

APPENDIX E

Draft Mitigation Monitoring and Reporting Plan

Draft
Mitigation Monitoring and Reporting Plan
for the
Wildwood Road Realignment and Widening
Project

CEQA Lead Agency:
Trinity County

Prepared: April 2014

Introduction

Purpose

Trinity County Department of Transportation (County) has prepared an Environmental Impact Report (EIR) for the proposed Wildwood Road Realignment and Widening Project. The proposed project would involve widening Wildwood Road between Post Miles 5.0 and 11.6 to two standard travel lanes with shoulders, improving its alignment to reduce the severity of its curves and improve sight distance, and rehabilitating the roadway structural section and drainage. The project would be designed and constructed in three phases, approximately 2 miles at a time, starting at the north end at the intersection with East Fork Road. The proposed project is described in more detail in the EIR.

As described in the EIR (Chapter 2, Project Description), the proposed project includes a number of construction measures and specifications to minimize or prevent adverse effects on the environment (see below for list of these measures). The EIR also identified several mitigation measures that are required to reduce potentially significant impacts to levels that are less than significant (see below for list of these measures). This Mitigation Monitoring and Reporting Plan (MMRP) describes a program for ensuring that the construction measures and additional mitigation measures are implemented in conjunction with the proposed project. In addition to the measures identified herein, permitting agencies, such as the U.S. Forest Service, California Department of Fish and Wildlife, North Coast Regional Water Quality Control Board, and U.S. Army Corps of Engineers, may identify additional measures to implement as part of the permits they issue, and those measures will also need to be implemented in conjunction with the proposed project and be monitored to ensure implementation. Monitoring and reporting requirements will be identified in the respective permits.

The County, as the lead agency under the California Environmental Quality Act (CEQA), is responsible for overseeing the implementation and administration of this MMRP. The County will designate a staff member to manage the MMRP. Duties of the staff member responsible for plan coordination will include conducting routine inspections and reporting activities, coordinating with the project construction contractor, coordinating with regulatory agencies, and ensuring enforcement measures are taken.

Regulatory Framework

California Public Resources Code Section 21081.6 and California Code of Regulations Title 14, Chapter 3, Section 15097 require public agencies to adopt mitigation monitoring or reporting plans when they approve projects that may result in significant impacts. The reporting and monitoring plans must be adopted when a public agency makes its findings pursuant to CEQA so that the mitigation requirements can be made conditions of project approval.

Format of This Plan

The MMRP describes the construction measures included in the proposed project and the mitigation measures identified in the EIR. A corresponding impact statement is included with each mitigation measure to identify the impact that requires mitigation. Mitigation measures are followed by an implementation description, the criteria used to determine the effectiveness of the mitigation, the

timeframe for implementation, and the party responsible for monitoring implementation of the measure.

Implementation of mitigation measures is ultimately the responsibility of the County; during construction, the delegated responsibility is shared by the construction contractor. Each mitigation measure in this plan contains a “Verified By” signature line, which will be signed by the County’s designated MMRP manager when the measure has been fully implemented and no further actions or monitoring are necessary for the implementation or effectiveness of the measure.

Noncompliance Complaints

Complaints of noncompliance with adopted mitigation measures shall be directed to Trinity County in written form, providing specific information on the alleged violation. If any complaints are received, the County shall conduct an investigation and determine the validity of the complaint. If noncompliance with a mitigation measure has occurred, the County shall take the appropriate action to remedy the violation. The complainant shall receive written confirmation indicating the results of the investigation or the final action corresponding to the particular noncompliance issue.

Measures Included in the Proposed Project

The construction contractor will be responsible for compliance with all applicable rules, regulations, and ordinances associated with project activities and for implementing construction-related measures to avoid or minimize adverse environmental impacts. Construction specifications will be in accordance with Caltrans Standard Specifications and Special Provisions in force at the time the construction contract is awarded. The County has identified the standard construction measures listed below that will be implemented during each construction phase of the proposed project. The contractor will be responsible for complying with and implementing these measures during construction in addition to the mitigation measures listed in the next section, and the County will be responsible for enforcing the measures and monitoring their implementation.

Borrow Areas/Stockpiles

Stockpile Measure 1. Cut and fill quantities for the entire project will be balanced to the extent feasible. Fill material will be acquired from cuts within the project area. Excess spoils generated by cuts during one phase may be saved for a later phase, although the design team will attempt to balance each phase.

Implementation: Engineer will attempt to balance cut and fill quantities to the extent possible.

Timing: During design

Verified By: _____ **Date:** _____
County MMRP Manager

Stockpile Measure 2. If materials need to be stockpiled for a later phase, they will be piled in a flat, unvegetated area that is already being used for similar purposes by the County Department of Transportation, California Department of Transportation (Caltrans), or the U.S. Department of Agriculture, Forest Service (Forest Service) in the general vicinity.

Implementation: County identifies suitable stockpile site(s) in consultation with the Forest Service and/or Caltrans.

Timing: Before construction

Verified By: _____ Date: _____
County MMRP Manager

Stockpile Measure 3. Stockpiles will be secured with tarps or bermed with soil, straw wattles, straw bales, or other devices to prevent runoff. In the event that insufficient materials are generated by project cuts, additional material will be obtained from commercial sources that are in compliance with the Surface Mining and Reclamation Act, or from excess materials derived from other highway projects in the area. No excavation will occur for the sole purpose of providing material for this project.

Implementation: Contractor secures stockpiles and places erosion control.

Timing: During construction

Verified By: _____ Date: _____
County MMRP Manager

Waste Disposal

Disposal Measure 1. Project design will endeavor to achieve balanced cut and fill and offset the need to dispose of excavated material.

Implementation: Engineer will attempt to balance cut and fill quantities to the extent possible.

Timing: During design

Verified By: _____ Date: _____
County MMRP Manager

Disposal Measure 2. If necessary, the construction contractor will be responsible for disposing of excess excavated materials at appropriate disposal sites approved by the County or the Forest Service. The staging areas may ultimately be used for spoils disposal, if necessary and upon approval from the Forest Service or private property owner. Such use will only be allowed if it does not detract from the continued use of the property.

Implementation: County identifies suitable waste disposal site in consultation with the Forest Service.

Timing: Before construction

Verified By: _____ Date: _____
County MMRP Manager

Disposal Measure 3. Permanent spoils disposal areas will be stabilized with erosion control methods similar to those described below for fill slopes, including compaction and seeding with native grasses.

Debris from construction and staging areas will be kept out of Hayfork Creek and other streams. All debris will be disposed of offsite at a landfill or recycling facility with sufficient capacity and permits to receive the waste. Liquid construction waste will also be disposed of offsite in accordance with the Waste Management and Materials Pollution Control Best Management Practices described in the *Caltrans Construction Site Best Management Practices Manual* (California Department of Transportation 2003). Petroleum-based compounds will be contained and removed to an officially designated landfill authorized to accept that type of waste. Wastewater from construction activities will not be allowed to drain into Hayfork Creek or other drainages. The project specifications will contain requirements for the handling, storage, and cleanup of hazardous materials (e.g., petroleum-based products, cement, or other construction pollutants) in the event of an accidental spill.

Implementation: The contractor will comply with disposal measures and prevent waste and wastewater from entering drainages.

Timing: During construction

Verified By: _____ Date: _____
County MMRP Manager

Traffic Control

The contractor will be responsible for controlling traffic through the project area and providing for emergency access, if necessary. Construction activities will require single lane closures and periodic closure of both lanes. In areas where the existing road is less than two lanes, periodic complete closures will sometimes be necessary.

Traffic Measure 1. A schedule for complete road closures will be worked out well in advance of construction, in consultation with the community, service providers, and emergency response personnel. The County will notify private land owners, the Forest Service, emergency response providers, and others, as appropriate, of the road closure schedule and alternative access routes.

Implementation: County will meet with the community, service providers, and emergency response personnel and work out a road closure schedule.

Timing: During design

Verified By: _____ Date: _____
County MMRP Manager

Traffic Measure 2. During the periods when the road is open during the day, traffic will be controlled by pilot cars or flaggers on a single travel lane through the construction zone. At night, the road will be left with at least one lane open, with temporary traffic signals or “stop – proceed when clear” signs. Access to the private properties in the northern end of the project area and on East Fork Road will be maintained throughout the construction period, although some delays could occur. Properties at the southern end of the project area in Segment 3 will be the most affected by the closures. Special accommodations will be required of the contractor to ensure that residents of this area are allowed access in and out of their properties with minimal delay (no more than 30 minute) if construction takes place on both the north and south sides of their driveway.

Implementation: The contractor will provide a traffic control plan prior to the start of construction. For Segment 3, the plan will include provisions for accessing the private properties in that segment.

Timing: Before construction

Verified By: _____ Date: _____
County MMRP Manager

Implementation: Contractor shall implement traffic control measures according to the approved plan.

Timing: During construction

Verified By: _____ Date: _____
County MMRP Manager

Instream Construction

Instream Measure 1. Instream construction activities in tributaries to upper Hayfork Creek will be limited to the greatest extent practicable, but will include excavation and removal of existing culverts and associated structures, installation of new culverts, downspouts, outlet protection, or energy dissipaters to reduce the effects of streambed scour and bank erosion downstream of the culvert outlet; energy dissipation structures include rip-rap, drop structures, and sills. Stream channels in the work areas will need to be dewatered to facilitate work and protect water quality. A temporary dam structure will be constructed by hand using sheet plastic, sand bags, clean gravel, and rock and will be installed in the creek during the summer instream work window (i.e., at low flow). Water will be allowed to pool at the dam and will be pumped around the instream work area. Any short-term water drafting needed for construction will be done in accordance with the National Marine Fisheries Service water drafting guidelines (National Marine Fisheries Service 2001).

Implementation: The contractor will provide a diversion plan and a water drafting plan prior to the start of water drafting or construction in any flowing stream.

Timing: Before construction

Verified By: _____ Date: _____
County MMRP Manager

Implementation: Contractor shall comply with instream construction and water drafting measures included in the approved plans.

Timing: During construction

Verified By: _____ Date: _____
County MMRP Manager

Pollution Prevention and Erosion Control

Water Quality Measure 1. The contractor will comply with Best Management Practices (BMPs) described in the *Caltrans Construction Site Best Management Practices Manual* (California Department of Transportation 2003) and a Stormwater Pollution Prevention Plan (SWPPP) prepared by either the County or the contractor. All project-specific BMPs and other pollution prevention and erosion control measures would be incorporated into the plans and specifications.

Implementation: County’s Engineers will incorporate all project specific BMPs, including those specified by Caltrans, into the project plans and specifications.

Timing: During design

Verified By: _____ Date: _____
County MMRP Manager

Water Quality Measure 2. The SWPPP will be prepared in accordance with the National Pollutant Discharge Elimination System program (Section 402[p], Clean Water Act [CWA]), administered by the State Water Resources Control Board (SWRCB) on behalf of the U.S. Environmental Protection Agency. Under the program, the County will file a Notice of Intent with the SWRCB to obtain coverage under the General Construction Activity Storm Water Permit prior to the first phase of construction. The SWPPP will describe runoff and erosion control measures to be employed; any toxic substances to be used during construction; and spill prevention and control measures, including, but not limited to, those found in the Caltrans Storm Water Quality Handbooks. These measures will incorporate the best available technology that is economically achievable and best conventional pollutant control technology pursuant to SWRCB requirements and federal law (40 CFR Parts 122-124). A monitoring program will be implemented to evaluate the effectiveness of the measures included in the SWPPP.

Implementation: County or contractor will prepare the SWPPP. County will file the Notice of Intent.

Timing: Before construction

Verified By: _____ Date: _____
County MMRP Manager

Water Quality Measure 3. The contractor will also be required to conform to the following provisions:

- Where construction areas encroach on live streams, barriers adequate to prevent the flow of muddy water into streams shall be constructed and maintained between the areas and streams, and during construction of the barriers, muddying of streams shall be held to a minimum.
- Mechanized equipment shall not be operated in the stream channels of the live streams.
- Water containing mud or silt from aggregate washing or other operations shall be treated by filtration or retention in a settling pond adequate to prevent muddy water from entering live streams.
- Oily or greasy substances originating from the contractor's operations shall not be allowed to enter or be placed where they will later enter a live stream.
- Portland cement or fresh Portland cement concrete shall not be allowed to enter flowing water of streams.
- Material derived from roadway work shall not be deposited in a live stream channel where it could be washed away by high stream flows.

Additional erosion control measures, such as the following, will also be implemented during construction:

- limit ground-disturbing activities to the dry season;
- use sediment traps, desilting basins, and/or sediment barriers, such as silt fencing, straw bales, and wattles;
- use geotextiles, mulch, and other temporary ground covers on disturbed areas and stockpiles;
- stabilize and revegetate the right-of-way immediately after construction;
- use native or non-persistent non-native grasses for quick establishment, followed by native grasses and forbs (no noxious or invasive weed species would be used); and
- do not spray pesticides, which are prohibited by County ordinance on County projects.

Implementation: The contractor will comply with the SWPPP and implement BMPs.

Timing: During construction

Verified By: _____ **Date:** _____
County MMRP Manager

Winterization

Winterization Measure 1. Earth-moving activities (i.e., grading) would be suspended during the rainy season (typically mid-November to May 1). The construction areas would be winterized with temporary or permanent erosion control at the end of each construction season (in early November), and most equipment would be removed from the area at that time. Equipment left on site during the winter would be stored in staging areas that are not subject to inundation and do not drain to Hayfork

Creek or any tributary. In areas where construction and revegetation have not been completed by November 15, interim erosion control, consisting of quick-establishing sterile grass seed, mulch, and/or geotextiles, would be applied to the unfinished disturbed areas. Construction materials and temporary fills would be removed from within and adjacent to the creek and other drainages. Any unpaved sections of road will be surfaced with rock or temporary pavement. Erosion and sediment control measures would be maintained during the winter suspension period and would be checked daily during any 1/2-inch or greater rainfall event and every seven (7) calendar days until site stabilization is achieved or construction resumes.

Implementation: The contractor will implement winterization measures.

Timing: During construction

Verified By: _____ Date: _____
County MMRP Manager

Impacts and Associated Mitigation Measures

Impact TT-1: Construction activities could restrict or impede access to lands along Wildwood Road.

Mitigation Measure TT-1a: Require contractor to make special accommodations for residents and property owners.

In Segment 1, from Post Mile 11.6 to 11.4, and in Segment 3, from Post Mile 5.3 (Gemmill Gulch) to Post Mile 6.2 (STNF boundary–north end of private properties), maximum delays of 30 minutes will be allowed. Contractor will be required to post flag people equipped with radios at each end of the construction zone. When no cars are waiting at either end of the construction zone, construction may proceed until the first car arrives at the north or south limits of the construction area. Then, the delay timer will start. Traffic must be allowed through in both directions when the first car has waited for 30 minutes.

Implementation: The contractor will prepare and implement the traffic control plan

Timing: During construction

Effectiveness Criteria: A written traffic control plan will be in the project file. Goal is no delays that exceed 30 minutes for property owners and no complaints from property owners.

Verified By: _____ Date: _____
County MMRP Manager

Mitigation Measure TT-1b: Require contractor to make special accommodations for emergency services.

The contractor or Resident Engineer shall have radios and/or portable telephones and shall provide contact information to the Forest Service and local emergency service providers (ambulance, local

fire districts, and sheriff). Upon being contacted regarding an emergency call on Wildwood Road, the contractor or Resident Engineer shall inform the provider of the estimated time it will take to open the road and will proceed with road opening immediately. If no phone or radio contact is made, contractor shall proceed with road opening as soon as emergency vehicles arrive. The road shall be kept open (at a minimum of one lane with flag persons, signals, or signage) until the emergency is over.

Implementation: The contractor will implement these measures.

Timing: During construction

Effectiveness Criteria: A written emergency access plan will be in the project file. Goal is no delays for emergency responders and no complaints from emergency responders.

Verified By: _____ Date: _____
County MMRP Manager

Impact AQ-1: Construction activities would generate emissions, including greenhouse gas emissions, and could result in violations of air quality standards.

Mitigation Measure AQ-1: Implement fugitive dust and greenhouse gas emission reduction measures.

The contractor will be required to implement a dust-control program to limit fugitive dust emissions and implement emission reduction measures for GHGs. The dust control program and GHG emission reduction measures shall include, but not be limited to, the following:

- Water inactive work areas at least twice daily on work days when soils are not naturally moist. Water shall be applied in a manner that does not result in runoff. Disturbed areas shall be covered with mulch, vegetation, rock, paving, or fabrics during extended non-working periods.
- Pursuant to the California Vehicle Code (State of California 2012), all trucks hauling soil and other loose material to and from the construction site shall be covered or should maintain at least 6 inches of freeboard (minimum vertical distance between top of load and the trailer).
- Exposed stockpiles of soil and other fine backfill material shall be watered twice daily, be covered, or have soil binders added.
- Any topsoil that is removed during construction shall be stored on site in piles not to exceed 4 feet tall to allow development of microorganisms prior to resoiling of the work area. These topsoil piles shall be clearly marked and flagged. Topsoil piles that will not be immediately returned to use shall be revegetated with a non-persistent erosion control mixture.

- Soil piles for backfill shall be marked and flagged separately from native topsoil stockpiles. These soil piles shall be surrounded by silt fencing, straw wattles, or other sediment barriers or covered unless they are to be immediately used.
- A construction traffic and parking management plan will be developed and implemented to maintain traffic flow and minimize vehicle trips. Construction workers will park in designated parking area(s) to help reduce dust emissions.
- On-site vehicles will be limited to a speed that minimizes dust emissions on unpaved roads or dirt work areas.
- All construction equipment will be maintained in proper tuning according to manufacturer's specifications. Unnecessary vehicle idling will be limited to 5 minutes.
- A publicly visible sign with the telephone number and person to contact regarding dust complaints will be posted in a publicly accessible area near the project area. The person named will respond to complaints and take corrective action within 24 hours. The telephone number of the North Coast Unified AQMD will also be visible.
- Contractors will commit to using the best available emissions control technology. The use of diesel construction equipment meeting the California Air Resources Board 1996 or newer certification standard for off-road heavy-duty diesel engines and having Tier 4 engines will be maximized to the extent feasible. Equipment may be electrified if feasible, and gasoline-powered equipment should be substituted for diesel-powered equipment when feasible, unless alternatively fueled construction equipment can be used. If the use of all equipment with Tier 4 engine standards is not feasible, the contractor should commit to using CARB and EPA-verified particulate traps, oxidation catalysts, and other appropriate controls when suitable to reduce emissions of diesel particulate matter and other pollutants during construction.
- To the extent feasible, a minimum of 50 percent of construction and demolition waste including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard will be reused and/or recycled.

Implementation: The contractor will implement a dust control program and emissions reduction measures.

Timing: During construction

Effectiveness Criteria: Goal is no dust or air quality complaints from the public to the County or to AQMD and no complaints or compliance actions from AQMD.

Verified By: _____ **Date:** _____
 County MMRP Manager

Impact BR-1: Construction activities could affect resident and special-status aquatic species and their habitat.

Mitigation Measure BR-1a: Remove fish from instream work areas and divert flows.

No equipment will be operated in a live stream. Gemmill Gulch and any other perennially flowing streams will be diverted before operating equipment to excavate in the channel and/or place culverts and rock slope protection. Prior to stream diversion, the work area will be isolated from the rest of the stream by permeable fencing materials. A qualified biologist shall salvage and relocate all aquatic life, including fish, and place them upstream or downstream outside of the fenced area. The instream diversion structure shall be installed by hand and shall direct flows into a culvert, pipe, or hose to be pumped or gravity-fed around the work area. The biologist shall check the worksite daily for stranded aquatic life until dewatering is complete.

Implementation: The contractor will install and remove water diversions. The County or contractor will hire a biologist to conduct salvage and relocation, and to monitor in-stream work.

Timing: During construction

Effectiveness Criteria: No aquatic organisms killed or injured during construction.

Verified By: _____ Date: _____
County MMRP Manager

Mitigation Measure BR-1b: Prevent impedance of fish passage.

The County will be responsible for designing the culverts to accommodate hydraulic function, including, but not limited to, incorporating the measures listed below into the design. The contractor will be responsible for installing culverts in accordance with the specifications of those designs. The contractor will also be responsible for installing them by mid-November, or earlier as specified by the National Marine Fisheries Service (NMFS) or CDFW, to accommodate fish passage. The following measures will be implemented:

- Any new or previously excavated gravel material placed in the channel will meet Caltrans' Gravel Cleanliness Specification #227 with a value of 85 or higher indicating the relative proportions of clay-sized material clinging to coarse aggregate and screenings. Gravel would also be completely free of oils, clay, debris, and organic material.
- Prior to mid-November (or earlier as specified by NMFS or CDFW), culverts will be in place and fully functional and all equipment and temporary construction materials removed from the stream. No structure or fill shall be left where it could become a barrier to the free passage of water or the movement of fish and aquatic animals between mid-November and June 15 or after construction is complete.
- To the extent feasible, culverts will be designed to mimic natural stream processes, such that sediment transport and flood and debris conveyance occur as they would in a natural channel, consistent with the Stream Simulation Design Method. Fish passage design will be a priority

for perennial tributaries because they have the greatest potential to affect habitat connectivity. Culverts at each perennial tributary (except Gemmill Gulch) will be designed to meet the need for sediment transport, flood, and debris conveyance and will include measures to protect fish passage to the extent possible. This means that culverts will be a minimum of 3 feet in diameter and that they will be installed at the same gradient as the stream in which they are placed. Where conditions preclude embedment measures, downspouts, outlet protection, or energy dissipaters will be designed and installed to prevent changes in channel elevation below the culvert that could exceed the maximum allowable hydraulic drop.

- Hydraulic drops between the water surface in the culvert and the water surface at the culvert inlet and outlet of the adjacent channel should be avoided. Where a hydraulic drop is unavoidable, its magnitude should be evaluated for both high design flow and low design flow and will not exceed 1 foot under the high flows for adult fish or 6 inches under the low flows for juvenile fish. If a hydraulic drop occurs at the culvert outlet, a jump pool of at least 2 feet deep should be provided.
- Consistent with the Hydraulic Design method (excluding the determination of high and low fish passage designs), fish passage at Gemmill Gulch will meet the following: (1) minimum culvert width will be 3 feet; (2) culvert slope will not exceed the slope of the stream; and (3) if physically possible, the bottom of the culvert will be buried into the streambed a minimum of 20 percent of the height of the culvert below the elevation of the tail-water control point downstream of the culvert.

Implementation: The County will design culverts with consideration for the above measures.

Timing: During design

Effectiveness Criteria: A set of plans showing fish passage and flood conveyance for all culverts, and supporting hydrologic analysis shall be kept in the project files. Design incorporated into the project plans and specification. Goal is unimpeded passage through culverts for fish and other aquatic organisms.

Verified By: _____ **Date:** _____
County MMRP Manager

Implementation: The contractor will install the culverts according to the plans.

Timing: During construction

Effectiveness Criteria: Properly sized and aligned culverts with no hydraulic drops.

Verified By: _____ **Date:** _____
County MMRP Manager

Mitigation Measure BR-1c: Conduct preconstruction surveys for special-status herpetofauna and implement avoidance measures.

The County or its contractor will implement the following measures to avoid or minimize project-related impacts on foothill yellow-legged frogs, tailed frogs, and western pond turtles:

- Any project activities in perennial streams or adjacent riparian habitat will be preceded by a preconstruction survey conducted by a qualified biologist within the stream and adjacent riparian habitat in the project area. Surveys will be conducted within 24 hours of any instream construction (including diversion installations) or riparian vegetation removal. If a foothill yellow-legged frog, tailed frog, or western pond turtle is found, the qualified biologist will move the animal to habitat either up or downstream of the project area. Monitoring and species removal shall continue daily until the work area is dewatered or in-stream and riparian zone construction is complete.
- To the extent feasible, vegetation removal and grading activities within 660 feet of aquatic habitat should be scheduled outside the western pond turtle nesting period (March-August). If this is not feasible, a preconstruction survey will be conducted by a qualified biologist within 2 weeks prior to construction to locate western pond turtle nests. This survey will be conducted within 660 feet of aquatic habitat in riparian and upland areas that provide nesting habitat for western pond turtle. If a pond turtle nest is found, the biologist will flag the site and determine whether construction activities can avoid affecting the nest. In consultation with CDFW, a no-disturbance buffer zone may be established around the nest until the young have left the nest or the nest may be excavated and re-buried at a suitable location outside of the construction impact zone by a qualified biologist.
- If a foothill yellow-legged frog, tailed frog, or western pond turtle is encountered during instream or riparian zone activities, work in the vicinity will cease until appropriate corrective measures have been implemented (e.g., relocation of the animal by a qualified biologist) or it has been determined that the frog or turtle will not be harmed. Any trapped, injured, or killed frogs or turtles will be reported immediately to the CDFW.

Implementation: The County or contractor will retain a biologist for preconstruction surveys, and the contractor will implement measures to protect special-status species.

Timing: Prior to and during construction

Effectiveness Criteria: Reports by the consulting biologist documenting monitoring. No aquatic species injured or killed during construction.

Verified By: _____ Date: _____
County MMRP Manager

Impact BR-2: Construction activities could adversely affect special-status birds and mammals that nest or breed in the project area.

Mitigation Measure BR-2a: Minimize noise and tree removal and implement limited operating periods for nesting birds and special-status mammals.

The construction contractor will implement the following measures to avoid or minimize impacts on nesting birds and special-status mammals during construction activities:

- All construction equipment will be properly muffled.
- Tree removal will be minimized. Large snags and old-growth trees that are not within the project limits and that do not pose a risk to the safety of motorists will be avoided, to the extent feasible.
- Vegetation removal will be scheduled to avoid the breeding/nesting or denning seasons listed below to the extent practicable. If the breeding/nesting or denning season cannot be avoided, preconstruction and protocol-level surveys will be conducted as described in subsequent measures. If no nesting birds or special-status mammals are observed, trees and other vegetation may be removed without seasonal restrictions. Surveys for nesting birds and special-status mammals will be repeated each year if construction activities commence in subsequent years during the nesting or breeding period.
 - Northern spotted owl: February 1 to July 31
 - Other nesting birds: February 15 to August 31
 - Pacific fisher and ring-tailed cat: March 1 to July 31

Implementation: The County will put these conditions in the project specifications. The contractor will implement measures to protect special-status species.

Timing: During design and construction

Effectiveness Criteria: No trees removed during the nesting season without documentation of surveys by a biologist.

Verified By: _____ **Date:** _____
County MMRP Manager

Mitigation Measure BR-2b: Conduct preconstruction surveys for nesting raptors and other birds.

The County will retain a qualified biologist to conduct surveys during the nesting season. The construction contractor will implement avoidance measures if birds are nesting in or near the project area. Survey requirements and avoidance measures include the following:

- If construction is to occur during the breeding season, a qualified biologist will conduct preconstruction surveys of the project area and a surrounding 250-foot buffer (where accessible) for raptors and migratory birds 2 weeks prior to the initiation of construction in any given area to ensure that no nests will be disturbed during project implementation.

Surveys may be conducted concurrently with other required preconstruction surveys for special-status species.

- If an active nest more than half completed is found, a construction-free buffer zone will be established around the nest until nestlings have fledged or breeding has failed based on field verification by a qualified biologist. The size of the buffer zone will be determined by a qualified biologist in consultation with CDFW. If no active nests are identified, no further mitigation is necessary.

Implementation: The County or Contactor will retain a biologist for preconstruction surveys, the biologist will conduct the surveys and the contractor will implement measures to protect special-status species.

Timing: Prior to and during construction

Effectiveness Criteria: Biologist's reports will be retained in the project file. Goal is no bird mortality or abandonment of fledglings during construction.

Verified By: _____ Date: _____
County MMRP Manager

Mitigation Measure BR-2c: Conduct preconstruction surveys for nesting northern spotted owls.

The County or contractor will retain a qualified biologist to conduct protocol-level surveys for northern spotted owl. Survey requirements and avoidance measures include the following:

- Construction activities that will generate sound levels ≥ 20 decibels above ambient sound levels or sound levels > 90 decibels, such as blasting, within 330 feet of nesting/roosting habitat for northern spotted owls will be conducted between August 1 and January 31, outside the spotted owl nesting season. If schedule restrictions are not feasible, construction may occur during the nesting/breeding season if protocol-level surveys reveal no active nest sites within 330 feet of the construction area (actual footprint of ground-disturbing activities). The County shall retain a qualified biologist to conduct protocol-level surveys for northern spotted owl following the U.S. Fish and Wildlife Service (2011) *Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls* or current USFWS Protocol. The protocol requires six surveys between March and August for 2 years prior to construction and should be scheduled no more than 2 years in advance of the anticipated construction season. Year 2 surveys will be completed the summer/fall prior to construction, so construction may commence the following spring/summer. Surveys will be phased and would be completed only along the segment proposed for construction. The surveys will be used to detect northern spotted owls in the project area and should be conducted in the delineated functional habitats within 330 feet of the project area (North State Resources, Inc. 2013b; U.S. Fish & Wildlife Service 2013). If an owl or pair of owls is observed, the biologist should determine if an active nest site is located nearby. If a nest site is observed, the following restrictions will be in place around the site until the young have successfully fledged:

- Between February 1 and July 31, no activities allowed within 330 feet of the nest site that cause noise above 90 A-weighted decibels.
- Between March 1 and July 31, no activities allowed within 650 feet of the nest site that involve nighttime construction (0.5 hour before sunset to 0.5 hour after sunrise).
- If no surveys have been conducted, or if owls have been detected, then no blasting shall occur within 0.25 mile of suitable nesting/roosting habitat between March 1 and September 30. If no nests are observed, the restrictions will not be necessary.

Implementation: The County will retain a biologist for preconstruction surveys, and the contractor will implement measures to protect special-status species.

Timing: Prior to and during construction

Effectiveness Criteria: Biologist reports on spotted owl surveys will be kept in the project file. Goal is no mortality of northern spotted owls or abandonment of fledglings during construction.

Verified By: _____ **Date:** _____
County MMRP Manager

Mitigation Measure BR-2d: Conduct surveys for denning Pacific fisher and ring-tailed cat.

The County will retain a qualified biologist to conduct surveys during the breeding season for Pacific fisher and ring-tailed cat. The construction contractor will implement avoidance measures if a potential den tree is discovered in or near the project area. Survey requirements and avoidance measures include:

- If vegetation removal is to occur during the breeding season (March 1 through July 31), a qualified biologist will survey for potential natal or maternity den trees using stand search techniques within areas slated for vegetation removal and within 375 feet of the vegetation removal area no more than 2 weeks before construction activities begin. No potential den trees will be felled within the natal denning period between March 1 and May 15. Female fishers move kits from one maternal den to another to minimize potential threats from predation and disturbance; vegetation removal is a disturbance that would cause a fisher to move her kits. During the maternal denning period (May 16 through July 31), trees that have maternal den characteristics will be retained until the day after all other trees within a 375-foot-radius have been felled.
- If no potential denning trees are observed within 375 feet of vegetation removal, these restrictions will not be necessary.

Implementation: The County will retain a biologist for preconstruction surveys, and the contractor will implement measures to protect special-status species.

Timing: Prior to and during construction

Effectiveness Criteria: Biologist reports on Pacific fisher and ring-tailed cat surveys will be kept in the project file. Goal is no mortality of Pacific fishers or ring-tailed cats during construction.

Verified By: _____ Date: _____
County MMRP Manager

Mitigation Measure BR-2e: Conduct surveys for pallid bat roosts.

The County will retain a qualified biologist to conduct surveys for potential roost trees for pallid bats and coordinate with the CDFW if necessary. The construction contractor will implement avoidance measures if a potential roost tree is discovered in or near the project area. Survey requirements and avoidance measures include the following:

- If trees greater than 12 inches in diameter or snags are to be removed, a preconstruction survey for roosting bats will be conducted by a qualified biologist no more than 2 weeks prior to vegetation removal during any time of year. If a maternity roost is present, a qualified biologist will determine, in consultation with CDFW, the extent of construction-free zones to be maintained around active nurseries until the mother and young have dispersed.
- If a non-breeding bat hibernaculum is found in a tree or snag scheduled for removal, the individuals will be safely evicted, under the direction of a qualified bat biologist (as determined in consultation with CDFW), by opening the roosting area to allow air flow through the cavity. Removal of the tree or snag will be done no earlier than the following day (i.e., at least one night will be provided between initial disturbance and the demolition). This action will allow bats to leave during dark hours, which increases their chance of finding new roosts with a minimum of potential predation during daylight.

Implementation: The County will retain a biologist for preconstruction surveys, and the contractor will implement measures to protect special-status species.

Timing: Prior to and during construction

Effectiveness Criteria: Biologist reports on pallid bat surveys will be kept in the project file. Goal is no destruction of pallid bat roosts during construction.

Verified By: _____ Date: _____
County MMRP Manager

Impact BR-3: Construction activities could adversely affect plant and animal species designated as Forest Service Sensitive or Survey and Manage.

Mitigation Measure BR-3. Implement measures developed by the Forest Service to minimize effects on Forest Service Sensitive species and manage known sites of Survey and Manage species.

In addition to the measures provided to avoid and minimize effects on special-status aquatic and terrestrial species, the Forest Service will identify project-specific avoidance and mitigation measures to reduce effects on Forest Service Sensitive and Survey and Manage species that have the potential to occur in the project area. Measures prescribed by the Forest Service may include presence/absence

surveys, habitat preservation measures, or management recommendations for Survey and Manage species (e.g., avoid known sites). Habitat preservation measures include limiting ground disturbance and soil compaction; conservation of favorable temperature and moisture conditions, herbaceous plants that are important as food, litter, large downed wood, decaying plant matter, and talus rock; avoidance of herbicides, pesticides, and other chemicals; and control of non-native plants and animals.

Implementation: The County will consult with the Forest Service and incorporate Forest Service measures into project design, and the contractor will implement construction measures identified by the Forest Service to protect special-status species.

Timing: Prior to and during construction

Effectiveness Criteria: Documentation of consultation with Forest Service, and a list of their recommendations, will be kept in the project file. Goal is minimal impact to habitat for survey and manage species.

Verified By: _____ Date: _____
County MMRP Manager

Impact BR-4: Construction activities could result in a temporary or permanent loss of riparian habitat.

Mitigation Measure BR-4a: Minimize removal of riparian habitat and restore similar habitat in nearby areas.

The County will design the project to minimize impacts on riparian vegetation by incorporating the measures listed below. The construction contractor will avoid and minimize impacts on riparian trees and implement restoration practices. Measures to reduce impacts on riparian vegetation include, but are not limited to, the following:

- The width of the construction disturbance zone within the riparian habitat will be minimized through careful preconstruction planning.
- Exclusionary fencing will be installed along the boundaries of all riparian areas to be avoided to ensure that impacts to riparian vegetation outside of the construction area are minimized.
- Equipment and materials will be stockpiled outside of riparian habitat.
- Impacts to herbaceous cover will be offset by reseeding any affected areas, including unvegetated areas, with a suitable seed mixture post construction.
- Where possible, temporary impacts on woody riparian vegetation should be minimized by trimming trees and shrubs rather than removing entire woody plants or by cutting trees or shrubs at least 1 foot above ground level to leave root systems intact and allow more rapid regeneration following construction.

- Revegetation to mitigate for permanent impacts will occur in areas suited for restoration or enhancement to help ensure that no net loss of riparian habitat function and value occurs within the project area.
- Riparian habitat areas temporarily disturbed will be replanted using riparian species that have been recorded along Hayfork Creek in the project area, including white alder, big-leaf maple, arroyo willow, narrowleaf willow, American dogwood, Sierra plum, and western choke cherry.
- Onsite creation/restoration of riparian habitat will occur in riparian areas disturbed during project construction and the amount of habitat created/restored will be at a 3:1 ratio of new plantings per each large woody plant removed that is greater or equal to 6 inches diameter at breast height. These replanting ratios will help ensure successful establishment of at least one vigorous plant for each large woody plant removed to accommodate the project, which shall be the success standard 5 years after construction is complete in each segment.
- Plant spacing intervals will be determined as appropriate based on site conditions following construction.
- Non-native tree species removed from riparian areas during project construction will be replaced with native riparian species.

Implementation: The County will design the project to minimize loss of riparian habitat, and the contractor will implement construction measures to protect riparian habitat.

Timing: During design and construction

Effectiveness Criteria: Project plans will show project footprint and location of exclusionary fencing and stockpile areas. A specific riparian restoration plan, requiring at least 3:1 replacement of riparian vegetation will be kept in the project file. The final effectiveness criteria for the replanting will be at least one vigorous plant for each large woody plant removed to accommodate the project,.

Verified By: _____ Date: _____
County MMRP Manager

Mitigation Measure BR-4b: Create, restore, or enhance riparian vegetation to compensate for the permanent loss of riparian vegetation in Segment 1.

The County will develop a restoration plan that will describe the specific restoration criteria and methods for the replacement of permanently lost riparian habitat in Segment 1. A suitable restoration site will be identified in the plan and selected by the County in coordination with the respective land owner (e.g., Forest Service or a private land owner). The site will be within or near the project area and will be along Hayfork Creek in riparian areas devoid of riparian vegetation or in degraded or disturbed riparian areas as determined by a qualified biologist. The plan will also describe restoration requirements for Segments 2 and 3, as outlined in Mitigation Measure BR-4a. The success standard

required by the plan at the end of 5 years of annual monitoring will be a minimum of one living riparian tree per each riparian tree greater or equal to 6 inches diameter at breast height that is removed by the project.

Implementation: The County will develop and implement a restoration plan for loss of riparian habitat.

Timing: Prior to and after construction

Effectiveness Criteria: The riparian restoration plan, requiring at least 3:1 replacement of riparian vegetation will be kept in the project file. The final effectiveness criteria for the replanting will be at least one vigorous plant for each large woody plant removed to accommodate the project.

Verified By: _____ Date: _____
County MMRP Manager

Impact BR-5: Construction activities could result in placement of fill material into waters of the United States and disturbance of wetlands.

Mitigation Measure BR-5: Compensate for the loss of waters of the United States in accordance with permit conditions provided by the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife.

The County will design each segment to minimize the discharge of fill material into waters of the United States. The County will apply for the appropriate permits from the U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Wildlife (CDFW) and will comply with the conditions of each respective permit. As applicable, the contractor will comply with the permit conditions. The County or its construction contractor will implement the following measures to avoid and minimize effects on waters of the United States:

- To the extent practicable, the design of each segment would consider waters of the United States and would minimize the discharge of dredged or fill material into these features.
- Prior to any discharge of dredged or fill material into waters of the United States, including wetlands, the County will obtain appropriate authorization from the Corps (CWA Section 404 nationwide or individual permit) and the RWQCB. (CWA Section 401 water quality certification).
- Prior to any activities that would obstruct the flow of or alter the bed, channel, or bank of any perennial, intermittent, or ephemeral creeks, the County will notify the CDFW of the alteration, and, if required, the CDFW would issue a Streambed Alteration Agreement.
- Any monitoring, maintenance, and reporting required by the regulatory agencies (i.e., Corps, RWQCB, and CDFW) will be implemented and completed. All measures contained in the permits or associated with agency approvals will be implemented.

- Impact on wetlands will be compensated at a ratio specified by the U.S. Army Corps of Engineers. Compensation of the loss of wetlands would be completed through on-site creation, restoration, enhancement, and/or preservation unless off-site mitigation is feasible and preferred by the Corps.
- Exclusionary fencing will be installed to mark the boundaries of all streams and wetlands that will be avoided. The fencing will be maintained throughout construction and pedestrian or vehicular entry will be prohibited during construction.
- Construction activities that will affect waters of the United States will be conducted during the dry season to minimize erosion.
- Appropriate sediment control measures to protect avoided waters of the United States will be in place prior to the onset of construction and will be monitored and maintained until construction activities have ceased. Temporary stockpiling of excavated or imported material will occur only in approved construction staging areas. Excess excavated soil will be used on site or stockpiled in an upland area and stabilized to prevent erosion into waters of the United States. Temporary stockpiles that are to remain on the site through the wet season will be protected to prevent erosion (e.g., silt fences, straw bales, covers).

Implementation: The County will design the project to minimize impacts to wetlands and other waters, submit applications for required permits, and prepare a compensatory mitigation plan to compensate for wetland impacts at the ratio specified by the Corps. The contractor will implement construction measures to minimize impacts on wetlands and other waters.

Timing: Prior to and during construction

Effectiveness Criteria: Copies of all permit applications and mitigation plan to be kept in the project file. Goal is no net loss of waters of the United States.

Verified By: _____ Date: _____
County MMRP Manager

Impact BR-6: Construction activities could introduce noxious weeds or modify habitats in the project area in a manner that would displace native plant species and increase the spread of invasive plant species.

Mitigation Measure BR-6: Implement construction measures to prevent the spread of invasive plants.

The County will require the contractor to implement the following measures to prevent the spread of invasive species in the project area:

- All equipment used for off-road construction activities will be weed-free prior to entering the project area.
- If project implementation calls for mulches or fill, they will be weed free.

- Any seed mixes or other vegetative material used for revegetation of disturbed sites will consist of locally adapted native plant materials to the extent practicable.

Implementation: The County Engineer will include the requirements in the project specifications. The contractor will implement measures to prevent the spread of invasive plants.

Timing: During design and construction

Effectiveness Criteria: Measures will be included in the project specifications. Goal is to have no noxious weeds on the project site after construction.

Verified By: _____ Date: _____
County MMRP Manager

Impact CR-1: Construction activities could disturb or damage previously undiscovered historical or archaeological resources or human remains.

Mitigation Measure CR-1a: Coordinate with the local Native American tribes prior to construction.

The County shall consult with members of the Nor-El-Muk Nation and the Wintu Education and Cultural Council before construction begins for each segment. They will be notified of the construction schedule for each segment and invited to visit the project area to view the project limits. If construction is to occur in areas considered by the Nor-El-Muk Nation or Wintu Cultural Council to be likely to contain burials or other archeological resources, then the Nation or Council may assign a representative to monitor construction in that vicinity under the provisions of a Memorandum of Agreement between the County and the Nor Rel Muk Wintu Nation. The physical limits of the areas to be monitored will be established in consultation with Nation and Council representatives prior to the commencement of construction. Contact numbers for a professional archaeologist under contract with the County, the STNF archaeologist, and the Caltrans archaeologist will be on file with the construction supervisor, Native American monitor, and other responsible individuals during construction. These individuals shall be contacted in the event resources are uncovered during construction.

Implementation: The County will include the measures in the specifications and consult and coordinate with Native American tribes, and the contractor will work with a monitor, if needed, during construction.

Timing: Prior to and during construction

Effectiveness Criteria: The mitigation provisions will be included in the specifications, and consultation with the Tribe will be in the file. Goal is the protection and appropriate handling of any unexpected historical or archaeological resources found during construction.

Verified By: _____ Date: _____
County MMRP Manager

Mitigation Measure CR-1b: Implement treatment measures and record previously undiscovered resources.

In the event that previously unidentified cultural resources are encountered during construction, all work in the immediate vicinity of the find will be halted, and the materials will be left untouched. The Trinity County Project Engineer, the STNF archaeologist the County's archaeologist and the Caltrans archaeologist shall be notified immediately. At least one of these qualified archaeologists shall evaluate the find to determine its historical or archaeological significance. If the find is determined to be a significant historical or archaeological resource, the archaeologist shall make recommendations for appropriate mitigation. Any cultural resources discovered during construction will be recorded according to accepted contemporary standards and evaluated to determine their eligibility for listing on the NRHP and CRHR. Impacts on the resources, if any, will be evaluated, and specific treatment measures will be identified in consultation with the State Historic Preservation Officer, Caltrans, and the Forest Service to determine the appropriate course of action if eligible resources would be adversely affected. Specific measures may be implemented to reduce adverse impacts, such as data recovery and curation of recovered materials or protection in place by avoiding the resource. Work in the area shall not resume until the mitigation measures have been implemented.

Implementation: The contractor will comply with cultural resources protection measures, and the County will consult with others and retain a qualified archaeologist to implement treatment measures if necessary.

Timing: During construction

Effectiveness Criteria: The mitigation provisions will be included in the specifications, and consultation with the Tribe will be in the file. Goal is the protection and appropriate handling of any unexpected historical or archaeological resources found during construction.

Verified By: _____ **Date:** _____
County MMRP Manager

Mitigation Measure CR-1c: Implement treatment measures for human remains.

In the event that previously unidentified evidence of human burial or human remains are discovered, all work in the immediate vicinity of the find will be halted, and the remains will be left untouched. The STNF archaeologist and County coroner will be notified immediately, and the Forest Service or Trinity County will notify local Native American tribes and the Native American Heritage Commission, as appropriate. Discoveries on federal lands are subject to the Native American Graves Protection and Repatriation Act. The ancestry of the remains will be determined if feasible with minimal disturbance of the remains by the coroner or a qualified archaeologist. All human remains and associated burial artifacts encountered will be protected and assessed in a respectful and dignified manner. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of such identification. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descendent. They will be given an opportunity to make recommendations for means of treatment of the human remains and any associated grave goods. If removal is necessary, it will be undertaken with a Native

American representative present (if appropriate), and the remains will be treated according to the provisions set forth in Section 7050.5 of the California Health and Safety Code and Section 5097.98 of the California Public Resources Code. Work in the area shall not continue until the human remains are protected or removed according to the recommendations of the County coroner, Native American Heritage Commission, and/or the most likely descendent.

Implementation: The contractor will comply with human remains protection measures, and the County will consult with others and implement treatment measures if necessary.

Timing: During construction

Effectiveness Criteria: The mitigation provisions will be included in the specifications, and consultation with the Tribe will be in the file. Goal is the protection and appropriate handling of any unexpected historical or archaeological resources found during construction.

Verified By: _____ **Date:** _____
County MMRP Manager

Impact HW-1: Construction activities could discharge pollutants or sediment into Hayfork Creek.

Mitigation Measure HW-1a: Implement water quality control measures during construction.

The construction contractor will be responsible for implementing BMPs identified in the project SWPPP. In addition, the County or its contractor will develop an erosion control plan in compliance with Forest Service Standards and Guidelines that identifies specific practices or techniques incorporated into the project design to minimize erosion. The BMPs outlined in the SWPPP shall be implemented during all phases of construction and will include, but not be limited to, the measures identified in the project description in combination with the following:

- Riparian and vegetative coverage shall only be minimally removed near drainages and stream road crossings during construction to prevent potential temperature increases in the streams and other water bodies. Cleared areas will be revegetated immediately following construction and before predicted rains or the rainy season.
- Temporary erosion and sediment control structures must be in place and operational at the end of each construction day during the rainy season or when rain is forecast and maintained until disturbed ground surfaces have been successfully revegetated.
- A specified buffer will be established between staging areas and stream banks or riparian areas. Sedimentation fencing or erosion and sediment control measures will be installed between staging areas and streams to avoid sediment and pollutant discharges to creeks. Riparian vegetation shall not be removed for staging purposes.

- Maintenance and refueling areas for equipment will be located a minimum of 100 feet away from the active stream channel. If equipment must be washed, washing will occur where the water cannot flow into the creek channel.
- Major ground-disturbing activities will be completed during the dry season (i.e., May 1 to November 15) to avoid stormwater sedimentation and turbidity effects to Hayfork Creek and its tributaries. Major ground-disturbing activities may occur outside the defined dry season based on a forecast of dry weather and permission from the appropriate regulatory agencies. Ground-disturbing activities will not take place when the soils are saturated.
- All instream work will be conducted from the top of the bank or existing road surface where feasible. Instream work will require the preparation of a dewatering plan.
- The construction contractor will keep on site at all times straw bales, straw wattles, silt fencing, or other similar sediment-control materials. Exposed soils will be covered with erosion blankets, straw, hydromulch, or similar ground-covering materials as soon as feasible to control wind and water erosion of exposed soils and prevent erosion and sedimentation.
- Spill containment booms will be maintained on site at all times during construction operations and/or staging or fueling of equipment.

Implementation: The water quality control measures will be in the project specifications and the contractor will be required to implement them.

Timing: During design and construction

Effectiveness Criteria: Evidence of compliance will be the measures in the specifications and implemented on the project. The goal is no discharge of sediment or toxic material into surface waters.

Verified By: _____ **Date:** _____
County MMRP Manager

Mitigation Measure HW-1b: Implement site-specific erosion control measures.

The County will incorporate site-specific erosion control measures into the project design and identify the measures on construction drawings. The measures will be identified based on the final alignment and design and the soil conditions where extensive cuts into steep slopes or extensive fill is required. In areas of high to very high erosion potential near Hayfork Creek, the following measures will be considered and incorporated into the design, as appropriate:

- minimize the cutslope area and grade the cutslope to no steeper than a 0.5:1 slope,
- use subsoil to stabilize the grade and re-contour disturbed areas,
- grade finished slopes to a stable grade,
- minimize side-cast on the fill slope and end haul excess fill,
- use approved engineered structural fill and compact to standards specified by the engineer,
- use hydromulch with a tackifier to cover cut and fill slopes and revegetate the slopes,
- armor any inboard ditches with coarse rock, and/or

- construct sediment basins on the downslope ends of inboard ditches before water crossings.

Implementation: The County will design the project to incorporate site-specific erosion control measures, and the contractor will implement the measures.

Timing: Prior to and during construction

Effectiveness Criteria: Evidence of compliance will be the measures in the specifications and implemented on the project. The goal is no erosion or discharge of sediment into surface waters.

Verified By: _____ **Date:** _____
County MMRP Manager

Impact HW-3: The proposed project would encroach on the floodplain of Hayfork Creek and could alter flood flows.

Mitigation Measure HW-3: Design road improvements to incorporate flood requirements for drainage structures and floodplain encroachment.

The County will conduct appropriate hydrologic and flood hazard studies to support development of the final design for each segment and ensure that FEMA and Forest Service requirements are followed and adhered to. More specifically, the final design will verify that the 100-year flood elevation is not raised by more than 0.5 foot at and near Post Miles 11.15 and 11.44 and ensure that the design of the drainage structure near Post Mile 5.34 would not result in overbank flooding. The studies shall identify specific design measures relating to the inlet and outlet elevations of the drainage structures, the road elevation, and armoring of the creek or slopes near drainage structure outlets. All drainage structures will be designed using capacity and geometry criteria to accommodate 100-year peak flows. These designs should account for landslide and woody debris potential and would reduce the risk of overbank flooding, degraded water quality, and damage to life and property. The following specific measures for drainage structures will be followed:

- All existing culverts will be replaced with new drainage structures that can accommodate the 100-year peak flow. Culvert sizes will be as recommended by a qualified hydrologist or engineer.
- The inlets of the nine key drainage features should be designed with headwalls and with a beveled edge (1.5:1) to decrease head loss as flow enters the culvert barrel, to protect the fill, and to reduce erosion potential.
- Culverts should be fitted with downspouts, outlet protection, or energy dissipators (energy dissipation structures include rip-rap, drop structures, and sills) to reduce the effects of streambed scour and bank erosion downstream of the culvert outlet.
- The culvert invert should be aligned with the channel bottom and skew angle of the stream.

- The culvert design slope will be based on surveyed measurements of the existing culvert and the channel profile survey. If the culvert is relocated, the final culvert slopes will align with the existing topography based on the profile survey of the stream course.
- Wildwood Road will need to be raised approximately 2.5 feet above its existing grade at Post Mile 5.34 (Gemmill Gulch) and 3.5 feet at Post Mile 11.67 (Gurley Gulch), if the project crosses these gulches, to maintain adequate cover over the drainage structure and to ensure that headwater and flow capacity criteria are met.
- The culverts near Post Mile 10.5 (subwatershed 7) will be replaced with 60-inch culverts with a riser and trash rack, or similar engineered solution, on the inlet of the primary culvert crossing of Wildwood Road. The secondary culvert will need to exit below the existing irrigation pipeline.
- Drainage structures at Post Miles 6.62 (subwatershed 3), 7.27 (subwatershed 4), and 9.05 (subwatershed 6) will include appropriately sized culverts (48-inch at 6.62, 60-inch at 7.27, and 72-inch at 9.05) with risers and trash racks or similar devices to deter debris jams and additional cross-road drains (e.g., ditch relief culverts) on either side of the crossings to prevent sedimentation from ditch runoff and stream flow diversion.

Implementation: The County will design the project to incorporate flood requirements, and the contractor will implement the measures.

Timing: Prior to and during construction

Effectiveness Criteria: Evidence will be appropriate sized culverts installed. Goal is no flooding or backwater effects in a 100-year storm event.

Verified By: _____ Date: _____
County MMRP Manager

Impact GS-3: The proposed project could trigger landslides along Wildwood Road.

Mitigation Measure GS-3: Incorporate slope protection measures into the project design.

During design of each segment, the County will hire a Professional Geologist or Geotechnical Engineer to prepare a landslide mitigation plan that describes the types and locations of slope repairs, surface and subsurface drainage measures, and instrumentation and monitoring requirements. The slope repairs and monitoring will be based on a detailed subsurface exploration that defines the lateral and vertical extents of each landslide that would be disturbed and the probable grading limits.

Landslide stabilization methods fall into three categories:

- geometric methods where the geometry of the hillside is changed;
- hydrogeological methods where the groundwater level is lowered or water is diverted; and
- mechanical methods where the shear strength of the unstable mass is increased using active external forces (e.g., anchors, rock, or ground nailing) or passive techniques (e.g., structural walls or reinforced ground).

Stabilization methods for landslides in the project area that could be incorporated into the mitigation plan include, but are not limited to:

- minimize cut into unstable or potentially unstable slopes;
- grade cutslope to slope;
- minimize side-cast on fill slope and end haul excess fill;
- grade slope geometry to stable shape and install mechanical slope treatments, as needed;
- use hydromulch with tackifier to cover cut and fill slopes;
- construct sediment basins on downslope end of inboard ditch before first water crossing;
- design culverts in locations of active, semi-active, or potentially unstable landslides to convey landslide debris, as necessary; and
- create benches along steep slopes, where appropriate.

Implementation: The County will design the project to incorporate slope protection measures through preparation of a landslide mitigation plan, and the contractor will implement the measures.

Timing: Prior to and during construction

Effectiveness Criteria: The County will prepare and keep on file documentation verifying the implementation of the above referenced measures.

Verified By: _____ Date: _____
County MMRP Manager

Impact HM-1: Construction activities could introduce hazardous materials into the environment and potentially contaminate Hayfork Creek.

Mitigation Measure HM-1: Implement spill containment measures in the event of a hazardous materials spill.

The contractor shall exercise every reasonable precaution to protect streams from pollution resulting from fuels, oils, and other harmful materials. The contractor will be required to have adequate spill containment equipment on hand at all times. All waste petroleum products and empty petroleum product containers will be disposed of properly at a recycling or disposal site legally authorized to accept that type of waste. The Trinity County Environmental Health Department, North Coast RWQCB, and California Emergency Management Agency (CalEMA 800-852-7550) must be notified immediately in the event of a release of significant quantities of hazardous materials. In the event of a release into Hayfork Creek, CDFW must also be notified.

Implementation: The contractor will implement spill containment measures.

Timing: During construction

Effectiveness Criteria: Evidence would be documentation of notification of agencies in the event of a spill. Goal is no discharge of hazardous materials to Hayfork Creek, or appropriate reporting and a quick response if there is an accidental discharge.

Verified By: _____
County MMRP Manager

Date: _____

Impact HM-2: Construction activities could increase the risk of fire hazards along Wildwood Road.

Mitigation Measure HM-2: Implement fire safety and response plans during construction.

The contractor will be required to prepare and implement a fire safety plan for construction operations to prevent and respond to fire. Construction equipment will also be equipped with fire prevention devices (e.g., spark arrestors) pursuant to Public Resources Code 4442. Water and firefighting tools (e.g. shovels, axes, fire extinguishers) will be maintained on site at all times.

The County will coordinate closely with emergency service providers before and during construction. A fire response plan will be developed in coordination with the Forest Service, Hayfork volunteer fire district, Trinity County Sheriff's Office, and others as appropriate. The plan shall establish lines of communication so that the construction crew receives notification of the need to open the road prior to the arrival of emergency vehicles at the work area, if possible. Procedures will also be established to keep emergency service providers advised of the location of construction crews, the activities going on at the time, and the estimated time to clear the road for each activity in each segment. The emergency service providers will use this information to determine the fastest way to reach an emergency site under the circumstances occurring at the time of an emergency.

Implementation: The contractor will prepare and implement a fire safety plan, and the County will coordinate with emergency service providers and prepare a fire response plan.

Timing: Prior to and during construction

Effectiveness Criteria: Evidence of compliance will be the written plans. Goal is to have no fires on site, or a quick response to fires on site, and no delay for emergency vehicles responding to a fire.

Verified By: _____
County MMRP Manager

Date: _____