

# CHAPTER 13.0

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## HYDROLOGY AND WATER QUALITY

The following text provides a description of the hydrology, drainage, and potential flooding conditions that exist within the project site, offsite improvement area, and vicinity. Existing and proposed water supply and wastewater treatment services and facilities are described in more detail in **Chapter 3.0**, and a report detailing water and wastewater service options is included as **Appendix J**. Additional information related to water supply infrastructure and wastewater treatment facilities is included in **Chapter 14.0**, which deals with public services and utilities.

### 13.1 ENVIRONMENTAL SETTING

#### 13.1.1 GROUNDWATER SETTING

The site for the proposed project is located within the North American Subbasin of the Sacramento Valley Groundwater Basin, which encompasses approximately 550 square miles in Sutter, Placer, and Sacramento Counties (California Department of Water Resources (DWR), 2006). Precipitation within the subbasin ranges from approximately 18-24 inches annually.

Water-bearing formations in the area of the proposed project include unconsolidated deposits from volcanics and alluvial floodplains, which occupies the upper 200 to 300 feet of the aquifer. Underlying deposits comprise a lower aquifer system, and the combined thickness of the upper and lower systems ranges from approximately 300 feet near the Sierra Nevada foothills, to over 2,000 feet along the floor of the Sacramento Valley. Pumping tests have indicated a potential for limited hydraulic connectivity between the upper and lower aquifer systems (DWR, 1997). Groundwater recharge in the area of the proposed project is primarily via streambeds, as much of the overlying sediments contain impervious clay layers.

Groundwater levels in the area, especially near McClellan Air Force Base in northern Sacramento County, have generally decreased over the last 40 years, at a rate of up to 1.5 feet per year. However, the basin is not currently in a state of overdraft, and these observed reductions in groundwater levels may be less severe in the area of the proposed project (DWR, 2006). A well monitored by the DWR, located approximately 1.25 miles north of the project site, indicated that groundwater levels were relatively stable from 1980 through 1992, fluctuating between 80 to 85 feet below ground surface (bgs; DWR, 2007). A second well, located along Orchard Creek approximately 2.0 miles northwest of the proposed project, indicated a general, slight decreasing trend in water table depth from 1955 through 1980. More recent monitoring at this well shows water levels have decreased from approximately 86 feet bgs in 1980 to

approximately 90 feet bgs in 2000 (DWR, 2007). A more detailed analysis of DWR groundwater level data conducted by the City of Lincoln indicated that groundwater levels in the Lincoln area have been essentially stable since the 1920s (City of Lincoln, 2003).

The City of Lincoln is actively planning an expansion of its groundwater pumping program, in order to meet growing demand within the City's sphere of influence. The proposal would allow Lincoln to eventually withdraw a total of approximately 20 million gallons per day (mgd) of groundwater from the aquifer, which would likely have an effect on local groundwater levels (City of Lincoln, 2003). The Placer County Water Agency (PCWA) has recently adopted a Groundwater Management Plan for western Placer County. One groundwater well has been completed and a second is being designed; these wells would be used to meet backup, emergency, and peak demands of PCWA customers (Martin, 2007a).

The Central Valley Regional Water Quality Control Board (RWQCB) has prepared and adopted the Fourth Edition of the Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin River Basins (as amended). The Basin Plan identifies beneficial uses of major aquatic systems, and establishes objectives to protect these uses. Beneficial uses for groundwater in the North American Subbasin as designated by the RWQCB include municipal, agricultural, and industrial uses (Central Valley RWQCB, 2007).

Groundwater quality in the North American Subbasin is generally good in most areas, although some localized impairments have been noted, including a major contamination plume downgradient of the proposed project at McClellan Air Force Base. A survey of approximately 260 subbasin public water supply wells conducted by DWR indicated seven wells showing concentrations above a primary Maximum Contaminant Level (MCL) for inorganics, two for radiological species, six for volatile organic carbons (VOCs), and no wells exceeding primary MCLs for nitrates or pesticides. Seventy-five of the wells surveyed exceeded a secondary MCL, related to taste, odor, or appearance (DWR, 2006).

Two existing water supply wells are located onsite, along with a pretreatment system. Together, the two wells are rated for a total water supply of 350 gallons per minute (gpm). Testing of the well water in 2004 revealed high concentrations of boron, which makes it unsuitable for landscape irrigation. In May of 2005, Thunder Valley Casino connected to a metered PCWA water main in the Athens Avenue right of way to supply potable water to the existing casino complex. The two groundwater wells and associated infrastructure have remained on standby since this time. Since the PCWA supply is presently derived from surface water, current casino facility operations are not drawing on the groundwater aquifer.

### 13.1.2 HYDROLOGY AND FLOODING

The proposed project site is located just south of Orchard Creek, a tributary to the Sacramento River system. The Sacramento River watershed is the source of drinking water for much of California. The major perennial and intermittent streams within the project area are shown in **Figure 13-1**. Orchard

**Figure 13-1:** Watershed Map

Creek is one of a series of small, naturally ephemeral streams that flow generally east to west in the vicinity of the project area. Orchard Creek combines with Ingram Slough before it discharges into the Auburn Ravine, located approximately 3 miles downstream of the project site. Auburn Ravine converges into the East Side Canal, then the Cross Canal, which eventually enters the Sacramento River near Verona, approximately 20 river miles from the project site.

Unlike larger tributaries to the Sacramento River, flows in Auburn Ravine and its tributaries, including Orchard Creek, are heavily influenced by municipal, agricultural, and other anthropogenic discharges, which substantially augment in-stream flows during the dry season. Flows within Orchard Creek originate in the foothills southeast of the City of Lincoln, and are a combination of natural and human-induced runoff. Historically, the creek was intermittent and active flows were confined to the wet season, generally October through March (AES, 2002b). However, at present, the creek also receives runoff from upstream golf courses, residential areas, and other human-influenced land uses that have resulted in flow being detectable in Orchard Creek throughout most of the year.

Flows within Orchard Creek are further influenced by discharge of tertiary treated effluent from the WWTP for the existing Thunder Valley Casino, which presently discharges into Orchard Creek via an outfall pipeline at a point slightly north of the project site (**Figure 13-2**). The WWTP is permitted to discharge into Orchard Creek under an existing NPDES permit with the RWQCB (2005) (**Appendix D** of **Appendix J**). In general, winter flows in the section of Orchard Creek near the project site result from a combination of treated wastewater discharge and natural precipitation runoff, while summer flows are dominated by irrigation water runoff from farms, ranches, and golf courses.

Several floods have been recorded in Orchard Creek and Auburn Ravine, with substantial events occurring in December 1955, April 1958, December 1964, March 1983, February 1986, January 1995, and January 1997. The Federal Emergency Management Agency (FEMA) prepares floodmaps that delineate estimated 100-year maximum flood levels within certain areas. These Flood Insurance Rate Maps (FIRMs) are available for the project site and offsite improvement area. As shown in **Figure 13-2**, the project site is not located within the existing 100-year flood zone, but a small portion of the proposed Athens Avenue widening offsite improvement area is located within the 100-year floodplain.

Drainage within the project site and temporary overflow parking lot has been altered through construction, although current stormwater management facilities have been designed in accordance with Placer County's Stormwater Management Manual to maintain overall drainage patterns and reduce the risk of local flooding.

On the project site, drainage swales, culverts, and inlets direct stormwater flows through a series of sediment and pollutant traps and energy dissipaters, and into an onsite detention basin. The 3.9-acre-foot basin, located at the west end of the casino parcel (**Figure 4-2**), is sized to retain flows from a 100-year

**Figure 13-2:** Floodplain and Wastewater Treatment Plant Discharge

storm event. A similar stormwater detention basin on the east side of the temporary overflow parking lot is sized to retain all anticipated stormwater flows from the paved parking lot.

### **13.1.3 WATER SUPPLY**

Water supply to the existing casino is currently provided by PCWA via a connection to an 18-inch diameter water main located within the Athens Avenue right of way. The connection supplies the existing casino with an average of approximately 240,000 gallons per day (gpd), with peak flows of approximately 473,000 gpd (HydroScience Engineers, 2008). The existing connection, in conjunction with an onsite 1,000,000-gallon storage tank, is also utilized to supply fire flow demands for the existing casino and related facilities.

### **13.1.4 WASTEWATER**

Wastewater flows from the existing casino vary depending upon the number of guests at the casino at any given time. As a result, weekend wastewater flows are generally higher than weekday flows, with normal two-day weekends typically having the highest flows on a weekly basis. Wastewater flows emanate from restrooms, kitchens, and other casino facilities, as well as industrial support facilities, including cooling towers, evaporative air conditioning, and other uses within the casino's central plant. Average daily wastewater flow for the existing casino is approximately 184,000 gpd, while peak day flows are approximately 323,000 gpd (HydroScience Engineers, 2008). Wastewater from the casino and associated facilities is treated to tertiary levels by the onsite WWTP and discharged to Orchard Creek. The existing NPDES permit for the wastewater treatment facility allows up to 225,000 gpd annual average daily discharge, and 350,000 gpd maximum daily discharge.

## **13.2 REGULATORY SETTING**

The following text provides an overview of the federal, state, and local regulations and statutory authorities relevant to water quality and hydrology in the context of the proposed project.

### **13.2.1 FEDERAL CLEAN WATER ACT**

The Federal Water Pollution Control Act, as amended in 1972 (the "Clean Water Act," or CWA, 33 USC 1251-1376), and as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the U.S.; it also specifies a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff.

Section 401 of the CWA requires an applicant who proposes an activity that may result in a discharge to waters of the U.S. to obtain a water quality certification by the state, ensuring that the discharge will comply with other provisions of the CWA. Section 402 of the CWA established the NPDES Permit Program, thereby giving the U.S. Environmental Protection Agency (EPA) authority to set limits on effluent discharges to ensure protection of receiving waters.

Section 404 of the CWA establishes a program to regulate the discharge of dredged and fill material into waters of the U.S., including some wetlands. Activities in waters of the U.S. that are regulated under this program include fills for development, water resource projects (e.g., dams and levees), infrastructure development (e.g., highways and airports), and conversion of wetlands to uplands for farming and forestry. Under Section 404, any person or public agency proposing to locate a structure, excavate, or discharge dredged or fill material into waters of the U.S. or to transport dredged material for the purpose of dumping it into ocean waters must obtain a permit for the proposed activity from the U.S. Army Corps of Engineers (Corps).

Discharges of stormwater associated with construction that results in the disturbance of one acre or more of land must apply for coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction Activity (Construction General Permit). The offsite improvement area is located within the area covered by Placer County's municipal stormwater quality permit (State Water Resources Control Board NPDES General Permit No. CAS000004). The General Permit requires all dischargers where construction activity disturbs one acre or more, to:

- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving offsite into receiving waters.
- Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the U.S.
- Perform inspection of all BMPs.

### **13.2.2 STATE OF CALIFORNIA PORTER-COLOGNE WATER QUALITY ACT**

The State of California's Porter-Cologne Water Quality Control Act of 1970 (as amended; California Water Code Section 13000 et seq.) directs each RWQCB to establish water quality objectives, while acknowledging that water quality may be changed to some degree without unreasonably affecting beneficial uses. Beneficial uses represent the services and qualities of a water body (e.g., the reasons why the water body is considered valuable), while water quality objectives represent the standards necessary to protect and support those beneficial uses. The Act provides for the development and periodic review of Water Quality Control Plans (basin plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters.

Water quality objectives for groundwater established in the Sacramento-San Joaquin Rivers Basin Plan include thresholds for bacteria, organic and inorganic chemical constituents, radioactivity, taste and odor, and toxicity (Central Valley RWQCB, 2007).

Water quality objectives for surface water within the Sacramento River watershed, including Orchard Creek as a tributary of the Sacramento River, have been set concerning thresholds for bacteria, bioaccumulation, biostimulatory substances, color, dissolved oxygen, floating material, oil and grease, radioactivity, population and community ecology, pH, salinity, sediment, settleable material, suspended material, taste and odor, temperature, toxicity, turbidity, and ammonia (Central Valley RWQCB, 2007).

The Act requires a Report of Waste Discharge (RWD) for any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair a beneficial use of the surface or groundwater of the state.

### **13.2.3 PLACER COUNTY**

#### ***PLACER COUNTY GENERAL PLAN***

The Placer County General Plan contains goals and policies aimed at protecting groundwater levels and quality. These policies include using high-quality stormwater and treated wastewater to replenish groundwater basins, protecting groundwater and groundwater recharge areas from potential contamination, and encouraging the use of surface water to meet municipal and industrial consumptive demands.

The General Plan also contains several policies related to drainage and flooding, in order to meet the goals of reducing potential water-related damage, minimizing drainage-related inconveniences to the public, and enhancing the environment. These policies include encouraging the use of natural drainage systems, mitigation of development-related increases in stormwater peak flows and/or volume, and acquisition of public easements on floodplain lands for flood protection. All new development shall comply with the Placer County Flood Control and Water Conservation District's Stormwater Management Manual and the County Land Development Manual, the Grading Ordinance and Flood Damage Prevention Ordinance, and the programs and policies of the watershed flood control plans developed by the Flood Control and Water Conservation District. Project designs that minimize drainage concentrations and impervious coverage are encouraged, and evaluations of potential flood hazards are required prior to approval of development projects. Projects that have significant impacts on the quantity of stormwater runoff shall allocate land as necessary for the purpose of detaining post-project flows.

Goals outlined in the General Plan regarding surface water include the protection and enhancement of Placer County's streams and creeks, and ensuring the maintenance of high quality water in water bodies used for domestic water supply. The General Plan contains policies directed toward meeting this goal,

such as requiring use of feasible and practical BMPs to protect streams from the adverse effects of construction activities and urban runoff, and encouraging the use of BMPs for agricultural activities. Grading during the rainy season is discouraged unless adequate mitigation measures are in place to prevent sedimentation of creeks and damage to riparian habitat. Watersheds of all domestic water supply reservoirs shall be protected by limits on grading, construction of impervious surfaces, and application of fertilizers. The complete text of all applicable Placer County General Plan goals and policies for groundwater, hydrology/flooding and surface water quality is included in **Table 4-2**.

### ***SUNSET INDUSTRIAL AREA PLAN***

The goals and policies of the SIA Plan are similar to the Placer County General Plan, including the goal of protection and enhancement of the area’s groundwater, by policies including acquisition of public easements within floodplains, and other means of protecting floodplains and stream channels as critical groundwater recharge areas.

Specific stormwater management policies in the SIA Plan are designed to “collect and dispose of stormwater in a manner that least inconveniences the public, reduces potential water-related damage, and enhances the environment.” The SIA Plan states that the County shall attempt to maintain natural conditions within the 100-year floodplain, except under certain circumstances where necessary work is conducted in compliance with local, state, and/or federal regulating authorities.

The SIA Plan also includes goals and policies related to protection of surface water quality, including requirements for mitigation of potential contamination of surface waters due to urban development and restrictions on grading activities during the rainy season. Development within the SIA must comply with all requirements of the Central Valley RWQCB, including development of a SWPPP and any other requirements for issuance of the appropriate NPDES permit(s) for construction, dewatering, or industrial stormwater discharges. The goals and policies of the SIA Plan related to groundwater, hydrology/flooding, and surface water quality appear in **Table 4-3**.

## **13.3 IMPACTS**

### **SIGNIFICANCE CRITERIA**

The proposed project would significantly affect hydrology and water quality if it would result in any of the following:

- Violate any water quality standards, waste discharge requirements, or otherwise substantially degrade water quality such that identified beneficial uses of a waterway would be impaired;
- Substantially alter the existing drainage pattern of the site or area, which would result in substantial erosion or siltation on or off site;

- Create or contribute runoff water, which would provide substantial additional sources of polluted runoff to existing or planned stormwater drainage systems;
- Result in a substantial change in groundwater levels or quality; or
- Expose people or structures to a substantially increased risk of flooding.

## CONSTRUCTION IMPACTS

<b>IMPACT 13.1:</b>	Construction of the proposed project could violate surface water quality standards or waste discharge requirements, or otherwise significantly impact surface water quality.
<b>SIGNIFICANCE:</b>	Potentially Significant
<b>MITIGATION:</b>	Mitigation Measure 13.1
<b>RESIDUAL SIGNIFICANCE:</b>	Less than Significant

Grading, demolition, excavation, and other activities associated with construction of the proposed project would disturb more than one acre of land and could result in sediment or pollutants being discharged into surface waters. For example, operation of heavy equipment, stockpiling of spoils from excavation, and construction of new buildings and other facilities could result in increased erosion or siltation. Fuels, solvents, and other chemicals used in construction activities could be accidentally spilled, dumped, or discarded and ultimately leak into receiving bodies of water. As such an increase may result in exceedence of the water quality thresholds set by the Central Valley RWQCB.

These impacts could potentially result in a significant adverse impact on water quality, and would require application for an NPDES permit for construction-related stormwater discharges, and adherence to the conditions outlined in that permit. Implementation of Mitigation Measure 13.1 will reduce potential impacts to water quality to less than significant levels.

<b>IMPACT 13.2:</b>	Groundwater levels could be affected by construction of the proposed project.
<b>SIGNIFICANCE:</b>	Less than Significant
<b>MITIGATION:</b>	None Warranted

Groundwater levels could be potentially affected by increasing the amount of impervious surfaces associated with the project area. The majority of the casino site is already covered with impervious surfaces. Road widening along Athens Avenue and Thunder Valley Court would result in new impervious surfaces, which would reduce infiltration of stormwater into underlying soils. This decrease in stormwater infiltration would be minimal, and would not affect underlying aquifers or reduce the amount of groundwater available for other uses.

Proposed development on the project site has been specifically designed to maintain the existing amount of impervious surface. New development on the project site, including the proposed hotel, parking garage, performing arts center, and casino expansion, would primarily be located within areas that are presently covered by the existing paved parking lot. An increase of approximately two acres of impervious surfaces would occur in conjunction with offsite improvements. However, this minor increase in impervious surfaces is not anticipated to significantly reduce groundwater recharge. No additional mitigation measures are recommended.

<b>IMPACT 13.3:</b>	Construction of the proposed project could alter existing drainage patterns, resulting in changes to hydrology and increased risk of flooding in the vicinity of the project area.
<b>SIGNIFICANCE:</b>	Potentially Significant
<b>MITIGATION:</b>	Mitigation Measure 13.2
<b>RESIDUAL SIGNIFICANCE:</b>	Less than Significant

Project construction could result in changes in slopes, grades, and other drainages, both temporary and permanent, that could alter drainage patterns in the vicinity of the proposed project. Increases in the amount or extent of impervious surfaces within the project site or offsite improvement area could lead to increased rates of discharge offsite. Proposed development on the project site would not create additional impervious surfaces (Martin & Martin Civil Engineers, 2007). Proposed offsite improvements would result in approximately two acres of additional impervious surfaces, potentially increasing erosion and changing stormwater drainage patterns.

As shown in **Figure 13.2**, 100-year flood levels are restricted to areas in the close vicinity of Orchard Creek, and are not within the project site. Although the westernmost offsite improvements along Athens Avenue would occur within the 100-year flood zone, construction of the proposed project would not involve new structures within this zone or impede 100-year flood flows. However, alterations of existing drainage patterns resulting from offsite improvements could create potentially significant changes to local hydrology. Implementation of Mitigation Measure 13.2 would reduce these potential impacts to less than significant levels.

## OPERATIONAL IMPACTS

<b>IMPACT 13.4:</b>	Groundwater levels could be affected by operation of the proposed project.
<b>SIGNIFICANCE:</b>	Less than Significant
<b>MITIGATION:</b>	None Warranted

The proposed project would result in a projected total potable water demand of approximately 757,000 gpd on average days, and 1,178,000-gpd peak day demand (HydroScience Engineers, 2008). As

discussed in **Chapter 3.0**, three options are available for providing potable water supply to the proposed project: 1) expansion of the existing PCWA connection to meet 100 percent of project needs; 2) a new connection to the City of Lincoln to supply 100 percent of project needs; or 3) continued use of PCWA water at existing rates, in combination with reactivation of existing onsite wells to provide for additional demands.

Deliveries from the PCWA to the existing casino are currently, and would continue to be, derived primarily from surface water. The PCWA's Groundwater Management Plan authorizes supply of groundwater to western Placer County consumers to meet demands for emergency, backup, or peak flows (Martin, 2007a). Under certain conditions, part of the PCWA water supply to the Proposed Project could be met with groundwater; however, this would occur only when deemed necessary by the PCWA, and would not impact local groundwater levels.

The City of Lincoln utilizes a combination of both surface water and groundwater for its municipal supply. Initial discussions with the City of Lincoln indicate that the City would be able to provide full supply to the proposed casino expansion. Potential drawdown of groundwater levels associated with City of Lincoln wells resulting from municipal water pumping was previously addressed in the City of Lincoln Groundwater Management Plan (City of Lincoln, 2003). Groundwater data presented within this report support the conclusion that groundwater elevations are not significantly declining within the vicinity of the City of Lincoln, and the aquifer is not currently in a state of groundwater overdraft. Relying upon the City of Lincoln to supply 100 percent of the potable water for the proposed project would therefore result in a less than significant impact on local groundwater resources.

Because the existing onsite wells are located in the vicinity of the City of Lincoln, directly adjacent to the area considered by the Groundwater Management Plan (City of Lincoln, 2003), results from the Groundwater Management Plan would apply to the area of the proposed project. Groundwater in the area of the onsite wells is not declining significantly in elevation and is not known to be in a state of overdraft. However, due to high boron concentrations in onsite groundwater, use of existing onsite wells to supplement the PCWA water supply for the proposed expansion is considered the least desirable option for supplying water to the proposed project (HydroScience Engineers, 2008). Even if this option is implemented, no significant impacts would occur to local groundwater levels from operation of onsite wells. No mitigation measures are recommended.

<b>IMPACT 13.5:</b>	Operation of the proposed project could cause violations of waste discharge requirements, that may significantly impact surface water quality.
<b>SIGNIFICANCE:</b>	Less than Significant
<b>MITIGATION:</b>	None Warranted

Implementation of the proposed project would result in average total daily wastewater flows of approximately 625,000 gpd, with peak flows of approximately 875,000 gpd (HydroScience Engineers, 2008). As discussed in **Chapter 3.0**, three alternatives are available for wastewater treatment: 1) connection with the City of Lincoln Wastewater System; 2) expansion of the onsite WWTP, wherein 100 percent of the wastewater generated by the casino would be treated onsite, with effluent discharged to Orchard Creek; and 3) connection with the Placer County Wastewater System, wherein 100 percent of the wastewater generated by the casino would be conveyed to the South Placer Wastewater Authority for treatment at the City of Roseville's Pleasant Grove WWTP.

Alternative 1 would result in the conveyance of raw wastewater to the City of Lincoln's wastewater treatment system. Treatment would be provided by the City's WWTP, which produces tertiary treated effluent. Routing of wastewater flows from the proposed project to the City's WWTP would result in increased discharges to Auburn Ravine. However, the increased discharge would continue to comply with the NPDES permit for the WWTP. Therefore, no significant impact to water quality would result, and no discharge requirements or other water quality standards would be exceeded as a result of operation of the proposed project.

Alternative 2 would result in treatment of wastewater by an expanded onsite WWTP. The plant would be upgraded by adding process trains to the immersed membrane bioreactor (MBR) system to produce higher volumes of high-purity treated effluent. An upgraded ultraviolet (UV) disinfection system, recycled water diversion station, and improved biosolids handling and disposal would also be implemented. An amendment to the existing NPDES permit for the expanded treatment plant would be obtained from the RWQCB prior to increasing treated wastewater discharge rates from current levels. Once obtained, compliance with the amended NPDES permit would ensure that the facility would not significantly degrade receiving water quality, violate any water quality standards, or exceed any waste discharge requirements. Therefore, the impact would be less than significant; no additional mitigation measures are proposed.

Alternative 3, although feasible, may not meet the scheduling requirements of the proposed project. Since the Pleasant Grove WWTP would continue to operate under an NPDES permit in good standing, no significant water quality impacts would occur under this alternative.

## 13.4 MITIGATION MEASURES

**Mitigation Measure 13.1:** Obtain Stormwater NPDES Construction Permit

Mitigation Measure 13.1 applies to Impact 13.1

Prior to construction on the project site, the Tribe shall obtain an NPDES permit from the U.S. EPA. Prior to construction associated with offsite improvements, the Tribe shall obtain an NPDES construction permit from the Central Valley RWQCB and shall provide to the Placer County Engineering and

Surveying Department (ESD) evidence of a state-issued WDID number or filing of a Notice of Intent and fees.

A SWPPP shall be prepared and implemented for all construction that would occur as a result of approval for the proposed project, including offsite improvements. The SWPPP shall identify pollutant sources that may affect the quality of stormwater discharge or potentially affect groundwater quality. The SWPPP shall identify BMPs to reduce these pollutants and their potential release into natural surface or ground waters. BMPs and other measures will be implemented to promote infiltration and retention of stormwater flows in order to channel them away from areas of open soil and other features subject to erosion and flooding. The plan shall include an evaluation of the effectiveness of potential temporary (during construction) and permanent (operational) BMPs, including BMP locations and sizing on site/grading plans. BMPs shall include, but are not limited to, the following:

- If excavation occurs during the rainy season, storm runoff from the construction area shall be regulated through temporary onsite silt traps and/or basins with multiple discharge points to natural drainages and energy dissipaters. Stockpiles of loose material shall be covered and runoff diverted away from exposed soil material. If work stops due to rain, a positive grading away from slopes shall be provided to carry the surface runoff to areas where flow would be controlled, such as the temporary silt basins. Sediment basins/traps shall be located and operated to minimize the amount of offsite sediment transport. Any trapped sediment shall be removed from the basin or trap and placed at a suitable location onsite, away from concentrated flows, or removed to an approved disposal site.
- Temporary erosion control measures (such as fiber rolls, staked straw bales, detention basins, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) shall be provided until perennial revegetation or landscaping is established and can minimize discharge of sediment into nearby waterways. For construction within 500 feet of a water body, appropriate erosion control measures shall be placed upstream adjacent to the water body.
- No disturbed surfaces will be left without erosion control measures in place during the spring and winter months.
- Erosion protection shall be provided on all cut-and-fill slopes. Revegetation shall be facilitated by mulching, hydroseeding, or other methods and shall be initiated as soon as possible after completion of grading and prior to the onset of the rainy season (by October 15).
- BMPs selected and implemented for the project shall be in place and operational prior to the onset of major earthwork on the site. The construction phase facilities shall be maintained regularly and cleared of accumulated sediment as necessary. Effective permanent (operational) mechanical and structural BMPs that will be implemented include the following:
  - Mechanical stormwater filtration measures, including oil and sediment separators or absorbent filter systems shall be installed within the storm drainage system to provide filtration of stormwater prior to discharge.

- Vegetative strips, high infiltration substrates, and grassy swales shall be used where feasible throughout the development to reduce runoff and provide initial stormwater treatment.
- Roof drains shall discharge to natural surfaces or swales where possible to avoid excessive concentration and channelizing stormwater.
- Permanent energy dissipaters shall be included for drainage outlets.
- The existing stormwater detention basins on the project site and temporary overflow parking lot are designed and maintained to provide effective water quality control measures including the following:
  - Maximum detention time for settling of fine particles;
  - Established maintenance schedules for periodic removal of sedimentation, excessive vegetation, and debris that may clog basin inlets and outlets; and
  - Maximum detention basin elevation to allow the highest amount of infiltration and settling prior to discharge.
- Manufacturer’s information for mechanical and structural BMPs will be included, along with appropriate discussion of existing soil properties and/or water table information.
- Hazardous materials such as fuels and solvents used on the construction sites shall be stored in covered containers and protected from rainfall, runoff, vandalism, and accidental release to the environment. All stored fuels and solvents will be contained in an area of impervious surface with containment capacity equal to the total volume of materials stored.
- A stockpile of spill cleanup materials shall be readily available at all construction sites. Employees shall be trained in spill prevention and cleanup, and individuals shall be designated as responsible for prevention and cleanup activities.
- Equipment shall be properly maintained in designated areas with runoff and erosion control measures to minimize accidental release of pollutants.
- All storm drain inlets and catch basins shall be permanently marked with prohibitive graphics and/or language such as “No Dumping! Flows to Creek,” or other language.
- All stormwater runoff shall be diverted around trash storage areas to minimize contact with pollutants. Trash container areas shall be walled or screened to prevent offsite transport of trash by water or wind. Trash containers shall remain covered when not in use, and shall not be allowed to leak.
- Loading dock areas shall be covered and run-on and runoff of stormwater to the dock area shall be minimized. Direct connections to storm drains from depressed loading docks (truck wells or sumps) are prohibited.

**Mitigation Measure 13.2:** Preparation of a Drainage Report and Implementation of BMPs

Mitigation Measure 13.2 applies to Impact 13.3

A comprehensive Drainage Report shall be prepared for offsite improvements and submitted with the project Improvement Plans, in conformance with the requirements of Section 5 of the Placer County Land Development Manual (LDM) and the Placer County Storm Water Management Manual that are in effect

at the time of submittal, to the ESD 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 offsite 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.

Stormwater runoff shall be reduced to 90% of pre-project conditions through the installation of retention/detention facilities. Retention/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 ESD. Maintenance of these facilities shall be provided by the Tribe unless, and until, a County Service Area is created and said facilities are accepted by the County for Maintenance. The ESD may, after review of the project drainage report, delete this requirement if it is determined that drainage conditions do not warrant installation of this type of facility. In the event onsite detention requirements are waived, this project may be subject to payment of any in-lieu fees prescribed by County Ordinance. No retention/detention facility construction shall be permitted within any identified wetlands area, floodplain, or right of way, except as authorized by project approvals.

Water quality 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 ESD.

Construction (temporary) BMPs for the project include, but are not limited to: Fiber Rolls (SE-5), Straw Bale Barrier (SE-9), Straw Wattles, Storm Drain Inlet Protection (SE-10), Velocity Dissipation Devices (EC-10), Hydroseeding (EC-4), Silt Fence (SE-1), Stabilized Construction Entrance (TC-1), and revegetation techniques. Storm drainage from on- and offsite impervious surfaces (including roads) shall be collected and routed through specially designed catch basins, vegetated swales, vaults, infiltration basins, water quality basins, filters, etc. for entrapment of sediment, debris and oils/greases or other identified pollutants, as approved by the ESD. BMPs shall be designed at a minimum in accordance with the Placer County Guidance Document for Volume and Flow-Based Sizing of Permanent Post-Construction Best Management Practices for Stormwater Quality Protection.

Post-development (permanent) BMPs for the project include, but are not limited to: Water Quality Inlets (TC-50), etc. No water quality facility construction shall be permitted within any identified wetlands area, floodplain, or right of way, except as authorized by project approvals. All BMPs shall be maintained as required to insure effectiveness. The Tribe shall provide for the establishment of vegetation, where specified, by means of proper irrigation. Proof of ongoing maintenance, such as

contractual evidence, shall be provided to ESD upon request. Maintenance of these facilities shall be provided by the Tribe unless, and until, a County Service Area is created and said facilities are accepted by the County for maintenance. Prior to Improvement Plan approval, easements shall be created and offered for dedication to the County for maintenance and access to these facilities in anticipation of possible County maintenance.

This offsite improvement area is located within the area covered by Placer County's municipal stormwater quality permit, pursuant to the NPDES Phase II program. Project-related stormwater discharges are subject to all applicable requirements of said permit. BMPs shall be designed to mitigate (minimize, infiltrate, filter, or treat) stormwater runoff in accordance with "Attachment 4" of Placer County's NPDES Municipal Stormwater Permit (State Water Resources Control Board NPDES General Permit No. CAS000004).