4.3 HYDROLOGY/WATER QUALITY

4.3.1 ENVIRONMENTAL SETTING

This section describes the existing hydrological resources within the project area. A Flood Study has been prepared for the proposed project (Pacific Hydrologic, Inc. 2002) and is available for public review as described in Section 2.7 of this EIR.

REGIONAL HYDROLOGY

The project area is located within the watershed of Hayfork Creek, tributary to the South Fork of the Trinity River. The Trinity River, which is the largest tributary to the Klamath River, drains an area of approximately 2,965 square miles (USFWS *et al*., 2000). The project area is drained by Hayfork and James Creeks. James Creek joins Hayfork Creek at approximately Station 125 in the eastern portion of the project area and Hayfork Creek joins the South Fork of the Trinity River at Hyampom, approximately 19 km (12 miles) east of the project area. Hayfork Creek drains approximately 300 square miles from Hayfork Summit and Hoossimbim Mountain west through Hayfork Valley and the Hyampom Gorge. Elevations in the watershed above the project site range from approximately 2200 feet near the project site to approximately 5900 feet along the eastern boundary of the watershed. Average annual precipitation ranges from approximately 40 inches in Hayfork to approximately 55 inches in Hyampom and the southern portion of the drainage basin. The majority of the basin is covered by mixed conifer forest with fair to good soil cover.

REGIONAL SURFACE WATER QUALITY

As characterized in the Water Quality Control Plan for the North Coast Region (NCRWQCB 1996), the beneficial uses of the Hayfork Creek and the South Fork Trinity River include municipal, agricultural, and industrial water supply, groundwater recharge, contact and non-contact recreation, commercial fisheries, cold freshwater fish habitat, and wildlife habitat. The South Fork Trinity River is included on California's Clean Water Act Section 303(d) list as water quality limited due to sediment. The sedimentation in the South Fork Trinity River watershed is judged to exceed the existing Water Quality Standards necessary to protect the beneficial uses of the basin, particularly the cold-water fishery. Accelerated erosion from land use practices and natural sources impacts the migration, spawning, reproduction and early development of cold-water fish. High temperatures were also identified as sources of impairment. (U.S. EPA 1998).

Section 303(d) of the Clean Water Act requires that the U.S. Environmental Protection Agency (EPA) establish Total Maximum Daily Loads (TMDL) for waters that are judged to be impaired. The TMDL is a plan to achieve water quality standards by describing an appropriate loading capacity for the water body. The EPA completed the *South Fork Trinity River and Hayfork Creek Sediment Total Maximum*

Daily Loads in December 1998 (EPA 1998). Prior to the formal TMDL development process, a group of local stakeholders and government agency representatives formed the South Fork Trinity River Coordinated Resource Management Plan (CRMP) to work together to make improvements in the basin.

A sediment source analysis was developed as part of the TMDL. The dominant sediment generating process in the basin is mass wasting (landsliding and debris flow). Most of the mass wasting sediment delivery is from natural causes. Hayfork Creek produces less sediment than the South Fork Trinity, but is more influenced by road-related erosion than by natural mass wasting. Road-related sediment delivery has continued to increase from 1944 to the present time. (EPA 1998).

Past and present land use practices have accelerated natural erosion processes in the South Fork Trinity River basin. Following the December 1964 flood, landslides and debris flows delivered considerable quantities of sediment to the stream channel, resulting in formation of river deltas, channel aggradation and widening, decreased depths and loss of pools, and increases in fine sediments in the bed material. Logging in the 1960's probably exacerbated the effects of the 1964 flood. Continued sediment delivery is found in many areas, particularly where large-scale forest fires have further exacerbated the problems. In addition, chronic inputs of sediment from roads as well as episodic inputs from washouts and mass wasting continue. (EPA 1998).

The South Fork Trinity River from Forest Glen to the mouth is designated as a component of the Wild and Scenic Rivers System, protected by the Wild and Scenic Rivers Act (PL 90-542, as amended). The primary management objective for wild and scenic rivers is enhancement and maintenance of the "outstanding remarkable values" for which the rivers were designated. The South Fork is designated as a Recreation segment of the System where it flows through Hyampom. Portions upstream and downstream of Hyampom are designated either "wild" or "scenic". Hayfork Creek is not designated as a component of the Wild and Scenic River System, and no portion of the proposed project is located within the quarter-mile management area of the wild and scenic portion of the South Fork Trinity River.

Primary responsibility for water quality protection rests with the North Coast Regional Water Quality Control Board (RWQCB). Now that the U.S. EPA has completed the TMDL, the RWQCB will be required to develop an implementation and monitoring plan that will regulate land uses that may impact water quality. In addition, the RWQCB prepares and implements the Water Quality Control Plan, which is intended to provide "a definitive program of actions designed to preserve and enhance water quality and to protect beneficial uses of water in the north coast region." The plan establishes specific temperature objectives for the Trinity River and references an existing cooperative management program for operation of the Trinity Division of the State Water Project, a mitigation program designed to protect and restore the river. The basin plan establishes specific objectives for water quality, summarized as follows:

- Free of coloration
- No increase in turbidity exceeding twenty percent above naturally occurring background levels
- No taste or odor-producing substances
- No floating material
- No substances which cause deposition of materials
- No increase in suspended sediment load and suspended sediment discharge
- No toxic substances in concentrations that are harmful
- No biostimulatory substances.

REGIONAL GROUNDWATER SUPPLY AND QUALITY

There are no known major groundwater aquifers in the project area. The porous recent alluvial deposits along the Trinity River and other waterways in the vicinity are recharged by surface water flows in these streams and are frequently tapped for domestic water supplies. Most useable groundwater in the Trinity River Watershed occurs in scattered relatively flat alluvium-filled basins adjacent to waterways, such as the Hayfork and Hyampom Valleys. These areas contain minimal amounts of recoverable groundwater. Groundwater withdrawals from the Trinity River Basin in 1990 were approximately 5,000 acre-feet (USFWS, 2000).

In upland areas with steep terrain, such as the project site, the availability and quality of groundwater is highly dependent on site-specific geologic conditions. Unlike alluvial aquifers, which have extensive interconnected pore spaces, hard rock areas have little to no primary porosity; openings are developed through fracturing, faulting, or weathering of the relatively impermeable rock mass, and openings, or zones of openings, are typically narrow, linear features within the larger geologic structure. Folding and faulting of rock units can create complex groundwater systems.

Predictions of the location of groundwater-bearing openings, flow systems, recharge, and discharge is extremely difficult. However, contacts between different rock types, faults, solution channels and caves in carbonate rocks, joint systems, and deeply weathered soils are some of the more common features yielding groundwater in fractured bedrock. These generally linear features may vary from five to 50 feet in width, and in length to hundreds of thousands of feet. Water yields within a given linear feature vary with the size of the opening penetrated by a well; well yields in such lineations can range from five to 20 gallons per minute (gpm).

FLOODING

Hayfork Creek is a large, steep mountain stream with numerous exposures of rock. Adjacent to the project, Hayfork Creek flood flows are confined by steep valley walls and flood characteristics are

substantially established by geologic controls. There are no structures along Hayfork Creek within or near the project reach. The last significant flood peak in Hayfork Creek occurred on December 31, 1996 during the storm and flood event commonly known as the flood of January 1, 1997. High water marks from this flood are still evident. Stream gage records indicate the peak flow of this flood was very close to a 10-year flood. (Pacific Hydrologic, 2002).

The 100-year floodplain at the project site has not been mapped by the Federal Emergency Management Agency using detailed study methods. A site-specific Flood Study was preformed to estimate the potential volume in cubic feet per second (cfs) and the elevation in feet above mean sea level of the 50-year and 100-year flood peak flows in Hayfork Creek. Adjusted data from the South Fork Trinity River gauge near Hyampom was used to estimate the peak flows. A HEC-RAS backwater model was prepared to represent flood profiles under existing conditions, using recently surveyed cross-sections of the channel. Once prepared, the high water marks observed in the field from the 10-year event in 1997 were compared to the water surface elevations predicted by the model for the 10-year flood, and found to match reasonably well. (Pacific Hydrologic 2002).

4.3.2 PLANNING DOCUMENT GOALS, OBJECTIVES, AND POLICIES

TRINITY COUNTY GENERAL PLAN LAND USE ELEMENT

The Trinity County General Plan Land Use Element contains the following finding related to hydrology and water quality for the Hyampom Planning Area:

- Ground water resources should be protected.

TRINITY COUNTY GENERAL PLAN OPEN SPACE AND CONSERVATION ELEMENTS

The Trinity County General Plan Open Space and Conservation Elements contain the following objective and recommendation related to hydrology and water quality that are applicable to the proposed project:

- Objective: To preserve the quantity and quality of the existing water supply in Trinity County and adequately plan for the expansion and retention of valuable water supplies for future generations.
  - Recommendation: Disapprove of any developments that may pollute the existing streams and lakes or become a source of silt which washed down into the water areas.

TRINITY COUNTY GENERAL PLAN SAFETY ELEMENT

The Trinity County General Plan Safety Element contains the following applicable goals, objectives, and policies related to hydrology and water quality:

- S.2 Flood Hazard Goal: Reduce hazards within Trinity County resulting from floods.
- S.2.1 Objective: Reduce loss of life and property by establishing development standards for areas subject to flooding.
    - Policy A. Require all development to meet federal, state, and local regulations for floodplain management protection; including the encouragement of upgrading existing structures to meet adopted standards.
    - Policy B. Require all development to meet the development standards of the National Flood Insurance Act regulations in Title 44 of the Code of Federal Regulations, Section 60.3, as implemented through the County Zoning Ordinance Section 29.4.
    - Policy D. The County's Disaster Response Plan should include procedures to protect the public from flooding hazards.
    - Policy E. Maintain or return to Open Space lands subject to flooding.
- S.3.3 Objective: Ensure water quality.

TRINITY COUNTY REGIONAL TRANSPORTATION PLAN

The Trinity County Regional Transportation Plan contains the following goals, objectives, and policies related to hydrology and water quality impacts of the proposed project:

- Goal 7.1: To coordinate this plan with adopted environmental goals and policies addressed in the Trinity County General Plan and other documents. These goals and policies include, but are not limited to air, water, timber, and land management plans.
    - Objective 7.1.1: Support those social, economic, recreational, safety, and service needs of the people in Trinity County which will preserve the quality of life outlined in the County General Plan.
        - Policy 7.1.1.A: Support transportation policies and projects which minimize and/or mitigate degradation to environmental quality.
        - Policy 7.1.1C: Assign funding priority to projects which would reduce or eliminate existing environmental impacts.
        - Policy 7.1.1.F Prohibit the use of herbicides along State highways and County roads.

SHASTA-TRINITY NATIONAL FOREST LAND AND RESOURCE MANAGEMENT PLAN

The proposed action area is included in Management Area 17, Hayfork Creek, and Management Area 19, Indian Valley/Rattlesnake of the Shasta-Trinity National Forests Land and Management Plan (LMP; USDA, 1995). The *Shasta-Trinity National Forest Land and Resource Management Plan (LMP)* policies regarding water resources that relate to the proposed project are as follows (USDI, 1995):

Applicable Forest Goals related to water resources include the following:

- Maintain or improve water quality and quantity to meet fish habitat requirements and domestic use needs.
- Maintain water quality to meet or exceed applicable standards and regulations.

Applicable Forest Standards and Guidelines include the following:

- Analyze each land disturbing project for its effect on the appropriate 2nd or 3rd order watershed to prevent excessive cumulative impacts on stream channel condition and water quality.
- Management activities within 5th order watersheds, which are in condition class 3, will emphasize watershed improvement and overall reduction in ERA levels.
- Implement BMPs for protection or improvement of water quality, as described in "Water Quality Management for National Forest System Lands in California," for applicable management activities. Determine specific practices or techniques during project level planning using information obtained from on-site soil, water, and geology investigations.
- Implement Forest Soil Quality Standards and the Forest supplement of the Regional BMPs for areas identified as having highly erodible soil. Specifically, apply the special practices dealing with timber harvest, site preparation, and road construction in highly erodible soils.
- Identify and treat areas with a degraded watershed condition in a cost-effective manner and according to beneficial use priorities. High priority items include domestic use, anadromous fish habitat, and sensitive species habitat. Improvement activities will be designed to meet Management Area objectives.
- Give full recognition to the tendency for erosion, mass land movement, and severe watershed damage potential when implementing vegetation management and related land management activities.
- Assess the potential impacts of vegetation management, road construction, and related activities on slope stability and watershed condition for areas identified as moderately or highly unstable.
- When watering roads for dust abatement, follow the following rules:
    - Allow drafting from fishery streams only where immediate downstream discharge is maintained at 1/5 cubic feet per second or greater.
    - Allow drafting from ephemeral streams, intermittent streams, wetlands, or constructed ponds provided that sufficient water quantity and quality remains to support associated wildlife species and riparian values.
    - Never allow drafting to remove more than 50 percent of any stream discharge or 75 percent of constructed pond water.

Supplemental LMP management direction for hydrologic resources within Management Area 17 includes the following:

- When implementing projects, recognize the potential for cumulative watershed effects, especially within the Gulch watershed.

Supplemental LMP management direction for hydrologic resources within Management Area 19 includes the following:

- When implementing projects, recognize the potential for mass wasting and severe watershed damage. This is particularly true in the inner gorges along the South Fork Trinity River
- When implementing projects, recognize the potential for cumulative watershed effects, especially within the Rattlesnake Creek and Butter Creek watersheds.

4.3.3 SIGNIFICANCE CRITERIA

Appendix G of the CEQA *Guidelines*, the CEQA Environmental Checklist, poses the following questions to be considered in determining whether the project would cause significant floodplain impacts:

Would the project:

- Violate any water quality standards or waste discharge requirements?
- 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 which would not support existing land uses or planned uses for which permits have been granted)?
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?
- 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?
- Otherwise substantially degrade water quality?
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site?
- Place housing within a 100-year flood hazard area?
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows?
- 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?

- Inundation by seiche, tsunami or mudflow?

4.3.4 IMPACTS AND MITIGATION MEASURES

PERMANANT IMPACTS AND MITIGATION MEASURES

Hydrology Impact – 1: Water quality impacts to Hayfork and James Creeks and unnamed drainages could occur as a result of the finished project.

As discussed in the project description, one of the project objectives is to improve water quality by reducing slope failure and erosion and by removing the road surface from the 100-year floodplain. Reconstructing the existing, aging road structure, section and surface, improving surface and subsurface drainage and adding rock slope protection and retaining walls will reduce sediment delivery to Hayfork Creek. Replacement of the culvert at James Creek with a bridge that spans the channel will eliminate the risk of culvert plugging and resulting potential erosion of the overlying road prism and/or surface. New road surfacing will protect the road surface from erosion. Removal of the road surface from the 100-year floodplain will eliminate pollutants on the roadway (petroleum products and heavy metals) from becoming entrained in floodwaters and discharged to Hayfork Creek and/or the Trinity River. In many areas, removal of the road from the 100-year floodplain involves realigning the road upslope, away from Hayfork Creek. This will provide a greater buffer between the road and the creek.

An ephemeral drainage at Post Mile 7.3 is currently diverted and conveyed along the roadside via an inboard roadside drainage ditch. This drainage will be returned to its drainage of origin by installing a new culvert at the point of diversion. This will restore the natural hydrology and reduce the exposure of stormwater to roadside sediment and other pollutants. New culverts will be installed at other ephemeral drainages, and at various points along the roadway to reduce the distance that stormwater is conveyed along the roadside. New culverts would be designed to accommodate 100-year flows, and fitted with downspouts and/or outlet protection to prevent erosion of fill slopes.

Immediately after construction of the proposed project, the right-of-way would be stabilized and revegetated. Erosion control will use either native or non-persistent non-native grasses for quick establishment, followed up with native grasses and forbs. No noxious or invasive weed species would be used. Pesticide spraying is prohibited by County Ordinance on County projects, and will not occur during revegetation or during long-term maintenance of the road.

In the long term, these improvements to the existing road will result in a beneficial impact on water quality, by reducing the existing potential for sediment delivery and pollutant discharge into Hayfork Creek and its tributaries.

Significance: Less Than Significant Impact

Mitigation Measure: None Required

Hydrology Impact – 2: Groundwater impacts could occur as a result of the proposed project.

The proposed project will not deplete groundwater supplies or interfere with groundwater recharge. Widening the road will create a small increase in the area of impermeable surface, but storm water falling on this area will quickly run off to permeable areas or surface water bodies, and be available for groundwater recharge.

Significance: Less Than Significant Impact

Mitigation Measure: None Required

Hydrology Impact – 3: Flooding impacts could occur as a result of the proposed project.

As part of the project, a portion of the road will be raised and realigned away from Hayfork Creek to eliminate inundation of the road surface during flood events. In addition to raising the road surface, this will also eliminate encroachments of road fill into the 100-year floodplain in some locations, thus lowering the water surface elevation of the 50-year and 100-year floods. On the other hand, the proposed rock slope protection at Station 122 and the extensions of the piers supporting Nine Mile Bridge to widen the bridge will result in minor encroachments within the 100-year floodplain. The hydraulic analysis performed for this project, based on preliminary design information, indicates that the maximum increase in the base flood elevation at any point in the project would be 0.49 feet near the upstream end of the project. In reaches of rivers that have not been mapped by FEMA using detailed study methods, projects are allowed to encroach in the floodplain of the most probable 100-year flood provided that they do not cause an increase in the water surface elevation of the most probable 100-year flood in excess of 0.50 foot per side, or 1.0 foot for encroachment on both sides of the channel, and provided that they do not result in an increased risk of damage to structures during the most probable 100-year flood. There are no structures in the project vicinity. The proposed project does not increase the risk of damage to structures or increase the water surface elevation of the most probable 100-year flood by over 0.50 foot. Therefore the floodplain encroachments associated with the project should be considered acceptable under current FEMA regulations. The proposed improvements raise the grade of Hyampom Road over the water surface elevation estimated for the most probable 100-year flood. (Pacific Hydrologic, 2002).

To meet FEMA requirements, additional hydrologic study will be undertaken on the near-final project design to ensure that the 100-year flood elevation is not raised by over 0.5 foot. If final hydrology studies indicate an unacceptable increase in the floodplain elevation, the design will be revised to reduce the encroachment into the floodplain by realigning the road further from the creek or steepening the fill slopes, using additional retaining walls, if necessary.

However, because of the lack of existing structures on either side of the creek that could be exposed to risk, and further based on the improvement of existing flooding of the road surface and associated risk to safety and water quality, the flooding impacts of this project are considered beneficial and not significant under CEQA.

Significance: Less Than Significant Impact

Mitigation Measure: None Required

Hydrology Impact – 4: The drainage pattern within the area could be impacted by the proposed project.

The drainage pattern within the proposed project area would not be altered substantially as a result of the project. Some drainage improvements, such as underdrains and additional ditch relief culverts will be added, and an existing drainage that is currently diverted along the roadway will be restored to its drainage of origin. The existing culvert at James Creek will be replaced with a bridge, restoring the natural channel bottom beneath Hyampom Road. To some extent, these improvements will restore the natural drainage patterns that existed before the road was constructed. This will be a beneficial impact. The course of Hayfork Creek, or the rate and amount of runoff flowing to Hayfork Creek, will not be altered.

Significance: Less Than Significant Impact

Mitigation Measure: None Required

TEMPORARY IMPACTS AND MITIGATION MEASURES

Hydrology Impact-5: Temporary water quality impacts could occur as a result of construction of the Hyampom Road Improvements project.

Construction activities will disturb soils and could result in the discharge of sediment, construction materials or chemicals such as fuels, oils, concrete or drilling muds into surface waters. Potential for increased erosion due to surface water flow would be primarily limited to cut and fill slopes and areas disturbed by grading during construction.

Project construction will involve work in or near Hayfork Creek to install rock slope protection and to extend the piers of Nine Mile Bridge. Retaining wall construction may encroach into the Ordinary High Water of Hayfork Creek, but is not expected to involve work in the live, low-flow stream channel. Construction of the new bridge over James Creek will involve work in the channel to remove the existing culvert, but bridge construction can be accomplished outside of the live channel of James Creek.

The SWRCB and Federal Law (40 CFR Parts 122-124) require that best available technology economically achievable and best conventional pollutant control technology be used to reduce pollutants. The TCDOT or its construction contractor would be required to prepare a SWPPP, which would include information on runoff, erosion control measures to be employed, and any toxic substances to be used during construction activities. Additional

measures to reduce impacts to a less than significant level are included in the Project Description (Chapter 3.0) or as mitigation measures below. The Project Description contains Caltrans Standard Specifications, County Standard Specifications, and other specific methods of erosion control and pollution prevention during construction activities in or near streams including bridge sanding and painting, concrete work and bridge construction. All of the measures in the project description, Caltrans Standard Specifications and the mitigation measures listed below and in other sections of this EIR will be included in the project plans and specifications. The TCDOT will oversee the contractor to ensure the plans and specifications are followed.

Significance: Potentially Significant, but mitigated

Hydrology Mitigation-1 The following measures will be implemented:

- **No contact of wet concrete with the live stream will be allowed. Groundwater that comes in contact with wet concrete, such as within bridge footing excavations, will not be allowed to enter the creek but will be pumped to a truck or upland for disposal or treatment, or it may be discharged to a sediment-stilling basin on site and percolated back into the soil.**

- **If drilling muds are used to drill holes within the ordinary high-water zone, all drilling muds and fluid within all drilled holes will be pumped through a closed system, contained on-site in tanks, removed from the project area, and disposed of off-site at an appropriate facility.**

- **The TCDOT contractor will remove all spoils materials from the drilled pier holes and dispose of the material in a manner that will not result in discharge of runoff of sediment into Waters of the United States.**

- **Heavy equipment will not be operated in the active flow channel of any creek.**

- **Complete diversion or damming of surface flows will not be allowed. A cofferdam may be installed along the edge of the low flow channel of Hayfork Creek, but shall not result in complete dewatering or impedance of flows within the creek.**

- **Maintenance and refueling areas for equipment will be located a minimum of 100 ft away from the active stream channel. If equipment must be washed, washing will occur where the water cannot flow into the creek channel.**

- **Spill containment booms will be maintained on-site at all times during construction operations and/or staging or fueling of equipment.**

Additional measures are also listed in the Project Description, Sections 3.6.9 through 3.6.19, and as mitigation measures in Sections 4.2, 4.4 and 4.7 of this EIR. The Specifications will include all of these measures, as well as any additional conditions resulting from Section 7 consultation with NOAA Fisheries (formerly the National Marine Fisheries Service), or included as conditions of the following state and federal permits:

- ACOE's Section 404 permit
- RWQCB's Section 401 water quality certification
- RWQCB's General Stormwater Permit for Construction Activities (and the Stormwater Pollution Prevention Plan prepared pursuant to that permit)
- CDFG's Streambed Alteration Agreement or Incidental Take Permit for Coho Salmon.
- STNF's Special Use Permit for use of National Forest lands for construction, staging, mitigation and road maintenance.

Significance after Mitigation: Less than significant

Hydrology Impact-6 Use of staging areas near Hayfork Creek or James Creek could result in discharge of construction materials or chemicals to the water bodies.

Staging areas designated on Figure 3 will be used to store equipment and materials, and to fuel and service construction equipment. These activities have the potential to discharge pollutants to surface water bodies if proper controls are not in place.

Significance: Potentially Significant, but mitigated

Hydrology Mitigation-2 All staging areas will be established at least 50 feet from the top of the stream bank or 50 feet from the outer edge of the riparian habitat, whichever is farther. This buffer will be clearly identified on the design drawings and delineated in the field with orange construction barrier fencing. Sedimentation fencing or other erosion and sediment control measures will be installed between the staging area and the riparian area to prevent sediment and pollutant discharges to creeks and riparian areas. There will be no removal of riparian vegetation for staging purposes.

Significance after Mitigation: Less than significant

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Hydrology Impact – 7: The proposed project could add to the cumulative effects on water quality from other projects along Hayfork Creek or the South Fork Trinity River.

The proposed project, in combination with the other projects proposed within the vicinity, could result in cumulative degradation of surface water quality in the area. However, as discussed above, many measures have been incorporated into the proposed project to address potential water quality impacts. Additional measures may be required by State and Federal agencies such as NOAA Fisheries, the US Army Corps of Engineers, NCRWQCB, CDFG

and/or the Shasta-Trinity National Forest as a result of the consultations and permits required to implement this project.

Other transportation projects in or near Hayfork Creek, including replacement of two bridges in Hayfork and rehabilitation and/or reconstruction of other segments of Hyampom Road, will all be subject to similar requirements to comply with state and federal agency requirements. Therefore, similar standard water quality protection measures will be implemented for the other transportation projects proposed for the vicinity. Private projects within the ordinary high water of Hayfork Creek, such as the private bridge proposed near Post Mile 2.0 of Hyampom Road, will also be subject to permit requirements of the Corps of Engineers and CDFG. Private logging and mining activities have decreased significantly in recent years, and are now subject to regulatory requirements that are similarly stringent.

In addition, the short-term effects of construction of these projects are not expected to concur concurrently. The long term effects of this project, the CFLHD projects and the bridge replacement projects in Hayfork will be beneficial because they will all, in the long term, reduce erosion and slope failure, improve flood passage and/or remove transportation facilities from the 100-year floodplain. Therefore, significant adverse cumulative impacts to water quality are not expected to occur.

Significance: Less Than Significant

Mitigation Measure: None Required