

Chapter 3. Environmental Setting and Impact Analysis

3.1 Introduction to the Environmental Analysis

This chapter provides an integrated presentation of the regulatory setting, environmental setting, environmental impacts, and mitigation measures for resources that may be affected by the proposed project. A preliminary assessment of each resource identified in the Environmental Checklist in Appendix G to the California Environmental Quality Act (CEQA) Guidelines was conducted to identify resources or issue areas that require further evaluation (see Appendix C for the preliminary assessment). Mineral resources, public services, and recreation were dismissed from detailed evaluation. All other resources are evaluated in detail, although some issue areas would not be affected by the proposed project (e.g., no habitat conservation plans apply to the area, no airports or developed areas are nearby, no water or wastewater facilities are included in the project); these issues are identified in the introduction to the relevant resource section.

In each resource section, the regulatory setting describes applicable laws, regulations, and policies specific to each resource topic. The environmental setting describes the environment in the project area, as it exists before the commencement of the proposed project. To be precise, the setting, which serves as the baseline for the impact analysis, is the environment as it existed on the date the Notice of Preparation was issued or September 28, 2009, with more recent information incorporated, where appropriate, for some resource topics. The environmental setting is presented at the regional and local (which includes the project area) scales, as appropriate to each resource topic. The impact analysis describes changes to the physical environment resulting from implementation of the proposed project, including permanent and temporary (construction phase) impacts and beneficial effects. The level of significance of each impact was determined using the thresholds identified in the Environmental Checklist and supplemented with local, regional, and federal (e.g., Trinity County or Shasta-Trinity National Forest) standards and guidelines. Significance thresholds vary for each issue and are defined at the beginning of each impact analysis section. According to CEQA Guidelines Section 15382, a significant impact is "... a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project..." Mitigation measures are identified for each potentially significant impact to avoid the impact or reduce its intensity to a less-than-significant level.

3.2 Land Use

This section describes land uses in the vicinity of Wildwood Road and analyzes the impacts of the proposed project on these uses. Information pertaining to land uses in the project vicinity was obtained primarily from the Shasta-Trinity National Forest (STNF) Land and Resource Management Plan (LRMP) (U.S. Forest Service 1995) and Trinity County.

The following issues are not discussed further in this section for the reasons noted below:

- **Physical Division of a Community:** The proposed project consists of improvements to an existing road corridor. No communities exist along the road.
- **Displacement of Residences or People:** The proposed project would not require relocation or displacement of existing residences.
- **Habitat Conservation Plan Consistency:** No habitat conservation plans have been approved for the project area.

3.2.1 Regulatory Setting

Shasta-Trinity National Forest Land and Resource Management Plan

The LRMP guides the management of the STNF by establishing management goals and objectives intended to direct management of National Forest System (NFS) lands for a 10- to 15-year planning period, while also being compatible with Forest Service objectives for the next 50 years (the planning horizon) (U.S. Forest Service 1995). The LRMP also identifies Standards and Guidelines designed to avoid or mitigate adverse impacts.

STNF lands within the project boundaries fall within the South Fork Management Unit in two management areas: the Hayfork Management Area (Management Area 18) and the Wildwood Management Area (Management Area 21). Both of these management areas are managed for their late successional reserves, wildlife habitat, recreation (motorized and non-motorized), water quality, riparian area preservation, and commercial timber production. Portions of the management areas are classified as adaptive management areas, meaning that management can be flexible for the purposes of retaining key structural elements of Late Successional Reserves on lands subjected to regeneration harvest and restoring and protecting riparian zones, while also providing for a stable timber supply. Riparian reserves are a land allocation established under the STNF LRMP to protect and manage a wide array of riparian features, including rivers, streams, lakes, ponds, and unstable landscapes (e.g., inner gorges). They are established along streams and around bodies of water and are managed to be consistent with Aquatic Conservation Strategy objectives, as identified in the STNF LRMP. Late successional reserves are managed to protect and enhance conditions of late-successional and old-growth forests.

The guidelines in the STNF LRMP incorporated those identified in the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl. The 1994 Record of Decision was amended in 2004 to clarify provisions related to the Aquatic Conservation Strategy, specifically with respect to direction pertaining to the Aquatic Conservation Strategy objectives; watershed analysis; riparian reserves; and Standards and Guidelines for Resource Activities.

Trinity County General Plan

The Trinity County General Plan applies to privately owned lands in the project area. The primary objective of the Open Space and Conservation Element (Hahn, Wise, and Associates, Inc. 1973) is to retain the character and natural beauty of Trinity County by preserving existing open space and controlling open space. Implementation of this objective requires retention of the rural character of the county, preservation of forests and agricultural lands as open space, protection of streambanks and floodplains, and establishment of recreational facilities.

The General Plan Circulation Element identifies goals to (1) provide for the long-range development of Trinity County's roadway system that is consistent with adopted land use patterns, ensures the safe and efficient movement of people and goods, minimizes impacts on the attractiveness of the community, meets environmental and circulation objectives, and implements funding strategies for construction, improvement, and maintenance of existing and new roadways; (2) maintain and upgrade the existing transportation system to prevent costly deterioration; (3) ensure the system efficiency does not decline; (4) maintain air quality and conserve energy; and (5) increase mobility and reduce travel time within Trinity County and adjacent regions (LSC Transportation Consultants Inc. 2002). Various objectives and policies have been identified to achieve these goals and improve or maintain the county-wide transportation system.

Trinity County Zoning Ordinance

The Trinity County Zoning Ordinance implements the land use goals, objectives, and policies of the General Plan. The Zoning Ordinance establishes zoning districts to provide specific development requirements and restrictions for land uses in the county. Zoning districts must be consistent with the General Plan land use designations.

Trinity County 2010 Regional Transportation Plan

The Trinity County 2010 Regional Transportation Plan (Fehr & Peers 2011) contains a number of goals, policies, and objectives intended to guide transportation projects relative to land use. Relevant transportation plan goals, objectives, and policies include:

Overall Goal (Goal 0): To provide a safe, reliable, accessible, cost-effective and efficient transportation system consistent with socioeconomic and environmental needs within Trinity County.

Goal 1: Develop and maintain an efficient and safe system of streets, highways, and bridges that is sensitive to existing and future needs and promotes preservation of the environment, reliable access to communities and enhancement of the economy.

- Objective 1.2: Rehabilitate and/or reconstruct existing road and bridge facilities where necessary, and continue to maintain existing facilities.
 - Policy 1.12.A: Pursue Federal and State grant funding for major rehabilitation and reconstruction of County roads and bridges.
- Objective 1.3: Enhance operation and safety of existing county roads and state highways by providing adequate width and safe passing zones where necessary and feasible.

- Policy 1.3.A: Strive to provide two safe travel lanes on county roadways.
- Objective 1.5: Provide reliable all-weather access to all developed communities of the county.
 - Policy 1.5.C: Motorist safety, emergency vehicle access, roadway use/purpose and climate/weather conditions are all factors that should be considered when existing roads are improved or new roads are developed.
- Objective 1.7: Establish consistency and/or linkages between transportation needs and land use plans.
 - Policy 1.7.A: Consider the Trinity County General Plan and/or community plans when assessing potential transportation projects.
 - Policy 1.7.B: Determine and, as appropriate, address the probable land use impacts of transportation projects prior to construction of the project.

Goal 5: Support and promote economic development through the efficient movement of freight to, and through, Trinity County.

- Objective 5.1: Support efforts to maintain and improve Trinity County’s highway system as important inter-regional trucking routes, as well as connecting highways in adjacent counties.

Goal 6: Support tourism throughout the County by developing and maintaining a safe and efficient transportation system.

- Objective 6.1: Provide efficient and safe transportation systems with clear signage.
 - Policy 6.1.B: Maintain transportation connections to tourist attractions in a safe and efficient condition.

3.2.2 Environmental Setting

Regional Land Use

Trinity County encompasses more than 2 million acres and is one of the original 27 California counties created in 1850 (Trinity County 2004). The majority of the land within the county (76 percent) is managed by the federal government as part of National Forests or wilderness areas. The STNF encompasses a large portion of the county. Land uses in the county are best characterized as accommodating tourism, outdoor recreation (e.g., hiking, hunting, and fishing), and forestry and timber production; the latter being the predominant private use, although it has declined significantly since the 1990s. The county is primarily rural and contains several small, scattered communities with no incorporated cities. Most communities are concentrated in the Weaverville, Hayfork, and Lewiston valleys. In addition to concentrated development, valleys are used for agriculture, including hay crops and livestock grazing.

In 2010, the total population of Trinity County was 13,786 persons (U.S. Census Bureau 2011), making it one of the least densely populated California counties. With a population of approximately 3,500 people, Weaverville is the county seat and the largest community in Trinity County.

Local Land Use

The project area is on the STNF and contains primarily NFS lands with some private inholdings within the STNF. The STNF land use designations for the project area are Adaptive Management Area—Commercial Wood Products Emphasis and Late Successional Reserves/Threatened, Endangered, or Sensitive Species (U.S. Forest Service 1994). The adaptive management area is managed for commercial wood production (U.S. Forest Service 1995). Late successional reserves are managed to maintain the health and diversity of the forests. Riparian reserves are natural corridors along rivers and streams, including Hayfork Creek and its tributaries. Riparian reserve widths were established under the LRMP for various categories of streams or water bodies, including active landslide areas. Riparian buffer widths specific to the project area range from 300 feet on both sides of a perennial stream or fish-bearing stream to 100 feet on both sides of an intermittent/ephemeral stream. Approximately 4.4 miles of riparian reserves associated with Hayfork Creek and its tributaries are in the project area. Two developed public recreation areas are partially within the project area: Shiell Gulch Campground and Gemmill Gulch Picnic Area. In addition, the Natural Bridge site, a geologically unique area, is located off Wildwood Road near the project area.

The private lands are subject to the Trinity County General Plan, and land uses for these lands are Agricultural and Resource. Agricultural lands contain various agricultural uses, such as livestock farming, dairies, and crops, and some uses require use permits from the County. Resource lands are designated for the natural resources they provide, such as timber, minerals, and important grazing areas. Wildwood Road crosses through five private parcels in the project area. Murrison Ranch is an active cattle and hay-producing operation on the west side of Wildwood Road in the northern portion of the project area; the ranch includes a residence and outbuildings that are outside the project area. In the southern portion of the project area, private lands adjacent to Wildwood Road are undeveloped, residential, and/or farmland.

Wildwood Road, which is also known as County Road 302 and Forest Route 3, is recognized by both the County and the Forest Service for its scenic qualities and is managed by both entities to retain these qualities within their respective jurisdictions. A Public Road Easement extends approximately 25 feet on each side of the road centerline.

3.2.3 Impact Analysis and Mitigation Measures

Methodology

Information for the environmental setting was compiled from available documentation and maps from agency sources and field observations, and impacts were analyzed qualitatively, with a focus on the potential for the proposed project to alter or conflict with land uses in or adjacent to the project area or be inconsistent with existing land use plans. Agriculture and forestry resources are discussed in Section 3.3.

Thresholds of Significance

The following significance criteria were developed from Appendix G of the CEQA Guidelines. Impacts on land use would be significant if the proposed project would:

- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, or local zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

Impact Analysis

Impact LU-1: Construction activities could create conflicts with nearby uses.

Uses in the vicinity of the project area that could be affected by the proposed project include recreational uses at the Shiell Gulch Campground and Gemmill Gulch Picnic Area, as well as general recreation on public lands in the area, and agricultural and residential uses on private lands.

Construction activities could temporarily disrupt these uses along Wildwood Road, but no long-term conflicts are anticipated based on the nature of the project. Overall access to the area would be improved by the proposed project.

In Segment 1, construction activities could temporarily disrupt agricultural activities and residential uses on two private parcels (Murrison Ranch). Temporary road or lane closures could affect access to the lands. However, access to Murrison Ranch and residences on East Fork Road can be maintained throughout construction because the access to Murrison Ranch is north of the project area, and the intersection with East Fork Road is at the northern terminus of the project area where Wildwood Road is two lanes. Temporary construction delays may occur, but will be kept to a minimum.

Land uses south of this area would be affected by temporary, but extensive road closures. During these times, these areas would be accessible from the south, via SR 36.

Most construction activities along Segment 1 would take place in the existing road right-of-way, with minimal cut and fill required in the segment. These activities would result in minimal disturbance to the uses on the private lands.

In Segment 2, construction activities could temporarily disrupt recreational uses at the Shiell Gulch Campground. Wildwood Road near the entrance to the campground would be raised, requiring temporary closure of the campground. In addition, disturbed areas of the campground may be used for staging during the construction phase of Segment 2, if authorized by the Forest Service. Construction would primarily take place during the peak recreation season (summer) and would prevent the use of Shiell Gulch Campground for up to 2 years. Other campgrounds and recreational areas would be available at other locations on the STNF, and the public would be notified in advance of the campground closure. Temporary closure of campgrounds is occasionally required for maintenance purposes, and the closure of the campground for the proposed project would result in a minimal disruption to use of the campground.

In Segment 3, construction activities could temporarily disrupt recreational uses at the Gemmill Gulch Picnic Area. Disruptions at the picnic area would be similar to those described for the Shiehl Gulch Campground. Disturbed areas at Gemmill Gulch Picnic Area may also be used for staging, if authorized by the Forest Service. This disturbance may last for one summer. The primary disruption to the undeveloped private lands would be access restrictions, but these restrictions would be temporary and access to the private lands would be maintained throughout the construction phase, via either SR 36 or SR 3 depending on the location of the construction. Construction may be necessary to the north and south of these private parcels at the same time. In this case, the contractor would be required to accommodate access to these parcels, although delays of up to 30 minutes may occur. Other than access, construction activities would not result in disturbance to the uses on the private lands.

General recreational uses in the vicinity of the project area would primarily be disrupted by access restrictions and possibly staging activities during construction activities. Access to some trails may be restricted during construction near the trails, but access would be restored once the nearby road improvements are complete.

Level of Significance: Less than significant because of the minimal disruptions to nearby uses and the temporary nature of access restrictions.

Impact LU-2: The proposed project could be inconsistent with the STNF LRMP or Trinity County General Plan.

Implementation of the proposed project would require temporary and permanent easements for construction access, staging, and the new road alignment. The Forest Service would need to issue a special use permit for use of Forest Service lands. As part of the permit application process, the County would need to demonstrate consistency with the STNF LRMP. The primary management considerations from the LRMP that relate to the proposed project are forestry resources, biological resources, and water quality. These impacts are discussed in their respective resource sections of Chapter 3, and, based on those analyses, the impacts would be less than significant with implementation of the construction measures identified in Chapter 2 and mitigation measures identified in the resource sections. The proposed project would therefore be consistent with the STNF LRMP.

The modified road alignment through the private parcels in Segments 1 and 3 would require minimal use of the private lands, and agricultural activities would be able to continue on those lands. The County would coordinate with the landowners to obtain additional right-of-way across the private lands, as necessary, to accommodate the modified road alignment. Land use designations for the parcels would not be modified, and the proposed project would be consistent with the Trinity County General Plan.

Level of Significance: Less than significant because the proposed project would be consistent with the STNF LRMP and Trinity County General Plan.

Impact LU-3: The proposed project may induce growth in the surrounding area.

Improvements to Wildwood Road would be limited to the realignment and associated modifications to the existing road, which would improve safety for travelers and access to the surrounding area;

overall capacity of Wildwood Road will remain the same. Most of the area is currently undeveloped and managed by the STNF. Limited opportunities for development exist on the private lands because of their existing uses and land use and zoning designations (Agriculture and Resource). Planned growth in the county is limited to the existing communities, such as Hayfork, and additional growth in the project vicinity is not projected or feasible because of the extensive NFS lands. The proposed project would not induce growth in the county based on its location and the nature of the road improvements.

Level of Significance: No impact identified.

3.3 Agricultural and Forestry Resources

This section describes agricultural and forestry resources in the vicinity of Wildwood Road and analyzes the effects of the proposed project on these resources. Information pertaining to agricultural and forestry resources in the project vicinity was obtained from Trinity County, the Forest Service, and State agencies. The following issues are not discussed further in this section for the reasons noted below:

- **Conversion of Important Farmland:** No important farmlands have been mapped in Trinity County by the Farmland Mapping and Monitoring Program.
- **Conflicts with Williamson Act Contracts:** The private lands in the project area are not subject to Williamson Act contracts.

3.3.1 Regulatory Setting

Shasta-Trinity National Forest Land and Resource Management Plan

Management of forestry resources on the STNF is guided by the STNF LRMP, as amended (U.S. Forest Service 1995). In the project area and immediate vicinity, Late Successional Reserves are managed to protect and enhance conditions of late-successional and old-growth forests. Forests used for commercial production are managed to optimize timber growth and yield and provide the highest level of outputs. To achieve this purpose, the Forest Service invests in road construction, fuels management, reforestation, vegetation management, and timber stand improvements on lands having this designation. Timber stand improvement activities consist of periodic thinning, pest management, weeding, and release actions to control competing species. Vegetation management provides habitat for those wildlife species primarily dependent on early and mid-seral stage forests.

Trinity County General Plan

The Trinity County General Plan Open Space and Conservation Element (Hahn, Wise, and Associates Inc. 1973) contains goals, objectives, and policies designed to guide the future physical development of, and protect or preserve, forestry and agricultural resources. Applicable objectives include the protection of scenic natural resources and preserve areas that are important as commercial natural resources for future generations; the conservation, preservation, and maintenance of scenic lands, including mountains, trees, and water; and the preservation and protection of agricultural lands and

commercial forest lands as an important part of the economy of the county and as a resource of the county.

3.3.2 Environmental Setting

Agricultural Resources

Due to the steep terrain and extent of dense forests in the county, crop production has been limited to valleys, such as Hayfork, Hyampom, and Weaverville, and has not been an important contributor to the economy. Livestock grazing, however, is not restricted to flat areas and occurs on both improved (irrigated) and unimproved pastures and in woodlands throughout Trinity County.

In 2007, total harvested acreage—which includes field crops, vegetable crops, seed crops, and rangeland—accounted for only 5.3 percent (108,758 acres) of the total land uses in the county (Center for Economic Development 2010). Pasture range was the dominant agricultural use and made up 97 percent of the total agricultural land. Irrigated pasture, hay, and other crops made up the remaining 3 percent of agricultural lands. Agricultural production contributed approximately \$2.3 million to the county economy in 2007.

Although most of the project area is steep and densely forested, the Murrison Ranch—consisting of private land in and adjacent to Segment 1—is a relatively flat, open pasture used for seasonal livestock grazing and hay production. The private land encompasses approximately 185 acres.

Forestry Resources

Most of Trinity County is densely forested, and timber production has traditionally been the cornerstone of the county's economic base and a way of life for many of its residents. Timber production decreased during the late 1990s, but has been relatively stable since 2001, contributing to around 90 percent of the total agricultural and timber production in the county (Center for Economic Development 2010). In 2007, timber production was valued at an estimated \$17.1 million or 88 percent of the total agricultural and timber production in the county. Most of the merchantable timber in the county is on federal land, such as the STNF. Non-commercial forest lands are located primarily in the north-central and southern portions of the county (Hahn, Wise, and Associates Inc. 1973).

The project area and vicinity are heavily forested and contain a mixture of suitable and unsuitable timber lands. Douglas-fir (*Pseudotsuga menziesii*), red fir (*Abies magnifica*), and mixed conifers dominate the mid to upper elevations, while the lower elevations support large stands of hardwoods, mainly tanoak (*Lithocarpus densiflorus*), chinquapin (*Chrysolepis* sp.), and madrone (*Arbutus menziesii*). Most of the National Forest System land in the project area is managed for commercial wood production, but some of the National Forest System land is protected from timber harvest in Late Successional Reserves. Forest lands determined suitable for timber harvest by the Forest Service (U.S. Forest Service 2001) are primarily located on the western side of Wildwood Road, including to the north of Post Mile 9.7 in Segment 1, in the middle of Segment 2, and near Post Mile 7.0 in Segments 2 and 3. Other forest lands in the project vicinity were determined unsuitable for timber harvest. Primary access to the forest lands is via Wildwood Road, with Forest Service roads providing access from Wildwood Road.

3.3.3 Impact Analysis and Mitigation Measures

Methodology

Information for the environmental setting was compiled from available documentation and maps from agency sources and field observations, and impacts were analyzed qualitatively, with a focus on the potential for the proposed project to convert agricultural or forestry lands to other uses.

Thresholds of Significance

The following significance criteria were developed from Appendix G of the CEQA Guidelines. Impacts on land use would be significant if the proposed project would:

- conflict with existing zoning for agricultural use or forest or timber land;
- result in the loss of forest land or conversion of forest land to non-forest use; or
- involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

Impact Analysis

Impact AF-1: The proposed project could conflict with zoning for agriculture or forestry in or adjacent to the project area.

None of the lands in the project area are specifically zoned for agriculture or forestry uses, although some of the lands are designated and used for such uses, as discussed in Section 3.2, Land Use. The proposed project would require modifications to the right-of-way associated with Wildwood Road and temporary easements for construction. The proposed changes to the road would not require changes to the current zoning for the lands or impede the use of the agriculture lands at Murrison Ranch or forestry lands on the STNF. Access to the lands would be improved by the modifications to Wildwood Road and could facilitate future timber harvest on the STNF lands and improve STNF management of the lands.

Level of Significance: Less than significant because zoning of the lands in and adjacent to the project area would not be modified to accommodate the proposed project.

Impact AF-2: The proposed project could result in the conversion of agricultural or forest lands to other uses.

Modifications to Wildwood Road across Murrison Ranch and on STNF lands would convert pastures and forests to a permanent road. These conversions would be minimal and would affect less than 13 acres of the ranch (out of 185 total acres) and 105 acres of forest lands. Less than 24 acres of the affected forest lands are considered suitable for timber production. The purpose of the proposed project is to improve access and safety conditions along Wildwood Road, which would improve management of the surrounding STNF lands, but would not facilitate growth or other development along the road because of the limited extent of private lands. Timber production may be improved on STNF lands with the improvements to Wildwood Road, but the land is already designated for such production. The proposed project would not change uses of the surrounding lands.

Level of Significance: Less than significant because the proposed project would result in a minimal conversion of agricultural and forest lands to a permanent road.

3.4 Transportation and Traffic

This section describes the transportation network and traffic conditions in the vicinity of Wildwood Road (also known as County Road 302 or Forest Road 3) and assesses the impacts of the proposed project on transportation and traffic. The transportation and traffic impact analysis is based on characteristics of the road system and traffic conditions in the project area, including access to adjacent private property, NFS lands, and public recreation areas.

The following issues are not discussed further in this section for the reasons noted below:

- **Air traffic patterns:** The project area is not near an airport or airstrip. The proposed project would not affect air traffic patterns.
- **Parking:** Formal on-street parking is not currently available along Wildwood Road. The proposed project would not affect available parking.
- **Alternative transportation:** No designated bikeways or alternative access routes are present along Wildwood Road. The proposed project would not affect alternative transportation access or routes.

3.4.1 Regulatory Setting

Shasta-Trinity National Forest Land and Resource Management Plan

The STNF LRMP includes several management goals and standards and guidelines applicable to the transportation network on NFS lands (U.S. Forest Service 1995). The primary goal is to manage the transportation system to facilitate resource management activities, protect wildlife, meet water quality objectives, and provide recreational access. Standards and guidelines focus on road maintenance and vegetation management activities along Forest Service roads.

National Scenic Byway Programs

The Federal Highway Administration's National Scenic Byway Program and the Forest Service's National Forest Scenic Byways Program are intended to showcase distinct and diverse roads throughout America. The National Forest Scenic Byways Program is designed to showcase the outstanding scenery of NFS lands, while meeting the public's demand for scenic driving tours on safe, well-maintained roads. In addition, the program allows for public interpretation of National Forest management, meets the growing demand for recreational driving opportunities, increases use of National Forests by non-traditional user groups such as the elderly and urban minorities, and creates opportunities for rural economic development. Wildwood Road is part of the Trinity Heritage Scenic Byway (LSC Transportation Consultants Inc. 2002)

Trinity County General Plan Circulation Element

The Trinity County General Plan Circulation Element identifies several goals, objectives, and policies to improve and maintain the transportation network in the county (LSC Transportation Consultants Inc. 2002). The primary goal is to provide for the long-range development of Trinity County's roadway system to ensure consistency with adopted land use patterns and environmental and circulation objectives; to ensure the safe and efficient movement of people and goods; and to implement funding strategies for construction, improvement, and maintenance of existing and new roadways. Key objectives focus on ensuring compatibility of road improvements with the land uses the roads serve, protecting the environment while ensuring public safety, considering social and economic issues when evaluating the impacts of road projects, using available funds for highest priority improvements, and reducing travel time while improving traffic safety on collector and arterial roads.

Trinity County Regional Transportation Plan

The Trinity County Regional Transportation Plan was derived from the General Plan Circulation Element and was designed to identify regionally significant transportation improvements needed to efficiently move goods and people across the county “over the next 20 years” (through 2030) (Fehr and Peers 2011). The plan incorporates policies from the Circulation Element and documents the policy direction, actions, and funding strategies designed to maintain and improve the regional transportation system. The goals, objectives, and policies identified in the plan were considered when planning this project, and the proposed project is identified as a transportation system improvement project in the 2010 Regional Transportation Plan.

3.4.2 Environmental Setting

Regional Transportation Network

The roadway system in Trinity consists of approximately 202 miles of state highways, 700 miles of County roads, and 1,288 miles of federally owned and operated roads (largely in the National Forest) (LSC Transportation Consultants Inc. 2002). The steep, mountainous terrain of Trinity County drastically limits where roads can be constructed. Many of the roads in isolated communities serve as the single access route into and out of the communities (Fehr and Peers 2011). Although Trinity County is large and the population is sparse, traffic volumes—particularly seasonal recreational traffic—often exceed the Level of Service standards on arterial roads, such as State Route 299, resulting in significant traffic congestion. Road maintenance is often difficult due to aging roads and bridges and frequent occurrences of erosion along roadsides, landslides, and rock falls. As of 2005, nearly one-third of the County-maintained bridges were rated as Functionally Obsolete or Structurally Deficient.

State Route (SR) 299 is the major east/west route through central Trinity County and connects California's north coast with the northern Sacramento Valley. SR 3 is the primary north/south route through the county, extending from Hayfork to Weaverville and into the Trinity Alps. SR 36 serves as a secondary east/west route through southern Trinity County.

Local Transportation and Traffic

Wildwood Road connects SR 3 east of Hayfork to SR 36 near the community of Wildwood. It is designated by the County as a Major Collector, providing access for regional traffic between the state routes. Most of Wildwood Road is on the STNF, and the County has a Public Road Easement from the Forest Service that extends 25 feet or more (to accommodate cuts and fills) on each side of the road centerline.

Wildwood Road is an important part of the local transportation system because it is a primary access route to the NFS and private lands between Wildwood and Hayfork. It is used daily by residents, non-residents, recreationists, and emergency services. Wildwood Road is not on a mail service or school bus route. Commercial vehicles often use Wildwood Road to access the Sacramento Valley from the Hayfork area. Wildwood Road serves as the main access to the Gemmill Gulch Picnic Area and Shiell Gulch Campground on NFS lands and is used by the Forest Service for timber management and firefighting access. Due to the narrow width of Wildwood Road, lack of adequate shoulders, and numerous sharp turns, 12 accidents were recorded between 1995–2010 that caused 17 injuries and one fatality along the stretch of Wildwood Road included in the project area, based on County records.

Approximately 220 vehicles per day, of which about 7 percent is truck traffic, use Wildwood Road based on County traffic counts. The estimated maximum hourly traffic volume is 30 vehicles. Traffic counts over Hayfork Creek Bridge, in the community of Wildwood, about 2 miles south of the southern end of the project area, were estimated at 330 trips (annual average daily traffic) in 2004 (LSC Transportation Consultants Inc. 2005). The Trinity County Department of Transportation has identified Wildwood Road as a Priority 1 road during storm events (Priority 1 roads are of the highest priority for the County to keep open) (Trinity County Department of Transportation 2010).

Wildwood Road is part of the route of the Hayfork Century Bicycle Race held annually on the second Saturday in June.

3.4.3 Impact Analysis and Mitigation Measures

Methodology

Information for the environmental setting was compiled from available documentation and maps from agency sources and field observations, and impacts were analyzed qualitatively, with a focus on the potential for the proposed project to affect the use of Wildwood Road during construction activities.

Thresholds of Significance

The following significance criteria were developed from Appendix G of the CEQA Guidelines. Impacts on transportation and traffic would be significant if the proposed project would:

- conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system;
- conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;

- substantially increase hazards due to a design feature or incompatible use;
- result in inadequate emergency access; or
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Impact Analysis

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

Construction activities would require periodic, temporary closures of one or both lanes of Wildwood Road during construction of each segment. These closures, although temporary, would be fairly extensive. Where Wildwood Road is less than two lanes wide, it would not be practical to keep one lane open during construction. Because Wildwood Road can be accessed from the north and south, all-day closures are anticipated during most of the construction season. The road would be closed during the construction hours (7:00 a.m. to 7:00 p.m.) and open at night to one-way traffic with temporary traffic signals or “stop – proceed when clear” signs, depending on sight distance. This would restrict or impede access to the adjacent lands, as discussed below for each segment.

The primary concerns are related to access to the private lands, recreation areas, and NFS lands, including emergency access to these lands. Overall travel through the project area would also be restricted or delayed due to the construction activities, but alternative access to all points would be available from either the north end of Wildwood Road (from SR 3) or from the south end of Wildwood Road (from SR 36). The alternative route between Hayfork and Wildwood via the state highways could increase travel time, but notification would be provided in the local area to inform travelers of the access restrictions and delays during construction. In the long term, the proposed modifications to the road would provide an overall benefit to travelers by reducing safety concerns and improving travel along Wildwood Road.

In Segment 1, construction activities could temporarily restrict or delay access to two private parcels (Murrison Ranch) and to residences on East Fork Road, which intersects Wildwood Road near the north end of the project area. The Ranch and intersection are located where the road is currently two lanes. These properties at the north end of Segment 1 could continue to be accessed from the north (SR 3) and would not have to alter their driving patterns. Work at the intersection with East Fork Road can be staged to allow one lane of controlled traffic at all times, with possible minor delays (approximately 20 minutes maximum). The main access to the Ranch is located on Wildwood Road south of the intersection, where Wildwood Road is less than two lanes wide. Complete closure of the road may be necessary at times in the sections of the road that are less than two lanes wide. However, an alternate access to the Ranch is available at the north end of the project area that could be used if Wildwood Road is closed at, or north of, the main driveway. If this is not possible, the contractor would be required to work with the property owner to ensure access without unreasonable delay (30 minutes or less).

Road or lane closures would be scheduled to maintain continuous access to the private parcels to the extent feasible, and the property owners would be notified in advance of the need for any complete road closures. With the measures incorporated into the proposed project to notify the landowners, use of traffic control measures, and maintaining at least one lane open at night, construction activities

would result in minimal access restrictions on the private and NFS lands and would not substantially impede general access. Access for emergency vehicles would be maintained at all times, although brief delays may be experienced if a road closure is in effect as construction crews open part of the road for access. During a sustained emergency, such as a fire, the contractor would be required to keep at least one lane open for the duration of the emergency.

In Segment 2, construction activities could temporarily restrict or delay access to NFS lands, particularly to the Shiell Gulch Campground. Wildwood Road near the entrance to the campground would be raised and the campground may be used for staging activities, requiring temporary closure of the access route to the campground for up to two years. The public would be notified in advance of the campground closure, and access restrictions to the campground would not be expected to be an issue with proper notification. Temporary access restrictions to other NFS lands could delay or impede Forest Service management activities on the lands, but the Forest Service would also be notified in advance of the construction activities to allow it to schedule activities outside the construction period when access is not restricted or to take the alternate route.

As with Segment 1, access for emergency vehicles would be maintained at all times, although brief delays may be experienced if a road closure is in effect as construction crews open part of the road for access.

In Segment 3, access restrictions and delays would be similar to those discussed for Segments 1 and 2. The key areas that would be affected are the Gemmill Gulch Picnic Area and private lands just north of the picnic area. Access to the private lands in this segment would be more problematic than those in Segment 1 because they are not at the beginning or end of the Segment. They are also located in a one-lane section of Wildwood Road on steep terrain. It would be difficult for the contractor to maintain one lane of traffic in these areas during construction.

Because of the potential for extensive road closures and possible delays during construction activities in each segment, access-related impacts would be significant. Implementation of Mitigation Measures TT-1a and TT-1b would maintain adequate access for residents and property owners and ensure minimal traffic delays are experienced during construction, particularly in the event of an emergency.

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.

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.

Level of Significance: Less than significant with implementation of the mitigation measures because the potential for adverse impacts on traffic and safety would be reduced.

Impact TT-2: Detours required by the proposed project could increase traffic on SR 3 and SR 36.

Due to the extensive road closures, many of the existing 220 vehicles that travel on Wildwood Road during the average day (Trinity County DOT 2010) would be diverted to the State Highways. The extent to which these trips would be diverted depends on the location of the construction closure and the destination of the traveler. Residents of Wildwood, for example, would not be affected if they typically use SR 36 for access, but would be if they typically use Wildwood Road to travel to Hayfork or Weaverville.

According to Caltrans 2006 traffic counts (Caltrans 2006) average daily traffic (ADT) on SR 36 east of the intersection with SR 3 is 400, and the ADT on SR 3 north of the intersection with SR 36 is 210. According the Trinity County Regional Transportation Plan (RTP) (Fehr & Peers 2011), the level of service of both highways in this vicinity is “B,” meaning stable flow, but the presence of other users in the traffic stream begins to be noticeable. Policy 1.1.B of the RTP states that the minimum acceptable Level of Service standard for roadways outside of Weaverville is “C.” The RTP cites the Highway Capacity Manual’s “upper limit daily traffic volume thresholds” for Class II 2-lane highways, such as SR 3 and SR 36, which says that ADT would have to increase to 2,000 before the highway would degrade to level of service “C.” Thus, if all the daily traffic on Wildwood Road would instead take the State Highways, an increase of 220 vehicles on these highways at this location would not cause the Level of Service to drop to “C.”

Level of Significance: Less than significant because the temporary increase in traffic on SR 3 or SR 36 would not cause the highways to drop to level of service “C” or otherwise significantly affect traffic flow on the highways.

Impact TT-3: The proposed project could create hazards from design features or incompatible uses.

The proposed project would substantially improve the condition of Wildwood Road between Post Mile 5.0 and 11.6. This portion of the road has been identified as a concern due to inadequate width (less than two lanes), inadequate shoulders, sharp horizontal curves, limited sight distance, falling rocks and debris, inadequate control of surface runoff, and inadequate substructure. The proposed

project would entail the widening and realignment of the road to reduce the severity of curves, provide two adequate travel lanes and shoulders and provide adequate erosion and rock fall control and drainage under the roadway. With the proposed improvements, Wildwood Road would no longer have hazardous design features, such as single-lane width, sharp curves, and lack of shoulders, which would benefit travelers and reduce the potential for accidents.

The proposed project is not intended to change the use of the road, and it would still serve as an access route for adjacent NFS and private lands, as well as a through-route for travelers between Wildwood and Hayfork. The use of large construction equipment and heavy trucks on Wildwood Road during construction could pose a temporary safety concern for travelers. However, implementation of the traffic control measures incorporated into the proposed project would reduce construction-related hazards.

Level of Significance: Less than significant because the proposed project is designed to improve Wildwood Road by reducing hazardous design features.

Impact TT-4: Project implementation could conflict with federal, state, or local transportation system goals and objectives.

The proposed project would involve implementation of a road improvement project identified in the 2010 Regional Transportation Plan (Fehr & Peers 2011). The proposed improvements to Wildwood Road would assist the County in achieving its goals and objectives for the Trinity County transportation system and ensure that the County can provide a public road that meets current design and safety standards. With the improvements, traffic levels along the road may increase, but the improvements would ensure the road operates at an acceptable level of service. The proposed project, by design, is not intended to increase capacity or substantially increase traffic volumes. The proposed project would be consistent with the 2010 Regional Transportation Plan and other plans adopted for the transportation system in the county, such as the Circulation Element of the General Plan (LSC Transportation Consultants 2002).

Level of Significance: Less than significant because the proposed project would be consistent with transportation plans and goals for the county.

3.5 Air Quality

This section describes air quality, current sources of pollutants, and sensitive receptors in Trinity County and along Wildwood Road and evaluates the impacts of the proposed project on air quality. The discussion of air quality is based on a focused literature review, agency and air district websites, and observations made during site visits. The following issues are not discussed further in this section for the reasons noted below:

- **Naturally Occurring Asbestos:** The project area is not known to contain naturally occurring asbestos or ultramafic rock (California Department of Conservation 2000, Kirk 2010). Although ultramafic rock is present in Trinity County, the use of this material for road surfacing is prohibited by the California Air Resources Board (CARB).

- **Greenhouse Gas Reducing Plans:** No plans have been adopted in Trinity County for the purpose of reducing greenhouse gases. The proposed project would be consistent with statewide plans for greenhouse gases.

3.5.1 Regulatory Setting

Clean Air Act

The federal Clean Air Act (1977), as amended (1990), requires states to identify areas that do not meet National Ambient Air Quality Standards (NAAQS) for the following “criteria” air pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter (PM10 and PM2.5), and lead. Air basins (or portions thereof) are classified as being either in “attainment” or “non-attainment” for each criteria air pollutant, based on whether or not the NAAQS have been achieved. For areas that do not meet federal ambient air quality standards, the state, through its local air quality districts, is required to prepare air quality plans to attain these standards. Trinity County is in attainment for all federal standards.

California Clean Air Act

The California Clean Air Act (1988) requires preparation of an air quality attainment plan for areas that violate California Ambient Air Quality Standards (CAAQS) for carbon monoxide, sulfur dioxide, nitrous dioxide, or ozone. The California Air Resources Board—California’s state air quality management agency—regulates mobile source emissions and oversees the activities of county Air Pollution Control Districts and regional Air Quality Management Districts. The California Air Resources Board regulates local air quality indirectly by establishing state ambient air quality standards and vehicle emission standards.

CAAQS are more stringent than the federal standards for the criteria air pollutants. Trinity County exceeds state air quality standards (i.e., is in “nonattainment”) for particulate matter of 10 microns or less (PM10) (California Air Resources Board 2013a). Although not required by the California Clean Air Act, the North Coast Unified Air Quality Management District (AQMD) developed a PM10 attainment plan that includes measures to reduce PM10 emissions from mobile sources, as well as from wood stoves and other combustion sources (e.g., prescribed burns) (North Coast Unified Air Quality Management District 1995).

California Global Warming Solutions Act

The California Global Warming Solutions Act of 2006 (Assembly Bill 32) requires the state to reduce California’s greenhouse gas (GHG) emissions to 1990 levels by 2020. In response to this act, state agencies have attempted to reconcile CEQA requirements with the implications of AB 32 regarding a project’s impact on climate change.

The State of California has adopted several regulations related to GHG emissions reduction. These include efforts to reduce tailpipe emissions and diesel exhaust produced by fuel-combustion engines. The proposed project would be expected to adhere to statewide efforts aimed at minimizing GHG emissions.

California Environmental Quality Act

As of August 2007, CEQA lead agencies are required to analyze the potential for a proposed project to produce GHG emissions, which consist primarily of carbon dioxide (CO₂), nitrous oxide (N₂O), and methane (CH₄) (PRC Section 21083.05). This legislation also required the Governor's Office of Planning and Research to prepare and submit to the Resources Agency proposed amendments to the CEQA Guidelines to provide direction on analysis of GHGs. Amendments to the CEQA Guidelines to provide guidance to public agencies regarding the analysis and mitigation of GHG emissions and the effects of GHG emissions in draft CEQA documents became effective on March 18, 2010.

The following GHGs are now regulated by the state: CO₂, CH₄, N₂O, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (Health and Safety Code 38505(g)). CARB has also adopted vehicle emission standards to reduce GHGs that result from gas combustion (e.g., CO₂), but EPA must approve the standards before they become effective. Implementation of these new standards is set to become effective for vehicles, allowing stricter air quality standards than the Clean Air Act requires. In addition to regulating GHGs from vehicle emissions, the state's Climate Action Team, headed by the California Environmental Protection Agency, set statewide targets for reductions in CO₂ emissions. By 2020, the state aims to reduce current CO₂ emissions by 59 million tons.

Shasta-Trinity Land and Resource Management Plan

The STNF LRMP identifies a goal of maintaining air quality to meet or exceed applicable standards and regulations (U.S. Forest Service 1995). Standards and guidelines in the LRMP applicable to air quality include protecting air quality by establishing baseline levels, predicting and monitoring changes to air quality, and applying air quality standards to dust and smoke management across the STNF.

Trinity County General Plan

The Safety Element of the Trinity County General Plan identifies a goal of maintaining a high standard of air quality in the county (Trinity County Planning Department 2002). The key policy for air quality is to conduct burning in compliance with burning permits.

3.5.2 Environmental Setting

Regional Air Quality

Trinity County is located in the North Coast Air Basin, which encompasses Del Norte, Humboldt, Trinity, Mendocino, and northern Sonoma counties. Air quality in Del Norte, Humboldt, and Trinity County is primarily managed by the North Coast Unified AQMD. The portion of the North Coast Air Basin under the jurisdiction of the North Coast Unified AQMD totals 7,767 square miles, which is approximately 5 percent of the land area of California.

Much of Trinity County is mountainous, and elevations vary from high peaks to low mountain valleys. Temperature inversions are common when warm air overlies cooler air under stable atmospheric conditions, trapping pollutants near the earth's surface. Inversions are most common

between late fall and early spring due to the shorter days and less intense heating from the sun. During the winter, inversions can persist for hours or sometimes days. Despite the potential for inversions to occur, Trinity County's air quality is generally good. The low population density, limited number of industrial and agricultural operations, and minimal traffic congestion contribute to the good air quality.

The North Coast Unified AQMD regulates both emission and ambient air quality standards. An emission standard is the maximum amount of a pollutant that is legally permitted to be discharged from a single source (e.g., a motor vehicle or a power plant). Ambient air quality standards define the maximum concentrations of air pollutants that can be present in the air of a defined area (e.g., a city, county, or air basin). Ambient air quality standards include the NAAQS and CAAQS. Pollutants that have set ambient air quality standards are known as "criteria pollutants." State air quality standards are often more stringent than federal standards, particularly for particulate matter and ozone. Trinity County is currently in attainment for all NAAQS and most CAAQS; however, the county is in nonattainment for the state PM10 standard (California Air Resources Board 2013a).

Particulate matter (PM2.5 and PM10) consists of fine mineral, metal, soot, smoke, and dust particles suspended in the air. For health reasons, particulate matter is monitored throughout the state. Trinity County has identified the following pollutant sources as primary contributors to PM10: wood stoves, wind-blown dust from dirt roads and agriculture, and open burning from backyard burn piles and prescribed forest fires (North Coast Unified Air Quality Management District 1995). Wildland fires also increase regional levels of particulate matter. While sources of particulate matter are most noticeable at the local level, all sources have a cumulative effect on regional PM10 concentrations.

CARB reports that California is the 15th largest source of GHG emissions in the world, exceeding most nations (California Air Resources Board 2008). Human activities that contribute GHGs include the combustion of fossil fuels (i.e., fuels containing carbon, such as wood, coal, gasoline, and diesel) (Governor's Office of Planning and Research 2008). While the attainment status of most of the primary GHGs (CO₂, CH₄, and N₂O) has not yet been classified for much of the North Coast Air Basin, and, in particular, Trinity County, the climate, topography, and expanding population within the region has a cumulative effect on GHG concentrations.

Local Air Quality

Air quality in and near the project area is relatively good and is representative of the rest of Trinity County. The nearest ambient air quality monitoring station to the project area is in Weaverville, approximately 18 miles northeast of Post Mile 11.6. No exceedances of the state or federal PM10 standards were reported at the station between 2010 and 2012, although exceedances were reported in 2009 during November and January (California Air Resources Board 2013b). Air quality monitoring in Hayfork, approximately 7 miles northwest of Post Mile 11.6, during 1984 and 1986 reported multiple exceedances of PM10 during winter months and fewer exceedances during summer months (Trinity County Department of Transportation 2003). High PM10 levels are more common during winter months in the air basin because of increased wood smoke emissions from wood stoves.

Wildwood Road runs through a fairly remote and sparsely populated section of eastern Trinity County. Little development exists along and near Wildwood Road, and the relatively low annual traffic along the road contributes little to mobile source emissions in the local area. Few sensitive

receptors (i.e., those that could have health problems from poor air quality) are present along Wildwood Road. Residents at the few private parcels in Segments 1 and 3 and recreationists at the nearby recreation areas along Segments 2 and 3 are the primary sensitive receptors.

3.5.3 Impact Analysis and Mitigation Measures

Methodology

Information for the environmental setting was compiled from available documentation and maps from agency sources along with field observations. Impacts were analyzed qualitatively, with a focus on the potential for the proposed project to adversely affect air quality in the local and regional areas.

Thresholds of Significance

The following significance criteria were developed from Appendix G of the CEQA Guidelines. Impacts on air quality would be significant if the proposed project would:

- conflict with or obstruct implementation of the applicable air quality plan;
- violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard; or
- expose sensitive receptors to substantial pollutant concentrations.

Impact Analysis

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

Construction activities would result in increases in emissions from the use of heavy equipment that generates dust, exhaust, and tire-wear emissions; soil disturbance; materials used in construction; and construction traffic. These activities would create short-term increases in fugitive dust (PM10 and PM2.5) and would generate both reactive organic compound and nitrogen oxide emissions from vehicle and equipment operation. Construction-related emissions would be expected to remain localized around the segments and would dissipate within the immediate vicinity, based on the surrounding topography and vegetation.

Truck traffic to haul materials and equipment and worker traffic would generate CO and other pollutants from exhaust that would contribute to ozone and GHG emissions in the region. Based on the anticipated construction schedule for each segment, construction emissions could affect air quality over a period of about 2 years for each segment (6 total years). The proposed project would comply with North Coast Unified AQMD air quality rules and Caltrans Standard Specifications. However, because of the existing nonattainment status for PM10, the increase in fugitive dust as well as potential GHG emissions during the 6-year construction period for all segments could contribute to existing violations of PM10 and GHG emissions in the region, resulting in a significant impact.

Implementation of Mitigation Measure AQ-1 would reduce fugitive dust and GHG emissions during each construction phase.

Dust and emissions in the project area could disperse to nearby residences and recreation areas, but few people would be affected. The few residences are located at least 150 feet away from the work areas. In addition, the use of gasoline or diesel-powered equipment that emits exhaust fumes and asphalt paving would create distinctive odors during application and use. These emissions would occur intermittently throughout the workday, and the associated odors are expected to dissipate within the immediate vicinity of the work area. Persons within proximity to the construction work area may find these odors objectionable. However, the limited number of receptors, infrequency of the emissions, and rapid dissipation of the exhaust into the air would result in minimal odor impacts.

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.

Level of Significance: Less than significant with implementation of the mitigation measure because fugitive dust and GHG emissions would be reduced to acceptable levels during construction.

Impact AQ-2: The proposed project could conflict with the PM10 attainment plan for the air basin.

The proposed project would result in short-term emissions during the construction phase (over a period of about 6 years), as discussed under Impact AQ-1, but long-term emissions would be similar to, or possibly reduced from, current conditions. The primary source of long-term emissions is vehicles traveling along Wildwood Road. The proposed road improvements are not designed to increase traffic along the road, but would improve safety and traffic conditions by providing two full lanes, reducing sharp turns, increasing the line-of-sight, and allowing more consistent vehicle speeds. These improvements could help reduce mobile source emissions by improving the average vehicle speed, which would improve engine efficiency and reduce vehicle emissions. Long-term emissions from traffic using Wildwood Road would not increase as a result of the proposed project. Based on the nature and design of the proposed road improvements, the proposed project would not conflict with the PM10 attainment plan for the North Coast Air Basin.

Level of Significance: Less than significant because the proposed project would not conflict with the PM10 attainment plan for the North Coast Air Basin.

3.6 Noise

This section describes the noise environment in the vicinity of Wildwood Road and evaluates the potential for the proposed project to generate substantial noise near sensitive receptors. The

discussion of noise is based on a review of land uses along Wildwood Road and observations made during field visits. The following issue is not discussed further in this section for the reason noted below:

- **Airport or Aircraft Noise:** The project area is not in the vicinity of a public or private airport or airstrip. Airport noise would not affect people in the project area.

3.6.1 Regulatory Setting

Trinity County General Plan

The Trinity County General Plan Noise Element contains goals, objectives, and policies designed to minimize and reduce noise conflicts (Brown-Buntin Associates Inc. 2003). The County acknowledges that the regulation of noise sources such as traffic on public roadways is preempted by federal and/or state regulations, meaning that these sources may not be addressed by a local government noise ordinance. The goals of the Trinity County Noise Element are:

- To protect the citizens of the County from the harmful and annoying effects of exposure to excessive noise.
- To protect the economic base of the County by preventing incompatible land uses from encroaching upon existing or planned noise-producing uses.
- To preserve the tranquility of residential areas by preventing noise-producing uses from encroaching upon existing or planned noise-sensitive uses.

The County established acceptable noise exposure levels for land uses in the county and identified a policy to mitigate transportation-related noise to achieve the acceptable levels for noise-sensitive land uses. The maximum day/night average sound level (L_{dn}) for residential uses is 60 decibels (dB) at the residential property line and 45 L_{dn} dB in the interior space. As part of the Noise Element update, a Noise Ordinance was proposed that would have allowed construction-related noise sources to exceed the acceptable levels, provided that they were implemented after 7 a.m. and before 8 p.m. Monday through Saturday. However, the Noise Ordinance was never adopted.

3.6.2 Environmental Setting

The noise environment of Trinity County is relatively quiet with few major sources of noise concentrated in the main communities of Hayfork and Weaverville. Other development is scattered across the county and generates less noise. Vehicle traffic is the primary noise source in the undeveloped portions of the county, which includes the project area. Vehicles using Wildwood Road are the main noise source in the project area, although occasional noise is generated from agricultural and recreational uses along the road. Overall noise levels are low and typical of a National Forest with little development.

Sensitive receptors to noise generally include sensitive land uses, such as schools, hospitals, convalescent homes, residences, and parks, where excessive noise could affect daily activities or result in health effects, such as hearing loss or reduced sleep. Noise-sensitive receptors in the general vicinity of the project area include residents at Murrison Ranch, recreationists at the campground and

picnic area, and other residential uses along Wildwood Road outside the project area. No schools, hospitals, or similar types of land uses are present in or near the project area.

3.6.3 Impact Analysis and Mitigation Measures

Methodology

Information for the environmental setting was compiled from available documentation and maps from agency sources and field observations. Impacts were analyzed qualitatively, with a focus on the potential for the proposed project to increase noise levels near sensitive receptors.

Thresholds of Significance

The following significance criteria were developed from Appendix G of the CEQA Guidelines. Impacts related to noise would be significant if the proposed project would:

- expose persons to excessive groundborne vibration or groundborne-noise levels,
- result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels,
- expose persons to noise levels in excess of standards established in the Trinity County General Plan Noise Element or applicable standards of other agencies, or
- result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Impact Analysis

Impact NO-1: Construction activities could generate excessive noise or groundborne vibrations near sensitive uses.

Construction activities would generate noise from construction equipment, vehicles, and ground-disturbing activities. Typical equipment used for road improvements includes pick-up trucks, dump trucks, graders, backhoes, excavators, bulldozers, compactors, water trucks, truck-mounted drills and pile drivers, rock crushers, concrete delivery trucks, asphalt concrete paving machines, rollers, and service vehicles. Typical noise levels for these types of equipment range from about 75 dB to more than 85 dB at 50 feet from the source. Pile driving can generate noise levels above 100 dB, as well as groundborne vibration. Occasional blasting or extended periods of drive hammering or rock drilling may be required in areas of hard rock, but this would not occur near the residential areas at the north end of the project area. Noise attenuates rapidly with distance and even more rapidly when it moves through a heavily forested area in steep terrain, such as the project vicinity.

Trucks and other construction-related traffic on highways that provide access to Wildwood Road would also generate noise, but the noise levels would be comparable to existing traffic-generated noise along Wildwood Road without the project. Construction traffic would not be in addition to normal traffic because normal traffic would be substantially less during construction due to the road closures.

Construction noise would be limited to the construction period for each segment (or a total of about 6 years) and would be restricted to daytime hours (7 a.m. to 7 p.m.) Monday through Saturday. Work outside of these hours would be limited to activities that do not generate equipment noise, such as hand-work to install and repair erosion control measures, erecting temporary signs for traffic control, etc. Current noise levels are relatively low in and near the project area, and few sensitive receptors or uses are present nearby. Most of the construction activities would generate noise above acceptable standards in Trinity County, resulting in a temporary increase in ambient noise levels in the project area; however, the activities would be more than 50 feet from the nearest residence or sensitive receptor and would be limited to daytime hours. Construction noise would attenuate (reduce) by the time it reaches nearby residential and recreational receptors, which are more than 150 feet from the project boundary (the closest residence is at the Murrison Ranch about 150 feet west of the road). Vegetation and topography along Wildwood Road would also help mask noise generated by construction activities. In addition, the Shiell Gulch Campground and Gemmill Gulch Picnic Area, the two primary recreation areas near the project area, would be temporarily closed during construction, which would prevent exposure of recreationists at these locations to excessive noise levels. Other recreationists could avoid the area during the construction period if noise levels would detract from their experience.

Some groundborne vibrations may result from pile driving in the project area or by the passing of haul trucks. These vibrations would be distant from nearby sensitive receptors, and some of the vibrations would be imperceptible at distances of more than 50 feet.

Level of Significance: Less than significant because construction activities would not generate excessive noise or groundborne vibrations near sensitive uses.

Impact NO-2: The proposed project could increase noise levels along Wildwood Road over the long term.

The proposed project would not change the use of Wildwood Road or substantially increase traffic volumes along the road. Traffic-related noise along the road would continue to be similar to current conditions. The proposed project would not result in a permanent increase in noise levels in the project area.

Level of Significance: No impact identified.

3.7 Biological Resources

This section describes the vegetation, fish, wildlife, and sensitive biological resources that occur within the project area and evaluates the impacts of the proposed project on these resources. Information in this section is based on fieldwork and background research on biological resources conducted for the proposed project and is summarized from the delineation of waters of the United States report, biological assessment for northern spotted owl (*Strix occidentalis caurina*) and pacific fisher (*Martes pennanti*), and biological assessment/essential fish habitat assessment for southern Oregon/northern California coho salmon (*Oncorhynchus kisutch*) evolutionarily significant unit (ESU) prepared for the proposed project (North State Resources, Inc. 2012a and 2013b, c).

The following issue is not discussed further in this section for the reason noted below:

- **Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan:** The proposed project is not located in an area with an adopted habitat conservation plan, natural community conservation plan, or other conservation plan.

3.7.1 Regulatory Setting

Clean Water Act

The Clean Water Act (CWA) was originally known as the Federal Water Pollution Control Act of 1972. It protects the surface water quality of the nation's waters through enforcement of water quality standards and permits for the discharge of pollutants into navigable waters. Section 303 of the CWA requires each state to adopt water quality standards for the protection of designated beneficial water uses for water bodies within the state. Section 401 requires applicants for federal permits to obtain water quality certification from the state if the proposed activities would discharge pollutants into a navigable water body. Section 402 establishes a framework for regulating stormwater discharges into surface water by issuance of a National Pollutant Discharge Elimination System permit, which establishes pretreatment standards for discharged water. Section 404 establishes permitting programs for discharges of dredged or fill material into waters of the United States. These and other sections of the CWA are intended to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters to support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water."

Federal Endangered Species Act

Section 9 of the federal Endangered Species Act of 1973 (ESA) prohibits acts of disturbance that result in the "take" of threatened or endangered species. As defined by the act, "endangered" refers to any species that is in danger of extinction throughout all or a significant portion of its current range. The term "threatened" is applied to any species likely to become endangered within the foreseeable future throughout all or a significant portion of its current range. Take is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Violation of this section can result in penalties of up to \$50,000 and up to one year of imprisonment.

Sections 7 and 10 of the ESA provide a method for permitting an action that may result in "incidental take" of a federally listed species. Incidental take refers to take of a listed species that is incidental to, but not the primary purpose of, an otherwise lawful activity. Incidental take is permitted under Section 7 for projects on federal land or involving a federal action, while Section 10 provides a method for permitting incidental take resulting from a state or private action. A biological assessment for northern spotted owl and Pacific fisher West Coast distinct population segment and a biological assessment/essential fish habitat assessment for southern Oregon/northern California coasts coho salmon ESU have been prepared for the proposed project. Designated critical habitat is present throughout most of the project area for northern spotted owl and in Hayfork Creek for the southern Oregon/northern California coasts coho salmon ESU.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance essential fish habitat for species regulated under a federal fisheries management plan. The act requires federal agencies to consult with the National Marine Fisheries Service on all actions, or proposed actions, authorized, funded, or undertaken by the agencies that may adversely affect essential fish habitat (Section 305[b][2]). A component of this consultation process is the preparation and submittal of an essential fish habitat assessment. In association with the biological assessment, an essential fish habitat assessment has been prepared for the proposed project.

Bald and Golden Eagle Act

Originally passed in 1940, the Bald and Golden Eagle Act, as amended in 1962, provides for the protection of bald and golden eagles by prohibiting the take; possession; sale; purchase; barter; offer to sell, purchase, or barter; transport; export; or import of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 USC 668(a), 50 CFR 22). The definition of “take” includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb (16 USC 688(c), 50 CFR 22.3). For purposes of these guidelines, “disturb” means “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagles’ return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits and causes injury, death, or nest abandonment. A violation of the act can result in a fine, imprisonment, or both.

Migratory Bird Treaty Act

Migratory birds are protected under the Migratory Bird Treaty Act of 1918 (16 USC 703-711). The act makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products except as allowed by implementing regulations (50 CFR 21).

Executive Order 13112–Invasive Species

Executive Order 13112 directs federal agencies to use relevant programs and authorities to:

- prevent the introduction of invasive species;
- detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner;
- monitor invasive species populations accurately and reliably;
- provide for restoration of native species and habitat conditions in ecosystems that have been invaded;

- conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species;
- promote public education on invasive species and the means to address them; and
- not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.

Executive Order 11990–Protection of Wetlands

Executive Order 11990 is an overall wetlands policy for all agencies managing federal lands, sponsoring federal projects, or providing federal funds to state or local projects. It requires federal agencies to follow avoidance, mitigation, and preservation procedures with public input before proposing new construction in wetlands. Compliance with conditions of a permit issued pursuant to Section 404 of the CWA would ensure compliance with this federal executive order.

California Endangered Species Act

Under the California Endangered Species Act (CESA), the California Department of Fish and Wildlife (CDFW) is responsible for maintaining a list of threatened and endangered species (Fish and Game Code Section 2070). Additionally, CDFW maintains a list of candidate species, which are species that CDFW has formally recognized as being under review for inclusion on the state’s list of endangered or threatened species. The CDFW also maintains lists of “species of special concern” to address issues of concern early enough to maintain the species’ viability. Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any species that is state-listed as endangered or threatened may be present in the project area and determine whether the proposed project could result in take of such species. “Take” of protected species incidental to otherwise lawful management activities may be authorized under Section 2081 of the Fish and Game Code.

Sections 1600–1616 of the Fish and Game Code

CDFW has jurisdictional authority over fish and wildlife resources associated with rivers, streams, and lakes under Fish and Game Code Sections 1600–1616. CDFW must be notified when any person, business, state or local government agency, or public utility proposes an activity that will:

- divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake;
- use material from a streambed; or
- result in the disposal or deposition of debris, waste, or other material where it can pass into any river, stream, or lake.

The notification requirement applies to any work undertaken in or near a river, stream, or lake that flows at least intermittently through a bed or channel. This requirement applies to ephemeral streams,

desert washes, and watercourses with a subsurface flow. It may also apply to any work undertaken within the floodplain of a body of water.

If CDFW determines that the proposed project or activity could have substantial adverse effects on fish or wildlife, a Streambed Alteration Agreement is required. As part of this agreement, CDFW may require reasonable modifications to project activities that would allow for the protection of fish and wildlife resources.

Other Sections of Fish and Game Code

The following sections of the Fish and Game Code also apply to project activities:

- Native Plant Protection Act, Sections 1900–1913
- Birds of Prey, Section 3503.5
- Migratory Birds, Section 3513
- Fully Protected Species, Sections 3505, 3511, 4700, 5050, and 5515

National Forest Management Act

The National Forest Management Act requires the Forest Service to “provide for a diversity of plant and animal communities” (16 USC 1604(g)(3)(B)) as part of its multiple-use mandate. The Forest Service must maintain “viable populations of existing native and desired nonnative species in the planning area” (36 CFR 219.19). The Sensitive Species program is designed to meet this mandate and to demonstrate the Forest Service’s commitment to maintaining biodiversity on NFS lands. The program is a proactive approach to conserving species to prevent a trend toward listing under the ESA and to ensure the continued existence of viable, well-distributed populations. A “Sensitive Species” is any species of plant or animal that has been recognized by the Regional Forester as needing special management to prevent the species from becoming threatened or endangered.

In addition to identifying Sensitive Species, the National Forest Management Act of 1976 directs the Forest Service to provide habitat capable of maintaining viable populations of selected species and to select Management Indicator Species to help ensure species viability in relationship to the effects of management activities (36 CFR 219.19). Each national forest has established a management indicator species or assemblage program as part of its LRMP to implement this provision of the act.

Shasta-Trinity National Forest Land and Resource Management Plan

The STNF LRMP contains forest goals, standards, and guidelines designed to guide the management of the STNF. The following goals, standards, and guidelines related to wildlife resource issues associated with the study area were excerpted from the STNF LRMP (U.S. Fish and Wildlife Service 1995). The Forest Service will address biological issues as part of its National Environmental Policy Act process to support the special use permit and easement across the STNF for the proposed project. Analysis will involve surveys based on habitat assessment; biological evaluations, and Survey and Manage reports as needed; limited operating periods; and other avoidance and mitigation measures. Applicable Forest Goals related to biological resources include:

- integrate multiple resource management on a landscape level to provide and maintain diversity and quality of habitats that support viable populations of plants, fish, and wildlife;

- emphasize the restoration of summer steelhead and spring-run Chinook salmon habitat in the South Fork Trinity River Basin and provide for the protection, maintenance, and improvement of wild trout and salmon habitat;
- monitor and protect habitat for Federally listed threatened and endangered, and candidate species; assist in recovery efforts for threatened and endangered species; cooperate with the State to meet objectives for state listed species; and manage habitat for sensitive plants and animals in a manner that will prevent any species from becoming a candidate for threatened and endangered status;
- meet habitat or population objectives established for management indicators; cooperate with Federal, State, and local agencies to maintain or improve wildlife habitat; and maintain natural wildlife species diversity by continuing to provide special habitat elements within Forest ecosystems; and
- maintain and improve riparian habitat.

Applicable Forest Standards and Guidelines include the following:

- natural openings—Management of natural openings will be determined at the project level consistent with desired future conditions;
- snags—Over time, provide the necessary number of replacement snags to meet density requirements as prescribed for each land allocation and/or management prescription. Live, green culls and trees exhibiting decadence and/or active wildlife use are preferred.
- hardwood—Apply the following standards in existing hardwood types:
 - Manage hardwood types for sustainability.
 - Conversion to conifers will only take place to meet desired future ecosystem conditions.
 - Where hardwoods occur naturally within existing conifer types on suitable timber lands, manage for a desired future condition for hardwoods as identified during ecosystem analysis consistent with management prescription standards and guidelines. Retain groups of hardwoods over single trees;
- develop an instream flow assessment program to determine fish needs and to protect the integrity of fish habitat in selected streams;
- coordinate instream flow needs with CDFW, Counties and other local agencies to benefit fish habitat;
- improve the anadromous fisheries within the South Fork Trinity River and its tributaries within the context of a watershed/ecosystem analysis and in conjunction with the Trinity River Basin Fish and Wildlife Program;
- coordinate rehabilitation and enhancement projects with cooperating agencies involved with the Model Steelhead Stream Demonstration Project Plan and the Trinity River Basin Fish and Wildlife Management Program;
- minimize accidental electrocution of raptors by ensuring that newly constructed overhead power lines meet safe design standards;
- consider transplants, introductions, or reintroductions of wildlife species only after ecosystem analysis and coordination with other agencies and the public;

- manage habitat for Neotropical migrant birds to maintain viable population levels;
- develop interpretation/view sites for wildlife viewing, photography, and study. Provide pamphlets, slide shows, and other educational material that enhance the watchable wildlife and other interpretive programs;
- maintain and/or enhance habitat for federally listed threatened and endangered or Forest Service sensitive species consistent with individual species recovery plans;
- apply Riparian Reserve Standards and Guidelines;
- maintain riparian area values, particularly when locating and constructing new roads and trails; and
- identify and treat riparian areas that are in degraded condition.

Northwest Forest Plan

In 1994, the U.S. Bureau of Land Management and the Forest Service adopted standards and guidelines, commonly known as the Northwest Forest Plan, for the management of habitat for late-successional and old-growth forest related species within the range of the northern spotted owl. The plan was designed to address human and environmental needs served by the federal forests of the western part of the Pacific Northwest and northern California. The development of the plan was triggered in the early 1990s by the listing of the northern spotted owl and marbled murrelet as threatened under the ESA.

To mitigate potential impacts to plant and wildlife species that have the potential to occur within the range of the northern spotted owl, surveys are required for species thought to be rare, or whose status is unknown due to a lack of information. These species became known as the Survey and Manage species. The Northwest Forest Plan has gone through several revisions since its implementation in 1994; current management direction is derived from the 2001 *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and Other Mitigation Measures*.

Trinity County General Plan

The Trinity County General Plan contains goals and policies designed to guide the future physical development of the county based on current conditions. The Open Space element identifies the following goals and policies for protection and management of vegetation, wildlife, and wetlands (Trinity County 1973).

The open space element objectives are to preserve and maintain open space as a means of providing natural habitat for all species of wildlife. The Open Space recommendations are to:

- strive to conserve those resources of the county that are important to its character and economic well-being;
- maintain all species of fish and wildlife for their intrinsic and ecological values as well as for their direct benefit to mankind,
- provide for diversified recreation use of fish and wildlife,
- project an economic contribution of fish and wildlife in the best interest of the people of Trinity County,

- consider any plans to alter the present environment on the basis of protecting fish and wildlife and their habitat,
- provide for scientific and educational use of fish and wildlife,
- present land uses which result in siltation and pollution of lakes and streams should be carefully monitored and if necessary corrected to assure clean and productive habitat,
- carefully consider outstanding wildlife habitats that have an unusually high value for fish and wildlife before any development altering this environment is permitted.
- encourage development and enhancement of wildlife habitat through careful use of methods, such as, controlled burning, planting, water development, judicious livestock grazing, mechanical land manipulation and creation of ponds in water courses.
- recognize and encourage the various appropriate and non-appropriate uses of wildlife. This includes such activities as bird watching, scientific studies, educational purposes, hunting, and fishing, and
- retain and develop access to public areas very carefully through riding and hiking trails.

3.7.2 Environmental Setting

Habitat Conditions

Wildwood Road is a narrow, winding road that generally parallels Hayfork Creek. The road alignment traverses a number of steep draws, and, in some sections, the road fill has been placed on flat land that is coincident with the floodplain of small tributaries. At the north end of Segment 1, the road crosses gentle slopes across a broad terrace. Slopes on either side of the road bed along Segments 2 and 3 often exceed 50 percent. Elevations within the project area range between approximately 2,680 feet and 3,500 feet msl.

Conifer and hardwood forests as well as chaparral, riparian, and open habitats are present in the project area. Segment 1 is dominated by mixed conifer-hardwood woodlands with smaller patches of conifer forests whereas Segments 2 and 3 are dominated by conifer forests. Montane riparian habitat is found along Hayfork Creek in the northern portion of Segment 1. Segment 2 contains dense conifer forests in its northern and southern portions, with chaparral habitat dominating the central portion of the segment. Montane riparian habitat is located along two streams. Segment 3 is dominated by conifer forest; however, a forest fire burned most of the habitat on the west side of Wildwood Road. Montane riparian vegetation is located along two perennial streams in the northern and southern portions (Gemmill Gulch) of the segment. Descriptions of these habitat types are presented below and are based on habitat mapping conducted during field surveys for the proposed project.

Closed-Cone Pine

Closed-cone pine habitat occurs in small stands on a southeast-facing slope near the middle of the project area in Segment 2, approximately 1 mile north of Shiell Ranch. Knobcone pine (*Pinus attenuata*) dominates this habitat type.

Closed-cone pine forests provide foraging habitat and cover for tree squirrels, including western gray squirrel (*Sciurus griseus*) and chickaree (*Tamiasciurus douglasii*). Band-tailed pigeons (*Columba fasciata*) are frequent visitors of closed-cone pine forests. A few avian species will make use of this

forest type as breeding or nesting habitat, including great horned owl (*Bubo virginianus*) and red-tailed hawk (*Buteo jamaicensis*).

Klamath Mixed Conifer

Klamath mixed conifer habitat occurs throughout the project area, but is most prevalent in the southern portion of Segment 3. Dominant tree species include Douglas-fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), incense cedar (*Calocedrus decurrens*), California black oak (*Quercus kelloggii*), and Pacific madrone (*Arbutus menziesii*). Common shrub species include deer brush (*Ceanothus integerrimus*), common snowberry (*Symphoricarpos albus*), Mahala mat (*Ceanothus prostratus*), and little prince's pine (*Chimaphila menziesii*). Herbaceous species present include sticky cinquefoil (*Potentilla glandulosa*), yarrow (*Achillea millefolium*), mountain sweet cicely (*Osmorhiza chilensis*), and Yolla Bolly bedstraw (*Galium ambiguum*).

Klamath mixed conifer habitat provides an array of nesting and foraging opportunities for wildlife. Bird species commonly found in this habitat include ground-dwelling birds, such as mountain quail (*Oreotyx pictus*) and blue grouse (*Dendragapus obscurus*). Woodpeckers, including pileated woodpecker (*Dryocopus pileatus*) and hairy woodpecker (*Picoides villosus*), are often found in this vegetation community. Raptors in this vegetation community include sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*Accipiter cooperii*), northern goshawk (*Accipiter gentilis*), and northern spotted owl.

Western gray squirrel, northern flying squirrel (*Glaucomys sabrinus*), and chickaree are mammals often found in the tree canopy and on the ground foraging for seeds and nuts. Black bear (*Ursus americanus*) and black-tailed deer (*Odocoileus hemionus*) are often found in this habitat. Carnivorous mammals including gray fox (*Urocyon cinereoargenteus*) and mustelids, such as Pacific fisher (*Martes pennanti*) and long-tailed weasel (*Mustela frenata*), occur in this habitat. The leaf litter also provides habitat for the California kingsnake (*Lampropeltis zonata*) and the ensatina salamander (*Ensatina eschscholtzii*).

Montane Hardwood-Conifer

Montane hardwood-conifer habitat is present throughout the project area, but is most prevalent in Segments 1 and 2. This habitat type is characterized as a moderately dense overstory with very few shrubs in the understory. Multiple tree species constitute the canopy, including Douglas-fir, ponderosa pine, incense cedar, canyon live oak (*Quercus chrysolepis*), Oregon white oak (*Quercus garryana*), and tanoak (*Lithocarpus densiflora*). Common herbaceous species occurring in the understory include shooting stars (*Dodecatheon hendersonii*), rayless arnica (*Arnica discoidea*), and annual agoseris (*Agoseris heterophylla*).

The variability of the canopy cover and understory vegetation of the montane hardwood-conifer habitat community creates habitat for numerous species of wildlife. Hollow trees and logs provide denning sites for mammals such as the coyote (*Canis latrans*) and gray fox, and cavities in mature trees are used by cavity-dwelling species. Raptors, such as the red-tailed hawk, construct nests in the upper canopy of mature trees. Mast crops and conifer seeds are an important food source for many birds and mammals, including the Steller's jay (*Cyanocitta stelleri*), acorn woodpecker (*Melanerpes formicivorus*), California quail, black-tailed deer, and western gray squirrel.

Montane Hardwood

Montane hardwood habitat occurs in Segment 2. This habitat type includes dense stands of hardwood trees along ephemeral drainages and an open stand on a rocky ridge. The dominant trees are canyon live oak and Oregon oak. Wildlife found in this community is similar to the wildlife found in the montane hardwood-conifer community.

Ponderosa Pine

Ponderosa pine habitat occurs as two pine stands within the project area, one near the intersection of Wildwood Road and East Fork Hayfork Creek Road in Segment 1 and one at Gemmill Gulch in Segment 3. This habitat type is characterized by a moderately dense overstory of ponderosa pine with a sparse understory of deer brush. Herbaceous cover is also sparse and includes mountain sweet cicely and yarrow.

Ponderosa pine needles, cones, buds, pollen, twigs, seeds, and associated fungi and insects provide food for many species of birds and mammals including the mountain quail, western gray squirrel, chickaree, Allen's chipmunk (*Tamias senex*), black-tailed deer, and blue grouse. Mature trees provide nesting habitat for raptors such as the sharp-shinned hawk and red-tailed hawk, while snags and hollow logs provide shelter for species such as the Virginia opossum (*Didelphis virginiana*) and western spotted skunk (*Spilogale gracilis*).

Douglas-fir

Douglas-fir habitat occurs throughout the project area in all three segments. Douglas-fir habitat is characterized by open to dense conifer stands dominated by Douglas-fir. Associated species include ponderosa pine, occasional sugar pine (*Pinus lambertiana*), incense cedar, canyon live oak, and California black oak. Associated understory species vary, but are similar to that of other conifer forest types. The ground layer is open to moderate and is dominated by various grasses and forbs.

The multilayered vegetation in the Douglas-fir habitat community supports a variety of wildlife species. Mature, fire-damaged, and wind-damaged forests typically contain snags (dead trees that are still standing), which are a valuable resource for birds and mammals that prefer nest and den sites in cavities, such as the flammulated owl (*Otus flammeolus*) and northern pygmy owl (*Glaucidium gnoma*). Snags also support wood-boring insects that provide food for bark-gleaning insectivorous birds such as the brown creeper (*Certhia americana*). Other birds foraging and breeding in this habitat include the sharp-shinned hawk, mountain quail, western wood-pewee (*Contopus sordidulus*), and western tanager (*Piranga ludoviciana*). Mammals found in this habitat include the long-eared myotis (*Myotis evotis*), northern flying squirrel, and bobcat (*Lynx rufus*).

Mixed Chaparral

Mixed chaparral habitat is prevalent on southeast-facing slopes located in all three segments, but is most prominent in Segment 2. A dense shrub layer with few scattered trees and open areas is characteristic of this habitat type. The dominant shrubs include manzanita (*Arctostaphylos manzanita*), white-leaf manzanita (*Arctostaphylos viscida*), mountain mahogany (*Cercocarpus betuloides*), holly-leaved redberry (*Rhamnus ilicifolia*), and buckbrush (*Ceanothus cuneatus*).

Herbaceous species are present in open areas and include large flowering collomia (*Collomia grandiflora*), wooly sunflower (*Eriophyllum lanatum*), blue field-gilia (*Gilia capitata*), California lomatium (*Lomatium californicum*), Laynea's monkeyflower (*Mimulus layneae*), and foothill penstemon (*Penstemon heterophyllus*).

Mixed chaparral habitat provides food and cover for a number of bird species including wrentit (*Chamaea fasciata*), California towhee (*Pipilo crissalis*), and spotted towhee (*Pipilo maculatus*). Small mammals including the golden mantled ground squirrel (*Spermophilus lateralis*) and black-tailed hare (*Lepus californicus*) often occur in this habitat type. Additionally, reptile species including the western fence lizard (*Sceloporus occidentalis*) and western skink (*Eumeces skiltonianus*) can be found in chaparral.

Annual Grassland

Annual grassland occurs primarily within the relatively flat, open section in the northern portion of Segment 1. A large portion of this annual grassland is cultivated and used for grazing cattle. Dominant plant species include wild oats (*Avena barbata*), soft chess (*Bromus hordeaceus*), chicory (*Cerastium glomeratum*), black mustard (*Brassica nigra*), and bird's foot trefoil (*Lotus corniculatus*). Klamath weed (*Hypericum perforatum*), yellow star-thistle (*Centaurea solstitialis*), and rose clover (*Trifolium hirtum*) are invasive plants found in annual grassland.

Annual grasslands provide important wildlife habitat. Grassland bird species, such as the mourning dove (*Zenaidura macroura*), savannah sparrow (*Passerculus sandwichensis*), and white-crowned sparrow (*Zonotrichia leucophrys*), as well as rodents, such as the California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), and deer mouse (*Peromyscus maniculatus*), forage on the seed crop this community provides. These species, in turn, attract predators such as the gopher snake (*Pituophis catenifer*), red-tailed hawk, barn owl (*Tyto alba*), and coyote. Other common grassland species likely to occur in the project area include the western meadowlark (*Sturnella neglecta*) and black-tailed hare. Reptile species expected to occur include the western fence lizard, western skink, western rattlesnake (*Crotalus viridis*), and racer (*Coluber constrictor*).

Montane Riparian

Montane riparian habitat is present within the floodplain of Hayfork Creek and along the banks of perennial and intermittent streams that flow through the project area. This habitat type also occurs on frequently flooded gravel and sand bars in streams. White alder (*Alnus rhombifolia*) dominates this community. Other tree species present include incense cedar, Pacific yew (*Taxus brevifolia*), and big-leaf maple (*Acer macrophyllum*). Common shrubs include arroyo willow (*Salix lasiolepis*), American dogwood (*Cornus sericea* ssp. *sericea*), common snowberry, Sierra plum (*Prunus subcordata*), and western choke cherry (*Prunus virginiana*). Dominant herbaceous species include horsetail (*Equisetum arvense*), elk clover (*Aralia californica*), Indian rhubarb (*Darmera peltata*), and velvet grass (*Holcus lanatus*). Invasive plants found in the montane riparian community include Canada thistle (*Cirsium arvense*), poison hemlock (*Conium maculatum*), and Himalayan blackberry (*Rubus armeniacus*).

Riparian woodlands represent some of the most important wildlife habitats due to their high floristic and structural diversity, high biomass (and therefore high food abundance), and water availability. In addition to providing breeding, foraging, and roosting habitat for a diverse array of animals, riparian habitats also provide movement corridors.

The leaf litter, fallen tree branches, and logs associated with the riparian communities provide cover for amphibians such as the western toad (*Bufo boreas*) and Pacific chorus frog (*Pseudacris regilla*). The western fence lizard, western skink, and northern alligator lizard (*Elgaria coerulea*) are also expected to occur here, as are several snake species, including the western rattlesnake, racer, and common kingsnake.

Common bird species nesting and foraging in this habitat, primarily in the riparian tree canopy, include the bushtit (*Psaltriparus minimus*), white-breasted nuthatch (*Sitta carolinensis*), black phoebe (*Sayornis nigricans*), Nuttall's woodpecker (*Picoides nuttallii*), and downy woodpecker (*Picoides pubescens*). Other resident species, such as the spotted towhee and song sparrow (*Melospiza melodia*), often nest and forage in dense understory vegetation. Several species of raptors, including the red-shouldered hawk (*Buteo lineatus*), Cooper's hawk, American kestrel, (*Falco sparverius*), great horned owl (*Bubo virginianus*), and western screech-owl (*Otus kennicottii*) are also year-round residents of riparian communities.

Several mammals also occur in riparian communities. Small mammals, such as the Botta's pocket gopher and deer mouse, may burrow or find refuge in dense grass or brushy thickets. Black-tailed deer frequently use riparian habitats, and opportunists, such as the raccoon (*Procyon lotor*), are attracted by the abundance of prey and cover.

Riverine

Riverine habitat in the project area occurs as perennial and intermittent streams that flow through the project area and their associated floodplains. Streams that cross through the project area are medium to high gradient streams and average approximately 30 inches wide with a bank full depth of approximately 6 inches. Dominant substrates include cobble, gravel, sand, and boulder. Plant species along the streams include Indian rhubarb, torrent sedge (*Carex nudata*), and elk clover.

Riverine habitat provides critical food, water, and cover to a variety of wildlife species. Many amphibians, fish, and invertebrates are dependent on riverine habitat for survival. Several species of waterfowl and heron (*Ciconiiformes* spp.) use riverine habitats to forage, escape predation, and seek refuge. Additionally, many species of insectivorous birds and bats find their prey over water.

Resident native fish species found in the Trinity River basin include game fish such as rainbow trout (*Oncorhynchus mykiss*) and non-game fish such as speckled dace (*Rhinichthys osculus*), Klamath smallscale sucker (*Catostomus rimiculus*), three-spined stickleback (*Gasterosteus aculeatus*), Pacific lamprey (*Entosphenus tridentata*) coast range sculpin (*Cottus aleuticus*), and marbled sculpin (*Cottus klamathensis*). Non-native fish species found in the Trinity and Klamath River basins include striped bass (*Morone saxatilis*), American shad (*Alosa sapidissima*), brown bullhead (*Ameiurus nebulosus*), green sunfish (*Lepomis cyanellus*), brown trout (*Salmo trutta*), and brook trout (*Salvelinus fontinalis*) (U.S. Fish and Wildlife Service, unpublished data).

Hayfork Creek supports anadromous runs of steelhead trout, Pacific lamprey, Chinook salmon, and to a very limited extent Coho salmon in the lower most reaches. Steelhead and lamprey are known to occur within the upper Hayfork Creek watershed (U.S. Forest Service 1998). Steelhead in particular is known to spawn in perennial and intermittent stream channels provided sufficient water is present at the time of spawning. Juvenile steelhead will rear in such streams until low water or poor water quality forces them to emigrate to larger and deeper stream channels.

Barren

The barren habitat in the project area includes primarily Wildwood Road and compacted dirt parking areas and turnouts along Wildwood Road. Sparse opportunistic weedy species are present along the edges of pavement and in less compacted areas. Weedy species occurring in barren habitat include cheat grass (*Bromus tectorum*), red brome (*B. madritensis*), and woolly mullein (*Verbascum thapsus*).

Special-Status Species

A special-status species assessment was conducted for the proposed project to identify those species that could use habitats in or near the project area. Special-status plant species include species that are:

- designated as rare by the CDFW or the U.S. Fish and Wildlife Service (USFWS) or are listed as threatened or endangered under ESA or CESA;
- proposed for state or federal designation as rare or for listing as threatened or endangered;
- state or federal candidate species for listing as threatened or endangered;
- ranked as California Rare Plant Rank 1B or 2; and/or
- designated as a Forest Service Sensitive Species.

Special-status animal species include species that are:

- listed as threatened or endangered under ESA or CESA;
- proposed for state or federal listing as threatened or endangered;
- state or federal candidates for listing as threatened or endangered;
- identified by the CDFW as Species of Special Concern or California Fully Protected Species; and/or
- designated as a Forest Service Sensitive Species.

The special-status species listed in Table 3.7-1 were determined to have the potential to use the habitats in the project area and, thus, could be affected by the proposed project. Table 3.7-1 also identifies where the species are likely to occur in the project area. Forest Sensitive species listed in Table 3.7-1 are only those that are also designated as special-status under CESA, ESA, California species of special concern, or California fully protected. Species that are found in habitat communities that are not present in the project area or that are not likely to breed in the project area, but may forage in regionally available habitat nearby, were eliminated from detailed analysis. In addition, no targeted special-status plant species were detected in the project area during focused surveys as part of the field investigations, and none are expected to occur in the project area. Plant surveys focused on species that are considered special-status as defined above, as well as Survey and Manage species.

Forest Service Sensitive and Survey and Manage species will be evaluated in more detail by the Forest Service as part of its National Environmental Policy Act (NEPA) process and are only generally evaluated in this section. Forest Service Sensitive and Survey and Manage animal species that would be included in the Forest Service evaluation include aquatic and terrestrial mollusks and other animals such as Pacific lamprey (*Entosphenus tridentatus*) and American marten (*Martes americana*). Forest Service Sensitive and Survey and Manage species lists for the STNF are provided in Appendix D.

Table 3.7-1. Special-Status Wildlife Species with Potential to Occur in the Project Area

Common Name Scientific Name	Listing Status ¹ (Fed/State)	General Habitat	Comments
Southern Oregon/northern California coasts coho salmon ESU <i>Oncorhynchus kisutch</i>	T/—	Juveniles prefer deep (>1 m) pools with dense overhead cover and clear water. Found over a range of substrates from silt to bedrock. Trinity River is designated critical habitat and essential fish habitat.	Hayfork Creek provides habitat. However, coho salmon has only been reported in Hayfork Creek downstream of Corral Creek, more than 21 miles downstream of the project area (Wiseman pers. comm.). Critical Habitat/Essential Fish Habitat
Klamath Mountains Province steelhead distinct population segment <i>Oncorhynchus mykiss irideus</i>	FSS/SC	This distinct population segment includes steelhead from the Elk River in Oregon to the Klamath and Trinity Rivers in California, inclusive.	Hayfork Creek provides habitat. Steelhead have been observed in Hayfork Creek (Frink et al. 1990, Lau and Sinnen 1998).
Upper Klamath-Trinity Rivers ESU spring-run Chinook <i>Oncorhynchus tshawytscha</i>	FSS/SC	The ESU includes all naturally spawned populations of Chinook salmon in the Klamath and Trinity River basins upstream of the confluence of the Klamath and Trinity Rivers.	Hayfork Creek provides habitat. Chinook salmon have been observed in Hayfork Creek (Lau and Sinnen 1998).
Foothill yellow-legged frog <i>Rana boylei</i>	FSS/SC	Cool, fast-moving rocky streams in a variety of habitats.	Hayfork Creek and tributaries provide habitat; species was observed in Hayfork Creek at Gemmill Gulch (Bainbridge pers. comm.).
Tailed frog <i>Ascaphus truei</i>	—/SC	Clear, rocky, swift, cool perennial streams in densely forested habitats.	Hayfork Creek and other perennial streams provide habitat. Nearest California Natural Diversity Database (CNDDDB) record is 6.5 miles east of the project area.

Table 3.7-1. Special-Status Wildlife Species with Potential to Occur in the Project Area

Common Name Scientific Name	Listing Status (Fed/State)	General Habitat	Comments
Western pond turtle <i>Actinemys marmorata</i>	FSS/SC	Slow-water aquatic habitat with available basking sites. Hatchlings require shallow water with dense submergent or short emergent vegetation. Require an upland oviposition site in the vicinity of the aquatic site.	Hayfork Creek and the adjacent montane riparian community provide habitat. Observed in Hayfork Creek in 2010 (California Department of Fish and Wildlife 2013).
Northern spotted owl <i>Strix occidentalis caurina</i>	T/—	In northern California, resides in large stands of early-, mid-, or late-seral, multi-layered conifer, mixed conifer, redwood, and Douglas-fir habitats	Conifer, mixed hardwood conifer, and montane hardwood forests provide nesting/roosting and foraging habitat throughout the project area. Known occurrences within 0.75 mile of the project area. Critical habitat has been designated in most of the project area.
Northern goshawk <i>Accipiter gentilis</i>	FSS/SC	Breeds in dense, mature conifer and deciduous forests, interspersed with meadows, other openings, and riparian areas; nesting habitat includes north-facing slopes near water.	Conifer forests in and adjacent to the project area are of sufficient size and density to support goshawk. Nearest CNDDDB occurrence is 25 miles west of the project area.
Long-eared owl <i>Asio otus</i>	—/SC	Dense riparian and live oak thickets near meadow edges and nearby woodland and forest habitats; also found in dense conifer stands at higher elevations.	Conifer and woodland forests throughout the project area provide habitat for this species.
Purple martin <i>Progne subis</i>	—/SC	Breeding habitat includes old-growth, multi-layered open forest and woodland with snags; forages over riparian areas, forest, and woodlands.	Conifer and woodland forests throughout the project area provide habitat for this species.
Vaux's swift <i>Chaetura vauxi</i>	—/SC	Prefers redwood and Douglas-fir habitats; nests in hollow trees and snags or, occasionally, in chimneys; forages aerially.	Conifer and woodland forests throughout the project area provide habitat for this species.
Yellow warbler <i>Dendroica petechia</i>	—/SC	Breeds in riparian woodlands, particularly those dominated by willows and cottonwoods.	Montane riparian vegetation provides habitat in the project area.
Yellow-breasted chat <i>Icteria virens</i>	—/SC	Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.	Montane riparian vegetation provides habitat in the project area.

Table 3.7-1. Special-Status Wildlife Species with Potential to Occur in the Project Area

Common Name <i>Scientific Name</i>	Listing Status (Fed/State)	General Habitat	Comments
Olive-sided flycatcher <i>Contopus cooperi</i>	—/SC	Breeds primarily in late-successional conifer forests with open canopies. Mostly associated with edges, openings, and clearings in otherwise relatively dense forests.	Conifer forests throughout the project area provide habitat for this species.
Pallid bat <i>Antrozous pallidus</i>	FSS/SC	Forages over many habitats; roosts in buildings, large oaks or redwoods, rocky outcrops and rocky crevices in mines and caves.	Decadent trees with sufficiently sized cavities are present in the project area and could provide roosting habitat for this species.
Pacific fisher <i>Martes pennanti pacifica</i>	C, FSS/SC	Dens and forages in intermediate to large stands of old-growth forests or mixed stands of old-growth and mature trees with greater than 50% canopy closure. May use riparian corridors for movement.	Conifer and woodland forests and montane riparian vegetation provide foraging and denning habitat throughout the project area. Nearest CNDDDB occurrence 3.8 miles southwest of project area.
Ring-tailed cat <i>Bassariscus astutus</i>	—/FP	Riparian habitats and brush stands of most forest and shrub habitats. Nests in rock recesses, hollow trees, logs, snags, abandoned burrows, or woodrat nests.	Conifer and woodland forests and montane riparian vegetation provide foraging and denning habitat throughout the project area.

¹ Status Codes: Endangered (E); Threatened (T); Candidate (C), Forest Service Sensitive (FSS), Fully Protected (FP); Species of Special Concern (SC).

Local Sensitive Habitats

Riparian habitat is considered a sensitive natural community by the U.S. Army Corps of Engineers (Corps), CDFW, and Trinity County and is protected by the Forest Serve under its LRMP (see Riparian Reserves discussion in Section 3.2, Land Use). In addition to providing habitat for many wildlife species, riparian areas provide shade, sediment, nutrient or chemical regulation, stream bank stability, and input for large woody debris or organic matter to the channel, which are necessary habitat elements for fish.

Riparian habitat (montane riparian) is present throughout the project area along streams. Riparian scrub habitat along Hayfork Creek in Segment 1 is approximately 25 to 150 feet wide and 400 feet long and is dominated by willow, interspersed with overstory trees including white alder and shining willow. Perennial streams in Segments 2 and 3 are characterized with overstory “stringers” that are limited to the banks of the streams, which generally range from 5 to 10 feet wide. Stringers are dominated by an overstory of white alder with occasional arroyo willow in the understory.

Waters of the United States

NSR conducted a delineation of waters of the United States in the project area on September 21, 22, and 23, and October 26, 2010 (North State Resources, Inc. 2012a). The Corps verified the delineation on July 30, 2013. Types of waters of the United States mapped within the project area include riparian wetland, seasonal wetland, vegetated ditch, ephemeral stream, intermittent stream, non-vegetated ditch, and perennial stream. Waters of the United States within the project area encompass approximately 1.076 acres, including approximately 0.531 acre in Segment 1, 0.240 acre in Segment 2, and 0.304 acre in Segment 3 (Table 3.7-2). A brief description of the delineated features follows the table.

Table 3.7-2. Acreage Summary of Waters of the United States

Waters of the United States	Segment 1		Segment 2		Segment 3		Total Acreage	Total Linear Feet
	Acres	Linear Feet	Acres	Linear Feet	Acres	Linear Feet		
Wetlands								
Riparian Wetland	0.383	—	0.053	—	0.094	—	0.530	—
Seasonal Wetland	0.011	—	0.002	—	—	—	0.013	—
Vegetated Ditch	0.017	—	—	—	0.012	—	0.029	—
Total Wetlands	0.411	—	0.055	—	0.106	—	0.572	—
Other Waters								
Ephemeral Stream	0.008	127	0.060	1,417	0.063	1,056	0.130	2,600
Intermittent Stream	0.107	743	0.009	196	0.012	212	0.128	1,151
Non-vegetated Ditch	0.006	160	—	—	0.056	1,724	0.062	1,884
Perennial Stream	—	—	0.117	1,005	0.067	825	0.184	1,830
Total Other Waters	0.120	1,030	0.186	2,618	0.198	3,817	0.504	7,465
Total Waters of the United States	0.531	1,030	0.240	2,618	0.304	3,817	1.076	7,465

Riparian wetlands occur along Hayfork Creek and several intermittent and perennial streams in each of the project segments. White alder, arroyo willow, and shining willow typically dominate the overstory, with an understory of western chokecherry, American dogwood, and Himalayan blackberry.

Seasonal wetlands occur in Segments 1 and 2. Cattail dominates the wetland in Segment 1, and durango root (*Datisca glomerata*) dominates the wetland in Segment 2.

Vegetated ditches are located in Segments 1 and 3. Vegetated ditches in Segment 1 are dominated by hydrophytes (wetland-dependent plants), including hooked-fruit buttercup (*Ranunculus uncinatus*) and hedge nettle (*Stachys ajugoides*). Dominant hydrophytic vegetation in vegetated ditches in Segment 3 include horsetail (*Equisetum arvense*), swordleaf rush (*Juncus ensifolius*), and iris-leaved rush (*Juncus xiphioides*). Seeps located along the upslope embankment along Wildwood Road provide hydrology for the ditches.

Other waters include ephemeral, intermittent, and perennial streams, and non-vegetated ditches. Ephemeral and intermittent streams occur in all three segments throughout the project area. Perennial streams occur in Segments 2 and 3, and non-vegetated ditches are present in Segments 1 and 3. Ephemeral, intermittent, and perennial streams and non-vegetated ditches are tributary to Hayfork Creek, a perennial stream. Streams range in size from 1 to 10 feet wide and substrates include sand, cobble, boulder, and bedrock.

3.7.3 Impact Analysis and Mitigation Measures

Methodology

The analysis of impacts on vegetation, fish, wildlife, and other sensitive biological resources is based on a review of applicable management plans, informal consultation with resource agencies, review of existing documentation that addresses biological resources in or near the project area, and observations from multiple field surveys of the project area. Project-specific studies and analytical reports referenced in this document are available from Trinity County. The information presented in other reports was used to determine the potential for special-status species to occur in the project area and to characterize the habitat present in the project area; this information was used to determine the potential for special-status species and their habitats to be affected by the proposed project. Because detailed construction plans have not been developed for each segment of the project, impacts on habitats, special-status species, waters of the United States, and other biological resources in each segment are discussed at a programmatic level and are primarily qualitative.

The following surveys were conducted and technical reports prepared to identify biological resources that could be affected by the project:

- Delineation of Waters of the United States,
- Botanical Survey,
- Northern Spotted Owl Habitat Assessment,
- Biological Assessment for Northern Spotted Owl and Pacific Fisher, and
- Biological Assessment/Essential Fish Habitat Assessment for Oregon/Northern California Coasts Coho Salmon ESU.

Thresholds of Significance

The following significance criteria were developed from Appendix G of the CEQA Guidelines. Impacts on vegetation, fish, wildlife, or sensitive biological resources would be significant if the proposed project would:

- substantially adversely affect, either directly or through habitat modifications, any species identified as a candidate for listing as threatened or endangered, sensitive, or special status by CDFW or the USFWS;
- adversely modify designated critical habitat for any federally listed species or essential fish habitat, including that for coho salmon or northern spotted owl;
- substantially adversely affect any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or the USFWS;

- substantially adversely affect federally protected wetlands as defined by Section 404 of the CWA through direct removal, fill, hydrological interruption, or other means;
- substantially interfere with or disrupt movement of any native resident or migratory fish species, substantially disrupt major terrestrial wildlife migration or travel corridors, or impede the use of native wildlife nursery sites;
- substantially adversely affect, either directly or through habitat modifications, any non-special-status wildlife species;
- eliminate a native plant or animal community;
- introduce or proliferate the spread of non-native and invasive plants; or
- would not comply with the Trinity County general plan biological resource policies.

Impact Analysis

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

Instream construction activities as well as construction activities upslope of streams (e.g., clearing, grubbing, cutting/filling, blasting, grading, installing culverts, and paving) could have direct and indirect impacts on resident and special-status species that occupy aquatic habitats and could modify riverine habitat for these species. Aquatic species that may be affected by these activities include special-status fish (Oregon/northern California coho salmon ESU, upper Klamath-Trinity Rivers ESU spring-run Chinook, and Klamath Mountains Province steelhead ESU), special-status herpetofauna (foothill yellow-legged frog, tailed frog, and western pond turtle), and other resident fish and herpetofauna. Instream construction would be scheduled from mid-June until the onset of winter rains (about mid-November), which would minimize impacts on aquatic species and riverine habitat. Direct mortality of eggs, juvenile or adult fish or herpetofauna federally or state listed as threatened or endangered or California species of special concern, or large quantities of resident fish would be a significant impact.

Fish. Direct impacts on coho salmon, Chinook salmon, or steelhead eggs and juveniles of coho and Chinook salmon are not expected because spawning habitat is not present in the project area and rearing juveniles of salmon are not likely to be present between mid-June and January (North State Resources, Inc. 2013c). Instream construction activities could result in direct impacts on non-breeding steelhead and other resident fish because these species have the potential to occur in Gemmill Gulch and other perennial streams. No other drainages provide habitat for steelhead or resident fish species. Although work would occur when juvenile and adult fish may be present, individuals could move upstream or downstream from the perceived threat when equipment enters the stream. Impacts may be limited to dispersion or displacement of individuals; however, mortality of fish could occur during the placement of diversion structures or culverts in Gemmill Gulch and other perennial streams. Mortality of special-status fish individuals would be a significant impact. Implementation of Mitigation Measure BR-1a would reduce the potential for mortality of special-status fish.

Installation of culverts in streams may impede fish passage through the formation of a hydraulic drop. Impedance of fish species to access potential habitat would be a potentially significant impact. Implementation of Mitigation Measure BR-1b would ensure that the culverts provide proper fish passage.

Construction activities including the installation and removal of culverts would not reduce available riverine habitat because installation of the new culverts would provide the same ecological function as the culverts that they replace, which is to allow passage upstream of the road.

The removal of riparian vegetation along the margins of Wildwood Road and tributaries to Hayfork Creek could adversely affect the quality of aquatic habitat for salmonids and other resident fish. The removal of up to 3 acres of riparian vegetation in Segment 1 along Hayfork Creek (see discussion below) would take place in the floodplain away from the wetted portion of the creek where the vegetation does not shade aquatic habitat; therefore, no loss of shaded riverine habitat is expected. Because of the perpendicular orientation of the streams to the new road alignment in Segments 2 and 3, a limited amount of riparian habitat (up to 1 acre) would need to be removed to modify the road. Additionally, streams in these segments are in steep canyons oriented west to east where upland overstory trees also provide shade for aquatic habitat. Impacts on riverine habitat would be less than significant because the overall ecological function of the habitat would remain despite the removal of adjacent riparian vegetation. Project implementation would not adversely modify primary constituent elements in habitat designated as critical habitat or essential fish habitat, and no impacts on constituent components would be expected. Impacts associated with the removal of riparian habitat as they relate to wildlife are addressed in Impact BR-4. No construction is proposed within the main channel of Hayfork Creek, and no direct impacts on stream habitat within Hayfork Creek are expected.

Herpetofauna. Instream construction activities could result in mortality of foothill yellow-legged and tailed frogs or western pond turtles if present during instream construction activities. Instream activities are expected to occur outside the period when egg masses are present, and no effects on egg masses are expected. Because tadpoles may be attached to rocks during the late spring and early summer when instream work would occur and juvenile and adult individuals of these species typically take cover under rocks when disturbed, mortality of individuals could occur, which would be a significant impact. Implementation of Mitigation Measure BR-1c would reduce the potential for mortality of individuals during instream activities.

Mortality of individual western pond turtles or destruction of their nests or eggs could occur during instream or upland construction activities. Western pond turtles will likely move upstream or downstream away from the threat of equipment entering Hayfork Creek or perennial streams, and mortality of individual adults is not expected. Vegetation removal, grading, and cut/fill activities within 660 feet of aquatic habitat between March and August (per Zeiner, et al. 1988) could disturb pond turtle nests or young, which could affect the species' reproductive success and result in a significant impact. Implementation of Mitigation Measure BR-1c would reduce the potential for nest disturbance during construction activities.

As with discussed for fish, installation of culverts would result in no net loss of riverine habitat. Impacts on riparian habitat, which provide upland habitat for these species, are addressed in Impact BR-4.

Hazardous Materials. Construction activities typically include the refueling of construction equipment on location. As a result, minor fuel and oil spills could occur, with a risk of larger releases. Without rapid containment and clean up, these materials could be toxic, depending on the location of the spill in relation to surface water features. Indirect impacts on aquatic species could

occur if water quality is compromised by petroleum or chemical spills or turbidity and sedimentation, which could be significant. Erosion and sediment control and other water quality measures, as discussed in Section 3.10, Hydrology and Water Quality, would be implemented during construction to minimize impacts on water quality. These measures would reduce the potential for adverse impacts on aquatic species, and impacts would be less than significant.

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.

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.

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.

Level of Significance: *Less than significant with implementation of the mitigation measures because impacts on special-status fish and herpetofauna would be avoided or minimized.*

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

Construction activities to widen and realign Wildwood Road (e.g., clearing, grubbing, cut/fill, blasting, grading, and paving) could have direct and indirect impacts on special-status species nesting or breeding in the project area and could modify or remove habitat for these species. Special-status species that may be affected include those that nest, roost, or breed in conifer or hardwood forests (northern spotted owl, northern goshawk, long-eared owl, purple martin, Vaux's swift, olive-sided flycatcher, pallid bat, Pacific fisher, and ring-tailed cat) and that nest or breed in riparian habitat (yellow warbler and yellow-breasted chat). The activities could also affect other common raptors and migratory birds nesting in or near the project area. Direct mortality of special-status birds, raptors, migratory birds, or mammals or disruption of their reproductive success would be a significant impact.

The construction schedule for each segment would depend on when funding becomes available. Typically, construction activities would take place between the spring of the first year and the fall of the following year. Vegetation removal may be scheduled to avoid the nesting/breeding season of most species. Impacts would be most pronounced during the nesting/denning season for birds and mammals because of the potential effects on reproductive success and young. In Trinity County, the nesting season for most special-status and migratory birds extends from March 1 through August 31, and the typical nesting period for raptor species is between February 15 and August 15. For mammals, the natal and maternal denning period is typically between March 1 and July 31.

Birds: Removal of vegetation could disturb bird nesting activity (e.g., incubating, feeding, etc.), or could result in mortality of young if they are unable to move from the area. Localized disturbance, including nest abandonment, could result from line-of sight disturbance or noise generated by equipment used to cut and remove vegetation; blast and remove material from cuts into the embankment; transport and place fill; and grade and compact the roadbed for final paving. Impacts from construction noise would be similar in each of the segments. These impacts could be significant if reproductive success is affected. Implementation of Mitigation Measures BR-2a and BR-2b would reduce the potential for disturbance of nesting birds.

Although the potential for nesting owls in the project area is considered low, nesting northern spotted owls could be present in adjacent habitat and could be disturbed by noise and visual harassment generated by the construction activities. Such disturbance could result in nest abandonment, mortality of young, and increased risk of predation. Auditory and visual harassment of northern spotted owl could result from construction activities that take place during the nesting season (February to mid-July) within approximately 650 feet of the functional nesting/roosting habitat, which would be a significant impact. Implementation of Mitigation Measures BR-2a and BR-2c would reduce the potential for impacts on nesting northern spotted owls.

Mammals. Construction activities could have a direct effect on denning Pacific fisher and ring-tailed cats. If these species are not given the opportunity to move their young prior to vegetation removal during the natal and maternal denning period (March 1–July 31), removal of a natal den tree could result in the mortality of young. Vegetation removal could also remove pallid bat roosts in trees, including maternity colonies (females and young) during parturition (April–July) and hibernacula during the rest of the year. The loss of a maternity colony or bat roost could affect the species’ regional population, as well as its reproductive success. Mortality caused by removal of vegetation or structures that contain a natal den for fisher or ring-tailed cats or maternity or other roost for bats would be a significant impact. Implementation of Mitigation Measures BR-2a, BR-2d, and BR-2e would reduce the potential for impacts on denning Pacific fisher and ring-tailed cat or roosting bats.

Localized disturbances such as noise and line-of sight disturbances caused by construction activities could cause Pacific fisher, ring-tailed cats, and roosting bats in trees outside the project area to relocate or move their young. The presence of construction activity and noise may deter occupation of the area by special-status mammals or result in relocation, including young, from the construction area. An increased risk of predation is not expected since these species commonly move young when disturbed and to avoid predation (California Department of Forestry and Fire Protection 2013). Because Pacific fisher, ring-tailed cats, and pallid bats are able to move their young to alternate maternity dens or roosts and denning and roosting habitat is readily available near the project area, impacts caused by noise-related and line-of-sight disturbances would be less than significant.

Habitat. The loss of habitat for nesting birds and mammals would be limited to the areas adjacent to the existing roadway and would not fragment northern spotted owl foraging or nesting/roosting habitat or other habitat used by special-status birds or mammals. Up to an estimated 139.2 acres of upland habitat that could support special-status birds or mammals may be removed from the project area (Table 3.7-3). This includes: up to 12.8 acres of forested habitat, 2.6 acres of riparian habitat, 2.6 acres of chaparral habitat, and 3.2 acres of annual grasslands in Segment 1; up to 52.3 acres of forested habitat, 0.5 acre of riparian habitat, and 6.0 acres of chaparral habitat in Segment 2; and up to 26.3 acres of forested habitat, 0.5 acre of riparian habitat, and 1.4 acres of chaparral habitat in Segment 3.

Table 3.7-3. Acreage of Potentially Affected Upland Habitat Communities

Community	Segment 1	Segment 2	Segment 3	Total Acreage	Percent of Total
Closed-cone pine	-	1.9	-	1.9	1.4%
Klamath mixed conifer	0.5	7.5	16.3	24.3	17.5%
Montane hardwood-conifer	8.7	30.0	1.3	40.0	28.7%
Montane hardwood	-	2.2	-	2.2	1.6%
Ponderosa pine	0.1	-	0.2	0.3	0.2%
Douglas-fir	3.5	10.7	8.5	22.7	16.3%
Mixed chaparral	2.6	6.0	1.4	10.0	7.2%
Annual grassland	3.2	-	-	3.2	2.3%
Montane riparian	2.6	0.5	0.5	3.6	2.6%
Other (barren, riverine)	6.2	14.8	10.0	31.0	22.2%
Total	27.4	73.6	38.2	139.2	100%

The loss of habitat would be limited to forested areas adjacent to the existing roadway that are already subject to ongoing disturbance from vehicle traffic and other activities along the road. Vegetation plantings after construction would occur along the road in suitable areas, and trees removed from riparian areas during construction would be replaced in the riparian areas (see Mitigation Measure BR-4a and 4b). Because of the proximity to the road, habitat that would be affected is considered to be of low quality for special-status species, and the widening and re-alignment of the road would not diminish the quality of the habitat or fragment existing habitat. Forested and riparian habitats would continue to provide the same functional habitat for special-status bird and mammal species as currently exists. Impacts on upland habitat would be less than significant.

Northern spotted owl habitat that may be removed during vegetation removal activities includes up to approximately 21 acres of foraging habitat and 4 acres of nesting habitat, all of which are within designated critical habitat for the owl (North State Resources, Inc. 2013b). Segment 1 contains approximately 3.1 acres of foraging habitat and Segments 2 and 3 contain small amounts of nesting/roosting (5.0 and 0.12 acre, respectively) and foraging habitat (12.3 and 8.0 acres, respectively) that could be removed to accommodate the new road alignment and segments of the road that would be widened. Due to the proximity of Wildwood Road and existing disturbances, the likelihood for northern spotted owl to use the nesting habitat adjacent to the road is very low. Project implementation would not adversely modify primary constituent elements in habitat designated as critical, and no impacts on constituent components would be expected.

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

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.

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.

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.

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.

Level of Significance: Less than significant with implementation of the mitigation measures because impacts on special-status and migratory birds and special-status mammals would be avoided or minimized.

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

Construction activities to widen and realign Wildwood Road (e.g., clearing, grubbing, cut/fill, blasting, grading, and paving) could have both direct and indirect impacts on Forest Service Sensitive or Survey and Manage species in the project area and could modify or remove habitat for these species. Impacts BR-1 and BR-2 address impacts on most of these species because they are also federally listed or considered California species of special concern. Impacts on species not previously addressed would be similar to the impacts identified above; a brief discussion of potential impacts is presented below. The Forest Service will conduct a thorough analysis of impacts to these species as part of its NEPA process. No Forest Service Sensitive or Survey and Manage plant species (vascular or non-vascular) were detected during botanical surveys, and no impacts would be expected.

Aquatic Forest Service Sensitive/Survey and Manage species could be affected by construction activities in the Hayfork Creek floodplain and perennial tributaries present within the project area. As discussed for Impact BR-1, impacts on individuals could result from instream work and impacts on aquatic habitat could result from degradation of water quality through sedimentation or spills of hazardous materials. These impacts could be significant. In addition to any measures the Forest Service develops during the NEPA process (see Mitigation Measure BR-3), implementation of Mitigation Measures BR-1a through BR-1c would avoid or reduce impacts on individuals and aquatic habitat.

Forest Service Sensitive/Survey and Manage terrestrial mollusks could be affected by construction activities in cool, moist microhabitats, including forest litter, large woody debris, talus slopes, moist seeps, and drainages throughout the project area. Vegetation removal and grading that results in the removal of overstory canopy, downed large wood and forest litter or disturbance of talus slopes could directly affect individuals and alter the microhabitats (e.g., reduce shading, modify hydrology, or facilitate habitation by invasive species), which could result in significant impacts. In addition to any measures the Forest Service develops during the NEPA process (see Mitigation Measure BR-3), implementation of Mitigation Measures BR-1a through 1c would avoid or reduce impacts on individuals and moist habitats.

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.

Level of Significance: Less than significant with implementation of the mitigation measures because impacts on Forest Service Sensitive and Survey and Manage species would be avoided or minimized.

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

Vegetation removal to accommodate road widening and realignment could result in temporary and permanent impacts on montane riparian habitat areas along Hayfork Creek in Segment 1 (up to about 2.68 acres), along two streams in Segment 2 (up to about 0.50 acre), and along two perennial streams in Segment 3 (up to about 0.48 acre) (see Table 3.7-3). The actual extent of impacts will be identified once design details for each segment are available. This analysis considers the maximum amount of impacts based on the extent of riparian habitat in the project area. Impacts on riparian habitat can only be considered less than significant where there is no permanent loss of riparian habitat or no substantial temporal loss of riparian habitat in terms of acreage, function, and value. A significant temporal loss is defined as one that causes substantial or potentially substantial adverse change in the quantity and/or quality of the wetland or riparian habitat within the project area. A portion of the riparian habitat is considered a riparian wetland, which is evaluated as part of the waters of the United States impact (Impact BR-5).

In the region, significant areas of riparian habitat are limited to the Hayfork Creek floodplain. The permanent loss of up to about 3 acres of riparian habitat along Hayfork Creek in Segment 1 would result in a significant impact. Riparian habitat will be converted to road, which would not provide the opportunity for natural revegetation. Implementation of Mitigation Measures BR-4a and 4b would minimize the extent of disturbance in riparian habitat and compensate for the loss of the habitat.

Wildwood Road crosses several streams in Segments 2 and 3, and the installation of culverts and road realignment would require the removal of up to an estimated 1 acre of riparian habitat along the unnamed streams. The loss of riparian vegetation may limit available habitat for special-status species and nesting birds along the streams. In areas where culverts will be removed, vegetation would likely regenerate along the stream side, which would offset the removal of riparian vegetation at the new culvert locations. A permanent loss of riparian habitat would not be expected in Segments 2 and 3; however, the temporal loss would reduce the availability of potential nesting habitat, which could be significant. Implementation of Mitigation Measure BR-4a would minimize the extent of disturbance in riparian habitat and further compensate for the temporal loss of the 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.

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.

Level of Significance: Less than significant with implementation of the mitigation measures because riparian habitat would be restored to maintain the ecological functions along Hayfork Creek and its tributaries.

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

Construction activities would result in the discharge of fill (e.g., concrete, gravel, soil, rock) into waters of the United States including wetlands. Instream activities that would affect wetlands and other waters include the temporary use of diversion dams and the permanent placement of culverts, bank protection, downspouts, outlet protection, and energy dissipaters (rip rap). Additional activities that could disturb wetlands include excavation, grubbing, and grading for new culverts and the new road alignment. Specific construction designs for each segment will be developed in more detail as each phase commences. As the design of each segment is completed, the County will calculate impacts on waters of the United States in support of the required permits and approvals.

The proposed project could result in permanent and/or temporary effects on up to 1.076 acres of waters of the United States, including up to 0.572 acre of wetlands and 0.504 acre of other waters (streams and ditches) (Table 3.7-2). Discharge of fill material into waters of the United States and the potential net loss of up to about 0.6 acre of wetlands would be a significant impact. Discharge of fill is subject to Corps authorization under the CWA. The County would need to adhere to permit conditions and demonstrate a no net loss of wetlands. Implementation of Mitigation Measure BR-5 would compensate for the loss of wetlands and minimize impacts to waters of the United States.

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).

Level of Significance: Less than significant with implementation of the mitigation measure because impacts on wetlands and other waters would be fully mitigated through permit conditions authorized by the Corps, RWQCB, and CDFW.

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.

Construction activities could result in the spread of non-native and invasive plant species during movement of equipment into the project area from other locations that may contain invasive plant species. Soil-disturbing activities could promote the introduction of invasive plant species. The introduction of invasive species could displace native plant populations that provide shelter and forage for wildlife species.

Invasive plants (e.g., star-thistle, Canada thistle, cheat grass, red brome, oat grass, black mustard, poison hemlock, Klamath weed, Himalayan blackberry, rose clover, and woolly mullein) would be removed during vegetation removal.

Implementation of the project could result in the spread of non-native and invasive plant species, which would be a significant impact. Implementation of Mitigation Measure BR-6 would reduce the potential for the spread and introduction of invasive species in the project area.

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.

Level of Significance: Less than significant with implementation of the mitigation measure because the introduction and spread of invasive plants would be minimized during construction.

Impact BR-7: The proposed project could result in long-term impacts on special-status species or restrictions to wildlife movement through the project area.

Modifications to Wildwood Road would not result in adverse long-term impacts on special-status species. Widening and realignment of the road would not result in a significant change from the existing alignment and would not impede existing overland wildlife movement through the area.

The proposed project is not intended to increase the capacity of Wildwood Road, and traffic levels would be similar to current conditions, resulting in similar noise and visual disturbances. Based on the project design, culvert installation measures that improve passage upstream, and slope stabilization measures incorporated into the project, long-term impacts on terrestrial and aquatic species would be less than significant or beneficial for the species.

Level of Significance: Less than significant because of the minimal long-term impacts.

3.8 Cultural Resources

This section describes the cultural resources setting in the vicinity of Wildwood Road and analyzes the effects of the proposed project on cultural resources. Cultural resources described in this section include prehistoric, ethnographic, and historic resources; human remains; and Native American sacred sites.

The information in this section is summarized from a cultural resources inventory report (PAR Environmental Services, Inc. 2010) and an archaeological survey report (North State Resources, Inc. 2013a) prepared for the proposed project. Those reports defined an area of potential effect (APE) that encompasses approximately 140 acres in a corridor along the current alignment of Wildwood Road between 125 and 775 feet wide, which corresponds to the project area.

3.8.1 Regulatory Setting

National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966, as amended (16 United States Code (USC) 470 et seq.), is the primary federal legislation requiring the federal government to consider the impacts of its actions on historic properties. Historic properties are defined as cultural resources listed, or eligible for listing, on the National Register of Historic Places (NRHP). The criteria for NRHP eligibility are outlined in 36 Code of Federal Regulations (CFR) Part 60.

Compliance with Section 106, outlined at 36 CFR Part 800, follows a series of steps that are designed to identify interested parties, determine the APE, conduct cultural resource inventories, determine if historic properties are present within the APE, and assess impacts on any identified historic properties. As defined at 36 CFR Part 800.5(a)(1), “an adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association.” Caltrans, as delegated by the Federal Highway Administration, and the Forest Service are responsible for complying with Section 106 of the NHPA.

Native American Graves Protection and Repatriation Act of 1990

The Native American Graves Protection and Repatriation Act (25 USC 3001 et seq.) requires federal agencies and museums receiving federal funds to inventory and repatriate human remains and associated funerary objects, including items of cultural patrimony. The agencies and museums must offer to return these remains and objects to the Native American groups who are judged to be the most likely descendants or most closely culturally affiliated. The law also protects Native American graves and other cultural items located within archaeological sites on federal and tribal lands.

Shasta-Trinity National Forest Land and Resource Management Plan

The STNF LRMP identifies several goals and policies regarding cultural resources that relate to the proposed project (U.S. Forest Service 1995). Applicable Forest Goals related to cultural resources include:

- Preserve and interpret significant historic and prehistoric sites for the benefit of Forest visitors.
- Provide archaeological research opportunities for the professional community.
- Develop partnerships with Native American tribes and organizations to enhance those cultural resources that reflect their heritage.

Applicable Forest Standards and Guidelines include the following:

- Manage heritage resources, including “Archaeological Interest” – 36 CFR 296, not covered by Forest Standards and Guidelines or within the administratively withdrawn heritage

resource management area, according to the STNF Manual Supplement to Forest Service Manual (FSM) 2361.

- Comply with the Supplement to FSM 2361 for heritage resource inventory procedures.
- Evaluate heritage resources that might be affected by project activities for eligibility to the NRHP and consult with the State Historic Preservation Office as well as interested parties.
- Identify sites that will require protection (e.g., by signing or flagging) prior to implementation of management activities adjacent to the site.
- Sign heritage resources in areas of recreation use only if visitor use is impairing the site's values or if the site is to be interpreted.
- Historic sites, unless assigned to the administratively withdrawn heritage resource management area, will not be enhanced or interpreted and will be managed so that the site is not adversely affected and no hazard is caused to the public.
- Modifications to historic structures must be compatible with standards and guidelines issued by the Department of the Interior and the Advisory Council on Historic Preservation (ACHP).
- Mitigate adverse effects to heritage resources that are eligible for the NRHP, according to direction issued by the Department of the Interior and the ACHP.

The APE is included in Management Areas 18, Hayfork, and 21, Wildwood, of the STNF. Supplemental LRMP management direction for cultural resources within these management areas includes:

- Develop an interpretive plan for sites along Hayfork Creek.
- Maintain an active program of site protection and monitoring to preserve archaeological and scientific values at sites determined eligible for the NRHP.
- Develop a management plan for cultural sites that are affected by grazing, vehicular traffic, camping, and vandalism.

California Public Resources Code

California Public Resources Code Section 21083.2 and 21084.1 require public agencies to consider the effects of their actions on historical resources and unique archaeological resources. Historical resources are defined as any cultural resource listed on, or determined eligible for listing on, the California Register of Historical Resources (CRHR) (California Public Resources Code Section 21084.1 and CEQA Guidelines Section 15064.5, subds (a) and (b)). The CRHR includes cultural resources listed, or formally determined eligible for listing, on the NRHP as well as some California State Landmarks and Points of Historical Interest. A unique archaeological resource is defined as an artifact, object, or site about which it can be clearly demonstrated that there is a high probability that it meets the criteria for listing on the CRHR and the NRHP pursuant to California Public Resources Code, Section 21083.2, Subd. [g].

Each public agency has a responsibility to assess whether the actions of a project will cause a substantial adverse change in the significance of a historical resource or unique archaeological resource pursuant to Section 21084.1. If a project will adversely affect historical resources or unique archaeological resources, the agencies will consult with the Office of Historic Preservation to avoid or mitigate the impacts.

Section 5097.5 of the California Public Code makes it a misdemeanor for anyone to knowingly disturb any archaeological, paleontological, or historical feature on public lands.

State of California Health and Safety Code 8010-8011 – California Native American Graves Protection and Repatriation Act

The California Native American Graves Protection and Repatriation Act establishes a state repatriation policy that is consistent with and facilitates implementation of the federal Native American Graves Protection and Repatriation Act. The act strives to ensure that all California Native American human remains and cultural items are treated with dignity and respect. It encourages voluntary disclosure and return of remains and cultural items by publicly funded agencies and museums in California and states an intent for the state to provide mechanisms for aiding California Native American tribes, including non-federally recognized tribes, in filing repatriation claims and getting responses to those claims.

Trinity County General Plan

The Land Use Element of the Trinity County General Plan (Trinity County 1988) does not contain specific goals, objectives, and policies related to the cultural resources; however, the General Plan recognizes that the history of Trinity County is a valuable community cultural asset and should be preserved and integrated with the growth and development of the county. Trinity County conducted a historical survey of portions of the county in 1978 to identify and classify historically significant trails, ditches, buildings, sites, and districts. The General Plan recommends that specific guidelines and standards be established for development within established historic districts.

3.8.2 Environmental Setting

Regional Prehistory, Ethnography, and History

Prehistoric occupation of Trinity County and western Shasta County extends over 8,000 years before present (B.P.) (Hildebrant and Hayes 1984). The earliest evidence of the prehistoric period in the region is on South Fork Mountain, where occupations have been found dating to the Post (or Paleo-Indian) Pattern (circa 11,500 to 8,000 B.P.). Fluted points and chipped-stone crescents are considered representative of this pattern (Hildebrant 2007). More recent patterns include the Borax Lake (or Early to Middle Archaic) Pattern (circa 8,000 to 2,800 B.P.), Mendocino or Willits (also known as the Late Archaic) Pattern (circa 2,800 to 1,500 B.P.), and Augustine Pattern or Shasta Complex (1,500 B.P. to 200 B.P.). Hunting and foraging for hard seeds were typical during the Borax Lake Pattern, and wide-stemmed and shouldered points and mano and metate grinding tools are representative of this pattern (White 2002). Sedentary or semi-sedentary settlements were established during the Mendocino Pattern in low lands, with campsites in the mountain regions (Hildebrant 2007). Large side-notched, corner-notched, and contracting-stemmed points are representative of this pattern.

Larger village sites became more prominent during the Augustine Pattern, and more structures were used, such as subterranean ceremonial structures, stone-lined storage pits and hearths, and stone-slab ovens (Moratto 1984).

During the ethnographic period, the Wintu Indian traditional territory extended from the Sacramento Valley to the Coast Ranges and the Klamath and southern Cascade mountains. The Norrelmuk division of the Wintun occupied the area around Hayfork Creek and the lower Trinity River (Theodoratus 1981). The Wintun occupied various-sized villages and relied on fish as an important staple. Hunting and gathering also occurred as did trading with peoples in neighboring regions (Theodoratus 1981, La Pena 1978). Trails were important to the Wintu because they served as routes for trade and for maintaining communication between people living in the villages and camping in the surrounding mountains. Various types of tools were used during this period, such as nets, traps, hooks, spears, and toggle harpoons for fishing; the hopper mortar for milling; chipped-stone tools; arrow shafts of reed or pith-centered wood; and bows of yew (Theodoratus 1981, Powers 1976). Euroamerican contact with the Wintun resulted in numerous deaths from massacres and disease and changes to their land as a result of gold mining activities, cattle operations, and settlement of the region.

Trinity County has a diverse history of economic activities, including agricultural production, mining, fur trapping, trading, and timber production. Roads and trails in the county have provided a means for accessing remote areas, traveling through the region, and trading with others in nearby regions. The community of Hayfork, which is northwest of the project area, was established in the 1850s as an agricultural community (Gudde 1969). The town flourished during the mining period, which involved extensive placer mining along the Trinity River and its tributaries during the mid to late 1800s and early 1900s. Timber and recreation are now major economic activities in the county.

Local Cultural Setting

The mixed conifer and hardwood forests and chaparral habitat in the vicinity of Wildwood Road and the riparian forest along Hayfork Creek would have provided resources for prehistoric and ethnographic people. Hayfork Creek also provided a source of water, and flat areas near the creek may have been used for villages or campsites. Steeper slopes (greater than 30 percent) are more common along the road and would have been less suitable for establishing settlements.

Wildwood Road is a historic road built between 1915 and 1936 to connect two state highways (SRs 36 and 3), provide access to Arcata in Humboldt County and to the Sacramento Valley in Tehama County, and serve as a logging road for the Forest Service. The road follows the former alignment of Wildwood Trail, which was a segment of the Hyampom Trail, a pack trail that connected Humboldt Bay to Red Bluff. Wildwood Road was surfaced with rock until approximately 1960, when it was paved with asphalt. Trinity County acquired a permanent easement for the road in 1992. The road runs along the western side of Hayfork Creek, which was affected by placer mining when gold mining was a major activity in the county. Evidence of mining still remains in the form of dredger tailings, mining claim markers, and ditches that diverted water from the creek.

No prehistoric resources have been recorded in the APE; however, several historic resources have been recorded. Three previously recorded resources are the Gemmill Gulch sawmill site, Wildwood Trail, and Hayfork Creek Ditch (descriptions of these resources are provided below). Newly recorded

resources include a rock cairn used to mark a mining claim; a segment of an abandoned trail or early graded road (possibly part of the Wildwood Trail or Wildwood Road); an abandoned pre-World War II age vehicle; a cedar post set in a rock cairn; survey marker tags and a sign on a tree; three abandoned, unpaved segments of the original Wildwood Road; and features associated with a mining landscape (e.g., signs, small ditch, hydraulic mining scarp). None of these sites or resources were determined eligible for listing to the NRHP or CRHR due to a lack of integrity or lack of individually unique or important features (PAR Environmental Services, Inc. 2010; North State Resources, Inc. 2013a). No Native American sites or known cultural resources were identified in or near the APE during archival research and contacts with Native Americans.

The sawmill site (CA-TRI-430H) is a historic site with a sawmill, fence, remains of an outhouse, orchard, and meadow. The structures have been removed, and the former site location has been converted to a Douglas-fir plantation. Evidence of a past fire is also present.

Wildwood Trail (CA-TRI-1319H) is a former access route through the region in the general location of the present-day Wildwood Road. Portions of the trail were incorporated into the Wildwood Road alignment when it was constructed. Segments of the original trail are still evident parallel to the road; however, they have been cut off and disturbed by various activities, including construction of Wildwood Road.

Hayfork Creek Ditch (CA-TRI-1343H) was used to supply water for placer mining along Hayfork Creek in the nineteenth century and was converted to agricultural use in 1916. The earthen ditch was replaced by a riveted pipe sometime later and with a buried pipe in the 1980s. The original engineering remains are no longer evident although the historic grade of the ditch is still well marked.

3.8.3 Impact Analysis and Mitigation Measures

Methodology

PAR Environmental Services, Inc., and North State Resources, Inc., conducted a review of available literature, historic maps, and records of cultural resources in the vicinity of the APE at the Northeast Information Center and STNF; sent letters to Native American, state, and local contacts requesting information about the project area; conducted a survey of the APE; and recorded newly identified resources and updated previously recorded resources on Department of Parks and Recreation forms. The information obtained from the cultural reports prepared for the proposed project was used to describe the environmental setting and served as the basis for evaluating impacts on cultural resources.

Thresholds of Significance

The following significance criteria were developed from Appendix G of the CEQA Guidelines. Impacts on cultural resources would be significant if the proposed project would:

- cause a substantial adverse change in the significance of a historical or archaeological resource as identified in Section 15064.5 or a historic property as identified by the NHPA, or
- disturb any human remains, including those interred outside of formal cemeteries.

Impact Analysis

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

Construction activities would involve ground disturbance in and adjacent to Wildwood Road, with some areas requiring extensive cuts to remove and stabilize steep slopes and accommodate the modified alignment. Excavations would generally be shallow and associated with the removal and replacement of culverts or pipes in areas that have previously been excavated. None of the historic resources identified in the project area were determined eligible or potentially eligible for listing to the NRHP or CRHR; therefore, no impacts on known historical resources or historic properties would occur with implementation of the proposed project.

Based on the presence of documented historic resources and the use of the area dating back several hundred years, buried cultural resources or human remains could be encountered during ground disturbing activities. Cultural materials that could be encountered include prehistoric items, such as chipped stone objects, flake debris, bone, and groundstone objects, and historic items, such as bottles, cut nails, and other debris. These resources could be encountered along any of the segments, with the greatest potential near Hayfork Creek and where previously discovered resources have been documented. These resources could be associated with previously recorded sites or be part of new sites. If resources are discovered, impacts on the resources could be significant if they are determined eligible for listing to the NRHP or CRHR and if the impact would affect their eligibility. Implementation of Mitigation Measures CR-1a, CR-1b, and CR-1c would ensure that previously undiscovered cultural resources or human remains are not adversely affected by construction activities.

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.

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.

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.

Level of Significance: Less than significant with implementation of the mitigation measures because important cultural resources and human remains would not be adversely affected.

3.9 Aesthetics

This section describes the aesthetic values and visual setting of the project area and vicinity and analyzes the effects of the proposed project on the visual setting. The information in this section is

derived from observations made during field visits and a visual resources technical memorandum prepared for the proposed project (North State Resources, Inc. 2013d).

3.9.1 Regulatory Setting

Shasta-Trinity National Forest Land and Resource Management Plan

The STNF LRMP contains Forest Service goals, standards, and guidelines designed to guide the management of the forest. Visual quality objectives (VQOs) are used by the Forest Service to manage its lands based on the degree of alteration of the characteristic landscape that it anticipates would be accepted by the public. The following goals, standards, and guidelines relative to aesthetic issues associated with the project area were excerpted from the LRMP (U.S. Forest Service 1995):

- **Goal:** Develop or expand opportunities for scenic drives and vista points
- **Goal:** Maintain a diversity of scenic quality throughout the Forest, particularly along major travel corridors, in popular dispersed recreation areas, and in highly developed areas
- **Standard and Guideline:** Manage activities and projects to meet adopted VQOs of: (1) preservation; (2) retention; (3) partial retention; (4) modification; or (5) maximum modification. On rare occasions the adopted VQO may not meet management's objectives (i.e., catastrophic events). Any proposed modification to adopted VQOs must go through the NEPA process and be approved by the Forest Supervisor.
- **Standard and Guideline:** In the Wildwood Road (County Road 302) sensitive travel corridor, the foreground portions (areas located from 0.25 to 0.5 mile from the road viewer) will be managed primarily to meet the adopted VQO of Partial Retention and Modification as shown on the Forest VQO map (U.S. Forest Service 1987).

Trinity County General Plan

The Trinity County General Plan contains goals and policies designed to guide the future physical development of the county. Although the General Plan contains all the state-required elements, it does not specifically address visual resources. Goals, objectives, and policies identified in other plan elements apply to visual resources management and are listed below from the Open Space and Conservation Element (Hahn, Wise, and Associates Inc. 1973) and Circulation Element (LSC Transportation Consultants Inc. 2002).

Open Space Conservation Element Goal: To retain the rural character of Trinity County.

Natural Resource Goal: To protect the scenic natural resources of Trinity County and preserve areas that are important as commercial natural resources for future generations.

- Preserve areas of established natural scenic beauty as areas of active and passive enjoyment.

Scenic Land Goal: To conserve, preserve, and maintain the scenic beauty of Trinity County.

- Encourage continuous sustained yield practices on public and private forest land.

- Adopt stringent regulations requiring the landscaping and maintenance of vegetation on cut and fill slopes as required by the appropriate agency.
- Control encroachment of cut and fill slopes into scenic easement areas or corridors along scenic highways, whether these highways are State or County.

Circulation Element Goal: Provide for the long-range development of the county's roadway system that is consistent with adopted land use patterns; ensures the safe and efficient movement of the people and goods; minimizes impacts on the attractiveness of the community; meets environmental and circulation objectives; and implements funding strategies for construction, improvement, and maintenance of existing and new roadways.

- Achieve scenic roadway designation for appropriate State and County highways/roads. Wildwood Road is identified in the Circulation Element as part of the Trinity Heritage Scenic Byway and as eligible for County Scenic Roadway designation, but it has not been so designated.
- The County Scenic Roadways Program will consist of specific right-of-way zoning per the County Scenic Conservation Overlay Zoning District. At the time that Community Plans or the General Plan Open Space Conservation Element are developed or updated, identify appropriate roads (or road segments) to be designated as County Scenic Roadways. Factors to consider include current viewshed condition, resource utilization needs and the need for shaded fuel breaks. (The Scenic Conservation Overlay Zoning District designates a 50-foot wide corridor along County Scenic Roadways, where activities such as tree removal and construction are limited.)

Trinity County General Plan Scenic Highways Element

The County adopted a Scenic Highways Element of the General Plan, but did not identify any highways eligible for Scenic Highway status. A less restrictive County Scenic Roadways designation was incorporated into the Community Plan adoption process to restrict certain activities along designated roadways (LSC Transportation Consultants Inc. 2002). Designated County Scenic Roadways have a 50-foot wide Scenic-Conservation overlay zone, which is intended to regulate the placement of structures bordering these roadways to preserve the beauty and rural character of areas along the roadway and areas of unusual scenic beauty in Trinity County. To date, four County Scenic Roadways have been designated:

- Trinity Dam Boulevard (Road 105)
- Canyon Creek Road (Road 401)
- Rush Creek Road (Road 204)
- Sky Ranch Road (Road 412)

Wildwood Road is currently considered an Eligible County Scenic Roadway (LSC Transportation Consultants Inc. 2002).

3.9.2 Environmental Setting

Regional Visual Landscape

The visual environment of Trinity County is dominated by rugged mountains, dense forests, rivers, and lakes. The dominant landform in the county is the rugged Klamath Mountains, which include the Trinity, Trinity Alps, and northern Yolla-Bolly mountains. The slopes of the Klamath Mountains in eastern Trinity County are characterized by steep, densely forested slopes, deep ravines, and mountain valleys; south-facing slopes, while similarly steep, tend to be less densely forested and noticeably drier. Primitive, or wilderness, areas are highly prized by County residents and visitors alike and are ranked among the most spectacular areas found anywhere in the continental United States. The scenic quality of Trinity County is vital to the County's communities and residential areas and contributes significantly to its recreational allure. With more than 90 percent of the county being forested and much of the total land area having slopes greater than 10 percent (Hahn, Wise, and Associates Inc. 1973), the visual environment is fairly similar across the county and provides a sense of open space. Nearly three-quarters of the land in the county is under public ownership (e.g., Forest Service, Bureau of Land Management, and Bureau of Reclamation) and is managed for the commercial value, recreational use, and preservation of valuable natural resources. Visual resource values of public lands must be considered during land use planning efforts (U.S. Forest Service 1974, U.S. Bureau of Land Management 1998).

Two Forest Service–designated National Scenic Byways cross Trinity County: the Trinity Heritage Scenic Byway (SR 3) and the Trinity Scenic Byway (SR 299). The Trinity Heritage Scenic Byway includes more than 100 miles of SR 3, extending north from Weaverville to Old Highway 99 near Interstate 5 north of Weed. The Trinity Heritage Scenic Byway also includes several County Roads, one being Wildwood Road. The Trinity Scenic Byway follows SR 299 between Redding and Arcata. This byway is approximately 140 miles long and bisects Trinity County as it parallels the Trinity River. Both SR 3 and SR 299 showcase outstanding National Forest scenery. Dense forests, mountain valleys, deep canyons, and numerous rivers and streams traversed by both highways contribute to the scenic quality of these roads. The extreme variations in topography afford travelers both close-in and panoramic views from the curvilinear highways. These highways, as well as several other local arterial roads (e.g., Trinity Dam Boulevard, Rush Creek Road), have been designated, or are recognized as being eligible for such designation, by the state as Scenic Byways.

The County has also designated several of its roads as County Scenic Roadways, to which a 50-foot-wide Scenic-Conservation overlay zone applies (as appropriate) as part of the Community Plan adoption process. Wildwood Road, Hyampom Road, and Mad River Road are examples of roads that the County has identified as being eligible for County Scenic Roadway designation, but these roads have not yet been formally designated.

Local Visual Setting

Wildwood Road offers views that range from cultivated agricultural land to panoramic mountain vistas. Much of the project area is managed for commercial wood production on the STNF, with some late successional reserves at the south end of the project area. The landscape of the late successional reserve is managed for the retention of natural-appearing, late-succession forest and the retention of old-growth trees (U.S. Forest Service 1995). The project area encompasses the narrow,

winding Wildwood Road corridor. The general visual environment of each segment of Wildwood Road in the project area is described below. Key viewer groups in the project area are travelers along the road, residents at the Murrison Ranch, users of other private lands in the Shiell Ranch area and recreationists at the designated recreation areas and in the general area.

Segment 1

Segment 1, the northernmost segment, extends from Post Mile 11.6 to 9.7 between the Wildwood Road/East Fork Road intersection and the Shiell Gulch Campground. The northern part of this segment is adjacent to the privately owned Murrison Ranch. A large open hay field dominates the landscape. While the topography of the field is relatively flat, Wildwood Road winds along the east side of the field roughly following the contour of Hayfork Creek, which is located less than 200 feet downslope and east of the road. Trees and shrubs block most views of the creek from Wildwood Road. A homestead is located on the ranch property, but distance, topography, and vegetation obstruct most views of Wildwood Road from the house.

Beyond the hayfield and the private property, Wildwood Road continues south into the National Forest. From this point to the end of the segment at Shiell Gulch Campground, Wildwood Road narrows and becomes more winding. Travelers' views are limited to short distances as the road winds through increasingly steep forested topography.

The Forest Service VQO for commercial wood production areas is partial retention (U.S. Forest Service 1987). Under this VQO, the STNF LRMP provides for management activities that, while noticeable, will not attract attention. The LRMP also directs that scenic roadway corridors are to be managed for the protection of scenery in the foreground (U.S. Forest Service 1995). Trinity County's Open Space and Conservation General Plan Element calls for the protection of its scenic natural resources through the careful control of timber harvesting on both public and private lands (Hahn, Wise, and Associates Inc. 1973).

Two key observation points (KOPs) were established in Segment 1 (see Figure 3-1—Key Observation Points):

- **KOP 1-1 Murrison Ranch:** Views from this KOP provide expansive views of an open hay field with forests in the background. These views are vivid and harmonious, with a uniqueness resulting from the expansive views in an otherwise rugged and forested region.
- **KOP 1-2 National Forest Interface:** Views from this KOP are primarily of the roadway and adjacent forests, with limited distant views. These views are harmonious and aesthetically pleasing, but are not individually remarkable because they are relatively common along most of the road.

Segment 2

Segment 2 begins at the Shiell Gulch Campground at Post Mile 9.7 and extends south to Post Mile 7.0, which is the boundary between the Hayfork Ranger District and the Yolla Bolla Ranger District. The campground is located on the east side of Wildwood Road between the road and Hayfork Creek. The road prism is higher than that of the campground. Views of Wildwood Road from the

campground are buffered by the elevated height of the road and a band of trees that runs between the two features.

The road narrows to the south as it climbs through the steepest and highest portion of the project area. Dense forest on the north-facing slopes and in the numerous drainages limit travelers' views of the road corridor and obstructs long distance views from the roadway. Where the forest is more open, travelers are afforded panoramic views of distant mountains. These views contribute to the remarkable scenic character of Wildwood Road.

Part of this segment is managed for partial retention (commercial wood production areas), and the rest is managed for modification. Under the modification VQO, management activities may visually dominate the landscape, but must blend with the naturally occurring form, line, color, and texture of the surrounding environment (U.S. Forest Service 1987). Although lands within Segment 2 are all NFS lands, the County's objective to preserve scenic resources using controlled timber harvest techniques applies to this segment.

Two KOPs were established in Segment 2:

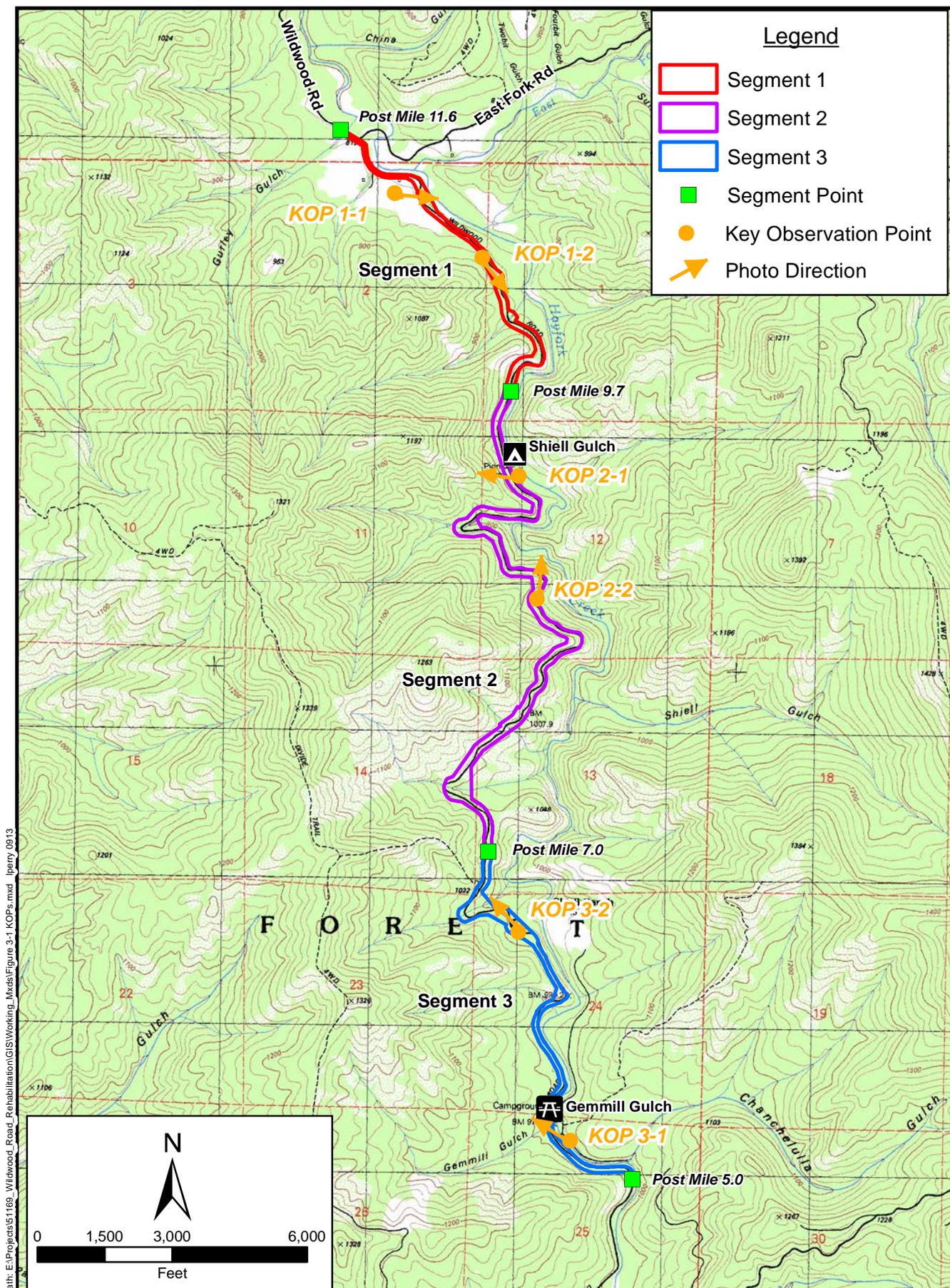
- **KOP 2-1 Shiel Gulch Campground:** Views from this KOP are primarily of the dirt parking area, forests, and roadway, with limited distant views. These views are harmonious and aesthetically pleasing, but are not individually remarkable because they are relatively common along most of the road.
- **KOP 2-2 Regional Panoramic Views:** Views from this KOP are focused on the distant scenic vistas as the road descends from the higher elevation campground. These distant views are harmonious, dramatic, and memorable, although the closer views of eroded hillsides and guardrails detract from the visual setting.

Segment 3

Segment 3 extends south from Post Mile 7.0 to approximately 0.6 mile beyond the Forest Service's Gemmill Gulch Picnic Area. Similar to the other two segments, Segment 3 is narrow and winding. Views from Wildwood Road are generally limited to the immediate road corridor due to vegetation and topography, but in northern end of the segment, which has a higher elevation, forest openings allow for limited distant views of nearby forested mountainsides.

Views of the project area are limited by vegetation and topography, and the visual character is typical of the region. Views of Wildwood Road from Gemmill Gulch Picnic Area are limited to a short stretch of the road as it passes by the campground parking lot.

This segment is managed for partial retention interspersed with modification (U.S. Forest Service 1987), similar to the other two segments.



Path: E:\Projects\51169_Wildwood_Road_Rehabilitation\GIS\Working_Maps\Figure 3-1_KOPs.mxd - Jpenry 09/13

Wildwood Road Project

Figure 3-1
Key Observation Points

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Two KOPs were established in Segment 3:

- **KOP 3-1 Gemmill Gulch Picnic Area:** Views from this KOP are primarily of the dirt parking area, forests, and roadway, with limited distant views. These views are harmonious and aesthetically pleasing, but are not individually remarkable because they are relatively common along most of the road.
- **KOP 3-2 Private Land Interface:** Views from this KOP are primarily of the roadway and adjacent forests, with limited distant views. These views are harmonious and aesthetically pleasing, but are not individually remarkable because they are relatively common along most of the road.

3.9.3 Impact Analysis and Mitigation Measures

Methodology

Information for the environmental setting was compiled from the visual resources technical memorandum (North State Resources, Inc. 2013d), and impacts were analyzed qualitatively, with a focus on the potential for the proposed project to substantially degrade the visual character of the area or affect views from KOPs. A field visit was conducted to identify areas of visual sensitivity and scenic resources and characterize the existing visual quality of aesthetic resources in and near the project area. The magnitude of potential changes to visual resources was assessed by evaluating the visual quality of the existing and proposed conditions at the six KOPs. A numerical rating system was used in the technical memorandum to quantify the magnitude of the visual change, and the results from that assessment were used to qualitatively describe the anticipated visual changes in this section. The analysis is based on guidance provided by the Forest Service and management goals and policies of the STNF LRMP and Trinity County General Plan.

Thresholds of Significance

The following significance criteria were developed from Appendix G of the CEQA Guidelines. Impacts on visual resources would be significant if the proposed project would:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the project area and its surroundings; or
- create a new source of substantial light or glare that would adversely affect day or nighttime views in the project area.

Impact Analysis

Impact AE-1: Construction activities could degrade the visual character of the project area.

Construction activities would involve vegetation removal and ground disturbance along Wildwood Road, as well as the staging and use of equipment, stockpiling of materials, and related activities. These activities would detract from the visual character of the project area for a period of about 6

years (2 years for each segment). With the temporary road closures, few travelers would be affected by the temporary visual changes during construction, and the residents and recreationists in nearby areas would only notice the changes as they pass by the work areas. During construction of Segments 2 and 3, the temporary closure of the recreation areas for use as staging areas would preclude recreationists from visiting those areas and reduce the exposure of recreationists to the construction-related visual changes. The visual impacts would be short-term and localized around the work area and would not affect the overall visual character of Wildwood Road in the project area. Views along most of the road are limited by the surrounding vegetation and topography. In addition, construction would be scheduled during daytime hours only, so no nighttime lighting would be used that could affect travelers or others during the construction phases.

Level of Significance: Less than significant because of the short-term and localized visual changes during construction.

Impact AE-2: The proposed project could permanently alter the visual character of the project area.

The proposed project would modify the alignment and width of Wildwood Road, which would result in localized changes to views along the road and to the visual character of the road where substantial modifications are implemented. Tree removal would be necessary along some parts of the road and would be conducted in accordance with the Forest Service's partial retention and modification management directions and VQOs and would not attract attention. The trees would be removed from the foreground along the road, but many trees would remain along the road and in the mid- and background views. Most of the road modifications would take place on undeveloped NFS lands, where few opportunities exist for permanent viewers (e.g., residents) to be affected by visual changes resulting from the proposed project. Murrison Ranch, properties at Shiell Ranch, Shiell Gulch Campground, and Gemmill Gulch Picnic Area are the only places near the project area from which residents or recreationists may notice changes in the visual character of views toward the road, but distance, topography, and forest vegetation would mask most views of the modified road and retain a visual character similar to the current character. A discussion of the changes in the visual character of each segment is presented below.

The proposed project would not involve any new sources of lighting. The potential for glare from headlights, the expanded road surface, and soils exposed by road cuts and vegetation removal would be consistent with existing conditions. New signage set against the landscape would blend in with the existing views because of the dominant vertical structure of the forest. Nighttime views of the project area would be limited to artificial light sources such as headlights or natural light, similar to current conditions.

In Segment 1, proposed improvements to the road corridor would elevate and widen the road prism near KOP 1-1 and possibly change the alignment slightly to reduce the degree of the curves. These changes could result in Wildwood Road becoming more prominent on the landscape and could reduce the intactness and unity of the view as seen from KOP 1-1. Because of the openness of the area and the road's proximity to private land, changes to the visual character at the north end of the project area would be noticeable to both residents of Murrison Ranch and travelers who frequently use the road, but they would not substantially detract from the permanent views as a whole.

Widening the road corridor near KOP 1-2 would not substantially change the quality of views that travelers have as they pass through Segment 1. Because of the dense forest lining the road and the surrounding topography, changes to Wildwood Road would not be noticeable from outside the road corridor. If tree removal is necessary to accommodate the road modifications, it would be compatible with the VQO of partial retention, which allows for management activities that, while noticeable, will not attract attention. Changes to the visual character near KOP 1-2 are not likely to be noticeable to travelers, although frequent travelers may notice a slight change to the views following the road modifications.

In Segment 2, the increased elevation of the Wildwood Road prism near the Shiell Gulch Campground (KOP 2-1) would have a noticeable effect on the view's integrity, increasing the presence of the road in the landscape. If the stand of trees between the road and the campground remains intact, views of the elevated road prism could be partially obstructed by foliage. If necessary, tree removal—although not a part of the current project design in this part of Segment 2—would be compatible with the VQO of partial retention. Because the road's alignment across the middle ground of the view from KOP 2-1 is apparent, partial retention management activities, while noticeable, would be compatible with the existing levels of intactness and unity and would not attract significant attention. Widening and elevating the road corridor would be noticeable for recreationists at the campground, but would not substantially detract from the permanent views as a whole.

The curve near KOP 2-2 would be realigned to shift the roadway alignment slightly west, cutting into the hillside, which would remove the bare soil visible in the foreground. Although the road features, including guardrail and paved surface, would be retained, the curve realignment would likely decrease the scale and dominance of the manmade features against the larger landscape and further enhance the panoramic view of the distant scenic vista. The western slope would likely appear similar to the current slope, although if stabilizing walls or other man-made structures are used to stabilize cut slopes and chainlink is used to catch rockfalls, they could detract significantly from views of the slope. Man-made materials can add a disruptive, unnatural pattern to the landscape, but the stabilizing materials could be designed to match the pattern elements (form, line, color, and texture) of the slope. Other impacts to visual resources associated with the minor road section realignments through this higher elevation, less densely vegetated portion of Segment 2 would be consistent with the VQO of partial retention and would not attract significant attention. The slight change in the curve alignment and widening of the road corridor would enhance the quality of the permanent views as a whole that travelers have of the distant landscape.

In Segment 3, Wildwood Road would be widened to two lanes near KOP 3-1. Pattern elements associated with the landscape character of views of the road from the Gemmill Gulch Picnic Area would remain intact. Tree removal along the road would be limited to the construction limits and the adjacent safe recovery zone, which extends 10 feet from the edge of the pavement, and would exclude the Gemmill Gulch Picnic Area. Tree removal would be compatible with the VQO of partial retention, which allows for management activities that, while noticeable, will not attract attention. The stand of trees between the road and the picnic area is expected to remain intact, and views of the road prism would remain essentially the same as the existing views. Widening the road corridor would not be noticeable to recreationists at the picnic area, but could be noticeable to travelers who frequently use the road. The visual changes, however, would not substantially detract from the permanent views as a whole.

Widening the road corridor near KOP 3-2 would result in minimal changes to the quality of views that travelers have as they pass through Segment 3. Proposed regrading of the private driveway entrance could make the driveway more noticeable, but this would be a minor change relative to the overall view afforded travelers through this section of Wildwood Road. In its current condition, the private driveway interface with Wildwood Road is not very distinct; however, it is anticipated that proposed improvements to the driveway entrance would make this visual intrusion more apparent, at least to frequent travelers along the road. Changes to the visual character at the south end of the project area would be noticeable to travelers who frequently use the road, but they would not substantially detract from the permanent views as a whole.

Level of Significance: Less than significant because of the minimal changes to the visual character of the project area and to permanent views of the local area.

3.10 Hydrology and Water Quality

This section describes the surface water resources in the vicinity of Wildwood Road and analyzes the effects of the proposed project on drainage patterns, flooding, and water quality. Information in this section is summarized from the hydrology and water quality study completed for the proposed project (North State Resources, Inc. 2012b). The following issues are not discussed in this section for the reasons noted below:

- **Exposure of Houses or People to Flood Hazards:** The proposed project consists of improvements to an existing road corridor, including installation of appropriately sized culverts under the roadway. No houses or people would be exposed to flood hazards as a result of the proposed project.
- **Deplete Groundwater Supplies:** The proposed project would not require the use of groundwater.
- **Inundation by Seiche, Tsunami, or Mudflow:** The project area is not in an area susceptible to these hazards.

3.10.1 Regulatory Setting

Clean Water Act

The CWA is the major federal legislation regulating the quality of the nation's waters. The objective of the act is "to restore and maintain the chemical, physical, and biological integrity of the nation's waters." The CWA establishes the basic structure for regulating discharge of pollutants into waters of the United States and gives the U.S. Environmental Protection Agency (EPA) the authority to implement pollution control programs, such as setting wastewater standards for industries. In certain states, including California, EPA has delegated authority to state agencies.

Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. The three major components of water quality standards are as follows:

- Designated uses are uses that society, through the federal and state governments, determines should be attained in the water body, such as supporting communities of aquatic life, supplying water for drinking, and recreational uses.
- Water quality criteria are levels of individual pollutants or water quality characteristics or descriptions of conditions of a water body that, if met, will generally protect the designated use of the water.
- The antidegradation policy is designed to prevent deterioration of existing levels of good water quality.

Where multiple uses exist, water quality standards must protect the most sensitive use. In California, EPA has given the State Water Resources Control Board (State Water Board) and the nine RWQCB the authority to identify beneficial uses and adopt applicable water quality objectives.

Section 303(d) of the CWA requires states and authorized Native American tribes to develop a list of water quality-impaired segments of waterways. The list includes waters that do not meet water quality standards necessary to support the beneficial uses of that waterway, even after point sources of pollution have installed the minimum required levels of pollution control technology. Only waters impaired by “pollutants,” not those impaired by other types of “pollution” (e.g., altered flow and/or channel modification), are to be included on the list. For impaired water bodies, a total maximum daily load (TMDL) plan is established to restore the beneficial uses of a stream or to otherwise correct an impairment. It establishes the allowable pollutant loadings or other quantifiable parameters (e.g., pH or temperature) for a water body and thereby provides the basis for the establishment of water quality-based controls. The South Fork Trinity River and Hayfork Creek are both included on the CWA Section 303(d) list as water quality limited due to sediment and have an approved TMDL (U.S. Environmental Protection Agency 1998). Temperature impairment was added to the 303(d) list for the South Fork Trinity River and Hayfork Creek in 1998; however, a TMDL for temperature has not been developed.

Section 401 of the CWA requires an applicant for any federal license or permit (e.g., a Section 404 permit) that may result in a discharge into waters of the United States to obtain a certification from the state that the discharge would comply with provisions of the CWA. The North Coast RWQCB is the administrative agency for water quality certifications for Trinity County. The County must adhere to any condition of a water quality certification issued by the North Coast RWQCB for the proposed project.

Section 402 of the CWA established the National Pollutant Discharge Elimination System (NPDES). All point sources that discharge into waters of the United States must obtain an NPDES permit under provisions of Section 402. The State Water Board is responsible for implementing the NPDES permitting process in Trinity County.

The NPDES permit process also provides a regulatory mechanism for controlling nonpoint-source pollution created by runoff from construction. Proponents of projects involving construction activities (e.g., clearing, grading, or excavation) involving land disturbance greater than 1 acre must file a notice of intent with the State Water Board to indicate their intent to comply with the General Permit for Discharges of Storm Water Associated with Construction Activity. This general permit

establishes conditions to minimize sediment and pollutant loadings and requires preparation and implementation of a stormwater pollution prevention plan (SWPPP) before construction. The SWPPP is intended to help identify the sources of sediment and other pollutants and to establish best management practices (BMPs) for stormwater and non-stormwater source control and pollutant control. A sediment monitoring plan must be included in the SWPPP if the discharges would occur directly to a water body listed on the Section 303(d) list for sediment.

Section 404 of the CWA establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. A permit from the Corps is required for the discharge of fill into waters of the United States, such as fill for development, water resources projects, infrastructure installation, and mining projects. During the permit process, the applicant must show that:

- Steps have been taken to avoid wetland impacts,
- Potential impacts on wetlands have been minimized, and
- Compensation has been provided for any remaining unavoidable impacts.

Federal regulations and policies mandate avoiding the filling of wetlands unless it can be demonstrated that no practicable alternatives (to filling wetlands) exist. The type of permit is dependent on the amount of fill being placed in waters of the United States and ranges from a Nationwide Permit for minimal impacts (typically less than 0.5 acre) to a standard Individual Permit. The San Francisco District of the Corps has jurisdiction over activities in the project area.

Shasta-Trinity National Forest Land and Resource Management Plan

The STNF LRMP provides guidance for managing NFS lands on the STNF. The LRMP includes Forest goals to maintain or improve water quality and quantity to meet fish habitat requirements and domestic use needs and maintain water quality to meet or exceed applicable standards and regulations. Standards and guidelines established to meet these goals include:

- 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 using the Region 5 Equivalent Roaded Area methodology.
- Determine the sensitivity of each 2nd or 3rd order watershed using soil, geologic and streamflow characteristics.
- 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.
- 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.
- Maintain or improve water quality to meet or exceed applicable standards and regulations.

- 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 40 percent of any stream discharge or 75 percent of constructed pond water.

Many of the goals of the STNF LRMP focus on riparian-dependent resources. The STNF LRMP defines a riparian reserve as the portion of a watershed where riparian-dependent resources receive primary emphasis and where special standards and guidelines apply. These areas include the portions of a watershed directly tied to streams and rivers; that are required in order for proper hydrologic, geomorphic and ecologic processes to be maintained; and that directly affect standing and flowing water bodies such as lakes, ponds, wetlands, and streams. The special standards and guidelines are documented in the Aquatic Conservation Strategy Objectives. All projects must demonstrate the progress toward achieving these objectives in riparian reserves.

Porter-Cologne Water Quality Control Act

The State Water Board and the nine RWQCBs have the authority in California to protect and enhance water quality. This authority is derived through the state's primary water pollution control legislation, the Porter-Cologne Water Quality Control Act, as well as through the designation of the regional boards as the lead agencies in implementing the Section 319 non-point source program of the CWA. The North Coast RWQCB (2011) developed the Basin Plan (Water Quality Control Plan) for the North Coast Region to designate beneficial uses to be protected, identify water quality objectives, and present an implementation program for achieving the objectives. Water quality requirements are intended to protect these beneficial uses.

Fish and Game Code Section 1602

Section 1602 of the Fish and Game Code requires an entity to notify the California Department of Fish and Wildlife of any proposed activities that may substantially modify a river, stream, or lake. These activities include a substantial diversion or obstruction of a water body, using or changing any material from the bed or channel, and depositing or disposing of any debris or waste into a water body. If the Department of Fish and Wildlife determines that the proposed activities may adversely affect fish and wildlife, a Lake or Streambed Alteration Agreement is prepared.

Trinity County General Plan

The Safety Element of the Trinity County General Plan includes Flood Hazard Goals, Objectives, and Policies to minimize the possibility of loss of life, injury, or damage to property as a result of flood and inundation. Applicable policies from the Safety Element include:

- **Policy S.2.1(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 S.2.1(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 S.2.1(C):** Prohibit the creation of new parcels that have no building sites outside of the 100-year floodplain, except for the creation of open space parcels.
- **Policy S.2.1(D):** The County's Disaster Response Plan should include procedures to protect the public from flooding hazards.
- **Policy S.2.1(E):** Maintain or return to Open Space lands subject to flooding.

3.10.2 Environmental Setting

Hydrology

The project area is in the Trinity River Hydrologic Unit as defined by the Basin Plan and the Upper Hayfork Creek fifth-field watershed (HUC 1801021202) (Figure 3-2—Watersheds and Sub-Watersheds). The Trinity River Hydrologic Unit is one of five hydrologic units within the Klamath River Basin of northern California. Each of the hydrologic units is divided into smaller units called hydrologic areas and subareas. The project area is located within the Hayfork Valley hydrologic subarea, which is within the South Fork Trinity hydrologic area. The project area contains nine subwatersheds that contribute channelized flow to Hayfork Creek via a number of ephemeral and intermittent streams, as wells as springs and seeps, with streamflow primarily from snowmelt runoff and large rainfall events. Hayfork Creek parallels Wildwood Road and is the main stream in the project area.

Hayfork Creek originates south of the project area in the Yolla Bolla Mountains and flows north through the project area, before turning west near Hayfork, California. Hayfork Creek drains 234,000 acres and is a main tributary of the South Fork Trinity River in the Klamath River Basin (U.S. Forest Service 1998). The South Fork Trinity River flows into the Trinity River, which flows into the Klamath River before reaching the Pacific Ocean.

The Upper Hayfork Creek watershed is drained by a dendritic channel network. Major tributaries in the watershed are generally small. Streamflow data for the Upper Hayfork Creek watershed are limited. The U.S. Geological Survey maintained a gage on upper Hayfork Creek (USGS #11528400) just downstream of the project area and collected daily data from 1957 through 1965 and peak flows through 1976. From 1957 through 1965, the average flow ranged from 64.5 cubic feet per second

(cfs) to 268.0 cfs. A peak flow of 7,550 cfs was recorded in 1974. The flows in Hayfork Creek are very low during the summer and fall due to geology of the watershed and the seasonal precipitation pattern, dropping to less than 2 cfs during very dry periods.

Flood Hazards

Flood hazard zones in the vicinity of Wildwood Road are classified as zone D, which includes areas where flood hazards are undetermined but possible (Federal Emergency Management Agency 2010). The flood zone along Hayfork Creek in the project area has not been mapped by the Federal Emergency Management Agency (FEMA).

Project-level flood modeling at three locations along Hayfork Creek in the project area (see Figure 3-2) identified the following flood concerns (North State Resources, Inc. 2012b):

- At the northern end of the project area just south of Post Mile 11.6 on Murrison Ranch, the modeled water surface elevation for a 100-year peak flow (10,890 cfs) is between 9 and 11 feet above the channel bottom and between 9 and 23 feet below the existing road surface.
- Near the southern end of the project area on one of the private parcels north of Gemmill Gulch Picnic Area, the modeled water surface elevation for a 100-year peak flow (9,460 cfs) is between 11 and 14 feet above the channel bottom and is between 6 and 9 feet below the existing road surface.
- At the southern end of Segment 3 at Post Mile 5.0, the modeled water surface elevation for a 100-year peak flow (8,770 cfs) is approximately 12 feet above the channel bottom and within two feet of the existing road surface.

Hayfork Creek near Post Mile 5.0 has the most potential for overbank flooding due to the proximity of the road, while the other two locations do not appear to be at risk of overbank flooding. In 2003, Forest Service personnel observed that Hayfork Creek overtopped Wildwood Road near the Gemmill Gulch Picnic Area. This was approximated as a 15- to 25-year flood event. During a flood event, it is possible that Hayfork Creek rises to the outlet elevation of the drainage at this location and causes a backwater effect that allowed flood flows to overtop Wildwood Road.

Water Quality

The Basin Plan designates specific beneficial uses for the Hayfork Valley hydrologic subarea, including municipal; agricultural; industrial service supply; industrial process supply; groundwater recharge; freshwater replenishment; contact and non-contact recreation; commercial and sport fishing; cold freshwater habitat; wildlife habitat; rare, threatened, or endangered species; migration of aquatic organisms; and spawning, reproduction, and/or early development of aquatic organisms (North Coast Regional Water Quality Control Board 2011).

The Basin Plan has established narrative or numeric limits that are intended to meet water quality objectives to ensure that beneficial uses of the water body are protected. It specifies limits for the following water quality parameters: boron, bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, hardness, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, specific conductance, tastes and odors,

temperature, toxicity, total dissolved solids, and turbidity (North Coast Regional Water Quality Control Board 2011).

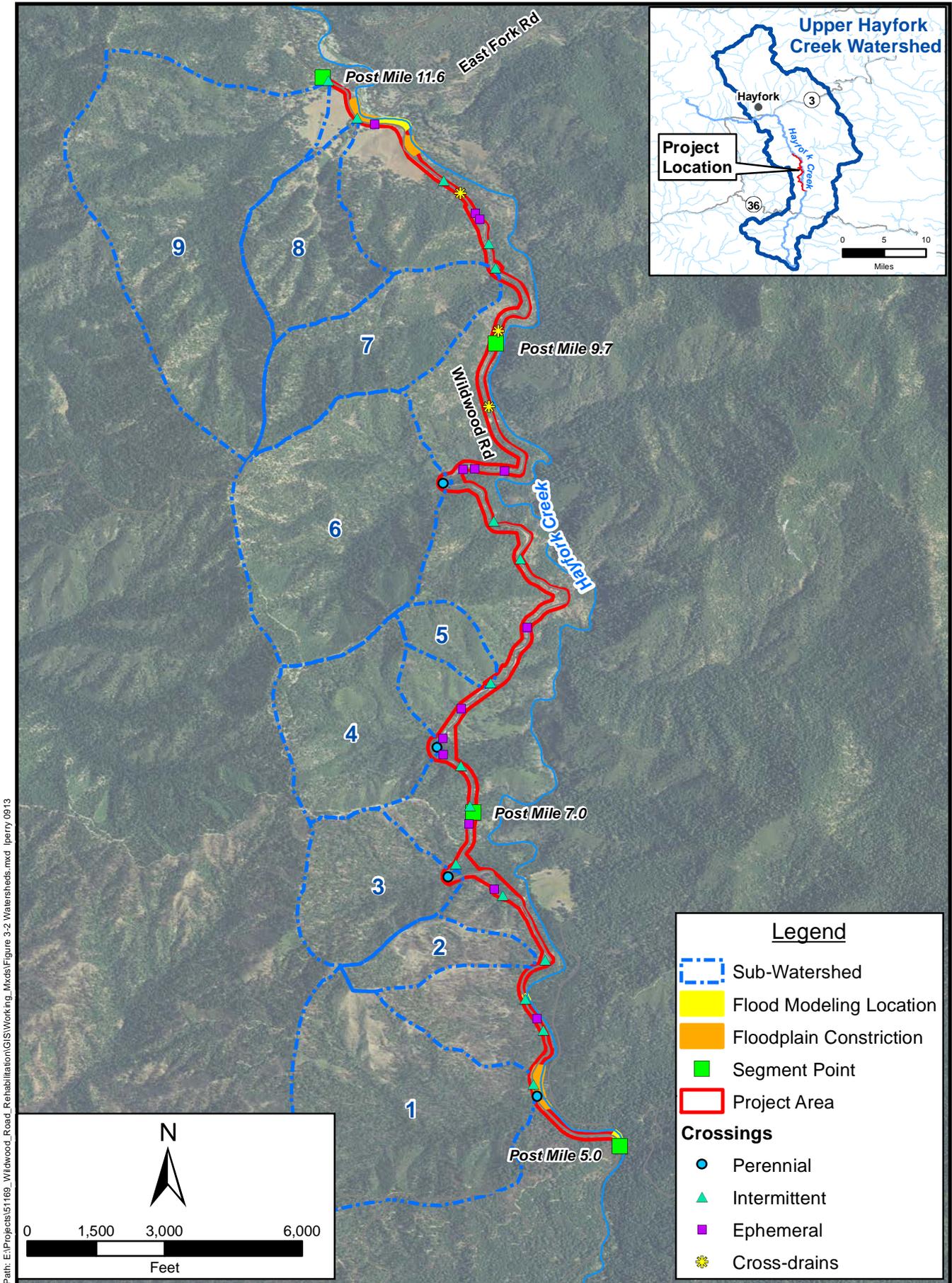
The South Fork Trinity River and Hayfork Creek are discrete water bodies that are included on California's CWA Section 303(d) list of impaired water bodies as water quality limited due to sediment. The sedimentation in the South Fork Trinity River watershed was judged to exceed the existing water quality standards necessary to protect beneficial uses, specifically cold freshwater habitat, migration of aquatic organisms, spawning, reproduction, and development of young fish. The sediment impairment resulted in non-attainment of designated beneficial uses, primarily the cold water fishery (U.S. Environmental Protection Agency 1998). A sediment TMDL, with numeric targets, was prepared for the South Fork Trinity River and Hayfork Creek in 1998. The water quality objectives addressed in the TMDL include settleable material and sediment.

The TMDL is based, in part, on a sediment source analysis developed to determine sources and quantities of sediment delivery to the entire South Fork Trinity River basin and each sub-basin from 1944 through 1990. This analysis concluded that mass wasting from non-management related sources has been the main source of sediment delivery in the basin, accounting for 65 percent of the total. In contrast, the dominant source of sediment delivery in the Hayfork Creek sub-basin is bank erosion processes, followed by surface erosion processes.

Land use practices or management-related sources (e.g., timber harvesting and road construction) are a slightly larger source of sediment to Hayfork Creek than natural sources or non-management related sources (e.g., landslides and bank erosion). The rate of sediment delivery in the Hayfork Creek sub-basin (361 tons/mi²/yr) is a third of the rate of delivery in the entire South Fork basin (1,053 tons/mi²/yr) (U.S. Environmental Protection Agency 1998).

Temperature impairment was added to California's CWA Section 303(d) list for the South Fork Trinity River and Hayfork Creek in 1998. High temperatures within the watershed are likely a result of water diversions, loss of riparian vegetation, natural conditions, and excess sedimentation. To date, a TMDL for temperature has not been established.

Data on temperature and sediment levels were collected at sites along Hayfork Creek and the South Fork Trinity River in 2002 and 2003 (Trinity County Resource Conservation District 2003). The 7-day maximum average temperatures in the mainstem of Hayfork Creek downstream of the project area were the highest collected, ranging between 77.8°F (at Arnold Ranch) and 83.4°F (at Hyampom). Temperatures were not monitored in the upper reaches of Hayfork Creek or within the project area. The 7-day maximum average temperature was monitored in two tributaries of the upper reach, including Dubakella Creek above the project area and the East Fork of Hayfork at the northern end of the project area. For the monitoring period, both of these sites were below the threshold temperature of 68.4 °F.



Path: E:\Projects\51169_Wildwood_Road_Rehabilitation\GIS\Working_Mxds\Figure 3-2 Watersheds.mxd (perry.0913)

Wildwood Road Project

Figure 3-2 Watersheds and Sub-Watersheds

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3.10.3 Impact Analysis and Mitigation Measures

Methodology

North State Resources, Inc. compiled background information on hydrology, flooding, and water quality in the project area and prepared a hydrology and water quality study to support the analysis contained in this section. The study also included an assessment of the culvert requirements for the proposed project and a feasibility-level floodplain analysis. The information obtained from the study was used to describe the environmental setting and served as the basis for evaluating impacts on hydrology and water quality.

Thresholds of Significance

The following significance criteria were developed from Appendix G of the CEQA Guidelines. Impacts on hydrology and water quality would be significant if the proposed project would:

- violate any water quality standards or waste discharge requirements;
- 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;
- 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;
- 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; or
- place within a 100-year flood hazard area structures which would impede or redirect flood flows.

Impact Analysis

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

During construction, surface runoff could carry sediment and pollutants into Hayfork Creek and its tributaries. The potential discharge of pollutants (e.g., sediment) into a water body during and for some time following clearing and grading activities is often associated with high-intensity rainfall and stormwater runoff events. Pollutants such as gasoline or oil may enter water bodies in or adjacent to the work area during maintenance and operation of construction equipment. Pollutants associated with construction materials (e.g., asphalt, concrete) could also be discharged to a water body during the handling, storage, or disposal process. Soil erosion resulting in the discharge of sediment into the water bodies could occur during earth-moving activities, such as excavation and grading and during vegetation removal. The potential for increased erosion due to surface runoff would be primarily limited to cut and fill slopes and other areas disturbed by construction activities.

Construction activities would be needed in the tributaries to Hayfork Creek that cross the existing and proposed alignment of Wildwood Road to remove and install culverts. Streams with water in them at the time of construction would require dewatering using a temporary dam structure and pumping

water around the work area. Dewatering of the streams would reduce the potential for sediment or pollutants to be conveyed in surface flow from the work area. Work in the streams would be minimized to the greatest extent practicable. In addition, grading activities would be suspended during the rainy season, and erosion control devices would be maintained during the winter months to reduce the potential for inadvertent discharge of pollutants or sediment while some of the work is suspended.

The proposed project incorporates Caltrans Standard Specifications to reduce erosion and discharge of pollutants into water bodies, and the contractor or County will be required to prepare a SWPPP to identify specific BMPs to implement during construction. The project will be required to comply with the NPDES General Permit for Construction Activities, and proper implementation of the BMPs outlined in the SWPPP would ensure that construction activities comply with the Basin Plan and other federal, state, and local requirements. The discharge of pollutants or sediment into Hayfork Creek during construction activities could adversely affect water quality in the creek and result in significant water quality impacts. Implementation of Mitigation Measures HW-1a and HW-1b in addition to the measures identified in Chapter 2 as part of the proposed project would reduce the potential for substantial adverse water quality impacts.

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.

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.

Level of Significance: Less than significant with implementation of the mitigation measures because construction-related water quality impacts would be reduced to acceptable levels.

Impact HW-2: The proposed project could increase the potential for pollutant or sediment discharge into water bodies over the long term.

The proposed project would result in extensive cut and fill in some locations and installation of new, appropriately sized culverts, which would modify the drainage patterns of the affected areas. However, with the new culverts, these modifications would improve drainage under the road and reduce the potential for runoff from the road to convey pollutants or sediment into Hayfork Creek. Sediment is currently introduced to Hayfork Creek from erosion along the road and streams that cross the road, which is a result of the undersized culverts, poor drainage conditions, and soil types. Some continued erosion would be expected as the road prism continues to weather and be subject to erosional processes, but flow under the road would be improved with the new culverts.

The fill used for the road prism would be constructed in lifts consistent with the thickness and percent compaction requirements in the design specifications. Compaction of soil decreases the permeability by lowering the volume of pore space within the soil. Compacted fill areas have the potential to result in increases in the amount of runoff in an area by decreasing water infiltration rates, which increases the volume of water that remains on the surface. An increase in the volume of stormwater runoff increases the likelihood that runoff will concentrate along the slope and cause rill and gully erosion. In areas near stream courses, such erosion is likely to deliver sediment and other materials to Hayfork Creek and its tributaries.

The water quality of Hayfork Creek and its tributaries in and adjacent to the project area is not likely to become degraded relative to existing water quality conditions. Vehicle traffic, which is the main source of chemical pollution to Hayfork Creek, would be similar to current conditions. The improved drainage under the road and implementation of site-specific slope stabilization and erosion control measures would reduce the potential for runoff to carry pollutants into the creek relative to the existing conditions. Turbidity and suspended sediment levels in Hayfork Creek and its tributaries should decrease over time as the new drainage structures, erosion control measures, and revegetation efforts become fully functional.

With improved roadway drainage, the proposed project would not substantially increase erosion or sedimentation or degrade the water quality of Hayfork Creek over the long term. Stormwater runoff may increase slightly due to the wider surface area of the roadway; however, the increase in runoff would not be measurable because of the minimal increase in impervious area and the surrounding undeveloped, natural areas.

The proposed realignment and widening of Wildwood Road would not increase the length of road within the mapped riparian reserves. Portions of the road that are removed within riparian reserves are expected to be restored to their preconstruction geometry, stabilized, and revegetated, pending final designs. The proposed project would be designed and implemented to meet Aquatic Conservation Strategy objectives, consistent with the applicable riparian reserve Standards and Guidelines of the STNF LRMP.

Level of Significance: Less than significant because long-term water quality impacts would be reduced from current conditions.

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

The proposed project would result in a minor encroachment on the floodplain of Hayfork Creek and could increase flooding in the localized area if drainage structures are not adequately sized. Overbank flooding would not be expected during a 100-year flood event because the new culverts would be sized and designed to accommodate the 100-year flows. Because the floodplain of Hayfork Creek in the project area has not been mapped by FEMA, the project would be allowed to encroach into the floodplain of the most probable 100-year flood event provided that it does not cause an increase in the water surface elevation of the most probable 100-year flood in excess of 0.5 feet per side or 1.0 foot for encroachment on both sides of the channel. Encroachment on the floodplain could occur in two places along the proposed road alignment: Post Miles 11.15 and 11.44 in Segment 1. Other segments of the road adjacent to Hayfork Creek are unlikely to encroach on the floodplain.

The proposed road alignment at Post Mile 11.15 may encroach slightly on the floodplain, which may constrict the floodplain and cumulatively increase the water surface elevation of the 100-year flood in excess of 0.5 feet. The existing road is high above the floodplain in this area, so overbank flooding is not an issue. The raised road at Post Mile 11.44 should eliminate any concerns regarding overbank flooding or backwater from the drainage structure at this location. However, the fill from the raised road may encroach on the floodplain in this area. These road modifications could result in a significant impact on the floodplain. Implementation of Mitigation Measure HW-3 would ensure that the project design incorporates the necessary elements to reduce the impacts of floodplain encroachment.

Backwater from Hayfork Creek in the event of a 100-year flood could cause flooding at Gemmill Gulch near Post Mile 5.34 due to the proximity and elevation of the culvert outlet relative to the 100-year floodplain of Hayfork Creek. The new culvert installed in this location would be designed to accommodate the 100-year flood and would reduce the potential for backwater flooding of the road.

The existing culverts at nine drainages that cross Wildwood Road and 24 additional drainage structures would be replaced with drainage structures sized to convey the 100-year flood. In Segment 1, 13 corrugated metal pipes are expected to be replaced to accommodate the new road alignment and improve flow under the road. In Segment 2, drainage structures in two large gulches and 12 other culverts that convey roadside drainage or ephemeral streams would be replaced to accommodate the new road alignment and improve flow under the road. In Segment 3, drainage structures in Gemmill Gulch and a major drainage at Post Mile 6.6 and six other culverts that convey ephemeral drainages or road runoff would be replaced to accommodate the new road alignment and improve flow under the road. The improvements made to the culverts at the streams crossings and cross drains would be a beneficial effect of the proposed project.

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.

Level of Significance: Less than significant with implementation of the mitigation measure because flood flows under Wildwood Road would be improved with the new culverts and road modifications.

3.11 Geology and Soils

This section describes the geologic and soil resources underlying the project area and the associated hazards present in the vicinity of Wildwood Road and analyzes the effects of the proposed project on soil resources, unique geologic or paleontological resources, and potential geologic or soil hazards. Information in this section is summarized from the geology and soils technical report completed for the proposed project (North State Resources, Inc. and Geoscience Services 2012). The following issues are not discussed further in this section for the reasons noted below:

- **Soil Issues for Wastewater Disposal:** The proposed project consists of improvements to an existing road corridor and would not involve wastewater disposal.

- **Locally Important Mineral Resources Site:** The proposed project would not result in the loss of availability of a locally important mineral resources site. No sites have been delineated in the project area.

3.11.1 Regulatory Setting

Antiquities Act of 1906

Federal legislative protection for paleontological resources stems from the Antiquities Act of 1906 (Public Law 59-209; 16 United States Code 431 et seq.; 34 Stat. 225), which calls for protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal land. Federal protection for significant paleontological resources applies to projects on NFS lands in the project area.

Shasta-Trinity National Forest Land and Resource Management Plan

The STNF LRMP requires that projects authorized by the STNF be designed and implemented in a manner that maintains the existing conditions or implements actions to restore biological and physical processes within their natural range of variability (U.S. Forest Service 1995). Specific standards and guidelines relating to soil resources include:

- Determine the sensitivity of each 2nd or 3rd order watershed using soil, geologic and streamflow characteristics.
- The threshold of concern for a watershed is expressed as the percentage of disturbed or compacted soil area within a total watershed, as measured by the Equivalent Roaded Area (ERA). The ERA threshold equals 18 percent in low sensitivity watersheds, 16 percent in moderate sensitivity watersheds, 14 percent in high sensitivity watersheds, and 12 percent in extremely sensitive watersheds.
- Projects on NFS lands should not increase the ERA above the proportional share (depending on land ownership) of the threshold unless, as part of the project, existing ERAs would be reduced or the ERA recovery factor would be improved.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code Section 2621 et seq. 1972) was passed by the California Legislature to mitigate the hazard of surface faulting to structures. The purpose of the Act is to prevent the construction of buildings used for human occupancy on or near the surface trace of active faults. Under the statute, the Division of Mines and Geology (California Geological Survey) maintains a mapping program that delineates all active fault traces in the state (California Geological Survey 2010). These maps are used by professional geologists performing earthquake hazard studies. The act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. Local agencies must regulate most development in fault zones established by the State Geologist. Before a project can be permitted in a designated fault zone, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults.

California Building Standards Code

The State of California provides minimum standards for building design through the California Building Standards Code (California Code of Regulations, Title 24). Where no other building codes apply, Chapter 29 regulates excavation, foundations, and retaining walls. The California code also applies to building design and construction in the state and is based on the Federal Uniform Building Code used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). The California code has been modified for California conditions with numerous more detailed and/or more stringent regulations. Chapter 18 of the California code regulates the excavation of foundations and retaining walls, and Appendix Chapter A33 regulates grading activities, including drainage and erosion control, and construction on unstable soils, such as expansive soils and liquefaction areas.

Trinity County General Plan

Section 65302(g) of the California Government Code requires that general plans include an element containing identification and appraisal of seismic and geologic hazards. The Safety Element of the Trinity County General Plan is composed of elements that relate to aspects of the county's natural and human-made environment that pose potential threats to human life or property (Trinity County Planning Department 2002). The Trinity County General Plan includes a section containing identification and appraisal of seismic and geologic hazards with the goal of minimizing the threat to life and property from seismic and geologic hazards. Geologic hazards policies include:

- **Policy S-7.1 Geologic Hazards–Subdivisions:** Geotechnical reports and/or related studies shall be required for all subdivision proposals in areas of known landslides or other geologic instability.
- **Policy S-7.2 Geologic Hazards–Existing Parcels:** Geotechnical reports and/or related studies shall be required prior to issuance of a building permit in all identified landslide areas or other geologic instability areas.
- **Policy S-7.6 Building Design and Construction:** Building design and construction shall consider soil conditions prior to development.

3.11.2 Environmental Setting

Regional Geology

The project area is in the Klamath Mountain Geomorphic Province. This province contains a series of geomorphic terrains, primarily of metamorphic and igneous rocks, that formed more than 350 million years ago. Rock formations, including alluvial, glacial, and mass wasting deposits, exposed across the province have been reworked by fluvial and glacial action over the past 10 million years (Wagner and Saucedo 1987).

The Klamath Mountains have been subject to several episodes of uplift, erosion, and subsidence over the course of geologic time. The landscape contains many remnants of the old eroded surface. The topography that developed on the Hayfork Terrane has been shaped by fluvial erosion and consists of

densely dissected, steep mountain hillslopes. Mass wasting (i.e., landslides) has also influenced topography within the region. For example, areas underlain by weak metamorphic rock have been strongly developed almost exclusively through mass wasting processes. Depending on individual bedrock types and associated topography, mass wasting and fluvial erosion are the dominant erosion processes that drive sediment regimes in the region.

Several mapped active faults exist within a 50-mile radius of the project area, but no active faults are known within or immediately adjacent to the project area (California Geological Survey 2010). Active faults are defined as faults that have moved in the last 11,000 years (i.e., Holocene). Historically, the project area has experienced frequent small seismic events and occasionally larger events.

Local Geology

The most common rock unit underlying the project area is igneous rock that is about 169 million years old (North State Resources, Inc. and Geoscience Services 2012). This rock unit is typical decomposed granite and has a high to very high erosion potential. It also contains several dormant and active landslides. Outcrops of decomposed granite are evident throughout the project area. The exposed rock within the project area is fairly uniform. Irrespective of the specific rock unit, most of the rock that is visible in the project area is mechanically weathered with visible fractures and is considered moderately rippable. Quaternary stream terrace deposits along Hayfork Creek are present near the north and south ends of the project area. The unconsolidated nature of these deposits results in landforms that are prone to slope failure, particularly where they are subject to fluvial erosion.

Fossils have been found in Trinity County, including a number of plant fossils from the Tertiary age in the Hayfork region (University of California Berkeley, Museum of Paleontology 2013). Fossils are more commonly found in sedimentary rocks, and igneous and granitic rocks, such as those present in most of the project area, do not typically support fossils because of how they were formed. Quaternary deposits are also younger and not likely to contain fossils or other paleontological resources.

The project area is on steep complexly faceted hillslopes facing east and north (North State Resources, Inc. and Geoscience Services 2012). Average slopes range between 30 and 120 percent, with some slopes above the road prism being greater than 120 percent. The topography associated with the existing road prism is steeper at a number of locations, in part due to the extensive cut slopes into steep hillslopes. Given the rock type and finished geometry of the cuts, the existing slopes appear stable. Material cut from the hillslope was used as fill to create flat areas or as road embankment, often with fill slopes extending to the edge of stream channels. This fill is made up of soil, rock, and organic debris excavated from the adjacent cutslope or sidecast as waste material.

The existing road prism crosses several dormant and active landslide features (Figure 3-3—Landslide Hazard Areas). Throughout the watershed, these landslides tend to be associated with concave topography (North State Resources, Inc. and Geoscience Services 2012). Within the project area, several cut slopes are actively failing, while a number of cut slopes indicate evidence of historic or potential failure if disturbed. Existing landslide types in the project area include colluvial hillslope, debris slide, inner gorge, rock slope, rotational landslide, and soil-shallow creep. The majority of the

landslide features identified in the field investigation are rock slope failures and soil-shallow creep. The landslides are in various stages of stability and activity.

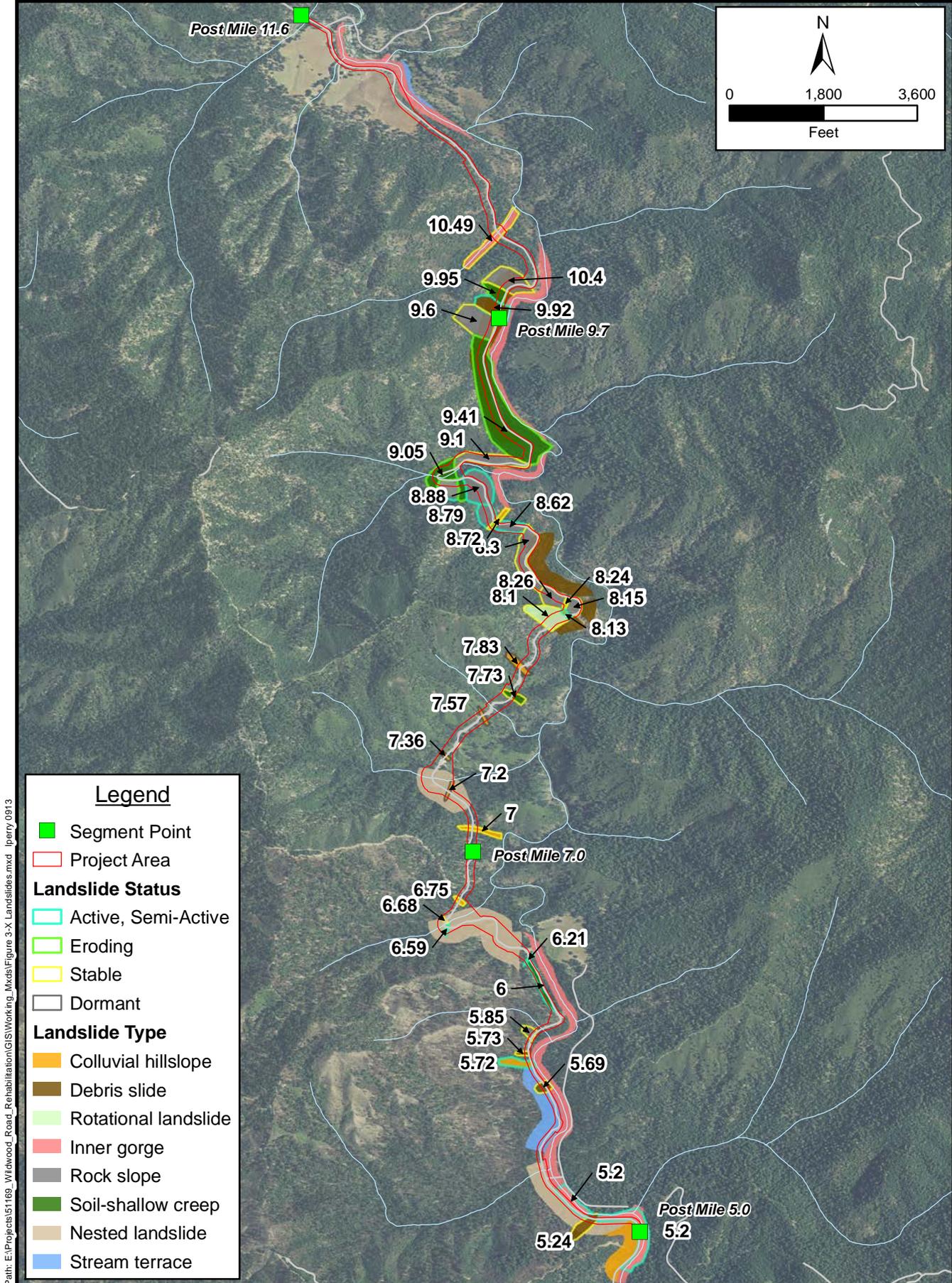
Local Soils

Twelve different soil types typical of steep mountainous landscapes have been mapped in the project area. The soils tend to be shallow on ridges and deeper in colluvial swales. The main soil types are: Hohmann Family, Goulding Family, Atter Family, Brader Family, Deadwood Family, and Holland Family. Most of the soils were derived from decomposed granite and tend to be sandy loam with silt. If disturbed, these granitic soils have high erosion potential as a result of high moisture content, slope gradient, and slope geometry. The sandy loam soils tend to have low cohesive properties, and surface deposits are easily displaced and transported by gravity when disturbed. The low cohesiveness of the disturbed soil is due to the friable nature of the decomposed granitics, which results in a high probability of erosion and transport due to the steep slope angle of the natural and constructed slopes. When undisturbed, the soils tend to be well drained and have low to moderate erosion potential. Soils with the highest erosion potential are from the Hohmann, Goulding, Deadwood, and Chaix families, which are found in the vicinity and south of Post Mile 10.0, in the vicinity of Post Mile 7.0, north of Post Mile 5.0, and around Post Mile 5.0 (Figure 3-4—Erosion Hazard Areas). Field investigations, including engineering classifications of soil texture and strength, indicate that none of the soils in the project area have high clay content or exhibit expansive soil characteristics.

3.11.3 Impact Analysis and Mitigation Measures

Methodology

North State Resources, Inc. compiled background information on geology and soils in and near the project area and prepared a geology and soils technical report to support the analysis contained in this section. The report also included an assessment of the landslide issues associated with Wildwood Road and an analysis of soil pit samples from the project area. The information obtained from the report was used to describe the environmental setting and served as the basis for evaluating impacts on geologic and soil resources.

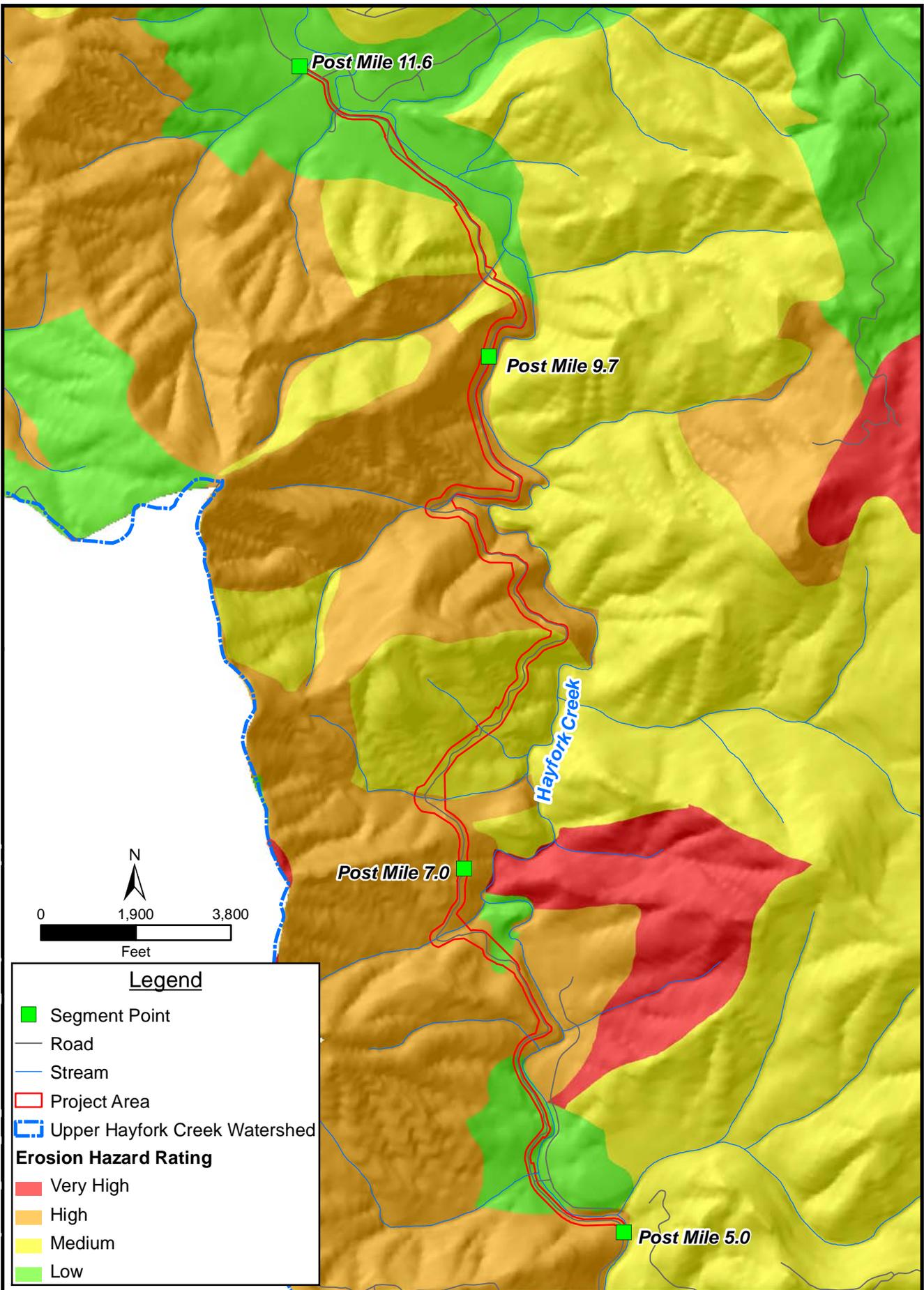


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Wildwood Road Project

Figure 3-3
Landslide Hazard Areas

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Wildwood Road Project

Figure 3-4
Erosion Hazard Areas

Thresholds of Significance

The following significance criteria were developed from Appendix G of the CEQA Guidelines.

Impacts on geologic and soil resources would be significant if the proposed project would:

- directly or indirectly destroy a unique paleontological resource or unique geologic feature;
- expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault,
 - strong seismic ground shaking,
 - seismic-related ground failure, including liquefaction, or
 - landslides;
- result in substantial soil erosion or the loss of topsoil;
- be located on strata or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse; or
- be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

Impact Analysis

Impact GS-1: Construction activities would expose soils to increased erosion.

Construction activities would involve extensive cuts and fills to realign Wildwood Road. Existing steep slopes (65 to 120 percent) along the inner gorge of Hayfork Creek would need to be excavated to establish a straighter road alignment along the gorge and widen the road, where needed.

Excavation of material to construct the road prism would alter the cut slope area and angle and decrease soil cohesion within in and adjacent to the road prism. These activities would expose the excavated soils and steep slopes adjacent to the road to erosion from wind or water. After construction activities, any runoff flowing over newly graded areas would have an increased volume and velocity, and less energy would be required to cause erosion. Because of the high erosion potential of most of the soils in the project area, extensive erosion could result from the soil disturbing activities. Paving of the road would protect soils along the new roadway from future erosion, but the adjacent shoulders would be compacted fill and could erode over the long term. Vegetation plantings in disturbed areas outside the permanent roadway would also help stabilize and protect soils over the long term. Excavated soils in the project area would be used for fill in other locations to balance the amount of cut and fill and reduce the need to import soils. Anticipated soil disturbance and erosion-related impacts for each segment are discussed below.

In Segment 1, most of the road improvements would entail small cuts and fills. Realignment of sharp reversing curves within the northern 0.7 mile of this segment would require excavation into the

embankment on the uphill side and placement of fill on the creek side (outside of the creek) and along the new road alignment to match the elevation of the adjacent road segments. The soils in this area have a low erosion potential, and substantial erosion would not be expected. Realignment near Post Miles 10.7 and 10.2 would include large cuts into the bank and a retaining wall on the creek side to remove the sharp reversing curves and allow room for the roadway widening. The soils in this area have a high erosion potential, and substantial erosion could result from the soil disturbing activities. The retaining wall would help reduce the potential for eroded soils to be discharged into the creek.

In Segment 2, several sharp curves would be straightened and require extensive cuts into embankments. The roadway elevation would also be increased in some areas and require extensive fill. A 500-foot-long retaining wall may be placed to widen the road across a steep section between Post Miles 9.4 and 9.5, which would help protect the soils in this area from future erosion. The soils in Segment 2 have a medium to high erosion potential, and substantial erosion could result from the soil disturbing activities.

In Segment 3, several sharp curves would be straightened and require extensive cuts into embankments. The roadway elevation would also be increased in some areas and require extensive fill. Near Post Mile 6.6, a sharp curve along a drainage would be straightened by either placing fill along 2,000 feet of relatively flat terrain approximately 400 feet from Hayfork Creek or by installing a culvert and placing fill in the gulch higher up in the drainage, which would require more fill. A tight curve at Post Mile 5.9 would be realigned away from Hayfork Creek by cutting into the bank. The soils in these areas have a high erosion potential, and substantial erosion could result from the soil disturbing activities. Smaller cuts would be done to widen the road on its existing alignment from Post Mile 5.8 to 5.0. The soils in this area have a low erosion potential, and substantial erosion would not be expected. The elevation of the southern end of the segment would be raised, requiring placement of fill along the roadway.

During all construction phases, BMPs and other project-specific erosion control measures would be implemented in accordance with Caltrans Standard Specifications, the project's SWPPP, Forest Service Standards and Guidelines, and the Caltrans Storm Water Quality Handbooks (Caltrans 2003), as described in Chapter 2. Although most of the soils in the project area are susceptible to erosion when disturbed, implementation of these measures would reduce the potential for erosion-related impacts and help stabilize the soils during and immediately following soil disturbing activities.

Level of Significance: Less than significant because erosion-related impacts would be minimized with implementation of construction measures. In addition, implementation of Mitigation Measures HW-1a and HW-1b would reduce water quality-related impacts from erosion during construction.

Impact GS-2: Construction activities could disturb unique geologic features or paleontological resources.

Construction activities would involve extensive cuts into embankments and slopes along the existing alignment of Wildwood Road to realign and widen the roadway. These activities could remove exposed granite and other rocks along the road, but no unique geologic features have been identified in the project area. The underlying geologic units have a low potential to contain paleontological

resources, and no fossils or other paleontological resources would be expected to be encountered during construction, despite the extensive amount of earthwork.

Level of Significance: No impact identified.

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

The modification of slopes in the project area, particularly those with slopes of 65 to 120 percent, to accommodate the realignment of Wildwood Road could trigger landslides, particularly slopes of 65 to 120 percent and in areas where active landslides have been mapped. The low cohesiveness of the disturbed soil when saturated makes certain areas prone to landslides especially in areas of decomposed granite. Landslides can be triggered by many, often inter-related, causes. Common triggers along roads include shallow erosion along slopes, excessive weight above the slope (e.g., from water, soil, and rock), and excavation that takes place at mid-slope or at the foot of the slope. Excavation activities during construction would remove soil and rock from steep slopes that could cause landslides as the material is excavated, particularly if it is excavated from the toe slope, or after construction if the slope is not re-stabilized. Areas of the road that require extensive fill could also be unstable despite being compacted and could require additional protection measures to prevent slope failure after construction. Anticipated landslide impacts for each segment are discussed below.

In Segment 1, five landslides were mapped along Wildwood Road that could be disturbed during construction activities. A debris slide near Post Mile 9.92 is considered semi-active and has the greatest potential of collapsing during excavation or causing long-term hazards after the road improvements. Soil-shallow creep was observed near Post Mile 9.95 where the slope is eroding, and erosion would be expected to continue along the slope without additional protection. The other three landslides are considered stable or appear to be distant from the road improvements; however, excavation into the landslides could trigger slope failure. Long-term hazards associated with the more distant landslides would be less of a concern.

In Segment 2, 22 landslides were mapped along Wildwood Road that could be disturbed during construction activities. Two active colluvial hillslope landslides near Post Mile 8.15 and four semi-active rock slope landslides around Post Mile 8.7 have the greatest potential of collapsing during excavation or causing long-term hazards after the road improvements. Three areas of soil-shallow creep were observed near Post Mile 9.0 and around Post Mile 9.4, and the slopes would be expected to continue to erode without additional protection. A retaining wall along steep slopes between Post Miles 9.4 and 9.5 would help protect the eroding slopes from causing rock or debris fall onto the roadway. The other landslides are considered stable or dormant; however, excavation into the landslides could trigger slope failure. Long-term hazards associated with the stable and dormant landslides would be less of a concern.

In Segment 3, 16 landslides were mapped along Wildwood Road that could be disturbed during construction activities. Two active landslides near Post Miles 5.2 (inner gorge) and 6.0 (soil-shallow creep) and three semi-active colluvial hillslope landslides near Post Miles 5.72, 6.21, and 6.59 have the greatest potential of collapsing during excavation or causing long-term hazards after the road improvements. The other landslides are considered stable; however, excavation into the landslides could trigger slope failure. Long-term hazards associated with the stable landslides would be less of a concern.

Because of the extent of ground-disturbing activities anticipated as part of the proposed project and the presence of several landslides, some of which are considered active, the proposed project could trigger landslides along Wildwood Road or cause substantial slope failure, which could damage structures or injure people. Implementation of Mitigation Measure GS-3 would reduce the potential for slope failure and ensure that steep slopes are protected from future erosion or landslide hazards.

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.

Level of Significance: Less than significant with implementation of the mitigation measure because landslide-related impacts would be minimized.

Impact GS-4: The proposed project could expose people or structures to hazards from seismic activity.

Seismic movement from earthquakes at levels commonly experienced in Trinity County has the potential to affect the stability of the new road prism, cut slope, and fill slope stability. The roadway improvements will be designed by a California Registered Civil Engineer in accordance with the Caltrans Design Manual, American Association of State Highway and Transportation Officials Design Guide, and California Standard Plans and Specifications. The proposed structures will be designed by a California-Registered Civil or Structural Engineer to withstand anticipated seismic hazards. No habitable structures would be constructed as part of the proposed project. By improving

the road and stabilizing cut slopes, the proposed project would actually reduce the exposure of people to risk from seismic hazards. Some damage to the roadway or associated structure may occur with strong seismic-related ground shaking, but the proposed project is not expected to expose people to loss, injury, or death involving seismic hazards.

No active faults have been mapped in the project area, and rupture of a known fault is not expected to affect the modified road. Likewise, seismic-related hazards, such as liquefaction, are not anticipated based on the soil types and other conditions in the project area.

Level of Significance: Less than significant because project design would ensure compliance with seismic design standards to minimize damage.

3.12 Hazards and Hazardous Materials

This section describes hazards and hazardous materials in the project area and analyzes the potential for the proposed project to increase the risk of hazards, specifically wildland fire hazards, or introduce hazardous materials into the environment. Information in this section is based on available information and maps from agency sources and the Phase I environmental site assessment completed for the proposed project (Lawrence and Associates 2010). Hazards relating to geology and soils are addressed in Section 3.11, and emergency access and road-related hazards are addressed in Section 3.4. The following issues are not discussed further in this section for the reasons noted below:

- **Hazards Near Schools:** The project area is not near schools, and the proposed project would not increase the risk of hazards near schools.
- **Airport-related Hazards:** The project area is not near an airport or private airstrip, and the proposed project would not increase the risk of airport-related hazards.
- **Hazardous Materials Sites:** No known hazardous materials sites exist in or within a 1-mile radius of the project area (Lawrence and Associates 2010).

3.12.1 Regulatory Setting

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act is a federal regulatory statute designed to provide “cradle to grave” control of hazardous waste by imposing management requirements on generators and transporters of hazardous wastes and on owners and operators of treatment, storage, and disposal facilities.

California Codes

Health and Safety Code Section 25100 et seq. describes the key aspects of hazardous waste management, including identification and classification; sources; transport; design and permitting of recycling, treatment, storage, and disposal facilities; treatment standards; operation of facilities, including staff training; closure of facilities; and liability issues. The sections define the Hazardous Waste Control Law of 1990 (as amended 1997), which created the California hazardous waste

management program, which is similar to, but more stringent than, the federal program under the Resource Conservation and Recovery Act. Regulations associated with this law impose cradle-to-grave requirements for handling hazardous wastes in a manner that protects human health and the environment.

California Code of Regulations Sections 1150 to 1194 regulate the transport of hazardous materials. When a hazardous material or waste spill originates on a highway, the California Highway Patrol is responsible for direction of cleanup and enforcement (Sections 2450-2454b). Highway is defined as a way or place of whatever nature, publicly maintained and open to the use of the public for purposes of vehicular travel. Under this definition, highways include streets and county maintained roads, as well as state highways.

Public Resources Code Sections 4428 to 4442 regulate emergency response in the event of a fire and require the provision of firefighting equipment on or near any forest, brush, or grass-covered land when fire hazards are highest. It also addresses disposal of flammable materials and waste and use of spark arrestors on certain equipment.

Trinity County General Plan Safety Element

The Trinity County General Plan Safety Element identifies goals to reduce fire hazards in wildland, wildland/urban interface, and developed areas and reduce threats to the public health and the environment caused by the use, storage, and transportation of hazardous materials and hazardous waste (Trinity County Planning Department 2002). Applicable objectives and policies for implementing these goals include:

- **S.5.1 Objective–Accessibility:** Ensure emergency accessibility to development through proper road construction and signage.
 - Policy A. Roads shall be constructed to provide adequate width, grade, and turnaround space for emergency vehicles by complying with appropriate federal, state and local adopted standards. Construction of roads shall protect water quality, slope stability and threat to natural and cultural resources.
- **S.3.1 Objective:** Proper regulation of transportation and storage.
 - Policy A. Transport of hazardous materials shall be regulated by the California State Highway Patrol under the California Code of Regulations, Title 13:1150-13:1194, and the Code of Federal Regulations, Title 49.
- **S.3.2 Objective:** Ensure adequate cleanup of hazardous materials and hazardous waste.
 - Policy A. The County should encourage cooperation between all agencies involved in the cleanup and regulation of hazardous materials.

3.12.2 Environmental Setting

Wildland Fire

The steep topography and extent of forests and woodlands, coupled with typically hot, dry summers, create an extreme fire danger throughout most of the county. Human-caused fires commonly occur along roadways and in other developed areas, and lightning strikes frequently cause fires in more remote areas. Wildland fire, regardless of the cause, can damage property, infrastructure, and roadways and threaten life. Because of the extensive forests surrounding the project area and the steep terrain along Wildwood Road and Hayfork Creek, fire hazards are high and could damage the roadway or threaten nearby homes and recreation areas.

The Forest Service, through its Hayfork and Yolla Bolla Ranger Districts, has primary responsibility for responding to fires on NFS lands. The Hayfork Ranger District has a station in Hayfork north of the project area, and the Yolla Bolla Ranger District has a station west of Platina on SR 36 south of the project area. The California Department of Forestry and Fire Protection has primary responsibility for fire protection on private lands in the county, and local volunteer fire departments may respond to fires on private lands. The Trinity County volunteer fire departments are responsible for structural fire protection and rescue services in Trinity County throughout the year. The Hayfork volunteer fire department has its headquarters in Hayfork on Hyampom Road, approximately 12 road miles from the north end of the project area.

Hazards Along Wildwood Road

Wildwood Road is narrow and winds through steep terrain surrounded by dense forest and rock bluffs. The road has many sharp turns, which limit the line of sight, and narrow lanes (less than two lanes in some places) with inadequate shoulders. Because Wildwood Road was originally a trail, it was constructed by cutting or blasting away the hillside and surfacing it with rock. The current road design does not contain an engineered substructure to preserve the pavement and absorb the weight of heavy loads. Erosion of the steep slopes above the road results in rocks falling onto the roadway, and the road is undermined from below as fill material settles. Drainage systems were also poorly designed, resulting in water flowing under and over the road, further damaging the pavement and creating additional hazards. No major road improvements or realignments have been done under County ownership since the late 1960s. Routine maintenance and snow removal have occurred, and guardrails were added in five locations in 2009.

Accidents occur fairly frequently and often result in injuries based on County records. Since 1995, 12 accidents resulting in 17 injuries and one fatality have been reported between Post Mile 5.0 and Post Mile 11.6 (the project limits). Of these accidents, three were head-on collisions, three involved vehicles hitting trees, and two others resulted in vehicles running into the embankment. Vehicles have also been driven off the road and flipped over or fell 50 to 100 feet over the embankment.

Hazardous Materials

Hazardous waste is defined as any waste material that is a potential threat to human health and environment, having the capacity to cause serious illness or death. Hazardous materials are materials considered dangerous to people or the environment. The use, transport, storage, and disposal of

hazardous waste and hazardous materials are subject to numerous laws and regulations. The project area is in a primarily undeveloped rural environment, and no evidence of previous use or presence of hazardous materials has been documented (Lawrence and Associates 2010).

Hazardous waste or materials may be transported along Wildwood Road, and accidental spills could discharge pollutants into Hayfork Creek or the environment. Activities on NFS and private lands could involve the use of hazardous materials, such as fuels, pesticides, and fertilizers. Construction activities can introduce hazardous materials into the environment and create hazards to people.

3.12.3 Impact Analysis and Mitigation Measures

Methodology

Information for the environmental setting was compiled from documentation and maps from agency sources and field observations, and impacts were analyzed qualitatively, with a focus on the potential for the proposed project to increase the risk of fire hazards or introduce contaminants into the environment. Lawrence and Associates (2010) conducted a Phase I environmental site assessment in support of the proposed project to identify potential hazards and hazardous materials sites in or near the project area. The report also included an assessment of naturally occurring asbestos. The information obtained from the report was used to describe the environmental setting.

Thresholds of Significance

The following significance criteria were developed from Appendix G of the CEQA Guidelines. Impacts relating to hazards/ hazardous materials would be significant if the proposed project would:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; or
- expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Impact Analysis

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

Construction activities would entail the use of hazardous substances such as fuels and lubricants for vehicles and equipment, paints, solvents, epoxies, and paving materials. The hazardous substances would need to be transported to the work area, where they would be used on site in designated areas. The transport and use of hazardous substances pose a risk to people and the environment, including Hayfork Creek, in the event of an accident or spill. For example, vehicles could leak or spill fuel, brake fluid, and lubricants during fueling or servicing activities or during delivery of fuels and other substances to work areas. Spills could contaminate soil and surface water or groundwater and potentially result in toxic effects on vegetation, wildlife, fish, workers, and the general public. No

major equipment repairs would be done in the work area, but maintenance and fueling would occur at designated staging areas.

During all construction activities, the contractor would be required to comply with applicable state and federal laws, regulations, and requirements pertaining to hazardous materials and hazardous wastes and implement water pollution control measures that conform to Chapter 13 of the Caltrans Standard Specifications. These measures include preparing and implementing a water pollution control program or SWPPP containing specific requirements for the handling, storage, and clean-up of an accidental spill of hazardous materials, such as petroleum-based products, cement, or other construction pollutants, and standard measures, including, but not limited to, those measures found in the Caltrans Storm Water Quality Handbooks relating to controlling runoff, reducing erosion, minimizing and controlling the use of toxic substances, and preventing and controlling spills.

All construction debris would be disposed of offsite at a landfill or recycling facility. Liquid construction waste would also be disposed offsite in accordance with BMPs for waste management and materials pollution control found in the Caltrans Construction Site Best Management Practices Manual. Petroleum-based compounds would be contained and removed to an officially designated landfill authorized to accept that type of waste. With implementation of appropriate construction measures, the potential for hazardous materials to result in substantial effects on the environment or pose health or safety risks to the public would be minimized. However, an accidental spill near Hayfork Creek could result in significant impacts on the creek. Implementation of Mitigation Measure HM-1 would ensure all spills are properly contained on site and do not cause substantial environmental impacts.

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.

Level of Significance: Less than significant with implementation of the mitigation measure because spills would be properly contained on site. In addition, implementation of Mitigation Measures HW-1a and HW-1b would reduce the potential for pollutants in the creek.

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

Construction activities would involve the use of equipment that could ignite nearby vegetation and cause a wildfire, creating a hazard for people and structures in the vicinity of the work area. Activities near Murrison Ranch and the recreation areas would pose a risk to the residence and facilities in those areas if a fire is ignited as a result of the activities. Most of the project area is in a

high fire hazard area because of the extensive forests, and construction activities could increase wildfire hazards, particularly during the dry season. Access constraints during construction could also increase the response time of emergency service vehicles and increase the risk of wildfire spreading beyond the project area. Because of the potential risk of fire during construction activities, fire-related impacts could be significant. Implementation of Mitigation Measure HM-2 would reduce the risk of wildfire and ensure that emergency vehicles can respond quickly in the event of a fire.

After construction, the completed road improvements would provide a wider and safer roadway that would be more reliable for emergency ingress and egress through the project area. The two full lanes and wider shoulders would better accommodate fire trucks accessing the project area and evacuees leaving the project area. In the event a fire occurs on the roadside, fire trucks would be able to stage equipment while keeping the road open for evacuees and other emergency vehicles. The fire hazard in the area would not be reduced, but the proposed project would not increase the risk of wildfire and would actually provide a benefit by improving access through the project area.

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.

Level of Significance: Less than significant with implementation of the mitigation measure because the risk of wildfire would be minimized.

Impact HM-3: The proposed project could increase traffic hazards along Wildwood Road.

Wildwood Road currently poses safety concerns to travelers as a result of severe curves and narrow lanes and shoulders, and many accidents have been reported along the road in the project area. The proposed project would improve safety conditions along the road by reducing severe curves and widening the roadway through the project area to two full lanes. Temporary hazards would be present during construction phases when road closures are needed, but traffic control measures would reduce these hazards. The road improvements would reduce the risk of accidents and provide an overall benefit to travelers using the road.

Level of Significance: Less than significant and beneficial because hazards along the road would be reduced.