

# Dollar Creek Shared-Use Trail Project Water Quality Memorandum

## 1.0 Introduction

### 1.1 Purpose and Need of Technical Report

The objective of this Water Quality Memorandum (WQM) report is to evaluate potential impacts of the proposed project on water quality. The WQM identifies direct, indirect, temporary and long-term effects on surface water and groundwater resources potentially resulting from actions of construction, operations and maintenance of the Dollar Creek Shared-Use Trail Project (Project). The WQM describes the design elements, categories of Best Management Practices and construction approach included in the Project proposal for conformance with federal, regional, state and local regulatory requirements and when necessary, additional mitigation measures to reduce potential impacts to less than significant levels.

The WQM discloses whether project-induced effects would have a significant impact on water quality. Significance is based on whether discharges to receiving waters would cause exceedances of federal, State of California or Tahoe Regional Planning Agency (TRPA) water quality objectives or have an adverse impact to the beneficial uses identified by the Regional Water Quality Control Board (RWQCB).

This report describes the environmental and regulatory setting and the environmental impacts of the Project and identifies measures to minimize adverse impacts on hydrology and water quality.

The Water Erosion Prediction Project (WEPP) model was not applied to project components located adjacent to Dollar Creek to determine the magnitude and significance of direct, indirect, and cumulative effects to soil erosion from proposed activities because of the minimal ground disturbance proposed at the Creek crossing. Based on WEPP model results from the South Tahoe Greenway Shared-use Trail Project in South Lake Tahoe, California, proposed construction activities and long-term operations and maintenance of the Dollar Creek Shared-use Trail Project would be hydrologically disconnected through site-specific project design (i.e., use of a bridge span) and conformance to federal, regional, state and local regulatory requirements throughout the construction and post-construction period; thus avoiding significant direct, indirect, and cumulative effects from soil erosion and sediment delivery to the Creek.

### 1.2 Project Location and Description

The Project is located in the northern Lake Tahoe Basin in Placer County. The shared-use trail alignment extends the existing Dollar Hill Bike Trail from the current terminus at the intersection of State Route (SR) 28 and Dollar Drive an additional 2.5 miles around the residential neighborhoods to a terminus at Fulton Crescent Drive close to the United States Department of Agriculture (USDA) Lake Tahoe Basin Management Unit's (LTBMU) property boundary.

The Project establishes a Class 1 or better shared-use trail (i.e., a 10 to 12-foot wide, separated trail) and provides for an extension of the Tahoe City bicycle trail network, linking residential and

recreation uses to jobs, schools, shopping, lodging, and recreation and community areas. Figure 1 illustrates the general Project alignment and Project location. The shared-use trail would travel through public lands commonly known as the Dollar and Firestone properties. The Project enhances recreational and transportation opportunities by extending the existing paved trail network in the Tahoe City area, including TCPUD's 10-mile Class 1 trail from Tahoe City to Sugar Pine Point State Park and the 3.7 mile trail along the Truckee River to Squaw Valley.

The Project represents a smaller portion of the long-studied, over eight-mile North Tahoe Bike Trail proposed to fill in one of the last critical trail gaps on the north shore to connect existing trails in Dollar Hill and Tahoe Vista. When this greater trail connection and other current trail efforts are completed, the overall shared-use trail system will allow riders to travel from SR 267 in Kings Beach, west to Squaw Valley and south to Sugar Pine Point State Park, creating more than 30 miles of Class 1 trail network.

The project area generally follows the existing informal trails located on Conservancy and NTPUD-owned parcels and encompassing other public parcels nearby as needed to improve the connection or reduce or avoid environmental effects. The Project complements the Conservancy-funded Tahoe City "Wye" Recreational Access Project, which provides bike trail parking at the junction of these trails in Tahoe City. Construction of the Project will also be a significant step toward completion of the Tahoe Regional Planning Agency (TRPA) Lake Tahoe Regional Bicycle and Pedestrian Master Plan (Tahoe Metropolitan Planning Organization 2010).

The Project implements specific goals and policies of the TRPA to provide a non-motorized alternative transportation corridor through north Lake Tahoe and is consistent with the County's outdoor recreation program requirements. The Project is included in the TRPA Environmental Improvement Program (EIP) as project 761 (Dollar Hill to North Tahoe Regional Park). Trail development details comply with the American Association of State Highway and Transportation Officials (AASHTO) guidelines and American Disability Act (ADA) design standards and include informal trail consolidation or decommissioning and disturbed land restoration along its length.

Sections of asphalt concrete trail on grade, asphalt concrete trail on permeable fill/vented trail, and a bridge span over Dollar Creek comprise the shared-use trail. The Project may also construct trailhead parking and an access road off of State Route 28 at Dollar Drive. Asphalt concrete trail on grade and on permeable fill are 10 feet wide with an additional two (2) feet of clear zone on each side of the trail. The bridge section is 12 to 14 feet wide with sections that exceed heights of 30 inches above grade constructed with rails.

Disturbance from construction is estimated at 6.4 acres, with 4.9 acres remaining as permanent land coverage associated with the 2.2 mile shared use trail, trailhead parking and access road, and existing foot trails within the project area. The approximately 1.5 acres of temporary disturbance associated with temporary construction roads, staging areas, and hammerhead turnarounds and cut and fill slopes will be revegetated and restored and maintained post-construction.

## **2.0 Affected Environment**

### **2.1 Existing Water Resources**

### 2.1.1 Project Area

Figure 1 depicts the extent of the project area and proposed location of the shared-use trail in context to Dollar Creek and Lake Tahoe, the potential receiving waters. The project area includes TRPA-zoned recreation and conservation lands, with a small portion located adjacent to the Dollar Hill commercial/public service plan area at the proposed SR 28 crossing location.

The background water quality and availability of water resources in an area depends upon several factors, including topography, geology, soils, surface and groundwater hydrology, land use, climate, and precipitation. The following is a brief description of these general characteristics in the project area and surroundings.

### 2.1.2 Regional and Local Climate and Precipitation

The Lake Tahoe Basin comprises a bowl-shaped watershed, characterized by steep, north/south trending mountain ranges to the east and west, with Lake Tahoe occupying nearly 40 percent of the watershed. Within the basin, 63 individual watersheds contribute their flow to Lake Tahoe. The climate consists of long, relatively mild winters with short, dry summers. Most of the area's precipitation comes in the form of snow, with occasional thunderstorms during the summer months. Precipitation that falls from June through September accounts for less than 20 percent of the annual total. The western portions of the basin receive between 35 and 90 inches of precipitation per year (in/yr), while the eastern portions receive between 20 and 40 in/yr (USGS 2002). The higher amounts of precipitation typically occur in the upper elevations. Monthly average precipitation for the project area based on WETS data from the Tahoe City Station with normal range of precipitation, defined as the 30% chance that precipitation will be either greater than or less than the average values, was 37.0 inches for the SNOTEL 30 year period of record (<http://www.wcc.nrcs.usda.gov/snow/30yrprec.html>).

Natural drainage systems surrounding Lake Tahoe convey surface and subsurface runoff from rain and melting snow that slowly erodes the land. Sediment, dissolved minerals, organic litter, and nutrients are transported through the drainage courses and stream environment zones (SEZ) to the lake. Delta marshes of tributary streams filter these sediments and nutrients, which are taken up during plant growth. Organic materials are decomposed in the oxygen-rich lake and stream waters and nutrients are used by aquatic biota. Water quality in Lake Tahoe and its tributaries can be adversely affected by runoff from surrounding lands. Suspended sediment can cause turbidity and result in sedimentation, and suspended and dissolved nutrients can stimulate algal growth, depleting the lake of oxygen in the natural process of eutrophication (i.e., increasing biologic material and depletion of oxygen over time). Today significant portions of the Lake Tahoe Basin are urbanized. Many factors such as land disturbance, habitat destruction, air pollution, soil erosion, and roads can interact to degrade surface water quality (Murphy and Knopp 2000).

Robert Coats recently published *Climate change in the Tahoe Basin: regional trends, impacts and drivers* (2010), a study that quantified decadal-scale time trends in air temperature, precipitation phase and intensity, spring snowmelt timing, and lake temperature in the Lake Tahoe Basin. The results indicate strong upward trends in air temperature, a shift from snow to rain precipitation regime, a shift in snowmelt timing to earlier dates, increased rainfall intensity, increased interannual variability and continued increases in temperature of Lake Tahoe. The study concludes that continued warming in the Lake Tahoe Basin has important implications for efforts to manage biodiversity and maintain clarity of the lake.

### 2.1.3 Watershed, Surface Water and Floodplain Features

The Lake Tahoe Basin is 506 square miles (mi<sup>2</sup>). The surface area of the Lake is 192 mi<sup>2</sup>, and the watershed area is 314 mi<sup>2</sup>. Most of the land in the basin is mountainous, limiting development mainly to relatively flat- lying areas along tributary streams. About 78% of the basin is at altitudes from 6,500 feet to greater than 10,000 feet mean sea level (msl). This altitude range, combined with other factors such as prevailing storm systems from the Pacific Ocean, causes an unequal distribution of precipitation throughout the basin. More than 80 inches per year (in/yr) of precipitation, mostly as snow, falls on the western side of the basin, whereas about 30 in/yr falls on the eastern side (USGS 1997).

The project area is located on the northern slope of the Lake Tahoe Basin in Placer County, California extending from the intersection of Dollar Drive and State Route (SR) 28 to Fulton Crescent Drive accessed by Old County Road.

As illustrated in Figure 1, the project area traverses the Lake Forest Creek, Dollar Creek and Cedar Flats watersheds. As enumerated in Table 1, The project area affects 0.11 acres within Lake Forest Creek watershed (TRPA Priority Watershed 4) or 0.03% of the watershed's 447 acres. The shared-use trail is not hydrologically connected to Lake Forest Creek. Dollar Creek, a perennial stream channel and TRPA Priority Watershed 5, drains the project area. Dollar Creek watershed drains an area of approximately 1,175 acres with approximately 217 acres of 18.5% of the total watershed contained within the project area. The project area also contains approximately 41 acres of the 1,166 acre Cedar Flats drainage area, which is 3.5% of the total area. Cedar Flats, TRPA Priority Watershed 6, is not drained by a perennial channel.

Figure 1 illustrates the watershed and the project area boundaries as delineated by the Tahoe Regional Planning Agency (TRPA) and defined for the Lake Tahoe Total Maximum Daily Load (TMDL) (Lahontan and NDEP 2010). The project area is not hydrologically connected to Lake Forest Creek or Cedar Flats watershed through perennial drainage channels. Surface runoff within the project area typically sheet flows and infiltrates within the undeveloped forested uplands, although some intermittent and ephemeral drainages were noted during field surveys. The Project proposes culverts at these locations to minimize effects to existing surface drainage.

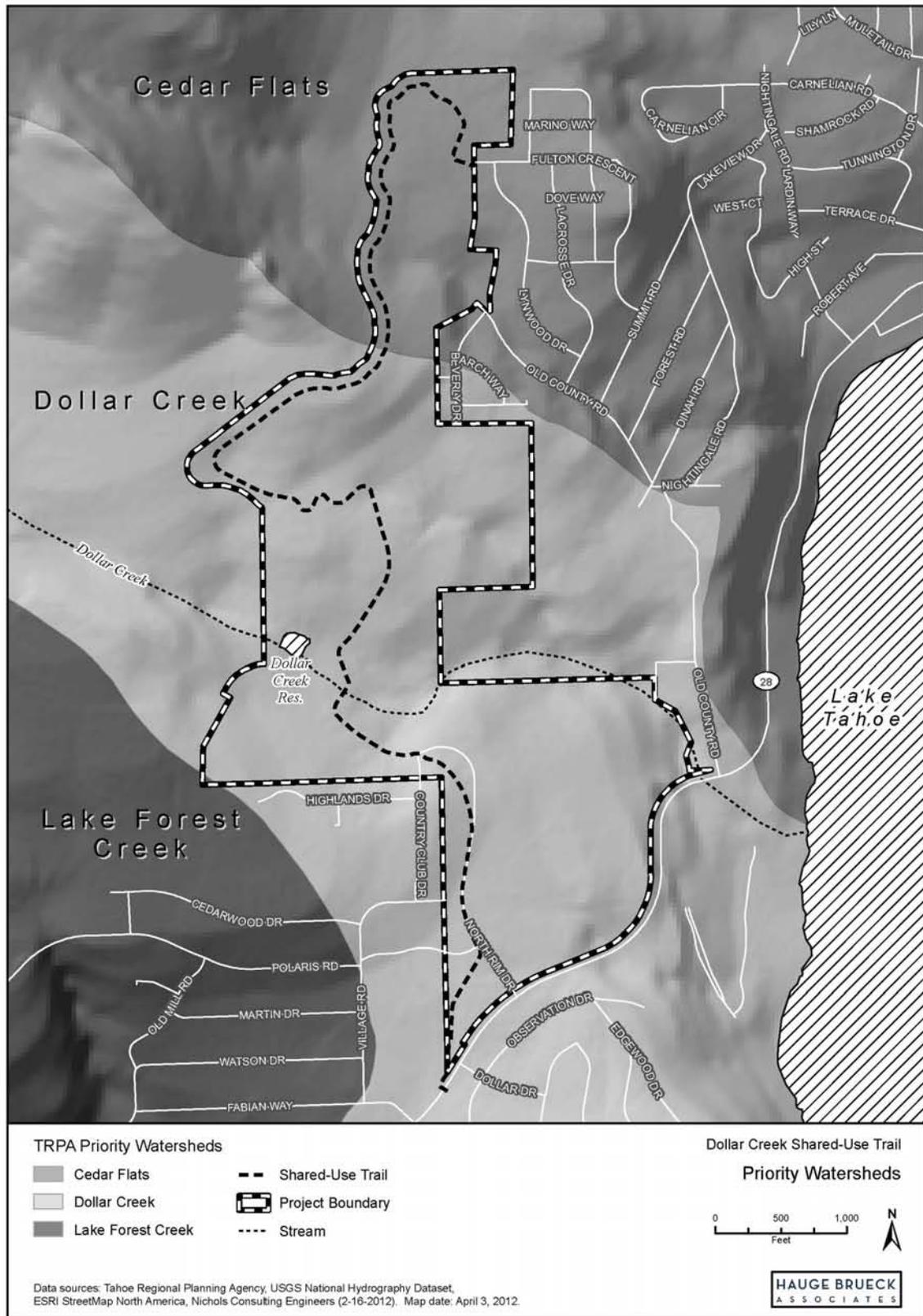
**Table 1**

Project Area Watersheds

TRPA Priority Number	Watershed Name	Watershed Acreage (GIS)	Watershed Acreage within Project Boundary	% Total Watershed within Project Boundary
6	Cedar Flats	1,166.36	40.79	3.50%
5	Dollar Creek	1,174.99	216.83	18.45%
4	Lake Forest	447.15	0.11	0.03%

Source: HBA 2011, TRPA GIS data

**Figure 1. Project Area Watersheds, Hydrography and Flood Zones**



#### **2.1.4 Groundwater**

The Tahoe Valley Groundwater Basin contains the project area and is located within the larger structural feature commonly referred to as the Lake Tahoe Basin. The basin is surrounded by the mountain peaks of the Sierra Nevada to the west and the Carson Range to the east. The groundwater basin consists of three alluvial areas surrounding the California side of the lake on the south, west, and north. The Tahoe Valley West Subbasin of the Tahoe Valley Groundwater Basin occupies an elongated, approximately 10 mile long structural basin, in which basin-fill deposits have accumulated (Thodal 1997). The subbasin is bounded on the east by the western shore of Lake Tahoe, and on the west by the Sierra Nevada, with an approximate north-south boundary that lies about 1/2 mile west of Dollar Point and two miles west of Meeks Bay. Elevations within the subbasin range from 6,225 feet at lake level rising to above 6,400 feet in the west.

The principal source of groundwater in the Tahoe Valley West subbasin is from Tertiary and Quaternary age glacial, fluvial, and lacustrine sediments, collectively referred to as basin-fill deposits (Burnett 1971). While Thodal (1997) could not identify specific-yield estimates for deposits in the subbasin from a review of previous studies, the range for similar deposits in the Tahoe Valley subbasin range from 6 % to 20% and average about 10%.

Groundwater recharge is primarily from infiltration of precipitation into faults and fractures in bedrock, into the soil and decomposed granite that overlies much of the bedrock, and into unconsolidated basin-fill deposits. Groundwater recharges over the entire extent of the flow path, except where the land surface is impermeable or where the groundwater table coincides with land surface. Stream flow also recharges groundwater when the water table is lower than the water surface of the stream (Thodal 1997).

NTPUD reports that in 2010 78 acre-feet/year were pumped from the Tahoe City/Westshore aquifer and that this pumping represented 6 % of the total water supply (NTPUD 2011).

#### **2.1.5 Public Water Supply**

The North Tahoe Public Utility District (NTPUD) supplies municipal water to the project area. The NTPUD services nearly 3,873 connections. These connections include single-family dwellings and business establishments, as well as separate irrigation and fire systems. The District operates three separate and independent water systems: Dollar Cove, Carnelian Bay, and the Tahoe Main system, comprised of Tahoe Vista, Kings Beach, and Brockway to the Nevada State Line. Dollar Cove is currently being supplied through the Tahoe City Public Utility District's Tahoe City system, which is comprised of five separate wells (groundwater sources). Carnelian Bay draws its water from a single well (groundwater source). The Tahoe main water system draws water from Lake Tahoe (surface water source) through an intake at the end of National Avenue in Tahoe Vista, as well as a single well (groundwater source) located in the North Tahoe Regional Park at the top of Donner Road. These combined sources supplied just under 484 million gallons of water to customers in 2010 (<http://www.ntpud.org>; accessed February 1, 2012).

The Dollar Cove system serves the community of Dollar Cove with water purchased from the Tahoe City Public Utility District (TCPUD) (PWSID number 31-10036). With a contract for

supply, including the jointly developed well and other TCPUD sources, NTPUD has a reliable source capacity.

The Project does not involve the use of public water supply beyond water applies during construction for dust suppression activities and irrigation for revegetation of disturbed areas.

### **2.1.5 TRPA Source Waters**

Per review of TRPA Source Water Maps available at the TRPA front counter (February 15, 2012), TRPA source waters in the project area vicinity include numbers: 09204002W1, 09208407W11, 09347001111, 09316029W22, 09316029W12, and 0930943011. The project area contains no mapped source waters or fall within the 600-foot source water protection zone.

The Project proposal includes no contaminating activities and poses no direct or indirect effects to TRPA source waters.

## **2.2 Existing Water Quality**

### **2.2.1 Surface Water**

Dollar Creek and Dollar Reservoir are the perennial surface water features and direct receiving waters within the project area. Intermittent and ephemeral drainages are present within the project area that convey surface runoff during the spring runoff period and extreme precipitation events, but these drainages do not discharge to receiving waters or to Lake Tahoe. Lake Tahoe is an indirect receiving water via stream flows from Dollar Creek and groundwater recharge from lacustrine deposits. Dollar Reservoir is about one acre in size and is sited behind a 14-foot high and 400-foot long dam. The dam and reservoir do not currently serve any purpose other than providing a favorite destination for hikers and bikers (California State Parks 2005).

Artificial barriers exist on Dollar Creek near the confluence with Lake Tahoe. Consequently there is no interchange of fish and other migratory aquatic species between the lake and the creeks (California State Parks 2005).

Little surface water quality data exists for Dollar Creek, but non-point sources of stormwater runoff from residential developments, including lawns and landscaping, driveways and access roadways along with runoff from forested uplands are known to be the primary influences on surface water quality (TRPA and NDEP 2007).

No portion of Dollar Creek is currently designated as impaired under Section 303(d) of the CWA; however, the stream is tributary to Lake Tahoe and addressed under the Lake Tahoe TMDL. The creek does not appear to be contaminated with heavy metals or other pollutants. Contaminants affecting the Dollar Creek watershed could include various vehicle-related pollutants such as oil, grease and other petroleum products from roadways, located down gradient of the project area and illicit dumping, pesticides, herbicides and fertilizers from residential homes in the project area vicinity. Wastewater treatment facilities do not contribute pollutants to the watershed because all sewer and wastewater are exported out of the Lake Tahoe Basin.

The discharge of surface flows generated within the project area to surface waters or to stormwater runoff conveyance systems cannot cause the concentrations in Lake Tahoe, Dollar Creek, minor surface waters or minor wetlands to exceed the WQO limits listed in Tables 2 and 3 below.

### **2.2.2 Groundwater**

In general, the inorganic quality of groundwater in the Lake Tahoe Basin is excellent (Thodal 1997). Groundwater quality in the project area portion of the Tahoe City/West Shore aquifer is considered excellent, as based on NTPUD and TCPUD monitoring data for the project area vicinity (NTPUD 2011). Public water systems must still be treated according to regulations set forth by the USEPA and the California Department of Public Health, Division of Drinking Water and Environmental Management. Water quality analysis sampling results for 2010 are referenced to:

- [http://www.ntpud.org/docs/conservation/NTPUD\\_2010%20Annual%20Water%20Quality%20Rpt.pdf](http://www.ntpud.org/docs/conservation/NTPUD_2010%20Annual%20Water%20Quality%20Rpt.pdf)
- Draft 2010 Urban Water Management Plan (NTPUD 2011).

Groundwater quantity and water table levels are not well defined for the project area. Groundwater recharge in the Tahoe Basin is primarily from infiltration of snow and precipitation into the soil, faults and fractures in bedrock, and decomposed granite that overlies much of the bedrock, and into unconsolidated basin-fill deposits. Groundwater is recharged over the entire extent of the flow path, except where the land surface is impermeable or where the groundwater table coincides with land surface. Stream flow also recharges groundwater when the water table altitude is lower than the water surface altitude of the stream (Thodal 1997). Overall, changes in groundwater storage for the NTPUD managed basin have been minimal. Decreases in groundwater storage have resulted in areas of pumping. Increases in storage have resulted in areas where storm runoff is temporarily ponded in small basins (. The groundwater in the NTPUD service area basin is not adjudicated; therefore there are no pumping limitations.

### **2.2.3 Erosion and Sedimentation**

The Burton Creek State Park General Plan Final Environmental Impact Report (EIR) (California State Parks 2005) includes assessment of the “Dollar Parcel” (i.e., a 900 acre undeveloped parcel of land adjacent to the Burton Creek State Park that was owned and managed by the Conservancy since 1990). The EIR noted that the Dollar Parcel, which includes portions of the project area, is not gated and receives considerable unregulated public use from adjacent subdivisions. The numerous native surface roads and trails contribute to erosion from the property (California State Parks 2005).

Bank erosion is not observed along Dollar Creek within the project area. Stream flows are controlled by the dam at Dollar Reservoir just a few hundred feet upstream. The banks are stabilized by riparian vegetation that is well-established along the narrow SEZ corridor.

Within the project area surface runoff can be categorized as sheet flow and intermittent rilling. Surface runoff, also termed overland flow, was observed during field surveys along portions of native surface trails and on the steeper slope areas of undeveloped forested uplands. This surface runoff initiates the process of erosion. Continuous rilling and extensive gully erosion was not observed within the project area. Sedimentation was observed to occur at slope breaks but not in correction to receiving waters.

The League to Save Lake Tahoe and Sierra Pacific Power (now NV Energy) engaged the north shore community to implement a road decommissioning project in 2000 in the northern project area. Presently an approximately 1,000-foot section of trail connects the proposed shared-use trail

alignment to Old County Road. The project was implemented to reduce erosion caused by road capture and conveyance of overland flows during spring runoff. The project alleviated some erosion impacts but during field surveys some sections of the user created trail were noted to still capture and convey overland flow and contribute to gully erosion.

## **2.3 Application Regulations, Plans and Policies**

Key regulatory agencies with respect to hydrology, water rights and supply, surface water quality and groundwater in the Project area are listed below.

- TRPA is designated by the United States Environmental Protection Agency (USEPA), California and Nevada as the water quality planning agency in the region;
- California Department of Water Resources;
- State Water Resources Control Board (State Board);
- California Regional Water Quality Control Board – Lahontan Region;
- Placer County; and
- Placer County flood control and Water conservation District.

### **2.3.1 Federal**

#### ***United States Environmental Protection Agency (USEPA)***

The Clean Water Act (CWA) of 1972 is the primary federal law governing water quality. The act provides for the restoration and maintenance of the chemical, physical and biological integrity of the nation's waters, emphasizes technology-based control strategies and requires discharge permits to use public resources for wastewater. The CWA limits the amount of pollutants that may be discharged and requires wastewater to be treated with the best treatment technology economically achievable regardless of receiving water conditions.

The 1987 CWA amendments included Section 402(p), which establishes a framework for regulating municipal and industrial stormwater discharges. The amendments also provided a framework for regulating stormwater runoff from construction sites. The USEPA published final regulations on November 16, 1990 that establish requirements for stormwater permits.

CWA Section 303(d) was amended to the act to require States to identify and maintain a list of waterbodies that do not meet water quality objectives and to implement a Total Maximum Daily Load (TMDL) program for such impaired waterbodies.

#### ***United States Army Corps of Engineers (USACE)***

Section 404 of the CWA established a permit program to regulate the discharge of dredged material into waters of the U.S. The program's scope also includes the regulation of discharges of dredge or fill material into wetlands adjacent to national waters. The permit program is administered by the Secretary of the Army through the U.S. Army Corps of Engineers (USACE). Since the project will involve the filling or dredging of waters of the U.S., a CWA Section 404 Permit will be required.

## ***Federal Emergency Management Agency (FEMA)***

FEMA is part of the Department of Homeland Security and is tasked with responding to, planning for, recovering from and mitigating against disasters. Formed in 1979 to merge many of the separate disaster-related responsibilities of the federal government into one agency, FEMA is responsible for coordinating the federal response to floods, earthquakes, hurricanes, and other natural or man-made disasters and providing disaster assistance to states, communities and individuals. The Federal Insurance and Mitigation Administration (FIMA) within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that provide assistance for mitigating future damages from natural hazards. Established in 1968 with the passage of the National Flood Insurance Act, the NFIP is a federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between communities and the federal government. If a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains, the federal government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide an insurance alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods.

Placer County participates in the National Flood Insurance Program (NFIP) by adopting and enforcing floodplain management ordinances to reduce future flood damage. Placer County Ordinance Article 15.52 - Flood Damage Prevention Regulations addresses floodplain management.

### **2.3.2 TRPA**

The TRPA is the designated area-wide water quality planning agency under Section 208 of the Clean Water Act (CWA).

#### ***Surface Water***

In 1988 the States of California and Nevada and the USEPA adopted the TRPA Water Quality Management Plan for the Lake Tahoe Basin (TRPA 1988), commonly referred to as the 208 Plan. The 208 Plan identifies water quality problems, proposes solutions or mitigation measures, identifies those entities responsible for implementing solutions, and determines agencies or jurisdictions responsible for enforcement. The TRPA Environmental Thresholds (Resolution 82-11 adopted in 1982) and State of California water quality objectives (WQO) establish over 30 separate water quality standards for Lake Tahoe and its tributaries. The standards address algal growth potential, plankton count, clarity, turbidity, phytoplankton productivity, phytoplankton biomass, zooplankton biomass, periphyton biomass, dissolved inorganic nitrogen (DIN) loading, nutrient loading in general, tributary water quality, surface runoff quality, and the quality of other lakes in the Lake Tahoe Basin.

TRPA water quality thresholds are as follows:

- WQ1—Decrease sediment load as required to attain turbidity values not to exceed three NTU in littoral Lake Tahoe. In addition, turbidity shall not exceed one NTU in shallow waters of Lake Tahoe not directly influenced by stream discharges.

- WQ2—Average Secchi depth, December–March, shall not be less than 33.4 meters.
- WQ3—Annual mean phytoplankton primary productivity shall not exceed 52 grams of carbon content per meter squared per year (gC/m<sup>2</sup>/yr). California: algal productivity shall not be increased beyond levels recorded in 1967–1971, based on a statistical comparison of seasonal and annual mean values.
- WQ4—Attain a 90th percentile value for suspended sediment of 60mg/L, total nitrogen range of 0.15 to 0.23 mg/L, total phosphorus range of 0.005 to 0.030 mg/L, and total iron range of 0.01 to 0.07 mg/L (annual average).
- WQ5—Dissolved inorganic nitrogen, 0.5 mg/L; dissolved phosphorus, 0.1 mg/L; dissolved iron, 0.5 mg/L; suspended sediment, 250 mg/L, grease and oil 2.0 mg/L, total phosphate as P, 0.1 mg/L, and turbidity, 20 NTU.
- WQ6—Surface water infiltration into the groundwater shall comply with the Uniform Regional Run Off guidelines. For total nitrogen, 5 mg/L; total phosphorus, 1 mg/L; total iron, four mg/L; turbidity, 200 NTU; and grease and oil, 40 mg/L.
- WQ7—Attain existing water quality standards.

Regional water quality standards are outlined in the TRPA Code of Ordinances, Revised Code Chapter 60. The chapter sets forth standards for the discharge of runoff water from parcels, and regulates the discharge of domestic, municipal, or industrial wastewaters. The standards and prohibitions apply to discharges to both surface and groundwaters. Revised Code Chapter 60 addresses water quality mitigation for projects and activities that result in the creation of additional impervious coverage.

Pollutant concentrations in surface runoff shall not exceed the values as stated in Table 2 at the 90<sup>th</sup> percentile. Surface runoff that is directed to infiltrate into the soil shall not exceed the discharges to groundwater standards. Stormwater running on to the Project area or stormwater generated on the Project area must be captured, conveyed and treated to these surface and ground water standards or spread and infiltrated on the Project area to receiving soils and spreading areas with suitable assimilative capacities.

TRPA is presently updating the Regional Plan, a draft of which is expected for release for public review in 2012. Integration of research, conducted as part of the water quality restoration plan being undertaken by Lahontan and NDEP, is a critical element of the Regional Plan Update. The research for the TMDL analysis for Lake Tahoe shows that emphasis on load reduction strategies for fine sediments entering the lake from urban areas is necessary. Another key component to the Regional Plan Update is the incorporation of the TMDL requirements and proposed implementation strategies and control measures contained in the TMDL technical analysis. The TMDL recommended implementation strategies or pollution reduction opportunities call for the deployment of new and more advanced water treatment technologies including: area-wide stormwater treatment systems; vacuum sweeping of roads; wetland and passive filtration basins; placing media filters in stormwater vaults; improving BMP compliance; and intensifying maintenance of stormwater infrastructure. With the Regional Plan Update, TRPA may begin to focus on load reduction rather than site design standards and infiltration only.

**Table 2****TRPA Surface Water Discharge Limits**

Parameter	Unit	Surface Runoff Limits	
		Discharge to Surface Water	Discharges to Groundwater
Turbidity	NTU	--	200
Suspended Sediment Concentration*	mg/L	250	--
Oil and Grease	mg/L	2	40
Dissolved Inorganic Nitrogen (NO <sub>2</sub> +NO <sub>3</sub> +NH <sub>3</sub> )	mg/L	0.5	--
Total Nitrogen	mg/L	--	5
Dissolved Phosphorus	mg/L	0.1	--
Total Phosphorus	mg/L	--	1
Dissolved Iron	mg/L	0.5	--
Total Iron	mg/L	--	4

Source: TRPA Code or Ordinances Chapter 81

Note: \*Suspended Sediment Concentration (SSC) is the TRPA discharge standard listed in Chapter 81. Many stormwater monitoring programs measure Total Suspended Solids/Sediment or TSS, an arguably cheaper and more appropriate parameter for stormwater runoff measurement.

**Grading Standards**

There are grading standards set forth in Revised Chapters 30 and 33, specifically Section 33.3 Grading Standards, of the TRPA Code of Ordinances. Limitations include no excavation, filling, or clearing of vegetation or other disturbance of the soil between October 15 and May 1 of each year, unless approval is granted by TRPA. Grading and construction schedules are established in Revised Code Chapter 33 of the Code of Ordinances. A grading plan is required by TRPA prior to project approval and project construction.

**Stream Environment Zones**

TRPA defines a SEZ as a biological community that derives its characteristics from the presence of surface water or a seasonal high groundwater table. SEZs exhibit the ability to rapidly incorporate nutrients into the usually dense vegetation and moist to saturated soils. SEZs are riparian areas identified by the presence of at least one key indicator or three secondary indicators (TRPA Revised Code Section 53.9). No additional land coverage or other permanent land disturbance is permitted in SEZs unless specific findings can be made to permit the exception (TRPA Revised Code Section 30.5).

There are mapped and verified SEZs in the Project area.

## ***Groundwater Regulations***

According to the TRPA Revised Code Chapter 33, groundwater impacts are considered significant if implementation of the Project results in the interception or interference of groundwater by:

- Altering the direction of groundwater;
- Altering the rate of flow of groundwater;
- Intercepting groundwater;
- Adding or withdrawing groundwater; or
- Raising or lowering the water table.

TRPA Revised Code Section 33.3.6 prohibits excavations in excess of five feet in depth or where there exists a reasonable possibility of interference or interception of a water table unless the following findings can be made:

(1) A soils/hydrologic report prepared by a qualified professional, whose proposed content and methodology has been reviewed and approved in advance by TRPA, demonstrates that no interference or interception of groundwater will occur as a result of the excavation; and

(2) The excavation is designed such that no damage occurs to mature trees, except where tree removal is allowed pursuant to revised Code Subsection 33.6.5: Tree Removal, including root systems, and hydrologic conditions of the soil. To ensure the protection of vegetation necessary for screening, a special vegetation protection report shall be prepared by a qualified professional identifying measures necessary to ensure damage will not occur as a result of the excavation; and

(3) Excavated material is disposed of pursuant to Revised Code Section 33.3.4, Disposal of Materials, and the project area's natural topography is maintained pursuant to Subparagraph 36.5.1.A; or if groundwater interception or interference will occur as described in the soils/hydrologic report, the excavation can be made as an exception pursuant to Subparagraph 33.3.6.A.2 and measures are included in the project to maintain groundwater flows to avoid adverse impacts to SEZ vegetation, if any would be affected, and to prevent any groundwater or subsurface flow from leaving the project area as surface flow.

## ***Source Water Protection***

TRPA Revised Code Chapter 60, Section 60.3 sets forth regulations pertaining to recognition of source water, prevention of contamination to source water and protection of public health relating to drinking water. Source water is defined as water drawn to supply drinking water from an aquifer, or a well or from a surface water body by an intake, regardless of whether such water is treated before distribution.

### **2.3.3 State of California**

Placer County serves as the lead agency under the California Environmental Quality Act (CEQA) with the Conservancy and NTPUD participating as responsible agencies.

The primary responsibility for the protection of surface water and groundwater quality in

California rests with the State Water Resources Control Board (State Board) and nine Regional Water Quality Control Boards (RWQCBs).

### ***The California Environmental Quality Act (CEQA)***

The California Environmental Quality Act (CEQA) of 1970 establishes a requirement for state agencies to analyze and disclose the potential environmental effects of a proposed action. The Initial Study (IS) prepared by state and local governments is usually a free-standing document intended to meet the requirements of CEQA.

If the County finds substantial evidence that any aspect of the Project, either individually or cumulatively, may have a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial, the County must prepare an EIR. If the County finds no substantial evidence that the Project or any of its aspects may cause a significant effect on the environment, a Negative Declaration (Neg Dec) shall be prepared. If in the course of analysis, the County recognizes that the Project may have a significant impact on the environment, but that by incorporating specific mitigation measures the impact will be reduced to a less than significant effect, a Mitigated Neg Dec shall be prepared.

The IS also provides sufficient information for Responsible and Trustee agencies to use as the basis for CEQA compliance, including the Regional Water Quality Control Board – Lahontan Region (Lahontan) and the California Department of Fish and Game (CDFG). The IS is not, in and of itself, a decision document. The document’s purpose is to evaluate the environmental consequences of implementing the Project and to identify measures if necessary to avoid significant impacts.

### ***State Water Resources Control Board (State Board)***

The State Board administers State and federal regulations that pertain to water quality including Sections 401 and 402 of the federal Clean Water Act.

### **National Pollutant Discharge Elimination System (NPDES) – General Construction**

The State Board regulates construction activities resulting in the disturbance of one or more acres of soils through the California General Permit for Storm Water Discharges Associated with Federal Clean Water Act Section 402 Construction Activities and Land Disturbance Activities (Order No. 2009-009DWQ). This permit does not cover disturbance to lands classified as SEZ and does not cover construction activities within the Lake Tahoe Hydrologic Unit. The State Board defers to Lahontan Board Order No. R6T-2011-0019 for construction activities within the Lake Tahoe Hydrologic Unit.

### **Low Impact Development – Sustainable Stormwater Management**

On January 20, 2005, the State Board adopted sustainability as a core value for all California Water Boards’ activities and programs, and directed RQWCB staff to consider sustainability in all future policies, guidelines, and regulatory actions.

Low Impact Development (LID) is a sustainable practice that benefits water supply and contributes to water quality protection. Unlike traditional storm water management, which collects and conveys storm water runoff through storm drains, pipes, or other conveyances to a centralized storm water facility, LID takes a different approach by using site design and storm

water management to maintain the site's pre-development runoff rates and volumes. The goal of LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall. LID has been a proven approach in other parts of the country and is seen in California as an alternative to conventional storm water management. The RWQCBs are advancing LID in California in various ways.

LID provides economical as well as environmental benefits. LID practices result in less disturbance of the development area, conservation of natural features, and less expensive than traditional storm water controls. The cost savings applies not only to construction costs, but also to long-term maintenance and life cycle cost. LID provides multiple opportunities to retrofit existing highly urbanized areas and can be applied to a range of lot sizes.

LID includes specific techniques, tools, and materials to control the amount of impervious surface, increase infiltration, improve water quality by reducing runoff from developed sites, and reduce costly infrastructure. LID practices include; bioretention facilities or rain gardens, sidewalk storage, grass swales and channels, vegetated rooftops, rain barrels and cisterns, vegetated filter strips, swales and buffers, tree preservation, roof leader disconnection, and permeable pavements and pavers, impervious surface reductions and disconnection, soil amendments, pollution prevention and good housekeeping ([http://waterboards.ca.gov/water\\_issues/programs/low\\_impact\\_development](http://waterboards.ca.gov/water_issues/programs/low_impact_development)).

### ***Regional Water Quality Control Board - Lahontan Region (Lahontan)***

Lahontan is one of the nine RWQCBs in California. The nine RWQCBs maintain Basin Plans that include comprehensive lists of water bodies in each area, as well as detailed language about the components of applicable WQOs. As authorized by the USEPA, the State Board and nine RWQCBs implement the Section 402 Clean Water Act NPDES Permitting Program and requirements in California. Clean Water Act Section 401 requirements generally relate to State certification of federal permits, including those issued by a federal agency under Clean Water Act Section 404. In addition, the Lahontan regulates waste discharges under the California Water Code, Article 4 (Waste Discharge Requirements) and Chapter 5.5 (Compliance with the Provisions of the Federal Water Pollution Control Act as Amended in 1972).

### **Porter-Cologne Water Quality Control Act**

The Porter-Cologne Water Quality Control Act is California's comprehensive water quality control law and functions as a complete regulatory program designed to protect water quality and beneficial uses of the State's water. Under this act, the State Water Resources Control Board (State Board) provides policy guidance and review for the Regional Water Quality Control Boards (RWQCBs), and the RWQCBs implement and enforce the provisions of the Act. The act requires the adoption of water quality control plans by the state's nine RWQCBs for areas within their regions. These plans are subject to the approval of the SWRCB and ultimately the USEPA. The plans are to be continually reviewed and updated. Basin Plans establish specific water quality objectives for individual bodies of water. The Basin Plans are master planning documents intended to guide efforts to maintain and restore the quality of California's waters.

For the area in which the project would be sited, the applicable RWQCB is Lahontan. The Porter-Cologne Act, the State Board and Lahontan have the authority and responsibility to adopt plans and policies, regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. The Porter-

Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substances, sewage, or oil or petroleum products.

Each RWQCB must formulate and adopt a water quality control plan for its region. The regional plans must conform to the policies set forth in the Porter-Cologne Act and established by the State Board in its state water policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

### Regional Water Quality Control Board's Basin Plan for the Lahontan Region

Lahontan implements the *California Regional Water Quality Control Board's Basin Plan for the Lahontan Region* or Basin Plan, which recognizes natural water quality, existing and potential beneficial uses, and water quality problems associated with human activities in Placer County (Lahontan 1995). Lahontan also has regulatory authority to enforce the requirements of the Clean Water Act and the California Water Code. This includes the regulatory authority to enforce the implementation of TMDLs, the adoption of waste discharge requirements (WDRs) to ensure compliance with surface WQOs, and groundwater management.

Specifically the Basin Plan outlines the narrative and numeric WQOs for water bodies within the Lake Tahoe Hydrologic Unit. Some water bodies have specific WQOs. In the project area, Dollar Creek has numeric WQOs for Total Dissolved Solids, Chloride, Total Nitrogen, Total Phosphorus, and Iron.

In addition to the WQO in the Basin Plan, federal water quality standards for certain toxic pollutants apply to surface waters within California, including the Lahontan Region. These standards are contained in the National Toxics Rule (40 CFR 131.36) and the California Toxics Rule (40 CFR 131.37). State Board has adopted a statewide implementation policy for the federal toxics standards, including summary tables listing the standards themselves. The federal standards have not yet been physically incorporated into the Basin Plan. The National Toxics Rule and California Toxics Rule standards differ from federal water quality criteria in that they are enforceable. Federal criteria are non-enforceable, science-based thresholds that can be used in development of enforceable state water quality standards.

### Waste Discharge Requirements and Anti-Degradation Findings

Lahontan must consider antidegradation pursuant to 40 CFR 131.12 and State Board Resolution No. 68-16 to find that the subject discharges are consistent with the provisions of these policies. Anti-degradation findings that consistent with the policies are necessary for reissuance of waste discharge requirements for operations and actions within the project area.

Placer County is the discharger and the receiving waters are the surface waters of the North Tahoe Hydrologic Area of the Lake Tahoe Hydrologic Unit (Department of Water Resources Hydrologic Unit No. 634.20), specifically Dollar Creek and Lake Tahoe. Dollar Creek beneficial uses include:

- municipal and domestic supply;
- agricultural supply;
- groundwater recharge,

- water-contact recreation;
- non-water-contact recreation;
- commercial and sportfishing;
- cold freshwater habitat;
- wildlife habitat; and
- spawning, reproduction and development.

The effluent limitations apply to surface flows generated within the project area, or as a result of the development on the project area, are discharged to land treatment systems and/or surface waters of Dollar Creek. These flows cannot contain constituents in excess of the concentrations listed in Table 3. The discharge of surface flows generated within the project area to surface waters or to stormwater runoff conveyance systems cannot cause the concentrations in Lake Tahoe, Dollar Creek, minor surface waters or minor wetlands to exceed the WQO limits listed in Table 3.

Surface flows generated within the project area that are discharged to groundwater or to land treatment systems cannot cause a violation of limits listed in Table 3 for land treatment or of the following WQOs for groundwaters of the Lake Tahoe Hydrologic Unit:

- Groundwaters cannot contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses;
- The median concentration of coliform organisms, in groundwaters, over any seven-day period shall be less than 2.2/100 ml; and
- Groundwaters shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels or secondary maximum contaminant levels based upon drinking water standards specified by the more restrictive of the California Code of Regulations, Title 22, Division 4, Chapter 15 or 40 CFR, Part 141.

**Table 3**

Lahontan Water Quality Objectives – Dollar Creek

Parameter	Unit	Effluent Limitations		Receiving Water Limitations**
		Surface Waters	Land Treatment	Dollar Creek
Turbidity	NTU	20	200	*
Total Dissolved Solids	mg/L	--	--	80
Oil and Grease	mg/L	2.0	40	--
Chloride	mg/L	--	--	0.30
Total Nitrogen	mg/L	0.5	5.0	0.16
Total Phosphorus	mg/L	0.1	1.0	0.030

Sulfate	mg/L	--	--	--
Boron	mg/L	--	--	--
Total Iron	mg/L	0.5	4.0	0.03

Source: Lahontan Board Order No. 6-95-86

Notes:

- \* Turbidity of waters shall not be raised more than 3 NTU. In no instance can an increase in turbidity exceed natural levels by more than 10 percent as determined by the mean of monthly means over a calendar year.
- \*\* Values are based on annual mean concentrations (arithmetic mean of 30-day averages over a calendar year)/90th percentile concentration (90 percent of data points are equal to or below value).

### National Pollutant Discharge Elimination System – Lake Tahoe Basin

Lahontan Board Order R6T-2011-0019, entitled *Waste Discharge Requirements and National Pollutant Discharge Elimination System for Permit No. CAG616002 for Discharges of Storm Water Runoff Associated with Construction Activity Involving Land Disturbance in the Lake Tahoe Hydrologic Unit*, applies to construction sites and activities resulting in the disturbance of one or more acres of soil disturbance in the Lake Tahoe Hydrologic Unit. Construction activities include clearing, grading, demolition, excavation, construction or new structures and reconstruction. This permit sets maximum concentration levels for discharges into surface waters for nutrients, sediment, turbidity, and grease and oil.

The permit requires submittal of a Notice of Intent (NOI) and that the construction contractor develop and implement a site-specific stormwater pollution prevention plan (SWPPP) to prevent stormwater and groundwater pollution caused by construction activities. At a minimum, implementation of the SWPPP must prevent debris, soil, silt, sand, rubbish, cement or concrete or washings thereof, oil or petroleum products or other organic or earthen material from construction or operation from entering into receiving waters, their tributaries and adjacent wetlands. The SWPPP outlines erosion control measures to be taken as well as BMPs to control and prevent to the maximum extent practicable the discharge of pollutants to surface waters and groundwater. Although the SWPPP focuses primarily on protection of surface waters, it also contains a plan for responding to and managing accidental spills during construction and a plan for management and storage of pumped groundwater. The SWPPP addresses overall management of the construction project site such as designating areas for material storage, equipment fueling, concrete washout, and stockpiles.

### California Environmental Quality Act (CEQA)

Under CEQA, Lahontan is a responsible agency with regard to the Project. The California Water Code section 13050(e) reads as follows: “Waters of the State means any surface water or groundwater, including saline waters, within the boundaries of the state.” State waters include irrigation canals and surface impoundments (other than those solely constructed for wastewater), wetlands, and waters of the United States (a subset of State waters). Lahontan’s policies concerning wetland and riparian protection are stated in chapter four of the Basin Plan as outlined under sub-section Wetlands Protection and Management (pages 12-8 to 12-14).

### Lake Tahoe Total Maximum Daily Load (TMDL)

Section 303(d) of the Clean Water Act requires States to compile a list of impaired water bodies that do not meet WQOs. The Clean Water Act also requires States to establish total maximum daily loads (TMDLs) for such waters. The deep water transparency standard for Lake Tahoe is the average annual Secchi depth measured between 1967 and 1971, an annual average Secchi

depth of 39.7 meters or 97.4 feet. The transparency standard for Lake Tahoe has not been met since its adoption. In 2007, the average annual average Secchi depth was 70 feet or 27.6 feet from the standard. Transparency loss is considered a water quality impairment from the input of nutrients and sediment. Consequently, Lake Tahoe is listed under Section 303(d) as impaired by inputs of nitrogen, phosphorus and sediment. The goal of the Lake Tahoe TMDL is to set forth a plan to restore Lake Tahoe's historic transparency to 97.4 feet.

The *Final Lake Tahoe Total Maximum Daily Load* report was released for public review and comment in June 2010. The report and the adoption and approval process are fully compliant with CEQA. The document states that the adoption of the Final Lake Tahoe TMDL will not have a significant adverse impact on the environment (Lahontan and NDEP 2007). The Lake Tahoe TMDL was adopted in August 2011 upon approvals of the United States Environmental Protection Agency (USEPA) and will be implemented by Lahontan.

### **California Tahoe Conservancy**

The mission of the California Tahoe Conservancy (Conservancy) is to preserve, protect, restore, enhance and sustain the unique and significant natural resources and recreational opportunities of the Lake Tahoe Basin. The project area contains lands that are managed by the Conservancy, which participates as a responsible agency under CEQA.

#### **2.3.4 Local**

##### **Placer County**

Placer County published the *Placer County Stormwater Management Manual* in 1990 (*Placer County 1990*) and the *Land Development Manual* in 2006 (*Placer County 2006*). The Placer County Tahoe Basin Stormwater Management Plan describes the Placer County stormwater quality improvement program to be implemented in compliance with Phase I of Lahontan Board Order No. R6T-2005-0026 (NPDES Permit No. CAG616001). Placer County shares a permit with El Dorado County and the City of South Lake Tahoe for the Lake Tahoe Basin.

##### Placer County General Plan

The following Placer County General Plan (Placer County 1994) goals pertain to water supply and delivery, stormwater drainage, water resources, grading and erosion prevention, and flood hazards and protection. The supporting policies and implementation programs are referred to the appropriate General Plan sections.

##### Water Supply and Delivery

**Goal 4.C:** To ensure the availability of an adequate and safe water supply and the maintenance of high quality water in water bodies and aquifers used as sources of domestic supply.

##### Stormwater Drainage

**Goal 4.E:** To collect and dispose of stormwater in a manner that least inconveniences the public, reduces potential water-related damage, and enhances the environment.

## Flood Protection

**Goal 4.F:** To protect the lives and property of the citizens of Placer County from hazards associated with development in floodplains and manage floodplains for their natural resource values.

## Water Resources

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

## Flood Hazards

**Goal 8.B:** To minimize the risk of loss of life, injury, damage to property, and economic and social dislocations resulting from flood hazards

## Placer County Grading, Erosion, and Sediment Control Ordinance

The Placer County Board of Supervisors adopted the following relevant regulations pertaining to grading and related runoff in Placer County,

**15.48.020 Purpose.** The ordinance codified in this article is enacted for the purpose of regulating grading on property within the unincorporated area of Placer County to safeguard life, limb, health, property and public welfare; to avoid pollution of watercourses with hazardous materials, nutrients, sediments, or other earthen materials generated on or caused by surface runoff on or across the permit area; and to ensure that the intended use of a graded site is consistent with the Placer County general plan, any specific plans adopted thereto and applicable Placer County ordinances including the zoning ordinance, flood damage prevention ordinance, (Article 15.52) environmental review ordinance (Chapter 18 Placer County Code) and applicable chapters of the California Building Code. In the event of conflict between applicable chapters and this article, the most restrictive shall prevail. (Ord. 5056-B (part), 2000)

**15.48.040 Grading.** No person shall do or permit to be done any grading in such a manner that quantities of dirt, soil, rock, debris or other material substantially in excess of natural levels are washed, eroded or otherwise moved from the site, except as specifically provided for by a permit. In no event shall grading activities cause or contribute to the violation of provisions of any applicable NPDES stormwater discharge permit. (Ord. 5407-B § 2, 2006; Ord. 5056-B (part), 2000)

**15.48.100 Construction in public rights-of-way.** No person shall perform any grading work within the right-of-way of a public road or street, or within a public easement, without prior written approval of the agency director. (Ord. 5407-B § 6, 2006; Ord. 5056-B (part), 2000)

**15.48.120 Tahoe Basin area special restrictions and exemptions.**

A. Provisions of this section apply to the unincorporated area of Placer County within that area defined as “TRPA region” in the Tahoe Regional Planning Agency Compact. This area is the Tahoe Basin and that additional and adjacent part of the county of Placer outside of the Tahoe Basin in the state of California which lies southward and eastward of a line starting at the intersection of the basin crestline and the north boundary of Section 1, thence west to the northwest corner of Section 3, thence south to the intersection of the basin crestline and the

west boundary of Section 10; all sections referring to township 15 north, range 16 east, M.D.B. and M.

- B. Grading and soil disturbance shall be prohibited during the period from October 15th through May 1st unless otherwise approved, in writing, by the agency director and by the Tahoe Regional Planning Agency and Lahontan Regional Water Quality Control Board. Complete winterization of the site is required by October 15th, if work is not complete and permanent revegetation is not established.
- C. All work shall be in conformity with any grading restriction required by other federal, state, or local agencies.
- D. A permit for grading on residential property issued by the Tahoe Regional Planning Agency will be evidence of conformity to provisions of this section. All other grading in the region, unless otherwise exempt as provided herein, is subject to review and approval by the community development resource agency.
- E. Areas of the site not approved for grading, vegetation removal, or construction shall be fenced or otherwise marked to limit access. These fences shall be inspected, maintained, and repaired as necessary.
- F. Prior to initiation of grading or construction-related activity, temporary erosion control measures shall be installed to prevent transport of earthen materials and other wastes off of the site.
- G. All other provisions of this article shall apply, but a permit shall not be required if the work complies with all the following conditions:
  - 1. The excavation does not exceed four feet in vertical depth at its deepest point measured from the original ground surface, does not exceed two hundred (200) square feet in area, and does not exceed three cubic yards per site;
  - 2. The fill does not exceed three feet in vertical depth at its deepest point measured from the original ground surface, the fill material does not cover more than two hundred (200) square feet, and does not exceed three cubic yards per site;
  - 3. The clearing of vegetation does not exceed one thousand (1,000) square feet in area. (Ord. 5407-B § 8, 2006; Ord. 5373-B (part), 2005; Ord. 5056-B (part), 2000) No person shall do or permit to be done any grading which may obstruct, impede or interfere with the natural flow of stormwaters, in such manner as to cause flooding where it would not otherwise occur, aggravate any existing flooding condition or cause accelerated erosion. This section applies whether such waters are unconfined upon the surface of the land or confined within land depressions or natural drainage ways, unimproved channels or watercourses, or improved ditches, channels or conduits. (Ord. 5056-B (part), 2000)

**15.48.570 Drainage—General.** Any drainage structure(s) or device(s) carrying surface water runoff required by this article shall be designed and constructed in accordance with standards herein, the current Placer County flood control and water conservation district stormwater management manual and criteria authorized by the agency director. (Ord. 5407-B § 16, 2006; Ord. 5056-B (part), 2000)

**15.48.580 Drainage discharge requirements.** All drainage facilities shall be designed and engineered to carry surface and subsurface waters to the nearest adequate street, storm drain, natural watercourse, or other juncture. (Ord. 5373-B (part), 2005; Ord. 5056-B (part), 2000)

**15.48.590 Drainage—Water accumulation.** All areas shall be graded and drained so that drainage will not cause erosion or endanger the stability of any cut or fill slope or any building or structure. (Ord. 5056-B (part), 2000)

**15.48.600 Drainage protection of adjoining property.** When surface drainage is discharged onto any adjoining property, it shall be discharged in such a manner that it will not cause erosion or endanger any cut or fill slope or any building or structure. (Ord. 5056-B (part), 2000)

**15.48.610 Terrace drainage.** Terraces at least eight feet in width shall be established at not more than twenty-five (25) feet in height intervals for all cut and fill slopes exceeding thirty (30) feet in height. Where only one terrace is required, it shall be at approximately mid-height. Suitable access shall be provided to permit proper cleaning and maintenance of terraces and terrace drains. Swales or ditches on terraces shall have a minimum depth of one foot, a minimum longitudinal grade of four percent, a maximum longitudinal grade of twelve (12) percent. Down-drains or drainage outlets shall be provided at approximately three hundred (300) foot intervals along the drainage terrace. Down-drains and drainage outlets shall be of approved materials and of adequate capacity to convey the intercepted waters to the point of disposal. If the drainage discharges onto natural ground, adequate erosion protection shall be provided. (Ord. 5056-B (part), 2000)

**15.48.620 Subsurface drainage.** Cut and fill slopes shall be provided with surface and/or subsurface drainage as necessary for stability. (Ord. 5056-B (part), 2000)

**15.48.630 Erosion and sediment control.** The following shall apply to the control of erosion and sediment from grading operations:

- A. Grading plans shall be designed with long-term erosion and sediment control as a primary consideration. Erosion prevention and source control are to be emphasized over sediment controls and treatment.
- B. Grading operations shall provide erosion and sediment control measures, except upon a clear demonstration, to the satisfaction of the community development resource agency that at no stage of the work will there be any substantial risk of increased sediment discharge from the site. Temporary mulch, revegetation, or other stabilization methods shall be applied to areas where permanent revegetation or landscaping cannot be immediately implemented. Unless otherwise exempted in this article, grading activity must be scheduled to ensure completion or winterization by October 15th of each year.
- C. Grading activity shall be conducted such that the smallest practicable area of erodible land is exposed at any one time during grading operations and the time of exposure is minimized. Land disturbance shall be limited to the minimum area necessary for construction.

- D. Natural features, including vegetation, terrain, watercourses and similar resources shall be protected and preserved wherever possible. Units of grading shall be clearly defined and marked to prevent damage by construction equipment.
- E. Permanent vegetation and structures for erosion and sediment control shall be installed as soon as possible.
- F. Adequate provision shall be made for effective maintenance of temporary and permanent erosion and sediment control structures and vegetation. Sediment and other construction-related wastes shall be retained and properly managed on the site or properly disposed of off-site.
- G. No topsoil shall be removed from the site unless otherwise directed or approved by the community development resource agency. Topsoil overburden shall be stockpiled and redistributed where appropriate within the graded area after rough grading to provide a suitable base for seeding and planting. Runoff from the stockpiled area shall be controlled to prevent erosion and resultant sedimentation of receiving water.
- H. Runoff shall not be discharged from the site in quantities or at velocities substantially above those which occurred before grading except into drainage facilities, whose design has been specifically approved by the community development resource agency.
- I. The permittee shall take reasonable precautions to ensure that vehicles do not track or spill earth materials into public streets and shall immediately remove such materials if this occurs.
- J. All cut and fill slopes shall be adequately stabilized to prevent erosion and failure through temporary and permanent means.
- K. Control measures shall be employed to prevent transport of dust off the project site or into any drainage course or water body. (Ord. 5407-B § 17, 2006; Ord. 5373-B (part), 2005; Ord. 5056-B (part), 2000)

**15.48.650 Erosion and sediment control plans.** Erosion and sediment control plans prepared pursuant to this article shall comply with all of the following:

- A. The erosion and sediment control plan need not be a separate sheet if all facilities and measures can be shown on the grading sheets without obscuring the clarity of either the grading plan or the erosion and sediment control plan.
- B. An erosion and sediment control plan shall be required whenever:
  - 1. The graded portion of the site includes more than ten thousand (10,000) square feet of area having a slope greater than ten (10) percent;
  - 2. Clearing and grubbing of areas of one acre or more regardless of slope;
  - 3. There is a significant risk that more than two thousand five hundred (2,500) square feet will be unprotected or inadequately protected from erosion during any portion of the rainy season;

4. Grading will occur within fifty (50) feet of any watercourse;
  5. The community development resource agency determines that the grading will or may pose a significant erosion, or sediment discharge hazard for any reason; or
  6. The site is located within the Tahoe Basin.
- C. Except as provided in Section 15.48.120 of this article, sediment and erosion control measures must be in place or be capable of being placed within twenty-four (24) hours, in the opinion of the agency director, by October 15th. The agency director may require suspension of any and all grading activities between October 15 and May 1 without prior notice.
  - D. The applicant shall submit with the erosion and sediment control plans a detailed cost estimate covering this work.
  - E. Erosion and sediment control plans shall include an effective revegetation program to stabilize all disturbed areas, which will not be otherwise protected. All such areas where grading has been completed between April 1 and October 15 shall be planted by November 1st. Graded areas completed at other times of the year shall be planted within fifteen (15) days. If revegetation is infeasible or cannot be expected to stabilize an erodible area with assurance during any part of the rainy season and the unstable area exceeds two thousand five hundred (2,500) square feet, additional erosion and sediment control measures or irrigation of planted slopes may be required as appropriate to prevent increased sediment discharge.
  - F. Erosion and sediment control plans shall be designed to prevent increased discharge of sediment at all stages of grading and development from initial disturbance of the ground to project completion. Every feasible effort shall be made to ensure that site stabilization is permanent. Plans shall indicate the implementation period and the stage of construction where applicable.
  - G. Erosion and sediment control plans shall comply with the recommendations of the responsible civil engineer, geotechnical engineer, engineering geologist, or landscape architect involved in preparation of the grading plans.
  - H. The structural and hydraulic adequacy of all stormwater containment or conveyance facilities shown on the erosion and sediment control plans shall be verified by a civil engineer, and he or she shall so attest on the plans. Sufficient calculations and supporting material to demonstrate such adequacy shall accompany the plans when submitted.
  - I. Erosion and sediment control plans shall be designed to meet anticipated field conditions.
  - J. Erosion and sediment control plans shall provide for inspection and repair of all erosion and sediment control facilities at the close of each working day during the rainy season and for specific sediment cleanout and vegetation maintenance criteria.

- K. Erosion and sediment control plans shall comply with any and all standards and specifications adopted herein for the control of erosion and sedimentation on grading sites. These standards and specifications shall be in general compliance with the current Erosion and Sediment Control Guidelines for Developing Areas of the Sierras, published by the High Sierra Resource Conservation District. (Ord. 5407-B § 19, 2006; Ord. 5373-B (part), 2005; Ord. 5056-B (part), 2000)

**15.48.660 Vehicular ways—General.** Vehicular ways shall conform to the grading requirements of this article. (Ord. 5056-B (part), 2000)

**15.48.670 Vehicular ways—Drainage.** Vehicular ways shall be graded and drained in such a manner that will not allow erosion or endanger the stability of any adjacent slope. Surface discharge onto adjoining property shall be controlled in such a manner that it does not cause erosion or endanger existing improvements. Bridges and culverts installed in watercourses may be reviewed by the Placer County Flood Control and Water Conservation district and must be approved by the agency director and any other required permitting agency. (Ord. 5407-B § 20, 2006; Ord. 5056-B (part), 2000)

### ***Placer County Flood Control and Water Conservation District***

The Placer County Flood Control and Water Conservation District (District) was established in 1984 by the State Legislature as a Special District and is separate from County government, to address flood control issues arising with growth. District boundaries are the same as Placer County boundaries. A nine-person board of directors governs the District. Members include a representative from each of the six incorporated cities in Placer County, two representatives from the Board of Supervisors and one Member-at-large appointed by the Board of Supervisors.

The primary purpose of the District is to protect lives and property from the effects of flooding by comprehensive, coordinated flood prevention planning. The District uses consistent standards to evaluate flood risk, and implements flood control measures such as requiring new development to construct detention basins and operation and management of a flood warning system. Access to Western Placer County real-time stream level and flood warning information is available on-line at Sacramento County Flood Warning System, City of Roseville Flood Warning System and Placer County Flood Control District Flood Warning System.

The District:

- Implements regional flood control projects;
- Develops and implements master plans for selected watersheds in the county;
- Provides technical support and information on flood control for the cities, the county, and the development community;
- Operates and maintains the County flood warning system;
- Reviews proposed development projects to see they meet District standards;
- Develops hydrologic and hydraulic models for county watersheds; and
- Provides technical support for Office of Emergency Services activities.

A Stormwater Management Manual is maintained by the District, which contains the following relevant regulations:

## Section VI – Drainage Systems, Item 2. Design Storms

New development shall be planned and designed so that no damages occur to structures or improvements during the 100-yr event and no inundation on private property occurs during the 10-yr event.

a. Local Drainage – The 10-yr event is the minimum design storm for new developments in all drainages and all dedicated drainage facilities will be sized for this event.

b. The development plan shall identify the effects of the 100-yr event and provision will be made in the plan to prevent loss of life and damages to property during a 100-yr event.

### ***North Tahoe Public Utility District***

The North Tahoe Public Utility District (NTPUD) provides services for water, sewer and recreational facilities to north shore areas of Lake Tahoe, including unincorporated parts of Placer County. The service boundaries span from the Nevada state line at Crystal Bay to Dollar Hill and the service area is 3.4 square miles. The majority of the land consists of Tahoe and Toiyabe National Forests mixed with developed areas. The NTPUD's potable water supply is primarily Lake Tahoe and water pumped from groundwater wells owned and operated by NTPUD. The District water system is comprised of three Lake intakes, three, shared groundwater wells, eight storage facilities with approximately 3.50 million gallons of storage, three booster systems and forty-five miles of water lines. Only one of the three lake intakes, the National Avenue intake, is currently in operation.

### **2.3.5 Applicable Permits**

The following is a list of permits and regulatory requirements that must be met for the Project:

- California Department of Fish and Game (CDFG) Section 1600 Streambed Alteration Agreement will be prepared to address the diversion of water during construction. Project construction would be limited to the low flow period of June 15 to September 15;
- California Department of Water Resources/Reclamation Board Permit is required for any activities affecting irrigation or flood control structures;
- Lahontan 401 Water Quality Certification;
- Lahontan Tahoe NPDES Construction General Permit;
- USACE Section 404 Dredge and Fill Permit;
- TRPA Grading Permit; and
- Placer County Grading Permit.

## 3.0 Environmental Evaluation

### 3.1 Significance Thresholds and Criteria

The Project would be considered to have a significant impact on water resources if construction, operations, or maintenance activities considerably affect the overall amount of runoff, the amount of discharge into Dollar Creek or other surface drainages, the existing pattern of surface drainage in the project area or project vicinity, or the amount of TRPA-designated source waters. The Project would be considered to have a significant impact on water quality if construction, operations or maintenance activities contribute to the exceedance of State or regional WQOs or conflict with the objectives, plans goals, policies or implementation of the TRPA Regional Plan and Code of Ordinances, Lahontan Basin Plan, or Placer County General Plan and ordinances.

The CEQA Guidelines and TRPA Initial Environmental Checklist (IEC) were consulted in the preparation of the standards to determine water quality impacts. In addition to impacts on water quality, an analysis is made of the Project's impact on surface and subsurface hydrology. The WQM determines whether the project-induced effects would have potential adverse impacts on water quality. An adverse impact is based on whether discharges to receiving waters would cause exceedances of water quality objectives or would impair the beneficial uses identified by the State of California. For the purpose of this WQM, an impact is considered adverse if the Project:

- Violates any water quality standards or waste discharge requirements;
- Substantially alters the existing drainage pattern of the site or area, including alteration of a stream or river in a manner that would result in substantial erosion or siltation on or offsite;
- Substantially alters the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increases the rate or amount of surface runoff, which would result in flooding on or offsite;
- Creates or contributes increased volumes or runoff water that would exceed the capacity of existing or planned storm water drainage systems, or cause substantial additional sources or polluted runoff;
- Otherwise substantially degrade water quality;
- Places structures that would impede or redirect flood flows within a 100-year flood hazard area; and/or,
- Expose people or structures to water related hazards such as flooding and/or wave action from 100-year storm occurrence or seiches.

### 3.2 Potential Project Impacts

#### 3.2.1 No Build

The no build/no project alternative assesses the existing conditions, as well as the physical conditions that are likely to occur in the future if the Project not approved. The purpose of

describing a no build alternative is to allow decision-makers to compare the impacts of approving the proposed Project with the expected impacts of not approving the Project.

The no build alternative would not result in the construction or operation of a shared-use trail, trailhead access driveway and parking lot area, or neighborhood connectors. No site grading or increase in impervious surfaces would occur within the project area. Unmanaged access and recreation would continue.

Opportunities for regional trail linkages would be lost. Placer County would not be able to assist in meeting the demand for new shared-use trails in the Tahoe Basin. Sensitive natural and cultural resources may be expected to degrade over time due to overuse. Under the no build alternative visitor use intensity, recreational facility development, and possible future acquisitions may not be developed. Trail improvements and installation of informational and directional signs would not occur.

### **3.2.2 Build**

#### ***Erosion and Sedimentation***

Potential impacts associated with construction practices include soil and vegetation disturbance from grading, filling and construction equipment use and storage.

Perennial surface waters within the project area include Dollar Creek and Dollar Reservoir. An intermittent spring was also mapped in the northern project area. Construction activities, operation and maintenance of the shared-use trail and human activities within the project area can accelerate the rate and amount of erosion and sedimentation. Sedimentation of these surface waters may increase turbidity and physically alter the stream and lakebed habitats. As a tributary flowing into Lake Tahoe, any increase in sediment loading to Dollar Creek may be considered a significant impact.

To avoid potential impacts from soil and vegetation disturbance, the Project revegetates and restores areas disturbed during construction and addresses maintenance of such areas as part of the Operations, Management and Maintenance Strategies (OMMS). Also, the Project implements a paved trail surface for use during saturated soil conditions, which is expected to alleviate erosion and sedimentation along dirt trails currently used by the public during spring runoff conditions.

#### ***Runoff and Drainage***

The Project involves minor changes to the existing SR 28 right-of-way to accommodate the proposed trailhead access roadway and trail crossing and may affect roadway drainage and established vegetation. Construction of the Project involves 1.5 acres of temporary soil disturbance and 4.9 acres permanent soft and hard land coverage. The Project locates a portion of this impervious surface over presently compacted surfaces (i.e., TRPA existing verified land coverage) associated with existing informal trails and minimizes new land coverage to the extent possible. The shared-use trail is primarily sited in TRPA Bailey LCD 6 areas.

The Project proposal includes a bridge span over the Dollar Creek channel and adjacent SEZ and asphalt over permeable fill in areas with evidence of saturated soils or surface hydrology to avoid potential effects to these sensitive areas. Change in runoff volume is minimized and potential

effects to drainage patterns within the project area are largely avoided through shared-use trail placement and design.

### ***Water Quality Degradation***

Potential sources of water pollution associated with this Project include stormwater runoff containing sediment from soil erosion and surface and groundwater contamination for construction materials such as concrete, paint and other chemical products and petroleum and wear products from construction vehicle operations. Transport of these materials usually occurs from rainfall runoff, but sediment can also be transported by wind. Watershed damage by natural or human-caused wildfires can decrease water quality by sedimentation.

Sediment is produced when soil particles are eroded from the land and transported to surface waters. Natural filtration and capture of sediments occurs via vegetation and soil cover on the ground. When land is cleared or disturbed to build a trail or parking area the rate of erosion can increase and the benefit of filtration can be diminished or completely absent. When vegetation is removed and soil is left exposed, there is a potential for it to be washed away during the precipitation event. Sediment-laden stormwater threatens to violate federal regional and state WQOs. Heavier and larger soil particles settle out of the water in lakes and streams onto aquatic plants and rocks. Suspended sediment prevents sunlight from reaching aquatic plants, clogs fish gills, and chokes other organisms. The settled sediment can destroy the habitat of macroinvertebrates.

Other pollutants, such as heavy metals and pesticides can adhere to suspended soil particulates and are transported by wind and water. These constituents, in elevated concentrations, pose threats to water quality and can harm aquatic life by interfering with photosynthesis, respiration, growth, and reproduction. Oils and grease can leak from equipment during construction and from visitor vehicles onto parking lot surfaces during long-term trail operations. Heavy metals do originate from natural sources, such as minerals in rocks, vegetation, sand, and salt. Other sources include motor vehicle exhaust, worn tires and engine parts, vehicle brake linings, weathered paint, and rust. Heavy metals are toxic to aquatic life and can potentially contaminate groundwater.

Other potential adverse impacts to surface water quality that could occur include changes in temperature, pH, dissolved oxygen, nutrient concentrations, toxicity, and ionic concentrations. These changes, in sufficient degree, could have a substantial impact on water quality and could adversely affect sensitive aquatic life.

The duration of the water quality impacts from sediment pollutant sources could be short-term and long-term, but because the shared-use trail will not allow motorized transport, the duration from oil and grease and heavy metals would primarily be during the construction phase only.

These potential short-term water quality impacts are anticipated to be minor and are not expected to threaten beneficial uses. Implementing the project compliance measures and the appropriate BMPs during construction is proposed to adequately avoid and minimize potential short-term impacts. Shared-use trail location and design and the strategies included in the Operations, Management and Maintenance Plan (OMMS) serve to avoid and minimize potential long-term effects from operation and maintenance of the Project.

## **Potential jurisdictional wetlands and waters of the U.S**

Wetland delineation is being completed for the project area. Potential filling of jurisdictional waters of the U.S as a result of the Project is not anticipated and compensatory mitigation for temporary and permanent impacts is not expected to be required. If filling is required, however, compensatory mitigation for the Project would be established during the permitting process.

### **100-year Floodplain**

The project area is located outside of the boundaries of the 100- and 500-year flood zones (Zone X), as depicted on the Flood Insurance Rate Maps prepared by FEMA. In addition, the Project does not propose to alter the current alignment of the Dollar Creek channel, nor would the Project result in a substantial increase in surface water runoff that could alter flood zone boundaries.

### **Groundwater and Construction Site Dewatering**

Construction activities and long-term operations and maintenance are not expected to affect groundwater recharge, discharge, flow conditions, or groundwater quality. Cut slopes are typically less than 5 feet and do not occur in areas of shallow groundwater. The potential for shallow groundwater exists along Dollar Creek channel and SEZ, but would be avoided by the proposed bridge span. The trail alignment has been designed to avoid a spring area in the northern project area. The need to dewater during construction is not expected but a contingency dewatering plan will be submitted as part of the SWPPP required for Lahontan NPDES permit coverage.

### **Seiche/Tsunami**

As a factor of elevation, the project area is located above of the zone of inundation that could result from a seiche in Lake Tahoe. A seiche in Dollar Reservoir could cause overflow from the dam but because of local topography would not be expected to create a zone of inundation within the project area.

## **4.0 Recommended Measures**

### **4.1 Construction Period (Short-term)**

Prepare TRPA Erosion and Sediment Control Plan. The TRPA Erosion and Sediment Control Plan (ESCP) identifies the type and placement of temporary construction BMPs and is often complimentary to the SWPPP required for NPDES permitting. Project construction documents will demonstrate compliance with TRPA Revised Code Chapter 60, Section 60.4.

File Permit Registration Documents (PRDs). The County shall electronically file a Notice of Intent (NOI) and Stormwater Pollution Prevention Plan (SWPPP) with Lahontan through the SMARTs system prior to any soil-disturbing activities to obtain coverage under Board Order R6T-2011-0019.

Conform to NPDES Permit Requirements (SWPPP, On-site Monitor, Emergency Response Plan, Construction Dewatering Plan, Stockpiling and Staging Areas). The Project must comply with Lahontan Board Order R6T-2011-0019, entitled *General Waste Discharge Requirements and*

*National Pollutant Discharge Elimination System for Discharges of Storm Water Discharges Associated with Construction Activity in the Lake Tahoe Hydrologic Unit, Counties of Alpine, El Dorado and Placer* (Permit No. CAG616002). The permit applies to construction sites and activities resulting in the disturbance of one or more acres of soil disturbance in the Lake Tahoe Hydrologic Unit. Construction activities include clearing, grading, demolition, excavation, construction or new structures and reconstruction. Most detail associated with SWPPP consideration will be developed during preparation of the final construction plans and address features such as construction techniques and staging. The project description incorporates general features related to SWPPP requirements as follows:

- a) Prevent discharge into surface water, including into SEZ and wetlands, during project construction. Critical areas of concern include construction near Dollar Creek and the SEZ and wetland areas.
- b) To prevent discharge from soil or construction activities, construction plan proposals shall implement the following provisions:
  - Construction scheduling shall respect site conditions and occur during the driest conditions possible.
  - Construction activity including grading and equipment and materials movement shall be conducted within designated work areas near the trail surface, identified with construction fencing or other approved means.
  - Site preparation for the construction zone includes tree and other vegetation removal. As identified in the RRP some riparian vegetation for removal and replacement will be stockpiled, irrigated, and protected for reuse. Brush, slash, timber, and removed stumps not used for restoration will be chipped for mulch or otherwise disposed of in accordance with local restrictions and regulatory requirements.
  - Vegetation protection for existing trees and other vegetation.
  - In SEZs, construction activities shall avoid existing vegetation removal to the maximum extent possible, including in areas of necessary equipment movement. Use of pin-type footings for boardwalk construction avoids most clearing and excavation, and allows smaller equipment to complete construction. Compact excavators and ATV-type utility vehicles will be preferred for boardwalk construction (helical pier footings area) and materials movement to reduce SEZ vegetation disturbance. Where necessary, construction proposals could also use linked landing plates, geotextile fabric topped with sand, or an alternative with equal or lesser impacts to protect work zone soils near the trail.
  - Engineering and construction control details for the new bridge at Dollar Creek will result from further geotechnical evaluation. Current project planning assumes new bridge supports can be piling or pier design; however use of concrete footings may be necessary. If so, dewatering for footings construction at Dollar Creek is possible. In that event, construction scheduling will direct footings excavation to the driest conditions possible. Excavation sites will be protected with sand bags, water berms, siltation fences, or other approved techniques. Localized pumping will clear the construction area of turbid standing

water. Pumped water could be used to irrigate planted vegetation, sprayed on uplands to allow infiltration at the project site, held in Baker Tanks, or otherwise treated to remove suspended sediment to comply with the requirements of the permit prior to discharge to Dollar Creek.

- Includes location requirements for staging areas outside of SEZ and floodplains. Materials storage and stockpiles shall be protected from erosion with temporary siltation fences, straw wattles, or other approved methodologies. As potential staging areas sit within or adjacent to residential development, careful consideration of dust control provisions, including prevention of track-out, will be necessary (Fugitive Dust Control Plan, provides more detail). Construction specifications will employ exposed soil watering, stockpile protection, street sweeping and/or other techniques to control dust. Access to staging and site construction will be protected with clean gravel or other approved material to reduce track-out.
  - If construction conditions warrant equipment washing to prevent soil transport off site, the areas will be identified in the SWPPP and located outside of sensitive areas and away from stream channels.
  - Project construction involves the short-term use of hazardous materials necessary for operation and maintenance of construction equipment, (e.g., diesel fuel and hydraulic fluid). Hazardous materials will be stored at the staging areas identified and prevented from contaminating the site from natural conditions or vandalism. Fueling and necessary maintenance of construction equipment will occur outside of SEZ, wetland or floodplain areas and be managed to avoid site contamination. A spill response plan will include provisions for worker training, spill containment, agency notice, and a remediation process.
  - If construction for any given segment will extend beyond a single construction season, the project site will be stabilized to meet permit requirements for withstanding the 20-year, 1-hour storm.
  - A Qualified SWPPP Practitioner (QSP) that is on-site during construction activities provides professional expertise and expedited response to correct issues that could arise during construction and assures compliance with permitting conditions and fulfillment of project commitments.
- c) Prevent discharge into surface water throughout the life of the project. Key project features to address these requirements include installation of permanent BMPs and water quality protection controls, revegetation and restoration of disturbed soil, and minimization of foot trail width where necessary. These features are described in more detail above. The Project proposal includes Project Operations, Management and Maintenance Strategy (OMMS), which outlines anticipated maintenance schedules for post-construction and permanent BMPs.
- d) Properly site staging and stockpiling areas to reduce potential impact to surface water quality by locating these areas on higher capability lands, maximizing distance to streams and conveyance systems.

Install Construction BMPs. The Discharger shall minimize or prevent pollutants in stormwater discharges and non-authorized non-stormwater discharges through the use of controls, structures and management practices that achieve Best Available Technology for toxic and non-conventional pollutants and Best Conventional Pollutant Control Technology (BCT) for conventional pollutants. Stormwater controls and control locations shall be installed per the SWPPP for the active project site. Construction BMPs shall be installed per Section V111. Best Management Practices (BMPs) of Board Order R6T-2011-0019 for site management, sediment and erosion/stabilization controls, construction site dewatering or diversions,

Comply with TRPA Grading Period. Soil-disturbing activities shall be conducted between May 1 and October 15.

Design Construction-related BMPs According to the California Stormwater Quality Association Stormwater BMP Handbooks and TRPA's Handbook of BMPs. Construction-related Best Management Practices (BMPs) shall be designed according to the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction, for New Development / Redevelopment, and/or for Industrial and Commercial, (and/or other similar source as approved by the Engineering and Surveying Department (ESD)). Construction (temporary) BMPs for the Project could include, but are not limited to: Fiber Rolls (SE-5), Hydroseeding (EC-4), Stabilized Construction Entrance (LDM Plate C-4), Storm Drain Inlet Protection (SE-10), Silt Fence (SE-1), revegetation techniques, dust control measures, and concrete washout areas.

Conform to Provisions of Placer County Grading, Erosion and Sediment Control Ordinance. All proposed grading, drainage improvements, vegetation and tree removal shall be shown on the Improvement Plans and all work shall conform to provisions of the County Grading Ordinance (Ref. Article 15.48, Placer County Code) and Stormwater Quality Ordinance (Ref. Article 8.28, Placer County Code) that are in effect at the time of submittal. No grading, clearing, or tree disturbance shall occur until the Improvement Plans are approved and all temporary construction fencing has been installed and inspected by a member of the DRC. All cut/fill slopes shall be at a minimum of 2:1 (horizontal:vertical) unless a soils report supports a steeper slope but fill slopes shall not exceed 1.5:1 (horizontal:vertical) and the Engineering and Surveying Department (ESD) concurs with said recommendation.

The applicant shall revegetate all disturbed areas. Revegetation undertaken from April 1 to October 1 shall include regular watering to ensure adequate growth. A winterization plan shall be provided with project Improvement Plans. It is the applicant's responsibility to assure proper installation and maintenance of erosion control/winterization before, during, and after project construction. Soil stockpiling or borrow areas shall have proper erosion control measures applied for the duration of the construction activity as specified in the Improvement Plans. Provide for erosion control where roadside drainage is off of the pavement, to the satisfaction of the ESD.

The applicant shall submit to the ESD a letter of credit or cash deposit in the amount of 110% of an approved engineer's estimate for winterization and permanent erosion control work prior to Improvement Plan approval to guarantee protection against erosion and improper grading practices. Upon the County's acceptance of improvements, and satisfactory completion of a one-year maintenance period, unused portions of said deposit shall be refunded to the project applicant or authorized agent.

If, at any time during construction, a field review by County personnel indicates a significant deviation from the proposed grading shown on the Improvement Plans, specifically with regard to

slope heights, slope ratios, erosion control, winterization, tree disturbance, and/or pad elevations and configurations, the plans shall be reviewed by the DRC/ESD for a determination of substantial conformance to the project approvals prior to any further work proceeding. Failure of the DRC/ESD to make a determination of substantial conformance may serve as grounds for the revocation/modification of the project approval by the appropriate hearing body.

Identify Stockpiling and/or Vehicle Staging Areas on Improvement Plans. Stockpiling and/or vehicle staging areas shall be identified on the Improvement Plans and located as far as practical from existing dwellings and protected resources in the area.

Satisfy the requirements of Section II of the Land Development Manual. (LDM). The applicant shall prepare and submit Improvement Plans, specifications and cost estimates (per the requirements of Section II of the Land Development Manual [LDM] that are in effect at the time of submittal) to the ESD for review and approval. The plans shall show all conditions for the project as well as pertinent topographical features both on- and off-site. All existing and proposed utilities and easements, on-site and adjacent to the project, which may be affected by planned construction, shall be shown on the plans. All landscaping and irrigation facilities within the public right-of-way (or public easements), or landscaping within sight distance areas at intersections, shall be included in the Improvement Plans. The applicant shall pay plan check and inspection fees. (NOTE: Prior to plan approval, all applicable recording and reproduction cost shall be paid). The cost of the above-noted landscape and irrigation facilities shall be included in the estimates used to determine these fees. It is the applicant's responsibility to obtain all required agency signatures on the plans and to secure department approvals. If the Design/Site Review process and/or DRC review is required as a condition of approval for the project, said review process shall be completed prior to submittal of Improvement Plans. Record drawings shall be prepared and signed by a California Registered Civil Engineer at the applicant's expense and shall be submitted to the ESD prior to acceptance by the County of site improvements.

Conceptual landscape plans submitted prior to project approval may require modification during the Improvement Plan process to resolve issues of drainage and traffic safety. Any building permits associated with this phased project shall not be issued until the Improvement Plans for that project phase are approved by the ESD.

Avoid Disturbance to Wetlands and Waters of the U.S. and Obtain Section 404 Permit from USACE. The County will, before construction of the Project, complete a jurisdictional wetlands delineation to determine the location of jurisdictional wetlands and waters of the U.S. within the project area. Design measures will avoid or minimize impacts to delineated wetlands and waters of the U.S. to the extent possible as determined by the USACE and Lahontan. If development within the delineated wetlands cannot be avoided, and if disturbance quantities rise to the minimum level, a Section 404 permit shall be obtained from the USACE as well as a water quality certification (Section 401) from Lahontan. The County shall comply with requirements of the permits to mitigate the specific impacts of the Project.

Final Construction Dewatering Plan. Because groundwater may be intercepted, which is the process of diverting and/or capturing the groundwater flows, dewatering, which is the removal and disposition of the water itself, shall be implemented onsite.

The final dewatering plan shall be further developed by the construction contractor based on the final site design of the selected alternative. The construction contractor shall demonstrate that they have a reliable plan for dewatering as well as contingency in case that plan does not function as expected. The contractor shall have demonstrable experience in dewatering operations and evidence of such experience shall be provided to TRPA and the County with the dewatering plan.

Dewatering discharges shall be treated to a level such that they do not contain pollutants, including but not limited to sediment, before discharging to surface waters, should discharge to surface water be necessary. A preliminary plan shall also be submitted to Lahontan, approved and in place prior to excavation and once excavation is underway, the primary plan shall be implemented with alternative plans in queue and implementable within a short window if necessary.

#### **4.2 Post-Construction Period, Operations and Maintenance (Long-term)**

Design Water Quality Protection BMPs According to the California Stormwater Quality Association Stormwater BMP Handbooks and TRPA's Handbook of BMPs. Water quality Best Management Practices (BMPs) shall be designed according to the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction, for New Development / Redevelopment, and/or for Industrial and Commercial, (and/or other similar source as approved by the Engineering and Surveying Department (ESD)). TRPA revised Code Chapter 60 establishes requirements for permanent BMPs. The Project incorporates provisions related to drainage conveyances, water quality treatment, cut/fill slopes, and revegetation. The Project proposes to infiltrate storm runoff from trail surfaces in adjacent clear zone areas. Where the trail lies in close proximity to existing roadways, capture and conveyance to infiltration areas may be necessary and will be defined during final engineering design.

The Project conforms to requirements for permanent BMPs as outlined in TRPA revised Code 60 (Section 60.4), Lahontan's Basin Plan Chapter 5 and County Codes and Ordinances.

Inspection, Operations, Maintenance and Monitoring Plan for Stormwater Treatment Systems and Permanent BMPs. The Project Applicant shall prepare and implement an Inspection, Operations, Maintenance and Monitoring Plan for Stormwater Treatment Systems and Permanent BMPs. This plan shall comply with TRPA revised Code of Ordinances Chapter 60 and Lahontan's updated WDRs. TRPA, Lahontan, and Placer County shall review the plan prior to issuance of final Project approval. Post-project monitoring shall include post-project BMP effectiveness monitoring and stormwater monitoring

Implement Post-Construction Stormwater Management. Post-construction stormwater management shall be implemented in accordance with SWPPP requirements for Lahontan Notice of Termination (NOT) conformance.

Reduce Stormwater Runoff to Pre-Project Volumes. The Improvement Plan submittal and Drainage Report shall provide details showing that storm water runoff shall be reduced to pre-project conditions through the installation of detention facilities. Detention facilities shall be designed in accordance with the requirements of the Placer County Storm Water Management Manual that are in effect at the time of submittal, and to the satisfaction of the Engineering and Surveying Department (ESD). No detention facility construction shall be permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals.

Submit Final Drainage Report– Conformance with Section 5 of the Placer County Land Development Manual and Stormwater Management Manual. The Project Applicant shall prepare and submit with the project Improvement Plans, a Final drainage report for each project phase in conformance with the requirements of Section 5 of the LDM and the Placer County Storm Water Management Manual that are in effect at the time of submittal, to the Engineering and Surveying Department for review and approval. The report shall be prepared by a Registered Civil Engineer and shall, at a minimum, include: A written text addressing existing conditions, the effects of the

improvements, all appropriate calculations, a watershed map, increases in downstream flows, proposed on- and off-site improvements and drainage easements to accommodate flows from this project. The report shall identify water quality protection features and methods to be used both during construction and for long-term post-construction water quality protection. "Best Management Practice" (BMP) measures shall be provided to reduce erosion, water quality degradation, and prevent the discharge of pollutants to stormwater to the maximum extent practicable.

Shared-Use Trail Operations, Maintenance and Management Strategies. Prepare OMMS and establish guidance for protection of critical resources, public access and use, and operations and maintenance for the Project.

Fugitive Dust Control Plan. This compliance measure implements standard dust mitigation and controls required by Placer County Air Pollution Control District Rule 228 - Fugitive Dust. Rule 228 applies to the entire County and addresses fugitive dust generated by construction and grading activities and by other land use practices including recreational uses. Examples of dust sources that are subject to Rule 228 are excavating and trenching, drilling, boring, earthmoving and grading operations, pavement cutting operations, brush clearing, travel on unpaved roads within construction sites and wind-blown dust from unprotected grading areas and stockpiles. Rule 228 prohibits visible dust crossing project area boundaries, generation of high levels of visible dust (i.e., dust sufficient to obscure vision by 40%) and places controls on the track-out of dirt and mud on public roads. The rule also established minimum dust mitigation and control requirements that must be used for all construction and grading activities.

When an area to be disturbed is greater than one acre, and if required by a Condition of Approval of a discretionary permit, a dust control plan (DCP) must be submitted to and approved by the District. The dust control plan instructions contain a DCP Application form. Completion of this application and subsequent approval by the District satisfy requirements to have a dust control plan. Failure to implement the plan is subject to enforcement through the Conditions of Approval, and by District through Rule 228.

Within the project area, few limitations to typical DCP elements exist. Site watering must occur to avoid spray beyond the project area in those locations with narrow right-of-way (e.g. where residences or other structures lie close to the project area). Additionally, equipment washing must occur on high capability land with the discharge contained to avoid runoff.

Implement Revegetation and Restoration Plans. Prepare RRP for trail removal and BMP retrofitting, and restoration of disturbed areas. The Project proposes the use of native and low water demand revegetation plantings and thus proposes no ornamental landscaping, irrigation or fertilizer plans.

Maintain Trail Decommissioning and limit disturbance and erosion from informal trails to remain. Decommissioned trails and informal trails to remain shall be maintained as specified in the Project's OMMS.

Maintain Hillside Construction Techniques. Hillside construction techniques shall be maintained as specified in the Project's OMMS.

Install and Maintain Educational and Informational Signage. Educational and informational signage shall be installed at trail entrances and neighborhood connectors and maintained as needed and as specified in the Project's OMMS.

Maintain Physical Barriers and Screening. Physical barriers and privacy screenings, if implemented, shall be maintained as necessary and as specified in the Project's OMMS.

SEZ Restoration for New Disturbance. The SEZ restoration requirement for new land coverage totals 429 square feet because the Project proposal successfully avoids direct impacts from land coverage within SEZ areas through shared-use trail location and a bridge span at Dollar Creek. Direct effects are avoided but TRPA land coverage regulations apply.

## 5.0 References

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