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CHAPTER 4 – ENVIRONMENTAL IMPACT ASSESSMENT

4.8 HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☑	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, causing a net deficit in aquifer volume or a lowering of the local groundwater table level? (In other words, would the production rate of pre-existing nearby wells drop to a level that would not support existing land uses or planned uses for which permits have been granted?)	☐	☐	☑	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial on- or off-site erosion or siltation?	☐	☐	☑	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or a substantial increase to the rate or amount of surface runoff in a manner that would result in on- or off-site flooding?	☐	☐	☑	☐
e) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☑	☐
f) Otherwise substantially degrade water quality?	☐	☐	☐	☑

Would the project:	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	❒	❒	❒	☑
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	❒	❒	❒	☑
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	❒	❒	❒	☑
j) Inundation by seiche, tsunami, or mudflow?	❒	❒	☑	❒

4.8.0 Introduction

This section describes the existing surface and groundwater hydrology, use, and quality, as well as the potential for erosion and flooding in the Sierra Pacific Power Company (SPPCo) 625 and 650 Line Upgrade Project (project) area. It also describes the potential impacts from construction, operation, and maintenance of the project to these resources. With the implementation of the project's Stormwater Pollution Prevention Plan (SWPPP) and Spill Prevention, Control, and Countermeasure (SPCC) Plan, which are both required by law, and the applicant-proposed measures (APMs) outlined in Section 4.8.4 Applicant-Proposed Measures, the project will result in a less-than-significant impact to hydrology and water quality.

4.8.1 Methodology

Water resources and potential impacts to hydrology and water quality as a result of the project were evaluated by reviewing water-quality studies and information from state and local water resource agencies. Federal Emergency Management Agency (FEMA) maps were referenced to identify flood zones in proximity to the project area, and local plans were reviewed for relevant policies regarding water quality and protection. United States (U.S.) Geological Survey (USGS) 7.5-minute series quadrangle maps and aerial photography of the project area were also examined to identify major water features and drainage patterns. The Truckee-Donner Public Utilities District (TDPUD), North Tahoe Public Utilities District (NTPUD) and Tahoe City Public Utilities District (TCPUD) were contacted to obtain information regarding municipal water sources and existing wells in the project area. Water features were then confirmed on the ground, and additional features were noted during reconnaissance-level field surveys, which were conducted between September 13 and September 26, 2007; October 6 and October 10, 2008; and October 27 and October 28, 2008. While water features were reviewed for their

potential to be classified as federal or state jurisdictional waters, formal wetland delineations have not yet been conducted.

4.8.2 Existing Conditions

Regulatory Background

Federal

Clean Water Act

The Clean Water Act (CWA) (33 U.S. Code (U.S.C.) § 1251 *et seq*.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the U.S. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water.

CWA Section 402

The National Pollutant Discharge Elimination System (NPDES) program was established in 1972 to control discharges of pollutants from defined point sources (33 U.S.C. § 1342). The program originally focused on industrial-process wastewater and publically-owned treatment works. In 1987, Section 402 of the CWA was amended to include requirements for five separate categories of stormwater discharges, known as Phase I facilities. Phase I facilities include:

- Facilities already covered by an NPDES permit for stormwater
- Facilities that engage in industrial activities
- Large municipal separate storm drain systems that serve more than 250,000 people
- Medium municipal separate storm drain systems that serve between 100,000 and 250,000 people
- Facilities that are considered significant contributors of pollutants to waters of the U.S.

The U.S. Environmental Protection Agency (EPA) issued a final rule for Phase II discharges in August 1995. Phase II stormwater discharges include light industrial facilities, small construction sites (less than 5 acres), and small municipalities (less than 100,000 population).

In California, NPDES permitting authority is delegated to the State Water Resources Control Board (SWRCB) and administered by the nine Regional Water Quality Control Boards (RWQCBs). This project falls under the jurisdiction of the Lahontan RWQCB (Region 6). Beginning in July 2010, under Section 402 of the CWA, projects that will disturb 1 acre or more of soil will be required to obtain coverage under the SWRCB's new General Permit for Stormwater Discharges Associated with Construction Activity No. 2009-0009-DWQ (General Permit).

The General Permit requires the implementation of a SWPPP, which must be submitted to the RWQCB as part of a report of waste discharge, approved by the Executive Officer before discharge under The General Permit can begin, and kept on site throughout the construction process. The SWPPP must include:

- Identification of pollutant sources and non-stormwater discharges associated with construction activity
- Specifications for best management practices (BMPs) that will be implemented during project construction to minimize the potential for accidental releases and runoff from the construction areas, including temporary construction yards, pull sites, and helicopter landing zones
- Calculations and design details for BMPs to control for site run-on
- Stabilization BMPs to reduce or eliminate pollutants once construction is complete

While SPPCo will obtain coverage under this General Permit for portions of the project outside of the Lake Tahoe Basin, SPPCo must also obtain coverage under the Lahontan RWQCB's General Permit for land disturbance within the Lake Tahoe Hydrological Unit (No. CAG616002) for the portions of the project that fall within the Lake Tahoe Basin. In addition, SPPCo must comply with the RWQCB's Waste Discharge Requirements for Overland Discharges with a Low Threat to Water Quality to dewater excavations over land.

CWA Section 404

Section 404 of the CWA authorizes the U.S. Army Corps of Engineers (USACE) to regulate the discharge of dredged or fill material to waters of the U.S., including wetlands (33 U.S.C. § 1344). The USACE issues site-specific individual or general (Nationwide) permits for such discharges.

CWA Section 401

Under Section 401 of the CWA, any applicant for a federal license or permit to conduct any activity that may result in any discharge into navigable waters must provide the licensing or permitting agency with a certification that the discharge will comply with the applicable CWA provisions (33 U.S.C. § 1341.). If a federal permit is required, such as a USACE permit for dredge and fill discharges, the project proponent must also obtain a Water Quality Certification or Waiver from the RWQCB.

CWA Sections 303 and 304

Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the U.S. (33 U.S.C. § 1313.) Section 304(a) requires the U.S. EPA to publish water quality criteria that accurately reflect the latest scientific knowledge on the kind of effects and extent of effects that pollutants in water may have on health and welfare (33 U.S.C. § 1314(a)). Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria based on biomonitoring methods may be employed when numerical standards cannot be established or when they are needed to supplement numerical standards.

Section 303(c)(2)(b) of the CWA requires states to adopt numerical water quality standards for toxic pollutants for which the U.S. EPA has published water quality criteria and that could reasonably be expected to interfere with designated uses in a water body.

Under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop a list of waterways (or segments thereof) with poor water quality. Waters on the list do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for waters on the lists and develop action plans, called Total Maximum Daily Loads (TMDLs), to improve water quality. In the project area, both Lake Tahoe and the Truckee River have been classified as 303(d) waters.

Rivers and Harbors Appropriation Act Section 10

Section 10 of the Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. § 401, *et seq.*) makes it unlawful to obstruct or alter a navigable river or other navigable water of the U.S. Construction, excavation, or deposition of materials in, over, or under such waters, or any work that would affect the course, location, condition, or capacity of those waters requires a Section 10 permit and approval from the USACE. Lake Tahoe is the only waterbody in the project area that is regulated under Section 10.

National Flood Insurance Program

The FEMA is responsible for determining flood elevations and floodplain boundaries based on USACE studies. The FEMA is also responsible for distributing the Flood Insurance Rate Maps used in the National Flood Insurance Program (NFIP). These maps identify the locations of special flood hazard areas, including 100-year floodplains. The FEMA allows non-residential development in the floodplain; however, construction activities are restricted within flood hazard areas, depending on the potential for flooding within each area. Federal regulations governing development in a floodplain are set forth in Title 44, Part 60 of the Code of Federal Regulations, enabling the FEMA to require municipalities that participate in the NFIP to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains.

Tahoe Regional Planning Agency, Regional Plan

The Tahoe Regional Planning Agency (TRPA) was created in 1969 through a bi-state compact between Nevada and California to preserve the natural environment within the Lake Tahoe Basin. The TRPA has developed a Regional Plan that presents an overall approach for establishing environmental goals and standards for the Lake Tahoe Basin and defining the capacity of the region to accommodate additional land development. The TRPA's Regulatory Code compiles all of the laws, ordinances, and regulations necessary to implement the goals and policies in the Regional Plan. Regulations set forth by the TRPA are only applicable to the project components within the Lake Tahoe Basin.

Tahoe Regional Planning Agency, Water Quality Management Plan

The TRPA has been designated as the regional water quality planning agency under Section 208 of the federal CWA, and has developed a Water Quality Management Plan (208 Plan) for the Lake Tahoe region, that was most recently revised in 1988. The 208 Plan identifies water quality problems that have contributed to the degradation of Lake Tahoe, sets forth a series of control measures, including land use restrictions and wetland protection and restoration requirements, and includes a BMP Handbook. Implementation of water quality control programs in the basin is an interagency effort between the TRPA, Lahontan RWQCB, and Nevada Division of

Environmental Protection. In California, the Lahontan RWQCB and TRPA implement their respective water quality plans in a complementary manner and entered into a Memorandum of Understanding in 1994 to increase the level of coordination. The Lahontan RWQCB's most recent update of its Basin Plan in 1995 incorporated provisions of TRPA's 208 Plan as a part of that effort. TRPA's compact directs the agency to attain and maintain federal, state, or local water quality standards. The strictest of the standards in the jurisdiction apply.

State

California Fish and Game Code

Section 1602 of the California Fish and Game (CDFG) Code protects the natural flow, bed, channel, and bank of any river, stream, or lake in which there is either an existing fish or wildlife resource or a resource from which these resources derive benefit. General project plans must be submitted to the CDFG in sufficient detail to indicate the nature of planned construction where the project will;

- divert, obstruct, or change a streambed,
- drill under a jurisdictional drainage,
- use material from the streambeds, or
- result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a stream.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1967, Water Code Section 13000 *et seq*., requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect state waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The Lahontan RWQCB, South Lake Tahoe Office is responsible for protecting the beneficial uses of water resources in the Lake Tahoe Basin area. The criteria for the project area are contained in the Water Quality Control Plan for the Lahontan Region (Basin Plan), which was adopted in 1995. The Basin Plan is the master policy document that contains descriptions of the legal, technical, and programmatic bases of water quality regulation within the Lake Tahoe Basin. The plan describes beneficial uses of water in the Lake Tahoe watershed, water quality objectives, implementation procedures, and water quality plans and policies. The Basin Plan also identifies land uses and activities that could degrade water quality, and discusses BMPs that could be used to address various non-point sources of pollution. As mentioned above, the Lahontan RWQCB's most recent update of its Basin Plan in 1995 incorporated provisions of TRPA's 208 Plan as a part of that effort.

Local

Placer County Flood Control and Water Conservation District, Stormwater Management Manual

The Placer County Flood Control and Water Conservation District (FCWCD) was established in 1984 by the State Legislature as a Special District, separate from county government, to address flood control issues arising with growth. The boundaries of the FCWCD are the same as Placer County boundaries. The primary purpose of the FCWCD is to protect lives and property from the

effects of flooding by establishing a comprehensive flood prevention system, which includes the Stormwater Management Manual. The purpose of the manual is to provide consistent, specific guidance and requirements for stormwater management, including regulation of the development process, to achieve stormwater management objectives. Its initial focus was on flooding problems; however, over time the scope has expanded to include guidance on sedimentation, erosion, water quality, and environmental effects. This manual presents policies, guidelines, and specific criteria for development, natural resource management, and facilities and infrastructure for stormwater management. Applicable policies, and the project's consistency with these policies, are included in Attachment 4.9-A: Policies Consistency Analysis.

General Plans

Local plans with policies applicable to hydrology and the project include the Placer County General Plan, Placer County's Martis Valley Community Area Plan, and the Town of Truckee General Plan. The Land Use, Public Facilities and Services, and Conservation and Open Space sections of these plans outline the goals and policies of these two agencies regarding water quality protection, flood control, and stormwater management within their jurisdictions. These policies are presented and evaluated in Attachment 4.9-A: Policies Consistency Analysis.

General Setting

The North Lahontan Basin of the Lahontan Region ranges from Mono Lake north to the Oregon border along the eastern side of the Sierra Nevada Mountains and is bounded to the east by the Nevada border. It includes parts of Mono, Alpine, El Dorado, Placer, Nevada, Sierra, Plumas, Lassen, and Modoc counties. Waters within the North Lahontan Basin are encompassed within the larger Great Basin region, which is bounded by the Sierra Nevada Mountains to the west and Wasatch Mountains to the east. The Great Basin is an approximately 200,000-square-mile region of the western U.S., encompassing portions of California, Nevada, Oregon, Idaho, Wyoming, and Utah, without any overland drainage connections to the Pacific Ocean or Atlantic Ocean. Because there are no oceanic connections, all waters flow towards the interior of the Great Basin into many scattered lakes and dry lake beds, often contributing to the buildup of salts in these areas.

The project is located in the eastern Sierra Nevada Mountains along the western boundary of the Great Basin between elevations of approximately 5,500 feet and 8,000 feet. The climate in the area is characterized by warm, dry days with cool nights during the summer and cold, snowy winters. Temperatures vary greatly between the lower elevation areas and the high country areas, with the higher temperatures typically found at lower elevations. The rain/snow season in the area occurs between November and April. Snowfields of the higher elevations are a major source of water during the dry summer months. Snowmelt in the area generally occurs from March to May depending on elevation and aspect. According to the Truckee Ranger Station, the average amount of precipitation is 31.6 inches, which typically arrives as an average total snowfall of 203.6 inches.

Surface Water Hydrology

The project lies within two watersheds—the Truckee River Watershed and the Lake Tahoe Watershed. The Lake Tahoe Watershed is made of a network of tributaries and streams

surrounding the Lake Tahoe Basin that all eventually flow into Lake Tahoe. Only one point of exit—the Truckee River—allows water to leave the Lake Tahoe Watershed. The Upper Truckee River originates in the mountains south of Lake Tahoe, flowing into Lake Tahoe at its southern end near South Lake Tahoe. The Truckee River flows out of Lake Tahoe at Tahoe City, leaving the Lake Tahoe Watershed, and enters into the Truckee River Watershed. The Truckee River Watershed encompasses Martis Valley and the surrounding mountains that feed the Truckee River between Lake Tahoe and Floriston, California. Primary water bodies within the Truckee River Watershed include the Truckee River, Prosser Creek, Martis Creek, Donner Lake, Donner Creek, Prosser Creek Reservoir, Boca Reservoir, and Martis Creek Reservoir. The general direction of flow within the Truckee River Watershed is towards the Truckee River, which then flows in a northeast direction towards Nevada and empties into Pyramid Lake. These watersheds and the Truckee River are shown in Figure 4.8-1: Hydrologic Features Map.

Drainages, Creeks, and Rivers

While Lake Tahoe and the Truckee River are the dominant water features within the project area, there are numerous drainages, creeks, and rivers, including Middle Martis Creek, West Martis Creek, Martis Creek, Trout Creek, and Griff Creek, that are crossed by one or more of the project components. In addition, many unnamed, intermittent creeks and drainages are present throughout the project area, as shown in Table 4.8-1: Hydrologic Resources. These features are also shown in Attachment A: Vegetation Community Maps in Attachment 4.4-A: Biological Resources Technical Report. Several existing poles are currently located either adjacent to or below the ordinary high water mark (OHWM) of perennial waterways in the project area. These include:

- Pole 1094 through Pole 1096 between milepost (MP) 3.8 and MP 4.2 of the 650 Line, which are located adjacent to and below the OHWM of Middle Martis Creek
- Pole 2001 through Pole 2006 between MP 15.1 and MP 15.3 of the existing 625 Line, which are located adjacent to or below the OHWM of the Truckee River near Tahoe City
- Poles 181 to 183 between MP 8.9 and MP 9.1 of the 650 Line, and Poles 2348 and 2349 between MP 0.2 and MP 0.4 of the existing 625 Line, which are located adjacent to Griff Creek in Kings Beach

The Truckee River is also spanned by the 132/650 Line Double-Circuit in Truckee, but no work will occur within 150 feet of the river. No designated Wild and Scenic Rivers are located within the project area.

Wetlands

In addition to drainages, creeks, rivers, wetlands, and wet meadows are present within the project area. One fresh emergent wetland is located between Pole 2002 and Pole 2003 near MP 15.3 beneath the existing 625 Line—also part of the new 625 Line—near the Truckee River. Many wet meadows also exist throughout the project area, with the largest located in Martis Valley surrounding the confluences of Middle Martis Creek, West Martis Creek, and Martis Creek. The 650 Line crosses this large wet meadow complex between MP 0.2 and MP 1.7. The Northstar Golf Course Staging Area will be located adjacent to this area.

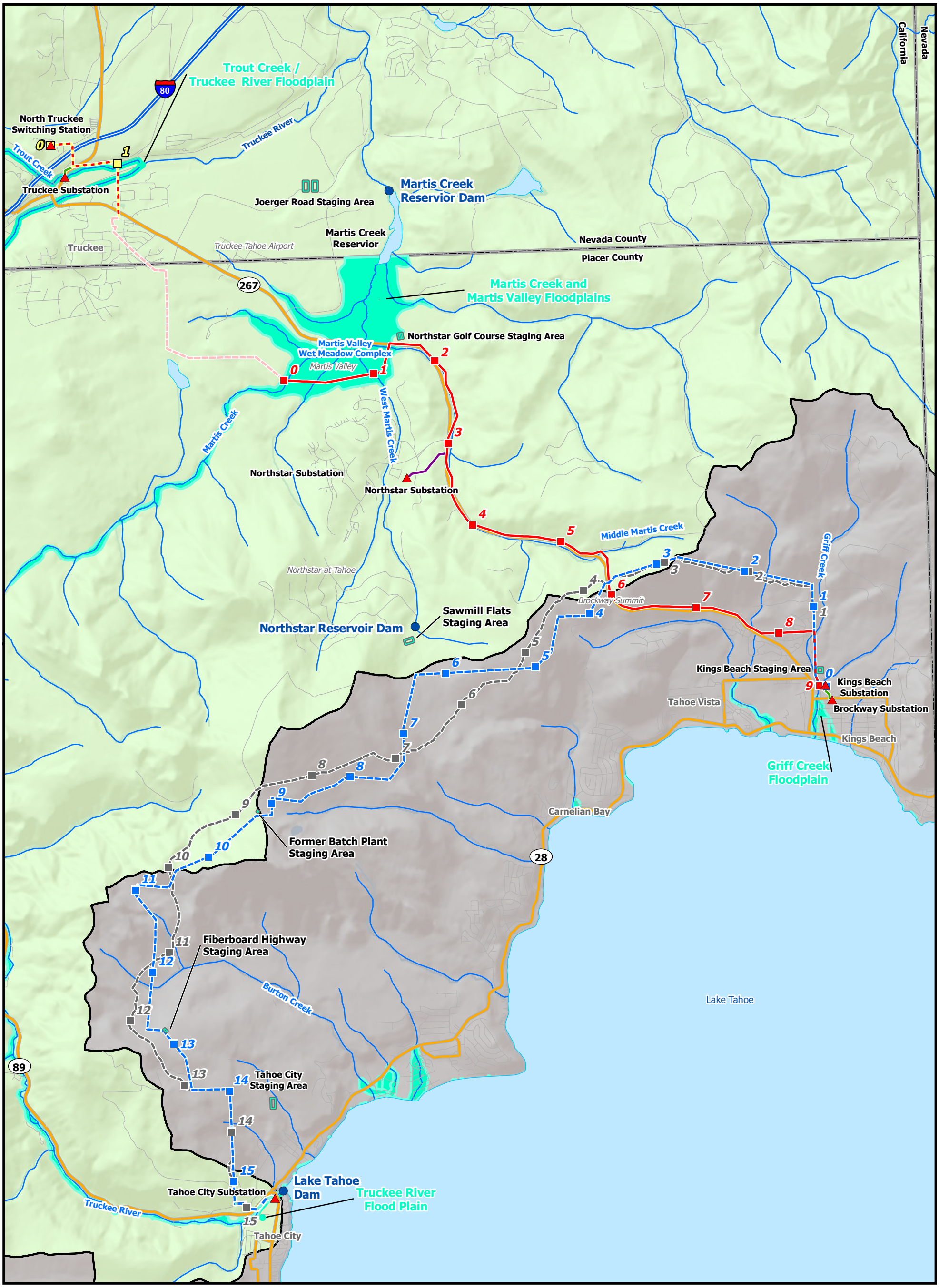

Figure 4.8-1: Hydrologic Features Map

625 and 650 Line Upgrade Project

- 650 Line to be Removed
- Northstar Fold
- New 625 Line
- Existing 625 Line
- 625/629 Double-Circuit
- 650 Line to be Rebuilt
- 650 Line Previously Upgraded
- 132/650 Double-Circuit to be Rebuilt
- Substation/Switching Station
- Staging Area
- Milepost (Color Coded by Line)
- Lake Tahoe Basin Watershed
- Martis Valley Watershed
- Dam
- Major Drainage
- Surface Water
- 100-Year Flood Plain

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Table 4.8-1: Hydrologic Resources

Resource Number	Name of Waterbody	Line	Approximate MP	Size	Flow Regime	USACE Jurisdictional[1]	CDFG Jurisdictional[2]
625-1	Unnamed creek	Existing 625	1.6	Width: 3 to 5 feet Depth: 1 foot	Seasonal[3]	Y	Y
625-2	Unnamed pool and creek	Existing 625	1.7	Width: 3 to 5 feet Depth: 1 foot	Perennial	Y	Y
625-3	Unnamed swale	Existing 625	1.8	Width: 15 feet Depth: 0.25 foot	Not Applicable (NA)	Y	Y
625-4	Unnamed meadow	Existing 625	6.1	Width: 10 feet Depth: 0.25 foot	NA	Y	Y
625-5	Unnamed creek	Existing 625	7.7	Width: 8 feet Depth: 1 foot	Seasonal	Y	Y
625-6	Unnamed seasonal creek	Existing 625	8.1	Width: 2 to 3 feet Depth: 3 to 6 feet	Seasonal	Y	Y
625-7	Unnamed seasonal channel	Existing 625	9.2	Width: 3 to 5 feet Depth: 1 foot	Seasonal	Y	Y
625-8	Unnamed seasonal channel	Existing 625	9.3	Width: 1 to 3 feet Depth: 1 foot	Seasonal	Y	Y
625-9	Unnamed seasonal creek	Existing 625	10.9 to 11.0	Width: 1.5 feet Depth: 10 inches	Seasonal	Y	Y

[1] USACE jurisdiction is preliminary and based on connectivity to waters of the U.S.; a wetland delineation has not yet been conducted.
[2] CDFG jurisdiction is preliminary and was determined based on the presence of riparian vegetation or a defined bed or bank.
[3] Features with a seasonal flow regime include both intermittent features and ephemeral features that do not possess water year-round.

Resource Number	Name of Waterbody	Line	Approximate MP	Size	Flow Regime	USACE Jurisdictional[1]	CDFG Jurisdictional[2]
625-10	Unnamed seasonal riparian thicket	Existing 625	11.2	Width: 15 feet Depth: NA	Seasonal	Y	Y
625-11	Unnamed seasonal swale	Existing 625	11.5	Width: 1 to 3 feet Depth: 1 foot	Seasonal	Y	Y
625-12	Unnamed swale	Existing 625	14.8	Width: 2 feet Depth: 1 to 1.5 feet	Seasonal	N	Y
625-13	Truckee River	Existing 625 132/650	15.1 to 15.3	Width: 80 to 100 feet Depth: 3 to 6 feet	Perennial	Y	Y
625-14	Unnamed fresh emergent wetland	Existing 625	15.3	Width: 10 to 25 feet Length: 75 feet Depth: 1 to 1.5 feet	Perennial	Y	Y
625-15	Unnamed tributary to Watson Creek	New 625	8.5	Width: 5 feet Depth: 1 foot	Seasonal	Y	Y
625-16	Unnamed tributary to Watson Creek	New 625	8.5	Width: 5 feet Depth: 1 foot	Seasonal	Y	Y
625-17	Unnamed tributary to Watson Creek	New 625	8.7	Width: 2 feet Depth: 0.5 foot	Seasonal	Y	Y
625-18	Unnamed tributary to Burton Creek	New 625	11.8	Width: 4 to 5 feet Depth: 1 to 1.5 feet	Seasonal	Y	Y

Resource Number	Name of Waterbody	Line	Approximate MP	Size	Flow Regime	USACE Jurisdictional[1]	CDFG Jurisdictional[2]
625-19	Unnamed swale	New 625	12.1	Width: 10 to 15 feet Depth: NA	Seasonal	Y	Y
650-1	Terminal end of unnamed swale to Martis Creek	650	0.0	Width: 18 feet Depth: NA	Seasonal	Y	Y
650-2	Unnamed seasonal wet depression	650	0.1	Width: 45 feet Length: 75 feet Depth: 0.25 foot	Seasonal	N	N
650-3	Unnamed channel to Martis Creek	650	0.2	Width: 3 feet Depth: 1.5 feet	Seasonal	Y	Y
650-4	Martis Creek	650	0.2	Width: 3 to 10 feet Depth: 1.5 to 2 feet	Perennial	Y	Y
650-5	Two adjacent unnamed tributaries to Martis Creek	650	0.4	Width: 1.5 to 2.5 feet Depth: 0.5 foot	Perennial	Y	Y
650-6	West Martis Creek	650	1.1 to 1.2	Width: 2 feet Depth: 2 feet	Seasonal	Y	Y
650-7	Unnamed tributary and wet meadow to Martis Creek	650	1.5	Width: 350 feet Depth: 0.5 foot	Seasonal	Y	Y
650-8	Unnamed tributary to Middle Martis Creek	650	2.9	Width: 1 to 3 feet Depth: 1 foot	Perennial	Y	Y

Resource Number	Name of Waterbody	Line	Approximate MP	Size	Flow Regime	USACE Jurisdictional[1]	CDFG Jurisdictional[2]
650-9	Unnamed wet meadow adjacent to Middle Martis Creek	650	2.9	Width: 50 feet Length: 200 feet Depth: NA	Seasonal	Y	Y
650-10	Middle Martis Creek	650	2.9 to 4.2, 5.7	Width: 1 to 3 feet Depth: 0.5 to 1 foot	Perennial	Y	Y
650-11	Unnamed tributary to Middle Martis Creek	650	4.9	Width: 2 to 3 feet Depth: 1.5 to 2 feet	Perennial	Y	Y
650-12	Unnamed creek	650	5.3	Width: 4 to 6 feet Depth: 0.5 to 1 foot	Seasonal	Y	Y
650-13	Unnamed creek	650	7.3	Width: 2 to 4 feet Depth: 2 to 4 feet	Seasonal	Y	Y
650-14	Unnamed riparian thicket/ roadside swale	650	7.6	Width: 4 to 6 feet Depth: 1 to 2 feet	Seasonal	N	Y
650-15	Roadside drainage/creek	650	7.9	Width: 2 to 3 feet Depth: 0.5 to 1 feet	Seasonal	Y	Y
650-16	Unnamed drainage	650	8.3	Width: 6 to 10 feet Depth: 1 foot	Seasonal	Y	Y
650-17	Griff Creek	650 New 625	8.6, 9.0 to 9.2	Width: 1 to 15 feet Depth: 3 to 4 feet	Perennial	Y	Y

Resource Number	Name of Waterbody	Line	Approximate MP	Size	Flow Regime	USACE Jurisdictional[1]	CDFG Jurisdictional[2]
650-18	Unnamed tributary to Griff Creek	650	9.1	Width: 4 to 10 feet Depth: 1 to 2 feet	Seasonal	Y	Y
650-19	Unnamed tributary to Griff Creek	650	9.2	Width: 4 to 10 feet Depth: 1 to 2 feet	Perennial	Y	Y
132-1	Unnamed stock pond	132/650	1.4	Width: 15 feet Depth: 1 to 4 feet	Perennial	Y	Y
132-2	Trout Creek	132/650	1.0	Width: 5 feet Depth: 1.5 feet	Perennial	Y	Y
SA-1	Unnamed tributary to Lake Tahoe	Tahoe City Staging Area	NA	Unknown	Seasonal	Y	Y
SA-2	Unnamed seasonal wetland	Northstar Golf Course Staging Area	NA	Several acres	Seasonal	Y	Y

Several other wet meadows exist along the new and existing 625 lines, in places where drainages or intermittent creeks fan out over larger, flatter areas, creating breaks in coniferous forest habitat where conditions are too wet for trees. These wet meadows are identified by a lack of tree cover, hydric soils throughout the summer and fall months, and/or the presence of hydrophytic vegetation. The wetlands found in the project area are presented in Table 4.8-1: Hydrologic Resources. These features are also shown in Attachment 4.4-A: Biological Resources Technical Report.

Groundwater

The project is located within two groundwater basins—the Martis Valley Groundwater Basin (MVGB) and the Tahoe Valley Groundwater Basin (TVGB). The TVGB makes up the areas surrounding the northern, southern, and western sides of Lake Tahoe, including Kings Beach and Tahoe City. The exposed basin-fill deposits are comprised of Quaternary age glacial and lacustrine sediments. Granitic, volcanic, and metamorphic rocks, collectively referred to as bedrock, underlie the basin-fill deposits. Groundwater occurs in unconsolidated basin-fill sediments, in volcanic rock interbedded with the basin-fill sediments, as well as in fractured rock. The primary source of groundwater recharge is through infiltration of surface water from precipitation. The area of the western and northern sub-basins, where the project is located, is estimated to be approximately 8,000 acres in size. Estimates as to the storage capacity or amount of groundwater currently stored within the TVGB are not known; however, the Department of Water Resources has indicated that recent changes to the groundwater level have been minimal. According to recent well log data, the depth to groundwater varies depending on location, from approximately 11 feet to approximately 60 feet from the ground surface.

The MVGB is located in the Martis Valley near the Town of Truckee. The MVGB is a multiple aquifer system consisting of basin-fill sedimentary units and interlayered basin-fill volcanic units. The primary sources of groundwater recharge are the Truckee River, Martis Creek, Donner Creek, and Prosser Creek. Three major water-storage reservoirs—Martis Creek Reservoir, Donner Lake, and Prosser Creek Reservoir—also exist within the MVGB and contribute to groundwater recharge. The MVGB is believed to have a total basin volume of approximately 9,680,000 acre-feet, with a surface area of approximately 37,000 acres. There is an estimated 484,000 acre-feet of water currently in storage. According to recent well log data, the depth to groundwater varies widely depending on location from approximately 14 feet to approximately 190 feet from the ground surface. Based on several recent studies, the TDPUD estimates annual groundwater recharge to be approximately 29,165 acre-feet/year, which exceeds the sustainable yield of 24,000 acre-feet/year. The groundwater level has remained relatively constant with annual fluctuations of approximately 10 feet.

Municipal and Private Water Sources

Drinking water in the project area comes primarily from groundwater wells and springs. The TCPUD and TDPUD draw entirely from wells within the project area. The NTPUD draws from a combination of wells and Lake Tahoe to serve the communities of Kings Beach, Tahoe Vista, Carnelian Bay, and Brockway. Although the Dollar Cove water system is part of the NTPUD, water to residents of Dollar Point is currently being supplied by the TCPUD via a joint well-drilling agreement. There are also numerous small wells supporting individual residences and recreational facilities, such as campgrounds, in the project area. However, no private wells were

observed within or adjacent to the right-of-way (ROW) during the reconnaissance-level field surveys. The closest known wells to the project area are the Southside No. 1 and Sanders wells, both part of the TCPUD. The Sanders well is located approximately 750 feet west of the North Truckee Switching Station and the Southside No. 1 well is approximately 1,000 feet west of the 132/650 Line Double-Circuit near approximate MP 1.4. Typical groundwater depths in this area range from 14 to 190 feet from the surface.

Surface Water and Groundwater Quality

Water quality in the project area is exceptional due to the high elevation and strict regulations regarding discharge in the Lake Tahoe Basin. Lake Tahoe, which is located near both the Kings Beach and Tahoe City substations, has been designated an Outstanding National Resource Water. Outstanding National Resource Waters are given the highest level of federal protection, which strictly forbids degradation of water quality. Lake Tahoe and the Truckee River are listed as impaired pursuant to Section 303(d) of the CWA. Lake Tahoe is listed due to sedimentation/siltation, nitrogen, and phosphorous impairments. The Truckee River is listed due to sedimentation/siltation. The SWRCB has developed action plans or established TMDLs to improve water quality in these waterways.

Although not a lot of available data exists regarding the Tahoe Valley and MVGB, groundwater quality in both of the basins is considered good to excellent and there are no known instances of contamination. Water sources—mainly wells and springs drilled deep into the ground—provide clean, high-quality water that consistently meets water quality standards without significant treatment. Because of natural filtration, the groundwater aquifers are protected from surface contamination. All wastewater in the project area is pumped to the Tahoe-Truckee Sanitation Agency in Truckee for treatment before being pumped into the groundwater aquifer. All sewage undergoes tertiary treatment, which includes primary, secondary, and tertiary settling, anaerobic sludge digestion, aeration, filtration, and chlorination prior to discharge. This is the highest level of waste treatment short of drinking water quality.

Floodplains

The project components cross several areas that are subject to flooding as identified by the FEMA. Between MP 1.0 and MP 1.2, the 132/650 Line Double-Circuit falls within the 100-year floodplain of the Truckee River and nearby Trout Creek. South of Truckee, the 650 Line runs through the Martis Creek and Martis Valley 100-year floodplains between MP 0.2 and MP 1.7. The existing and new 625 lines cross the 100-year floodplain of the Truckee River between MP 15.1 and MP 15.3 near Tahoe City and the Tahoe City Substation. In addition, the Kings Beach Substation is located approximately 500 feet east of the 100-year floodplain surrounding Griff Creek where it enters Lake Tahoe.

Dam Failure Inundation Areas

No dams or other flood control devices are crossed by the project components; however, three dams are located in the project area. The Lake Tahoe Dam, along the Truckee River in Tahoe City, is located approximately 0.1 mile upriver from the Tahoe City Substation. The Martis Creek Reservoir Dam is approximately 0.9 mile east of the Joerger Road Staging Area and 1.7 miles north of the 650 Line. The Northstar Reservoir Dam is located approximately 0.5 mile

south of the new 625 Line. These dams are shown in Figure 4.8-1: Hydrologic Features Map. The Placer County Office of Emergency Services gives the Lake Tahoe Dam a high hazard rating and the Northstar Reservoir Dam a significant hazard rating. The failure of a dam with a high hazard rating could result in the loss of life and property. The failure of a dam with a significant hazard rating would impact only property.

4.8.3 Impacts

Significance Criteria

According to Appendix G of the California Environmental Quality Act Guidelines, the project will have a significant impact to hydrology and water quality if it:

- Violates any water quality standards or waste discharge requirements
- Substantially depletes groundwater supplies or interferes significantly with groundwater recharge to the extent that a net deficit in aquifer volume or a lowering of the local groundwater table level will occur
- Substantially alters the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that will result in substantial erosion or siltation on or off site
- 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 in a manner that will result in flooding on or off site
- Creates or contributes to runoff water that will exceed the capacity of existing or planned stormwater drainage systems or provides substantial additional sources of polluted runoff
- Otherwise substantially degrades water quality
- Places housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary, Flood Insurance Rate Maps, or other flood hazard delineation map
- Places structures that will impede or redirect flood flows within a 100-year flood hazard area
- Exposes people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam
- Causes inundation by seiche, tsunami, or mudflow

Question 4.8a – Water Quality and Waste Discharge Violations

Construction – Less-than-Significant Impact

Construction of the project has the potential to temporarily impact several aquatic features, as shown in Table 4.8-1: Hydrologic Resources. Disturbance to these features as a result of access

road construction, tree clearing, and pole installation and removal has the potential to result in impacts to water quality in the project area. The construction or upgrade of access roads and use of those roads by vehicles and heavy equipment has the potential to impact water quality through the installation of culverts, introduction of sediment, and accidental spills of hazardous materials. Impacts may also result from the changing runoff patterns during rain and snowmelt. Water quality impacts could also result from pole installation and removal or tree clearing, especially if poles and trees are skidded through creeks and drainages, and restoration of aquatic resources to preconstruction conditions once construction is complete.

There are also several locations where the existing poles are located below the OHWM of aquatic features in the project area, including the Truckee River between MP 15.1 and MP 15.3 of the existing 625 Line, and Middle Martis Creek between MP 3.8 and MP 4.2 of the 650 Line. While SPPCo proposes to remove those poles along the 650 Line and relocate them a short distance above the OHWM of these features, it is possible that the streams in the Martis Valley may migrate to an existing or proposed pole location by the time construction begins due to natural flow fluctuations in the area. Poles located along the Truckee River will be relocated to a higher elevation but still may lie below the OHWM in some locations. Removal or replacement of these poles has the potential to contribute sediment to nearby resources as a result of ground disturbance and excavation at the work sites. Estimates regarding the volume of fill resulting from new poles placed in USACE-jurisdictional waters are provided in Table 4.8-2: Estimated Permanent Fill in Waters of the U.S.

Table 4.8-2: Estimated Permanent Fill in Waters of the U.S.

Line	Estimated Number of Direct Bury Poles	Estimated Number of Self-Supporting Steel Poles	Total Estimated Fill[4] (cubic feet)
Existing 625 Line	0	0	0
New 625 Line	5	3	2,509
650 Line	21	0	1,048
Northstar Fold	0	0	0
132/650 Line Double-Circuit	0	0	0

The installation of new, steel poles will require excavations ranging between 7 feet and 10 feet in depth (20 feet to 30 feet in depth for self-supporting poles), which, if located near aquatic resources, will require dewatering and increase the potential for sedimentation. The area with the highest likelihood of requiring dewatering is the Martis Valley along the 650 Line. The depth to groundwater varies widely depending on location from approximately 14 feet to approximately 190 feet, and there is an extensive network of surface waters, including a large wet meadow, and three creeks (Middle Martis Creek, Martis Creek, and West Martis Creek) that converge in this location. This area is flooded throughout most of the year, and even if no visible water is present

[4] These estimates are based on preliminary determinations regarding waters of the U.S. A wetland delineation will be conducted prior to construction to determine jurisdiction.

on the surface, the area remains extremely saturated. Excavations will be dewatered and the water will be allowed to disperse overland into well-vegetated areas, as described in APM-HYD-03.

While most of the new poles will be directly buried in the ground, some of them will require concrete foundations. Where concrete foundations will be installed in saturated areas or areas with a high water table, SPPCo will use cofferdams, bentonite, concrete slurry, or a combination thereof, to hold the sides of the excavation intact while the concrete is poured. Use of concrete near aquatic resources, combined with stormwater runoff, has the potential to affect water quality by increasing pH. Where concrete use is required near waterways, APM-HYD-02 and APM-HYD-05, listed in Section 4.8.4 Applicant-Proposed Measures, will be implemented to minimize impacts.

To reduce potential temporary and permanent impacts to aquatic resources, SPPCo will implement the measures contained in the project's SWPPP as well as APM-HYD-01, APM-HYD-02, APM-HYD-04, APM-HYD-05, APM-HYD-06, APM-HYD-07, and APM-HYD-08, which include limited refueling and concrete use near aquatic resources, avoid the skidding of poles and trees through waterways unless they are dry or lined with snow, fell trees and poles away from streams, and conduct dewatering in accordance with USACE, CDFG, and RWQCB permit requirements, as described further in Section 4.8.4 Applicant-Proposed Measures. In addition, waterbars, rolling dips, side ditches, and culverts will be installed in temporary access roads where necessary and will be appropriately sized to accommodate anticipated runoff both during and after construction in accordance with SWPPP requirements. The substations are located in relatively flat areas away from aquatic resources; therefore, construction at these sites will not result in water quality degradation or other water quality impacts. The measures outlined in the project's SWPPP will be implemented at all substation sites to manage surface runoff and minimize off-site sedimentation. With the implementation of the described legal requirements and measures outlined in Section 4.8.4 Applicant-Proposed Measures, the potential impact to water quality will be less than significant.

Operation and Maintenance – No Impact

Following construction, the ROW, work areas, and access roads will be stabilized using BMPs, including reseeding. Operation and maintenance activities for the transmission lines will be conducted in the same manner as they were prior to upgrading the lines. Therefore, there will be no impact.

While the new transformers to be installed at the substations have the potential to leak oil, the existing facilities are already equipped with secondary spill containment basins to prevent accidently released oil from exiting the site and entering any waterways that exist in the area. These containment facilities are described further in Section 4.7 Hazards and Hazardous Materials. Because an accidental spill is not likely to result in discharges to nearby water resources, no impact is anticipated.

Question 4.8b – Groundwater Depletion or Recharge

Construction – Less-than-Significant Impact

Construction of the project will require water to be obtained from NTPUD and TCPUD wells and fire hydrants for dust and fire suppression. Within the project area, the primary source of municipal water is from groundwater sources. With an estimated total of 8,016,000 gallons of water required for dust control and 12,000 gallons required for fire suppression over the three-year construction period, water use for the project will be relatively low—0.04 acre-feet—as compared to the amount of groundwater available in the underlying groundwater basins—over 9,680,000 acre-feet. It is assumed that construction crews will rely on bottled water for daily consumption.

In addition, construction of the project will not significantly increase the amount of impermeable surfaces in the project area, and as a result, is not anticipated to affect the rate of groundwater recharge. With the exception of the Kings Beach Substation, the existing substations are already sufficiently compacted to be considered impervious and, as a result, there will be no increase in impervious surfaces at those locations. The new Kings Beach Substation will require 38,060 square feet of new impervious coverage. Currently there is only 22,400 square feet of remaining coverage available on the parcel. The remaining 15,660 square feet of new coverage will be offset by the reclamation and transfer of coverage from the decommissioning of the Brockway Substation. Therefore, the impact will be less than significant.

Operation and Maintenance – Less-than-Significant Impact

Operation and maintenance of the project will not utilize substantial amounts of water, or differ significantly from the practices currently implemented at the existing facilities. In addition, the increase in impermeable sources as a result of the substation expansions will not result in a significant increase in impermeable surfaces, which could affect groundwater recharge. Thus, the impact to groundwater will be less than significant.

Question 4.8c – Drainage Patterns – Erosion/Siltation

Construction – Less-than-Significant Impact

Erosion and siltation are generally caused by runoff from areas of ground disturbance or from the alteration of existing drainage patterns. Ground disturbance in the project area will occur during the construction of temporary access roads, tree and pole removal, pole foundation excavation, and during any other grading that may be required in temporary work areas, staging areas, and conductor pulling locations. To minimize the potential for sediment runoff, ground-disturbing work will be scheduled to coincide with the local dry season—summer and fall—to the greatest extent possible. If work must take place in wet weather or saturated soil conditions, SPPCo will implement APM-HYD-06 to minimize rutting, erosion, and off-site sedimentation. Work areas will be restored to preconstruction conditions and revegetated following construction.

The drainage patterns of nearby creeks, rivers, and other aquatic features will not be significantly altered as a result of the project; however, the flow direction at each pole site may change due to the minor grading required to access the site and install each pole. Existing drainage patterns will also change slightly at the Kings Beach and Tahoe City substations to allow for the on-site

infiltration of stormwater flows. However, these potential changes will not result in substantial erosion or siltation as all surface runoff will be captured and allowed to infiltrate on site. Where possible, all temporary access roads will be constructed away from drainages or will utilize existing crossings so that effects of erosion and runoff are minimized. If necessary, waterbars, rolling dips, side ditches, and culverts will be installed in and along temporary access roads to maintain existing flow patterns and control stormwater runoff. If culvert installation is required, culverts will be appropriately sized to accommodate anticipated runoff both during and after construction. In addition, SPPCo will implement the project's SWPPP, which will include specific BMPs for controlling sediment runoff, such as the use of silt fencing, straw bales, and straw wattles. With the implementation of the SWPPP and the measures outlined in Section 4.8.4 Applicant-Proposed Measures, the potential impact to aquatic resources from erosion and sedimentation will be less than significant.

Operation and Maintenance – Less-than-Significant Impact

Routine operation and maintenance of the transmission lines will require minimal ground disturbance for annual vegetation-clearing activities and line inspection. Annual vegetation removal will mainly consist of tree trimming and hazard tree removal. Because all low-lying vegetation will remain intact and because trees will be cut to ground level leaving the stumps in place, this work will not significantly increase erosion potential. Where access to the transmission lines is limited due to terrain, work will be conducted by helicopter or all-terrain vehicle. Because the 650 Line, Northstar Fold, and 132/650 Line Double-Circuit are being rebuilt in place, operation and maintenance-related impacts are anticipated to be minimal, as they will not differ significantly from the activities already occurring. Operation and maintenance of the substations and switchyards will not cause an increase in erosion potential, as operation and maintenance work will take place within the permanent fence lines. Therefore, the impact will be less than significant.

Question 4.8d – Drainage Patterns – Runoff/Flooding

Construction – Less-than-Significant Impact

Construction of the project will not involve the creation of a significant amount of new impermeable surfaces, nor will it significantly redirect drainage patterns and increase runoff resulting in flooding. As mentioned previously in the response to Question 4.8c – Drainage Patterns – Erosion/Siltation, the project will not substantially alter existing drainage patterns. SPPCo has proposed several measures, outlined in Section 4.8.4 Applicant-Proposed Measures, to minimize work within existing drainages, including APM-HYD-05 and APM-HYD-08. Along the 650 Line, Northstar Fold, and 132/650 Line Double-Circuit, no new poles will be placed below the OHWM of drainages, creeks, or rivers. Along the new 625 Line, several poles may be placed at a higher elevation than those of the existing 625 Line but still below the OHWM of the Truckee River in order to prevent the removal of several large trees growing along the bank of the river. The portion of the 650 Line to be rebuilt through the Martis Valley will require pole replacement within the wet meadow complex described in response to Question 4.8a – Water Quality and Waste Discharge Violations. In general, the new steel poles will be between 2 and 3 inches larger than the existing poles. While there will be a slight increase in impermeable surface in this area due to the larger diameter poles, the poles will not be large enough to impede the

natural flow of water. Because downstream flow rates and volumes will not change substantially, impacts to drainage patterns that would result in flooding will be less than significant.

Modifications to the Kings Beach Substation will result in an increase in impermeable surface of approximately 0.36 acre and a slight alteration to the existing drainage patterns. However, this area is not located in an area prone to flooding and the increase in impermeable coverage will be offset by the reclamation and transfer of coverage from the decommissioning of the Brockway Substation. While the expansion of existing stormwater infiltration basins or swales is not anticipated for substations undergoing minor changes, on-site drainage patterns will be slightly changed at the Kings Beach and Tahoe City substations. Drainage patterns at the Kings Beach Substation will be modified slightly by grading the site in such a manner as to capture and infiltrate stormwater within the Kings Beach property. At the Tahoe City Substation, a new stormwater infiltration trench will be constructed. This trench will be approximately 2 feet wide by 20 feet long, approximately 8 feet deep, and backfilled with drainage rock. All stormwater runoff, including stormwater collected by the secondary containment basins, will be directed towards this trench. These modifications will allow all stormwater collected at these facilities to infiltrate on site; therefore, there will be no impact to drainage patterns that could result in runoff or flooding.

Operation and Maintenance – No Impact

The drainage patterns established during the construction phase will remain unchanged during operation and maintenance activities; therefore, the project will not result in the potential for increased runoff volumes. As a result, there will be no impact.

Question 4.8e – Stormwater Runoff

Construction – Less-than-Significant Impact

Construction of the project, particularly grading to establish access roads, spur roads, and work areas, has the potential to increase stormwater runoff by removing existing vegetation and compacting soils. In addition, the use of water for dust- and fire-suppression activities could increase surface runoff if water is applied in excess and the soil infiltration capacity is exceeded.

As described in Chapter 3 – Project Description, access roads in steep terrain may be leveled at two separate elevations to minimize soil disturbance and the potential for surface runoff into surrounding areas. Side ditches and temporary culverts will be installed, where necessary, to maintain existing runoff patterns. Gravel may also be applied along access roads to minimize rutting, off-site sedimentation, and track-out onto public roads. In areas where the terrain is too rugged for truck access, helicopters may be used, or crews will use all-terrain vehicles or hike in by foot to access the poles. SPPCo will also implement the BMPs outlined in the project's SWPPP, including managing water use for dust suppression, so that runoff and off-site sedimentation is minimized.

In addition, because the project is located in primarily undeveloped areas where limited stormwater conveyance systems exist, the potential to impact such systems will be minimal. Where storm drains do exist in the project area, BMPs will be implemented to reduce the introduction of sediment and other pollutants into the stormwater system in accordance with the

project's SWPPP. With the implementation of the project's SWPPP, APM-HYD-01, and APM-HYD-02, impacts associated with the introduction of pollutants to stormwater runoff will be less than significant.

As mentioned in response to Question 4.8d, the Kings Beach Substation will be graded in such a manner as to capture and infiltrate stormwater within the Kings Beach property. The stormwater infiltration system at this facility will be capable of handling the additional surface runoff generated by the 0.36 acre of new impermeable surface that will be created as a result of the substation modifications. In addition, a new stormwater infiltration trench will be constructed at the Tahoe City Substation. This trench will be approximately 2 feet wide by 20 feet long, approximately 8 feet deep, and backfilled with drainage rock. All stormwater runoff, including stormwater collected by the secondary containment basins, will be directed towards this trench. These additions will have a beneficial impact in controlling stormwater runoff at these facilities. No changes to the stormwater infiltration systems are planned at the other substations. Therefore, the impact will be less than significant.

Operation and Maintenance – Less-than-Significant Impact

Surface runoff, following the completion of construction, is expected to be similar to the existing conditions due to a minimal amount of new impermeable surfaces. No impact will occur to existing stormwater conveyance systems and no alterations of existing culverts, catch basins, or drains will be required to accommodate the project during the operation and maintenance phase. Steel poles, conductor, and substation equipment will be exposed to stormwater; however, these materials are not readily soluble or considered to contribute to water quality degradation. The stormwater infiltration basins, swales, and trenches at the existing substation facilities will continue to be used to collect stormwater and any potential pollutants from the substation sites.

Maintenance activities, such as routine inspections, vegetation management, and conductor repair, can introduce pollutants to the site. However, operation and maintenance of the proposed facilities will not differ from those activities already occurring along the existing transmission lines and at the existing substations. In addition, SPPCo will continue to implement standard protocols in accordance with state and federal regulations to control, contain, cleanup, and dispose of any pollutants that may occur during maintenance activities in accordance, as described further in Section 4.7 Hazards and Hazardous Materials.

Fertilizers and soil amendments may be used to facilitate revegetation of the work areas. Fertilizers or other soil amendments will be used according to the manufacturer's specifications and are not anticipated to reach nearby waterways. Approval will be obtained from the USFS prior to the use of any such materials. Within the Lake Tahoe Basin, approval will be obtained from the TRPA and all applications will comply with the TRPA Handbook of Best Management Practices. As a result, the impact from stormwater runoff will be less than significant.

Question 4.8f – Water Quality Degradation – *No Impact*

Potential sources of pollutants and activities that can contribute to water quality degradation are discussed in detail in the responses to Question 4.8a – Water Quality Standards and Waste Discharge Violations and Question 4.8e – Stormwater Runoff. No other foreseeable sources of

pollution are anticipated to be associated with construction, operation, or maintenance of the project. Therefore, there will be no impact.

Question 4.8g – Housing in Flood Hazard Areas – *No Impact*

No housing is being constructed as part of the project. Therefore, there will be no impact.

Question 4.8h – Structures in Flood Hazard Areas – *No Impact*

Pole 2003 to Pole 2006, between approximate MP 15.1 and MP 15.3 of the existing 625 Line, are currently located below the OHWM of the Truckee River. While these four poles will be removed as a result of the project, several new steel poles will replace the existing wood poles within 100-year flood zones along the new 625 Line (MP 15.1 to MP 15.3) and 650 Line (MP 0.2 to MP 1.7). However, because the new, more robust steel poles will replace the existing wood poles, the transmission lines will be more capable of withstanding flood flows should they occur in the project area. The majority of the new poles will be located within 10 feet of the existing poles and will be 2 to 3 inches larger in diameter. Even with the size increase, the poles will be too small to impede flood flows.

The 132/650 Line Double-Circuit crosses two narrow 100-year flood plains between MP 1.0 and MP 1.2, though all existing poles are currently located outside of flood plains. Subsequently, all new poles will be located outside of these flood plains as well.

The modifications at the substations will not result in an increase in flood hazards as the existing facilities are not located within or adjacent to any 100-year-flood zones. Therefore, there will be no impact.

Question 4.8i – Flood Exposure – *No Impact*

Construction, operation, and maintenance of the project will not expose people or structures to a significant risk of loss, injury, or death due to flooding, as no on- or off-site flood impacts are expected, as described in the response to Question 4.8h – Structures in Flood Hazard Areas. While the project is located downstream of the Lake Tahoe Dam, no construction, operation, or maintenance-related activities will be conducted within 350 feet of this structure. Furthermore, proposed activities will not differ from those already occurring along the existing transmission lines and at the existing substation facilities. Further, no permanent buildings will be constructed in a known 100-year flood zone. Thus, no impact will occur.

Question 4.8j – Seiche, Tsunami, Mudflow – *Less-than-Significant Impact*

Modeling has shown that Lake Tahoe is potentially susceptible to a seiche or tsunami in the event of a high-magnitude earthquake occurring below the lake. However, as described further in Section 4.6 Geology, Soils, and Seismicity, the project area is not located within or adjacent to an Alquist-Priolo Earthquake Fault Zone and only has a 2 percent probability of experiencing seismic ground motion of moderate intensity, and a 10 percent probability of experiencing seismic ground motion of low to moderate intensity. To minimize seismic hazards, such as a seiche or tsunami, SPPCo will implement the APMs outlined in Section 4.6 Geology, Soils, and Seismicity, including designing and building all structures in accordance with Uniform Building

Code standards and preparing a geotechnical assessment of the pole locations to determine whether seismic forces are capable of damaging or overturning transmission line structures.

Similar to a landslide, a mudflow is a flow of dirt and debris that occurs after intense rainfall, earthquakes, or severe wildfires. The potential for a landslide or mudflow to occur depends on the slope steepness, soil type, and soil moisture content. Landslides and mudflows have the potential to occur in the project area due to the steepness of slopes along portions of the alignments. As described in Section 4.6 Geology, Soils, and Seismicity, excavation, grading, and cut and fill activities associated with establishing spur roads to pole sites and other project facilities could alter existing slope profiles, making them unstable as a result of over-excavation of slope material, steepening of the slope, or increased loading. The potential for landslides and mudflows is much less at the substations and switching stations because they are built in relatively flat areas. As described previously, the geotechnical assessment will include an evaluation of the potential for landslides or mudflows to occur along the transmission line route. If a mudflow, seiche, tsunami did occur and resulted in a damaged facility, repair would be addressed in accordance with SPPCo's emergency-repair protocols. Thus, the impact will be less than significant.

4.8.4 Applicant-Proposed Measures

In addition to the SWPPP that is required to be implemented by law, SPPCo proposes implementation of the following APMs to ensure project-related impacts to hydrological resources are less than significant:

- APM-HYD-01: All refueling will be conducted at least 100 feet away from wetlands, waterways, and other aquatic features. If refueling within 100 feet of a waterway is unavoidable, SPPCo will ensure that spill kits are on site, use secondary containment to control accidental spills, and notify an environmental monitor prior to fueling. Environmental monitors will regularly inspect refueling areas in order to ensure that proper measures are being implemented in accordance with the project's SWPPP and SPCC Plan.

- APM-HYD-02: All concrete washouts will be conducted either into excavations where the concrete was poured, within designated concrete washout stations, or will be captured using a washout-recycling system. Crews will not be allowed to dispose of concrete directly onto the ground.

- APM-HYD-03: Where feasible, all stormwater or groundwater within excavations will be discharged overland into well-vegetated areas to promote the settling of sediment.

- APM-HYD-04: When working near aquatic resources, poles and trees will be cut by hand and felled away from such features. The skidding of poles and trees through aquatic resources will be avoided to the extent feasible. Vehicles and equipment will be staged at least 100 feet away from these features, along designated access routes or within staging areas. In instances where aquatic features are unavoidable, no trees or poles will be skidded through aquatic features unless they are dry or lined with snow at the time of crossing. If skidding occurs in dry or snow-covered aquatic features, SPPCo will restore

the banks and channels to preconstruction conditions immediately afterwards. An environmental monitor will be present in all instances in which trees or poles must be skidded through an aquatic feature to ensure that impacts to resources are minimized and that water is not present. All skidding within dry or snow-covered features will be documented by the biological monitor.

- APM-HYD-05: When construction activities are required adjacent to flowing aquatic resources, work will be conducted during low-flow conditions.

- APM-HYD-06: In areas where topsoil has not been salvaged, construction activities will be limited when the environmental monitor determines that the soil is too wet to adequately support vehicles and equipment. Where soil conditions are deemed too wet to work, one of the following measures will apply:

    - Access will be limited to the minimum area feasible for construction. Where possible, vehicles and equipment will be routed around wet areas so long as the re-route does not cross into sensitive resource areas.

    - If wet areas cannot be avoided and soil moisture is too high to strip topsoil, BMPs, including the use of wide-track or low ground pressure equipment or installation of prefabricated equipment pads or timber mats, will be implemented for use in these areas to minimize rutting and off-site sedimentation.

- APM-HYD-07: SPPCo will minimize vehicle and equipment usage within aquatic resources stream channels and other aquatic resources to only those pieces of equipment required for tree removal or to establish access. SPPCo will construct shoo-fly access roads to access either side of the resource or utilize existing bridges, where feasible, in order to minimize the need to install temporary bridges. If there are no existing crossings and the construction of shoo-fly roads would cause greater resource impact, SPPCo will install timber mats or other materials suitable for a temporary bridge. If bridges are installed over streams with discernable flow, all attempts will be made to span the channel.

- APM-HYD-08: SPPCo will obtain permits from appropriate regulatory agencies prior to commencing work in waters of the U.S or waters of the state. Following construction, SPPCo will restore any impacted aquatic resources to pre-project conditions and compensate for any permanent wetland impacts in accordance with the USACE's "no net loss" policy.

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