Maternity group members may remain together during hibernation. The period of hibernation lasts from October through March. This species is migratory, making relatively short, local movements to suitable hibernacula. Mating occurs in the fall, followed by delayed fertilization. Gestation lasts 50-60 days. The young are born from May through July, but most are born in late June. The fringed myotis is easily disturbed at roosting sites however given that there are no caves, mines, buildings, or crevices or other suitable roosting spots, impacts to this species is not anticipated.

**FISHER WEST COAST DPS (Pekania pennanti):** This California Candidate Threatened species and DFW Species of Special Concern inhabit upland and lowland forests, including coniferous, mixed, and deciduous forests. They occur primarily in dense forest stands having dense overhead cover. This fisher generally avoid areas with little forest cover or significant human disturbance. Although there is forest habitat immediately adjacent to the project’s impact area, the fisher would not be impacted by other then short term noise related to small mechanical and power equipment use as well as the use of forested areas to store supplies and equipment during the limited period of project implementation. Mitigation measures x and xx have been developed in order to reduce potential species impacts to a less than significant level.

**Amphibians**

No listed amphibians were noted within the project site or surrounding area of Childs Meadows.

**Fishes**

**CENTRAL VALLEY SPRING RUN CHINOOK SALMON (Oncorhynchus tshawytscha):** Battle Creek, Paynes Creek and Antelope Creek are known to support Fall-run Chinook salmon when water conditions are adequate downstream from the project area. Battle Creek and Antelope Creek are also considered habitat for Spring run Chinook salmon. Low flows and inadequate spawning gravel have been identified as significant factors limiting salmon production in Paynes Creek and Antelope Creek. Aquatic and riparian habitat conditions within the project area will be protected by 150’ no treatment buffers and it is anticipated that the fuel break infrastructure developed thought this
project will help to reduce the threat of catastrophic wildfire within this portion of Eastern Tehama County which could denude riparian vegetation along these important anadromous fish streams.

**Birds**

**NORTHERN GOSHAWK (Accipiter gentilis)**

Accipiter gentilis occupies dense middle and high elevation old growth conifer forests. The species nests near riparian areas and open meadows containing water and are interspersed within the densest portions of forested areas. It also utilizes large live trees with diameters of 11” and greater for nesting and breeding sites during the period of April through mid June. Project work in not anticipated to impact this species as wide no treatment buffers will be established along all riparian corridors and the project’s impact area contains no open meadows. Finally, no trees or standing snags over 10” in diameter will be cut.

**GREATER SANDHILL CRANE (Grus Canadensis tabida)**

The Sandhill Crane is one the largest migrating North American birds. During summer months in Northeastern California, Grus Canadensis tabida can be found in large freshwater marshes, prairie ponds, marshy tundra and wet meadows such as Childs Meadows. During winter migration through California, this species inhabits grain fields or prairies in the Central Valley. When foraging, the Sandhill Crane prefers open short grass plains, grain fields, and open wetlands. Moist sites containing grasses and forbs are commonly used. Tubers, seeds, grains, earthworms, and insects are consumed as are mice, small birds, snakes, crayfish along with fruits and berries if available. The Sandhill crane Roosts at night in flocks standing in moist fields, shallow water, dry grasslands, island sites and wide sandbars generally within remote portions of these sites. When nesting, it prefers open habitats within shallow lakes and fresh emergent wetlands. Nests are commonly large mounds of wetland plants placed in shallow water. Natural hummocks or muskrat houses are often used. Ideal sites for nesting are on small islands screened by tall tules, cattails, or shrubs.

Breeding population from north of California passes southward through the state in September and October and northward in March and April. California breeding population winters chiefly in the Central Valley. Courtship begins in April with elaborate dancing behaviors that often include 50-80 individuals. The peak breeding period for the crane is May until July. Nesting is generally completed by late August producing a single brood with an incubation period of about 30 days. Young fly at about 70 days, but remain with adults up to a year. If project work is initiated between May and September, RCDTC personnel or an appropriately credentialed biologist will examine the project site and surrounding area prior to implementation in order to determine if this species inhabits the area. If nesting individuals are found, project work would delayed until late September or immediately after spring thaw prior of the following season.
CALIFORNIA SPOTTED OWL (*Strix occidentalis occidentalis*): The spotted owl is an uncommon, permanent resident in suitable habitat. In the Cascade Range within northern California, the owl resides in dense, old-growth, mixed conifer stands that are multi-layered and have large trees and snags at elevations ranging from sea level up to approximately 7,600’. *Strix occidentalis* is very sensitive to habitat destruction and fragmentation. This owl feeds in upon a variety of small mammals, including flying squirrels, wood rats, mice and voles, rabbits, small birds, bats, and large arthropods. It usually searches from a perch and swoops or pounces on prey in vegetation or on the ground. In northern regions of the state, daytime roosts averaged 550’ from water.

The Spotted Owl usually nests in a tree or snag cavity as well as the broken top of large tree. Less frequently it nests in large mistletoe clumps, abandoned raptor or raven nest, in caves, cliff crevices and cliff faces. In northern California, the spotted owl appears to prefer narrow, steep-sided canyons with north-facing slopes. There are no caves cliff crevices or cliff faces within 1 mile of the project’s implementation area. Nests are usually placed 30 to 180 ft above the ground. Habitat requirements include blocks of 100 to 600 acres of mature forest with permanent water and suitable nesting trees and snags. Individuals tend to be spaced 1 to 2 miles apart in suitable habitat. The Spotted Owl breeds from early March through June, with a peak in April and May. Female incubates and broods young; male feeds female and young. Pair may use same breeding site for 5-10 yr, but may not breed every year. Great horned owls and goshawks are potential predators of young and invading barred owls are known to displace spotted owls from their territories. Any impacts to individuals or breeding pairs of this species found within the project area will be reduced to less than significance level through the Implementation of Mitigation Measures # Bio 3 (Protection of Migratory Bird Treaty Act Species) and #Bio 4 (Raptor Protection).

WILLOW FLYCATCHER (*Empidonax traillii*): Willow flycatcher breeding habitat occurs within and adjacent to forested habitats. The species has historically nested throughout much of California where mesic willow thickets are found. This species has specific habitat requirements that typically consist of riparian habitat often dominated by willows (salix spp), and/or alder (Alnus spp). In addition, permanent water, often in the form of low gradient watercourses, ponds, lakes, wet meadows, marshes, and seeps within and adjacent to forested landscapes are also required elements of *Empidonax traillii* habitat.

Loss, fragmentation, and modification of riparian breeding habitat are thought to have resulted in a decline of Willow Flycatcher numbers. Large scale losses of wetlands have occurred, especially those associated with riverine systems in both valley and montane habitats. In recognition of the potential for loss of riparian habitat for this species, wide riparian buffers have been established along all stream corridors within the project area and there are no meadows within the project’s impact area. In addition, those segments of all riparian areas within the 150’ exclusion zone will be surveyed for evidence of this species. Surveys will be conducted by RCDTC personnel having the training and
experience as described in Mitigation Measure #Bio-1 (Pre Project Implementation Plant Surveys) and Appendix E, Protocols for Surveying and Evaluation Impacts to Special Status Native Plant Populations and Natural Communities or by a qualified botanist.

Reptiles

CASCADAS FROG (Rana cascadae): In California, Cascades frog distribution is associated with montane and subalpine landscapes. Known extant California populations appear to be restricted to elevations above 3000’ in a highly fragmented “island” distribution. The range of Rana cascadae a Species of Special Concern includes Lassen National Park and areas surrounding its boundaries. This frog occupies aquatic and riparian habitats within mountain meadows, streams, ponds and lakes located above 3000’ and have a breeding period of May to August. The design of the project’s work scope incorporates protections for this species including conducting project work outside the species May to August breeding period. In addition, Mitigation Measures X and XX have been developed in order to reduce the potential for impacts to this species.

Insects

No listed insects were noted within the project site
Or surrounding area of Childs Meadows

Crustaceans

No listed crustaceans were noted within the project site
Or surrounding area of Childs Meadows

Plants

MARSH CLAYTONIA (Claytonia palustris): Claytonia palustris is a species of wildflower in the purslane family. It is endemic to California where it is an uncommon member of the flora in wet areas such as spring meadows in the high mountains from the Klamath Range to the High Sierra. Although the plant inhabits wet areas such as are found at the Childs Meadows Head Cut Stabilization and Repair project site, the current Calflora distribution map shows the nearest occurrence of this plant approximately 10 miles to the northwest between the community of Manton and Lake McGowan at an elevation of 5,600’. If this plant is found within the project area during staging or construction activities, it will be protected through the implementation of Mitigation Measures XX and XX.
CREAM-FLOWERED BLADDERWORT (Utricularia ochroleuca): This wetland obligate inhabits meadows and similar sites at elevations ranging between 5,380’ and 7,775’. Although sightings of the plant have been found near the southern boundary of Lassen Volcanic National Park and Warner Valley, no sightings have occurred within Childs Meadows which at 4,800’ are below the average elevational range of this plant. If the Cream Flowered Bladderwort is found within the project area, it will be protected through the implementation of Mitigation Measure #Bio-1 (Pre Project Implementation Plant Surveys) and various Best Management Practices shown in Appendix B.

FLAT LEAVED BLADDERWORT (Utricularia intermedia): Flat-leaved Bladderwort is a perennial submersed aquatic herb with submerged stems, leaves, bladders, overwintering buds, and emergent flowers. It is found in shallow ponds, slow moving streams, along with wet sedge and rush meadows at elevations to 4,100’. No sightings of the plant have been found in Childs Meadows however, if the plant is identified within the length of the small tributary where project work will be completed, Mitigation Measure XX and XX will be implemented.

LONG LEAVED STARWORT (Stelleria longifolia): The Long Leaved Starwort inhabits an array of sites including young fir groves, logging areas, rocky hillside broad-leaved forests, foot of precipices, stream-side hedgerows, springs, and grassy swamps. Within California, the plant’s elevation range is to 5,380’. The closest observation of this plant identified by Cal Flora was approximately 12 miles to the northeast of the project area near the community of Mineral. Any occurrence of this plant at the project site or other areas that would be impacted by construction activity would be protected through the implementation of Mitigation Measures XX and XX.

HOT ROCK DAISY (Erigeron inornatus var. calidipetris): Although this plant tends to occur on wetlands sites in other regions, within northeastern California, the Hot Rock Daisy is most often associated with non-wetland sites such as yellow pine forests, loose sand, lava beds, depressions and forest edges at elevations ranging between 4,265’ and 5,807’. Considering that forest edges, lose sand and depressions are found within the project area, Mitigation Measures XX and XX were developed in order to protect the plant if they could be impacted by project work.
THREE-RANKED HUMP MOSS (*Meesia triquetra*): A2 This moss occur in wetland sites, such as within wet woods or fens which are not found within the project area. The occurrence of this plant is not anticipated however if an individual would be protects through the implementation of Mitigation Measures XX and XX.

SLENDER BULRUSH (*Schoenoplectus heterochaetus*): A3 A perennial rhizomatous herb Slender Bulrush is found in lower montane coniferous forest and marshes and swamps (lake margins) and has been found in the Wilson Lake area of Tehama County which approximately 2.5 miles from the project area.

WATER BULRUSH (*Schoenoplectus subterminalis*): A3 This perennial rhizomatous herb is found in bogs and fens and marshes and swamps (montane lake margins) at elevations ranging from 750 - 2250 meters. The plants blooming period is from June through September.

WATERSHIELD (*Brasenia schreberi*): A3 A native aquatic rhizomatous herb *Brasenia schreberi* is found in ponds and slow streams at elevations less than 7,200’. And is found in the North Coast Ranges, High Cascade Range, High Sierra Nevada, and the Sacramento Valley.

DWARF RESIN BIRCH (*Betula glandulosa*): A2 Streambanks, marsh margins, lakes and bogs, also found on alpine slopes. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in heavy clay and nutritionally poor soils. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist soil.
Appendix D
CNDDB Map Printouts
Childs Meadows Head Cut Stabilization and Repair Project
Appendix E

Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities
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REFERENCES CITED

E. Beedy. “Life History Account of for SANDHILL CRANE”, Wildlife Habitat Relationships System California Department of Fish and Game California Interagency Wildlife Task Group, California Department of Fish and Game, 2008

Bureau of Land Management. “Special Status Animals in California, Including BLM Designated Sensitive Species” United States Department of Interior. 2010

California Department of Fish and Game. “California Bird Species of Special Concern” 2008

California Natural Diversity Database: Online Search May 2010


Moyle, Peter B. Ronald M. Yoshiyama, Jack E. Williams And Eric D. Wikramanayake Fish “Species of Special Concern in California” 2nd edition California Department of Fish and Game, 1995

Northeast Center of the California Historical Resources Information System: Records Search March 2014

C. Polite. L. Kiff “Life History Account of for Spotted Owl”, Wildlife Habitat Relationships System California Department of Fish and Game California Interagency Wildlife Task Group, California Department of Fish and Game, 2008


C. Polite. J. Pratt “Life History Account of for Bald Eagle”, Wildlife Habitat Relationships System California Department of Fish and Game California Interagency Wildlife Task Group, California Department of Fish and Game, 2008

C. Polite. J. Pratt “Life History Account of for Prairie Falcon”, Wildlife Habitat Relationships System California Department of Fish and Game California Interagency Wildlife Task Group, California Department of Fish and Game, 2008

NRCS Web Site Soils Data

Pierson Elizabeth D. & William E. Rainey Townsend's big-eared bat, Corynorhinus townsendii pallescens and C. t. townsendii in “Terrestrial Mammal Species of Special Concern in California”, 1998

Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.
U.S. Fish and Wildlife Service “Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon”
2005

Verts, B.J., Leslie N. Carraway, Al Kinlaw *Mammalian Species* Spilogale gracilis, American Society of Mammalogists, 2001

Williams Daniel, “*Mammalian Species of Special Concern in California*” California Department of Fish and Game/California Department of Fish and Game/California State University, Stanislaus 1986