

12.0 HYDROLOGY AND WATER QUALITY

This chapter evaluates information regarding hydrology and water quality. It describes the existing hydrologic conditions in the project area, presents a summary of the regulatory context, analyzes the hydrology and water quality impacts of the proposed trail alignment, and provides any mitigation measures needed to reduce those impacts.

12.1 ENVIRONMENTAL SETTING

12.1.1 GROUNDWATER

The project area lies in the North American subbasin in the eastern central portion of the Sacramento Groundwater Basin. The North American subbasin has a surface area of approximately 351,000 acres or 548 square miles. The subbasin is bounded by the Bear River to the north, the Feather River to the west, and the Sacramento River to the south. The eastern boundary of the subbasin is a north-south line extending from the Bear River south to Folsom Lake approximately 2 miles east of the town of Lincoln. The eastern boundary represents the approximate edge of the alluvial basin, where little or no groundwater flows into or out of the groundwater basin from the rock of the Sierra Nevada. The eastern portion of the subbasin is characterized by low, rolling dissected uplands. The western portion is a nearly flat flood basin for the Bear, Feather, Sacramento, and American Rivers, and several small eastside tributaries. The general direction of drainage is west-southwest at an average grade of about 5%. Precipitation ranges from 18–20 inches in the western half of the subbasin, which includes the project area, to 20–24 inches in the eastern half of the subbasin (DWR 2004).

As described below in Section 12.2, “Regulatory Setting,” Section 303(d) of the federal Clean Water Act (CWA) requires the identification of water bodies that do not meet, or are not expected to meet, water quality standards, or that are considered impaired. The current list, approved by the U.S. Environmental Protection Agency (EPA), is the 2002 303(d) list. The North Fork American River is not listed as an impaired water body (Central Valley RWQCB 2004).

12.1.2 REGIONAL HYDROLOGY

The project area is situated in a steep canyon with north-facing slopes located within the south-central portion of the Sacramento River Hydrologic Basin, as defined by the California Department of Water Resources (DWR). The Sacramento River Hydrologic Basin covers approximately 17.4 million acres (27,200 square miles). The region includes all or larger portions of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Sacramento, El Dorado, Yolo, Solano, Lake, and Napa Counties. Small areas of Alpine and Amador Counties are also within the region. Geographically, the region extends south from the Modoc Plateau and Cascade Range at the Oregon border, to the Sacramento–San Joaquin River Delta.

The Sacramento Valley, which forms the core of the region, is bounded to the east by the crest of the Sierra Nevada and southern Cascades and to the west by the crest of the Coast Range and Klamath Mountains. Other significant features include Mount Shasta and Lassen Peak in the southern Cascades; the Sutter Buttes in the south-central portion of the valley; and the Sacramento River, with major tributaries being the Pit, Feather, Yuba, Bear, and American Rivers (DWR 2003).

12.1.3 DESCRIPTION OF THE LOCAL WATERSHED

The proposed trail alignment is located within the North Fork American River and Middle Fork American River surface water drainage basins. The North and Middle Forks of the American River are major surface flows that define the area and have their confluence near Lake Clementine. The North Fork/Middle Fork American River confluence (confluence) feeds into the South Fork American River, which feeds Folsom Lake and ultimately the

Sacramento River. The North Fork American River has its headwaters in the Granite Chief Wilderness area, which is located at the west rim of the Tahoe Basin, and has a relatively narrow drainage basin above Folsom Lake. As described in Chapter 7.0, “Visual Resources,” federal legislation has designated the North Fork American River above the Auburn State Recreation Area (SRA) as a National Wild and Scenic River, precluding motorized river access or activities on the river, but permitting nonmotorized access. The Middle Fork American River begins in the Picayune Valley, which is located in the Granite Chief Wilderness area; the river forms part of the southern boundary of Placer County and the *Foresthill Divide Community Plan* area.

Lake Clementine is fed by the North Fork American River and is located immediately north of the proposed trail alignment. Lake Clementine has a storage capacity of 12,800 acre-feet and is operated by the U.S. Army Corps of Engineers (USACE). Lake Clementine is used for power production and recreational purposes.

The proposed trail alignment is located along the south canyon of the North Fork American River, beginning at the confluence, approximately 3 miles northeast of Auburn near Foresthill Road and ending at the Ponderosa Bridge, approximately 5 miles west of the town of Foresthill.

The project area is undeveloped and heavily forested. Approximately 47 drainages occur along the proposed trail alignment. All of the drainages are characterized by a distinct bed and bank and eventually flow into the North Fork American River and Lake Clementine. The majority of the drainages in the project area are ephemeral drainages that flow for brief periods of time in response to a single rain event. A few drainages in the project area can be characterized as intermittent drainages (Wells, pers. comm., 2004). Intermittent drainages in the project area flow for extended periods of time throughout the rainy season and dry up during late spring or early summer. The elevation of the proposed trail alignment ranges from approximately 800 feet to 1,200 feet; the vegetation consists mostly of woodland and chaparral.

Based on the *Soil Survey of Placer County, California, Western Part*, by the U.S. Soil Conservation Service (SCS) (renamed the Natural Resources Conservation Service in 1998), the predominant soil types in the project area are Auburn-Sobrante and Mariposa-Josephine-Sites complexes. See Chapter 11.0, “Soils, Geology, and Seismicity” for a description of these soil types.

12.2 REGULATORY SETTING

12.2.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

FEDERAL EMERGENCY MANAGEMENT AGENCY

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues Flood Insurance Rate Maps that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection is established by FEMA, with the minimum level of flood protection for new development determined to be the 1-in-100 annual exceedance probability (AEP) event (i.e., the 100-year flood event). Specifically, where levees provide flood protection, the levee crown is required by FEMA to have 3 feet of freeboard above the 1-in-100-AEP water surface elevation, except in the vicinity of a structure such as a bridge, where the levee crown must have 4 feet of freeboard for a distance of 100 feet upstream and downstream of the structure.

FEDERAL CLEAN WATER ACT OF 1972

EPA is the lead federal agency responsible for water quality management. The CWA is the primary federal law that governs and authorizes water quality control activities by EPA as well as the states. Various elements of the CWA, discussed below, address water quality. Wetland protection elements administered by USACE under

Section 404 of the CWA, including permits to dredge or fill wetlands, are discussed in Chapter 5.0, “Biological Resources.”

Water Quality Criteria and Standards

Under federal law, EPA has published water quality regulations under Volume 40 of the Code of Federal Regulations (i.e., 40 CFR). Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of two elements: identified designated beneficial uses of the water body in question and criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. In California, EPA has granted the State Water Resources Control Board (SWRCB) and its nine regional water quality control boards (RWQCBs) the authority to identify beneficial uses and adopt applicable water quality objectives.

National Pollutant Discharge Elimination System Permit Program

The National Pollutant Discharge Elimination System (NPDES) permit program was established to regulate municipal and industrial discharges to surface waters of the United States. The discharge of wastewater to surface waters is prohibited unless an NPDES permit issued by the applicable RWQCB allows that discharge. NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify allowable concentrations of effluent in receiving waters and/or limits on pollutant emissions contained in discharges; prohibit discharges not specifically allowed under the permit; and describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

In November 1990, EPA published regulations establishing NPDES permit requirements for municipal and industrial stormwater discharges. Phase 1 of the permitting program applies to municipal discharges of stormwater in urban areas where the population exceeds 100,000 persons. Phase 1 also applies to stormwater discharges from a large variety of industrial activities, including general construction activities if the project would disturb more than 5 acres. Phase 2 of the NPDES stormwater permit regulations, which became effective in March 2003, require that NPDES permits be issued for construction activities for projects that disturb between 1 and 5 acres. Phase 2 of the municipal permit system, known as the NPDES General Permit for Small Municipal Separate Storm Sewer Systems (MS4s), requires small municipal areas with fewer than 100,000 persons to develop stormwater management programs. The RWQCBs in California are responsible for implementing the NPDES permit system (see additional information under “NPDES Permit System” below).

Section 401 Water Quality Certification or Waiver

Under Section 401 of the CWA, an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the United States) must first obtain a certificate from the appropriate state agency stating that the fill is consistent with the state’s water quality standards and criteria. In California, the authority to either grant water quality certification or waive the requirement is delegated by the SWRCB to the nine RWQCBs.

Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would not attain water quality objectives for specific pollutants after implementation of required levels of treatment by point-source dischargers (municipalities and industries). Section 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants. The TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. The TMDL can also act as a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. The

TMDL prepared by the state must include an allocation of allowable loadings to point and nonpoint sources, with consideration of background loadings and a margin of safety. The TMDL must also include an analysis that shows the linkage between loading reductions and the attainment of water quality objectives. EPA must either approve a TMDL prepared by the state or, if it disapproves the state's TMDL, must issue its own. NPDES permit limits for listed pollutants must be consistent with the waste load allocation prescribed in the TMDL. After implementation of the TMDL, it is anticipated that the problems that led to placement of a given pollutant on the Section 303(d) list would be remediated.

FEDERAL ANTIDegradation Policy

The federal antidegradation policy, established in 1968, is designed to protect existing uses, water quality, and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions.

- ▶ Existing instream uses and the water quality necessary to protect those uses shall be maintained and protected.
- ▶ Where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development.
- ▶ Where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

AUBURN STATE RECREATION AREA INTERIM RESOURCE MANAGEMENT PLAN

The *Auburn State Recreation Area Interim Resource Management Plan* (Auburn SRA IRMP) contains the following management guideline relevant to hydrology and water quality in the project area.

- ▶ Management of soils should prevent destructive or unnatural erosion.

12.2.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS

In California, the SWRCB has broad authority over water quality control issues for the state. The SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the state by the federal government under the CWA. Other state agencies with jurisdiction over water quality regulation in California include the California Department of Health Services (DHS) (for drinking-water regulations), the California Department of Pesticide Regulation, the California Department of Fish and Game, and the Office of Environmental Health and Hazard Assessment.

Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The regional boards are required to formulate and adopt water quality control plans (Basin Plans) for all areas in the region and establish water quality objectives in the plans. The Central Valley RWQCB is responsible for the water bodies in the project vicinity.

PORTER-COLOGNE WATER QUALITY CONTROL ACT OF 1969

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) is California's statutory authority for the protection of water quality. Under the act, the state must adopt water quality policies, plans, and objectives that protect the state's waters for the use and enjoyment of the people. The act sets forth the obligations of the SWRCB and RWQCBs to adopt and periodically update Basin Plans. Basin Plans are the regional water quality control plans required by both the CWA and Porter-Cologne Act in which beneficial uses, water quality

objectives, and implementation programs are established for each of the nine regions in California. The act also requires waste dischargers to notify the RWQCBs of their activities through the filing of Reports of Waste Discharge (RWDs) and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements (WDRs), NPDES permits, Section 401 water quality certifications, or other approvals. The RWQCBs also have authority to issue waivers to RWD/WDRs for broad categories of “low threat” discharge activities that have minimal potential for adverse water quality effects when implemented according to prescribed terms and conditions.

WATER QUALITY CONTROL PLAN FOR THE SACRAMENTO-SAN JOAQUIN RIVER BASINS

The Central Valley RWQCB, under the authority of the Porter-Cologne Act and pursuant to the CWA, is responsible for authorizing activities that have the potential to discharge wastes to surface water or groundwater resources. The *Water Quality Control Plan for the Sacramento–San Joaquin River Basins*, adopted by the Central Valley RWQCB in 1998, identifies the beneficial uses of water bodies and provides water quality objectives and standards for waters of the Sacramento River and San Joaquin River basins. State and federal laws mandate the protection of designated beneficial uses of water bodies. State law defines beneficial uses as “domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves” (Water Code Section 13050[f]). Major issues and the general conditions of existing beneficial uses of the Sacramento River as well as the North and Middle Forks of the American River are listed below.

- ▶ **Water Supply:** The Sacramento River and the North and Middle Forks of the American River are a source of municipal water supply.
- ▶ **Agricultural Supply:** The Sacramento River and the North and Middle Forks of the American River are used for agricultural purposes that may include farming, horticulture, or ranching. Primary uses are for irrigation and stock watering.
- ▶ **Recreation:** Water-dependent recreation uses of the Sacramento River and the North and Middle Forks of the American River include swimming, wading, waterskiing, sport fishing, and a variety of other activities that involve contact with the water. Noncontact (water-enhanced) recreation uses include picnicking, camping, pleasure boating, hunting, bird watching, education, and aesthetic enjoyment.
- ▶ **Groundwater Recharge:** Water from the Sacramento River recharges the Colusa and East Yolo groundwater subbasins along their eastern sides. Its contribution is not substantial, however, because of the relatively flat groundwater gradient in this area and the relatively low permeability of the basin materials.
- ▶ **Fish and Wildlife:** The Sacramento River, including the North and Middle Forks of the American River, and the waterways of the Sacramento–San Joaquin River Delta provide important habitat for a diverse variety of aquatic life and terrestrial wildlife. This habitat includes seasonal habitat and migration routes for anadromous and other migratory species, as well as permanent habitat for resident species.

The Basin Plan identifies specific narrative and numeric water quality objectives for a number of physical properties (e.g., temperature, turbidity, and suspended solids); biological constituents (e.g., coliform bacteria); and chemical constituents of concern, including inorganic parameters, trace metals, and organic compounds. Water quality objectives for toxic priority pollutants (i.e., select trace metals and synthetic organic compounds) are identified in the Basin Plan and in the California Toxics Rule (CTR), which was adopted in May 2000. The CTR is discussed below.

STATE NONDEGRADATION POLICY

In 1968, as required under the federal antidegradation policy described previously, the SWRCB adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state. The policy provides as follows.

- ▶ Where the existing quality of water is better than required under existing water quality control plans, such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such water.
- ▶ Any activity that produces waste or increases the volume or concentration of waste and that discharges to existing high-quality waters would be required to meet waste discharge requirements that would ensure that (1) pollution or nuisance would not occur and (2) the highest water quality consistent with the maximum benefit to the people of the state would be maintained.

CALIFORNIA TOXICS RULE

In May 2000, the SWRCB adopted and EPA approved the CTR, which establishes numeric water quality criteria for approximately 130 priority pollutant trace metals and organic compounds. The SWRCB subsequently adopted its State Implementation Policy (SIP) of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries. The SIP outlines procedures for NPDES permitting for toxic pollutant objectives that have been adopted in Basin Plans and in the CTR.

NPDES PERMIT SYSTEM AND WASTE DISCHARGE REQUIREMENTS

The SWRCB and Central Valley RWQCB have adopted specific NPDES permits and/or WDRs for a variety of activities that have the potential to discharge wastes to waters of the state or to land. Dischargers are required to eliminate or reduce nonstormwater discharges to storm sewer systems and other waters. The SWRCB's statewide stormwater permit for general construction activity (Order 99-08-DWQ, as amended) is applicable to all land-disturbing construction activities that would disturb more than 1 acre. Construction activities such as clearing, grading, stockpiling, and excavation are subject to the statewide general construction activity NPDES permit. The proposed project would expose greater than 1 acre of disturbed construction area to stormwater runoff and thus would require an NPDES stormwater permit for general construction activity.

The NPDES permit requires filing of a notice of intent (NOI) with the RWQCB to discharge stormwater and preparation and implementation of a storm water pollution prevention plan (SWPPP) to control contaminated runoff from temporary construction activities. The SWPPP provides the plans and specifications for erosion and sediment best management practices (BMPs), means of waste disposal, methods for implementation of approved local plans, postconstruction sediment and erosion control BMPs and maintenance responsibilities, nonstormwater management BMPs, and BMP performance inspection requirements.

NPDES permits require that design and operational BMPs be implemented to reduce the level of contaminant runoff during construction. The permit also requires dischargers to consider the use of permanent postconstruction BMPs that will remain in service to protect water quality throughout the life of the project. Types of BMPs include source controls, treatment controls, and site planning measures.

The NPDES regulations also require implementation of appropriate hazardous materials management practices to reduce the possibility of chemical spills or release of contaminants, including any nonstormwater discharge to drainage channels.

Construction dewatering activities that discharge to surface waters require NPDES authorization under the Central Valley RWQCB's General Order for Dewatering and Other Low-Threat Discharges to Surface Waters (Order No. 5-00-175). This permit requires the applicant to submit an NOI before the activity verifying that the dewatering will occur in compliance with applicable water quality objectives. It contains terms and conditions for discharge prohibitions, specific effluent and receiving water quality limits, solids disposal activities, and water quality monitoring protocols. The permit authorizes direct discharges to surface waters up to 250,000 gallons per day for no more than a 4-month period each year.

The Central Valley RWQCB also may issue site-specific WDRs, or waivers to WDRs, for certain waste discharges to land or waters of the state. In particular, Central Valley RWQCB Resolution R5-2003-0008 identifies activities subject to waivers of reports of waste discharge and/or WDRs for a variety of activities, including minor dredging activities and construction dewatering activities that discharge to land.

All NPDES permits have inspection, monitoring, and reporting requirements. In Resolution 2001-046, the Central Valley RWQCB responded to a court decision by implementing mandatory water quality sampling requirements for visible and nonvisible contaminants in discharges from construction activities. Water quality sampling is now required if the activity could result in the discharge of turbidity or sediment to a water body that is listed as impaired under Section 303(d) because of sediment or siltation, or if a release of a nonvisible contaminant occurs. Where such pollutants are known or should be known to be present and have the potential to contact runoff, sampling and analysis are required.

SAFE DRINKING WATER ACT

Under the Safe Drinking Water Act (Public Law 93-523), passed in 1974, EPA regulates contaminants of concern to domestic water supplies. Contaminants of concern that are relevant to domestic water supplies are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA National Primary Drinking Water Regulations and National Secondary Drinking Water Regulations. Maximum Contaminant Levels (MCLs) are set for all contaminants of concern. MCLs and the process for setting these standards are reviewed triennially. Amendments to the Safe Drinking Water Act enacted in 1986 established an accelerated schedule for setting drinking-water MCLs.

EPA has delegated to DHS the responsibility for administering California's drinking-water program. DHS is accountable to EPA for program implementation and for adopting standards and regulations that are at least as stringent as those developed by EPA.

Title 22 of the California Code of Regulations (Article 16, Section 64449) defines secondary drinking-water standards that are established primarily for reasons of consumer acceptance (i.e., taste) rather than because of health issues. For mineralization (i.e., total dissolved solids and chloride), the secondary standards are expressed in the form of recommended, upper, and short-term MCLs. The recommended, upper, and short-term MCLs for total dissolved solids are 500, 1,000, and 1,500 milligrams per liter, respectively.

12.2.3 LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

PLACER COUNTY GENERAL PLAN

The following are the relevant goals and policies identified by the *Placer County General Plan* (Placer County 1994) for hydrology and water quality.

- ▶ **GOAL 6.A:** To protect and enhance the natural qualities of Placer County's streams, creeks and groundwater.

- ▶ **Policy 6.A.4.e.** Where creek protection is required or proposed, the County should require public and private development to: use design, construction, and maintenance techniques that ensure development near a creek will not cause or worsen natural hazards (such as erosion, sedimentation, flooding, or water pollution) and will include erosion and sediment control practices such as: 1) turbidity screens and other management practices, which shall be used as necessary to minimize siltation, sedimentation, and erosion, and shall be left in place until disturbed areas; and/or are stabilized with permanent vegetation that will prevent the transport of sediment off site; and 2) temporary vegetation sufficient to stabilize disturbed areas.
- ▶ **Policy 6.A.7.** The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.

WEIMAR-APPLEGATE-CLIPPER GAP GENERAL PLAN

The *Weimar-Applegate-Clipper Gap General Plan* contains the following goals and policies relevant to hydrology and water quality in the project area.

- ▶ **GOAL 1:** To ensure a balanced environment where physical development can occur with minimal adverse effect to the natural resources of the area.
- ▶ **GOAL 2:** Maintain the quality of air and water resources at a level consistent with adopted federal, state, and local standards.
- ▶ **Policy 2.** Review proposed development for their potential adverse effect on air and water quality.
- ▶ **GOAL 3, Policy 1.** Preserve the natural condition of all stream influence areas, including flood plains and riparian vegetation areas.

FORESTHILL DIVIDE COMMUNITY PLAN

The *Foresthill Divide Community Plan* (Community Plan), which is currently in draft form, includes the project area. The Community Plan contains the following goals and policies relevant to hydrology and water quality in the project area.

- ▶ **GOAL 4.A.7:** Protect and enhance the natural qualities of the Foresthill Divide’s streams, creeks and groundwater.
- ▶ **Policy 4.A.7-1.** The County shall require the provision of sensitive habitat buffers which shall, at a minimum, be measured as follows: 100 feet from the centerline of perennial streams, 50 feet from centerline of intermittent streams, and 50 feet from the edge of sensitive habitats to be protected including riparian zones, wetlands, old growth woodlands, and the habitat of rare, threatened or endangered species.

Based on more detailed information supplied as a part of the review for a specific project, the County may determine that such setbacks are not applicable in a particular instance or should be modified based on the new information provided. The County may, however, allow exceptions, such as in the following cases:

- a. reasonable use of the property would otherwise be denied;
- b. the location is necessary to avoid or mitigate hazards to the public;
- c. the location is necessary for the repair of roads, bridges, trails, or similar infrastructure; or

- d. the location is necessary for the construction of new roads, bridges, trails, or similar infrastructure where the County determines there is no feasible alternative and the project has minimized environmental impacts through project design and infrastructure placement.
- ▶ **Policy 4.A.7-4.** Encourage the use of natural stormwater drainage systems to preserve and enhance natural features.
 - ▶ **Policy 4.A.7-8.** Continue to require the use of feasible and practical BMPs to protect streams from the adverse effects of construction activities and runoff from developed areas and to encourage the use of BMPs.
 - ▶ **Policy 4.A.7-10.** The County shall improve water quality by eliminating existing water pollution sources and by prohibiting activities which include the use of hazardous materials around wetland and groundwater recharge areas.
 - ▶ **Policy 4.A.7-12.** Preserve or enhance the aesthetic qualities of natural drainage courses in their natural or improved state compatible with flood control requirements and economic, environmental, and ecological factors.
 - ▶ **Policy 4.A.7-17.** Discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.
 - ▶ **Policy 4.A.7-18.** Require project proponents to restore such areas by means of landscaping, revegetation, the use of rice straw or other weed-free vegetative material for erosion control measures, or similar stabilization techniques as a part of development activities where the stream environment zone has previously been modified by channelization, fill, or other human activity.

12.3 IMPACTS

12.3.1 ANALYSIS METHODOLOGY

The environmental analysis for hydrology and water quality was based largely on the project-related documents identified in Section 12.1, “Environmental Setting.” Background information included in the *Placer County General Plan*, the Community Plan, and the Auburn SRA IRMP was also used. The effects of the proposed project were compared to environmental baseline conditions (i.e., existing conditions) to determine impacts.

12.3.2 THRESHOLDS OF SIGNIFICANCE

Based on the Placer County California Environmental Quality Act (CEQA) checklist and the State CEQA Guidelines, the proposed project would result in a potentially significant impact on hydrology and water quality if it would result in:

- ▶ changes in absorption rates, drainage patterns, or the rate and amount of surface runoff;
- ▶ exposure of people or property to water-related hazards such as flooding;
- ▶ discharge into surface waters or other alterations of surface water quality;
- ▶ changes in the amount of surface water in any water body;
- ▶ changes in currents, or the course of direction of water movements;

- ▶ change in the quantity of groundwater, either through direct additions of withdrawals, or through interception of an aquifer by cuts or excavations, or through substantial loss of groundwater recharge capability;
- ▶ altered direction or rate of flow of groundwater;
- ▶ impacts on groundwater quality;
- ▶ substantial reduction in the amount of groundwater otherwise available for public water supplies; or
- ▶ violation of any water quality standards or waste discharge requirements.

The proposed trail alignment does not lie within the 100-year floodplain mapped by FEMA. No sources of potable or nonpotable water are proposed along the trail or at staging termini; therefore, there would be no use of groundwater and no adverse effects on the quantity, rate, flow, or quality of groundwater in the project area. The project would not affect the direction or flow of water in the North Fork American River or drainages along the trail. In addition, Lake Clementine is not considered an important surface water resource for drinking and/or irrigation water (Fisher, pers. comm., 2004). Therefore, these issues will not be analyzed further in this chapter.

12.3.3 IMPACT ANALYSIS

IMPACT 12-1	Hydrology and Water Quality – Potential for Short-Term Construction-Related Soil Erosion and Water Quality Impairment. <i>Implementation of the proposed project could cause short-term water quality degradation associated with construction activities. Areas from which duff and vegetation have been removed could be subject to erosion from rain and wind. In addition, accidental spills of construction-related contaminants could occur during construction activities in the project area. Both of these mechanisms could carry soil and construction-related contaminants to intermittent drainages before they are ultimately discharged to the North Fork American River.</i>
Significance	<i>Potentially Significant</i>
Mitigation Proposed	<i>Mitigation Measure 11-1 in Chapter 11.0, "Soils, Geology, and Seismicity": Obtain Authorization for Construction and Operation Activities with the Central Valley RWQCB and Implement Erosion and Sediment Control Measures as Required</i>
Residual Significance	<i>Less Than Significant</i>

Approximately 6.5 acres of vegetation and duff would be removed from the proposed trail alignment and approximately 2.6 acres would be disturbed for construction of the two staging termini. This material would be raked or side cast above the proposed trail alignment. This material would be used after trail construction to aid in revegetation and erosion prevention. Because of the steep side slopes and the need to support equestrian traffic, the 14.2-mile, 6-foot-wide trail would be cut out of the hillside, and no fill would be used. The trail would be 6 feet wide with an outslope of 2–4% depending on the grade of the trail. Wherever feasible, the trail surface would have a grade of less than 10%. Further adjustments may be made to the proposed trail alignment if focused surveys result in identification of sensitive resources that can be avoided.

Removal of duff and vegetation exposes bare soil and causes unstable conditions, resulting in soils that are easily disturbed by equipment and eroded by rain and wind. This could affect surface water quality because of erosion and sedimentation from the project area during construction, use, and maintenance of the proposed trail. The proposed trail alignment is located on steep slopes with soils that are subject to moderate to very high erosion hazard, which could result in erosion of surface soils during construction of the proposed trail. In addition, accidental spills of construction-related contaminants, such as fuels, oils, solvents, and cleaners, could occur during construction activities in the project area, resulting in contamination of surface soils. Discharges of these

construction materials and contaminants to the receiving waters during storm events would degrade water quality. Runoff from the proposed trail and staging termini could result in effects on the intermittent drainages and the North Fork of the American River. This impact is considered potentially significant.

IMPACT 12-2 **Hydrology and Water Quality – Potential for Long-Term Soil Erosion and Water Quality Impairment.** *Implementation of the proposed project could cause long-term water quality degradation associated with use of the proposed trail and extreme weather events. Areas from which duff and vegetation have been removed could be subject to erosion from rain and wind. These mechanisms could carry soil into intermittent drainages before they are ultimately discharged to the North Fork American River.*

Significance *Potentially Significant*

Mitigation Proposed *Mitigation Measure 11-1 in Chapter 11.0, “Soils, Geology, and Seismicity”: Obtain Authorization for Construction and Operation Activities with the Central Valley RWQCB and Implement Erosion and Sediment Control Measures as Required*

Residual Significance *Less Than Significant*

The proposed project would be constructed in an area with steep slopes that have the potential for erosion. The proposed trail would be maintained as an exposed dirt surface that would increase the amount of soil exposed to wind and water erosion. Extreme weather events could cause increased erosion and decreased water quality. The proposed trail would be closed for approximately 6 months immediately following construction to allow the soil and materials to settle and compact before the trail opens to the public. Routine maintenance would also be performed on the trail to reduce erosion to the extent possible and to repair weather-related damage that could contribute to erosion. This impact is considered less than significant. Implementation of Mitigation Measure 11-1, “Obtain Authorization for Construction and Operation Activities with the Central Valley RWQCB and Implement Erosion and Sediment Control Measures as Required,” would further reduce this impact.

12.4 MITIGATION MEASURES

See Mitigation Measure 11-1 in Chapter 11.0, “Soils, Geology, and Seismicity.” This mitigation measure applies to Impacts 12-1 and 12-2.