

G. HYDROLOGY AND STORM DRAINAGE

This section describes the existing hydrological setting for the Plan Area, including runoff, drainage, and water quality based on available information from published and unpublished reports, site-specific environmental investigation reports, internet sources, and a reconnaissance of the site conducted in October 2006. Based on the information reviewed, this section identifies impacts that may result from project development, and provides mitigation measures to reduce potential impacts to a less-than-significant level, if feasible.

1. Setting

A description of the existing conditions related to hydrology and storm drainage is provided below.

a. Climate. The Truckee area is located within a climate 'island' that encompasses the southern Cascade and Sierra mountain ranges and is characterized as humid-continental. The climate is influenced seasonally by both polar and tropical weather patterns, with relatively large changes in temperature and precipitation throughout the year.¹ In Truckee, for the period between 1948 and 2007, the annualized average high temperature is 59.2° Fahrenheit (F); the average low is 27.6°F. A high of 100.0°F occurred on 11 July 2002, and a low of minus (-) 23.0°F on February 27, 1962. During this period of record, the mean annual precipitation in the site vicinity is approximately 31.6 inches. Annual precipitation has varied from 16.04 inches (1976) to 54.62 inches (1996), with a one-day high of 5.2 inches of precipitation on February 1, 1963. Typically, about 75 percent of the precipitation occurs during the winter and spring (December to May).² Of this precipitation, the average annual snowfall amounts to 203.6 inches; with a high occurring in 1952 of 401.4 inches of snow.³

b. Runoff and Drainage. The approximately 75-acre Plan Area is located within a relatively flat semi-developed area. The existing ground surface elevation is approximately 5,800 feet above sea level (National Geodetic Vertical Datum [NGVD]) with a slope of approximately 1.5 percent to the east. Trout Creek crosses the site, running roughly parallel to and near the northern boundary, and the Truckee River is approximately 200 feet south

¹ Lutgens, Frederick K., Tarbuck, Edward J., 1979, *The Atmosphere: an introduction to meteorology*, Prentice Hall.

² Western Regional Climate Center, 2007, *General Climate Summary, Station 049043, Truckee, CA*, accessed February 6, 2008 at: www.wrcc.dri.edu.

³ The water content of snow is variable. Many snows that fall at temperatures close to 32°F and snows accompanied by strong winds contain approximately one inch of water per 10 inches of snowfall, however, ten inches of fresh snow can contain between 0.10 and 4.0 inches of water depending on crystal structure, wind speed, temperature, and other factors. The majority of U.S. snows fall with a snow-to-water ratio of between 10:1 and 4:1.

of, and parallels, the southeastern edge of the site.⁴ The Plan Area is largely covered with pervious surfaces with limited areas of pavement and buildings. Most of the precipitation at the site encounters the pervious surfaces, and either infiltrates, pools (or accumulates if snow) and evaporates, or drains by sheetflow to Trout Creek, which joins the Truckee River just east of the site. The Plan Area is located in the Trout Creek Planning Watershed (PWS) surface water planning area,⁵ of the Truckee River Hydrologic Area (HU No. 635.20),⁶ and the Martis Valley Groundwater Region.⁷

c. Snow Removal. The Town of Truckee has developed policies and procedures for snow and ice removal, as implemented by the Public Works Department.⁸ Plowing begins after accumulations reach three inches or more and crews follow a prioritized plan for street clearing. Snow is initially plowed to the side of the street in windrows with special attention given to school bus routes, and main arterial streets. Plowing and snow removal operations may be ongoing 24-hour per day, and last several days after a major storm. Additional snow removal to widen the useable portion of the roads, after the initial pass, may not occur for several days. Application of sand is not usually initiated during an ongoing snowfall event as additional plowing would remove the sand from the roadway, potentially requiring re-sanding.⁹

d. Flooding. The proposed Plan Area is mapped by the Federal Emergency Management Agency (FEMA) as flood Zones A (100-year), B (500-year) and C (minimal flooding) (Figure IV.G-1). The Flood Zone A area is an irregular shaped zone along the margins of Trout Creek that expands south of Trout Creek and east of Donner Pass Road to encompass roughly one-quarter of the area inside the loop of the present 'balloon' track. Farther east, Zone A varies in width, but is shown to average approximately 200 feet in width, with wider areas mapped behind obstructions presented by creek crossing structures. The Zone B area is at the west end of the project. It originates outside the Plan Area where Trout Creek passes under Jibboom Street. Within the project, it is the area from about 300 feet east of Brockway

⁴ USGS, 2008, The National Map Viewer, NED Contiguous U.S. 1/3W Arc Second Elevation Data, accessed at: <http://nationalmap.gov/index.html>, on February 6, 2008.

⁵ California Watershed Portal, 2008, *Mapping Website*, accessed 2-4-2008 at: <http://cwp.resources.ca.gov/>.

⁶ Lahontan Regional Water Quality Control Board (LRWQCB), 1995 as amended through 2005, Water Quality Control Plan for the Lahontan Region: North and South Basins, December.

⁷ California Department of Water Resources, 2006, *California Groundwater Bulletin 118, Martis Valley 6-67*, 20 January, accessed 2-4-2008 at: <http://www.groundwater.water.ca.gov/>.

⁸ Town of Truckee, City Ordinances, Chapter 10.17 Snow Removal.

⁹ Town of Truckee, 2005. *Snow Removal*. Accessed 7/1/08 at: www.townoftruckee.com/snowremov.html

Road to E Street and then southeast across the width of the project to East River Street (and the Truckee River beyond). The remaining portions of the site are mapped as Zone C.¹⁰

Restoration of Trout Creek to a more stable and naturally-functioning creek channel corridor upstream and within the Master Plan Area has been proposed by the Town of Truckee and an independent CEQA analysis is being completed for the restoration project. Approximately 6,000 feet of creek channel corridor would be restored with a combination of channel modification and floodplain restoration. The restoration plan is a separate project from the proposed Master Plan project, but as the areas overlap and some Master Plan elements (i.e., balloon track relocation and two associated creek crossings, Glenshire Drive reroute, and site grading activities) are interdependent with the restoration, the creek restoration efforts would be coordinated with Master Plan development.¹¹ It is anticipated that the restoration of Trout Creek would, when completed, result in a reduction in flooding in the restoration area, including the area of the proposed Master Plan project. Changes in the 100-year floodplain within the area of the Trout Creek restoration, as compared to the most recent Flood Insurance Rate Map (FIRM), would be resolved by the Letter of Map Amendment (LOMA) process with FEMA, possibly resulting in new boundaries for the 100- and 500-year flood zones.¹²

Catastrophic structural dam failure can be caused by an earthquake or overflow. The Plan Area is not within a mapped dam failure flood inundation hazard area.¹³ The site is not adjacent or near a substantial body of standing water, therefore the location and elevation of the site would be expected to preclude exposure of the site to local coastal hazards, such as tsunamis, seiche, or extreme high tides. The nearest substantial bodies of water, Donner Lake, 1.6 miles to the west, and Lake Tahoe, 10 miles to the southeast, do not present an imminent tsunami or seiche treat to the Plan Area.^{14,15}

¹⁰ Federal Emergency Management Agency (FEMA), 1983, *Flood Insurance Rate Map (FIRM)*, Nevada County, California, Community Panel Number 060210 0508 B, January 19, accessed 2-5-08 at: <http://www.msc.fema.gov/>.

¹¹ Town of Truckee, 2007, *Truckee Railyard Master Plan: Public Review Draft*, 26 November, 2007.

¹² Town of Truckee, 2006. *Request for Proposals, Trout Creek Restoration Project*, 12 October.

¹³ Governor's Office of Emergency Services (OES), 2002, *Merged Dam Inundation Maps for California, GIS files on DVD*, State of California.

¹⁴ Ichinose, Gene A., et al., 1999, *The Potential Hazard From Tsunami And Seiche Waves Generated By Future Large Earthquakes Within The Lake Tahoe Basin, California-Nevada*, UNR, Nevada Seismological Laboratory MS-174, Geophysical Research Letters, Vol. 27, pgs. 1203-1206. April 15, 2000.

¹⁵ Town of Truckee, 2007, *General Plan 2025 EIR*.

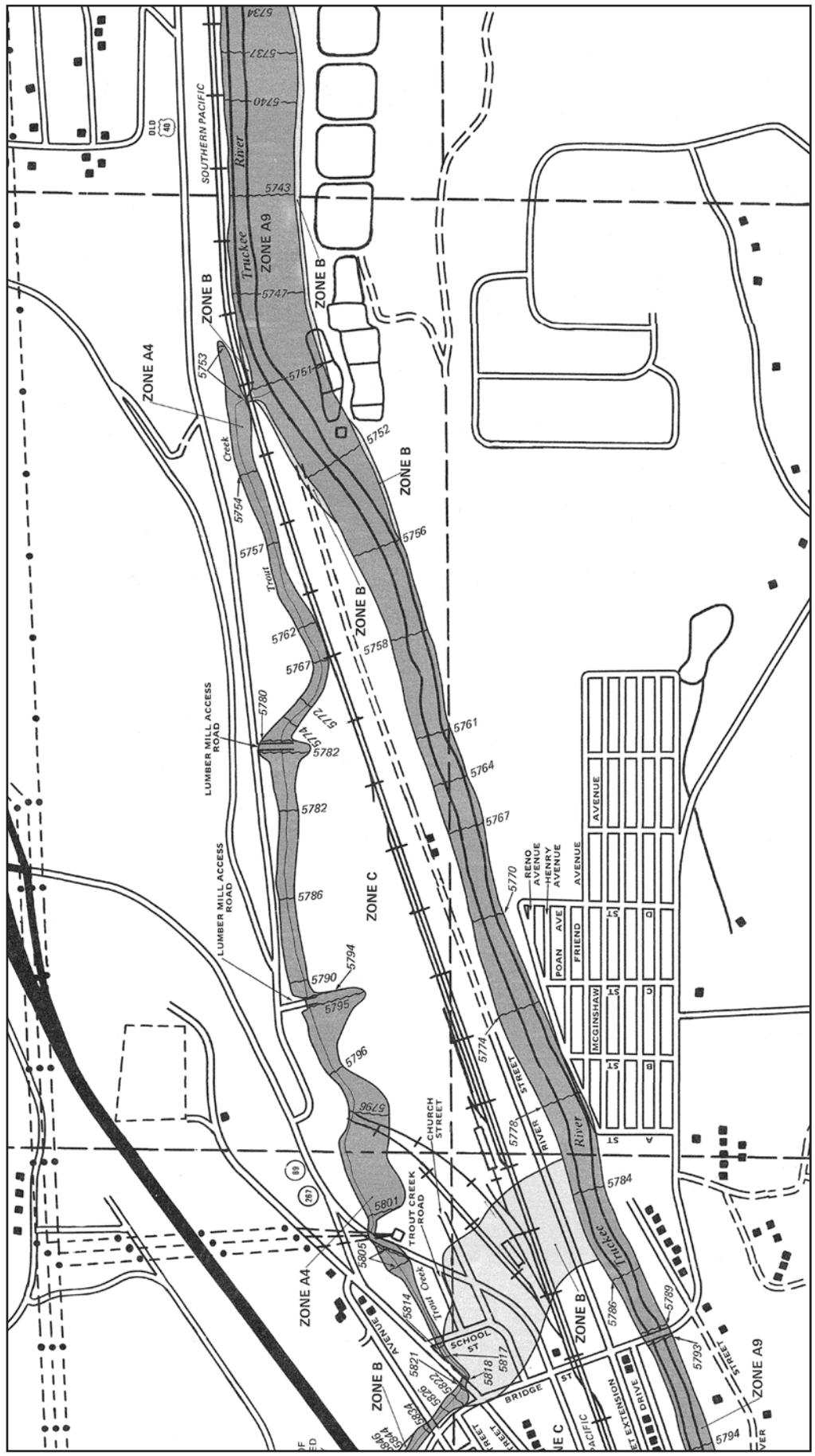


FIGURE IV.G-1

Truckee Railway Master Plan EIR FEMA Flood Zone Designations

SOURCE: FEMA, FLOOD INSURANCE RATE MAP., 1983
 \\Saul-st\On-Site\2007\1407542 Truckee Railway Master Plan EIR\Documents\Admin EIR\Figures

e. Water Quality. The quality of surface water and groundwater in the vicinity of the Plan Area is affected by past and current land uses at the site and within the watershed and the composition of geologic materials in the vicinity. Water quality in surface and groundwater bodies is regulated by the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCB). The Plan Area is under the jurisdiction of the Lahontan Regional Water Quality Control Board (Water Board), which is responsible for implementation of State and federal water quality protection regulations and guidelines in the upper Sierra Nevada area and as far south as the Mojave area and Lake Arrowhead. The Water Board implements the Water Quality Control Plan (Lahontan Basin Plan), a master policy document for managing water quality issues in the region. The Basin Plan establishes beneficial water uses for waterways and water bodies within the region. Designated beneficial use classifications for the Truckee River, which is the receiving water for drainage from the Plan Area, include; Agricultural Supply, Cold Freshwater Habitat, Commercial and Sportfishing, Freshwater Replenishment (of surface water bodies), Ground Water Recharge, Industrial Service Supply, Migration for Aquatic Organisms, Municipal and Domestic Water Supply, Hydropower Generation, Rare, Threatened or Endangered Species Habitat, Water Contact Recreation, Water Non-Contact Recreation, Spawning, Reproduction and Development Habitat, and Wildlife Habitat. The Truckee River is listed on the State's 303(d) list as impaired for sedimentation and siltation. Causes listed include construction and land development, highway, road and bridge construction, streambank modifications and destabilization, and nonpoint sources.

(1) Stormwater. Runoff water quality is regulated by the National Pollutant Discharge Elimination System (NPDES) Program (established through the Clean Water Act);¹⁶ the NPDES program objective is to control and reduce pollutant discharges to water bodies. There are two NPDES permits that are relevant to the proposed project.

- **NPDES General Permit for Discharges of Stormwater Associated with Construction Activity (99-08-DWQ) commonly referred to as the Construction General Permit (CGP).** Projects anywhere in the State of California¹⁷ disturbing more than one acre of land during construction are required to file a Notice of Intent (NOI) with the appropriate Regional Water Board to be covered under the CGP for discharges of stormwater associated with construction activity. A developer must propose control measures that are consistent with the CGP. A Storm Water Pollution Prevention Plan (SWPPP) must be developed and implemented for each site covered by the CGP. The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed

¹⁶ US Environmental Protection Agency, 2007, NPDES Overview, accessed February 7, 2008 at: <http://cfpub.epa.gov/npdes/index.cfm>.

¹⁷ There are two Regional Water Boards that have adopted their own permits to cover discharges from construction activity greater than 1 acre within specific watersheds. The areas are the Lake Tahoe hydrologic unit (Region 6) and the San Jacinto Watershed (Region 8). Owners of construction projects in these two watersheds must apply for coverage under the applicable Regional Board permits rather than the statewide Construction General Permit.

buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list Best Management Practices (BMPs) the discharger will use to protect stormwater runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Section A of the CGP describes the elements that must be contained in a SWPPP.

A revision to the CGP is currently undergoing review, and may be adopted by the Water Board during 2008. Some of the changes proposed in the new Permit include required numeric action levels for pH, turbidity, and total petroleum hydrocarbons, additional BMPs, effluent monitoring and reporting, active treatment systems, performance standards for hydromodification impacts, technical training for staff, and annual report requirements.

- **NPDES General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems.** Locally, this NPDES program is administered by the regional Water Board. The Water Board has delegated responsibility for implementation of stormwater regulations in the vicinity of the Plan Area to the Town of Truckee. The General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems, Water Quality Order (WQO) No. 2003-0005-DWQ (Small MS4 General Permit), requires that Dischargers (in this case the Town of Truckee) develop and implement a Storm Water Management Program (SWMP). The SWMP describes the BMPs, measurable goals, and time schedules for implementation as well as assigns responsibility for each task. The MS4 General Permit requires all permittees to develop and implement a SWMP designed to reduce the discharge of pollutants through their MS4s to the Maximum Extent Practicable (MEP).

A SWMP has been prepared by the Town of Truckee and has been approved by the Water Board (Permit No. 6A290712005).¹⁸ The SWMP describes the programs to be implemented in the Town of Truckee to control stormwater pollutants.

The SWMP includes guidance for new development and significant redevelopment projects. The SWMP includes by reference Attachment 4 of the General Permit, which provide specific design standards applicable to the project based on the size and nature of the proposed project. As specified by the MS4 General Permit, all new development projects, regardless of size, should incorporate appropriate source control and site design measures that minimize stormwater pollutant discharges to the maximum extent practicable. The proposed project

¹⁸ Vaughan, Mike, 2008. Senior Engineer, Truckee Public Works Department. Verbal communications with RRM Design Group. August 1.

would be required to comply with the terms of the SWMP and WQO Attachment 4, including (but not limited to):

- **Numeric Sizing Criteria for Pollutant Removal Treatment Systems.** The project must include source controls, design measures, and treatment controls to minimize stormwater pollutant discharges. Treatment controls must be sized to treat a specific amount – about 85 percent – of average annual runoff.
- **Operation and Maintenance of Treatment Measures.** Treatment controls often do not work unless adequately maintained. The permit requires an operations and maintenance (O&M) program, which includes: 1) identifying the properties with treatment controls; 2) developing agreements with private entities to maintain the controls, and 3) periodic inspection, maintenance (as needed), and reporting.
- **Limitation on Increase of Peak Storm Water Runoff Discharge Rates.** Urbanization creates impervious surfaces that reduce the landscape’s natural ability to absorb water and release it slowly to creeks. These impervious surfaces increase peak flows in creeks and can cause erosion. Projects must evaluate the potential for this to occur and provide mitigation as necessary.

State law authorizes the State and Regional Water Boards to set prohibitions against the discharge of waste in certain areas or under certain conditions. These prohibitions may apply to discharges to groundwater or surface water or both (CA Water Code § 13280-13284). The prohibitions do not directly prohibit the construction of new subdivisions, development of environmentally sensitive lands, or development which is not offset by remedial erosion control measures. The discharge of sediment and nutrients which results from such development is prohibited by the Lahontan Basin Plan. The prohibitions related to new development can be enforced through conditions in site-specific waste discharge permit requirements and/or NPDES stormwater permits.¹⁹

(2) **Groundwater.** There is a potential for soil contamination resulting from former industrial activities on properties within the proposed Plan Area to have occurred, which could affect groundwater quality. Groundwater testing and remediation has been ongoing since 1998 at the Berry-Hinckley site on Church Street. The fall 2007 quarterly remediation progress report for the Berry-Hinckley site indicates ground water levels at the Plan Area vary seasonally from approximately 20 to 60 feet below the ground surface; also, the report includes historical data detailing the impacts to groundwater resulting from an earlier release at the site.²⁰ The remediation of soil and groundwater contamination at Berry-

¹⁹ LRWQCB, 2005. op. cit.

²⁰ McGinley & Associates, 2007. Groundwater Monitoring and Remediation Report – Third Quarter 2007, Former BHI Store #545, 10161 Church Street, Truckee, CA. LUSTIS #6T0276A, prepared for Consolidated Nevada Corporation, Reno, NV; Lahontan Regional Water Board; State of California; and Nevada County Environmental Health Department.

Hinckley is nearly complete; details are discussed in Section IV.J, Hazards and Public Safety, of this EIR.

Truckee Development Associates, LLC contracted with environmental consulting firms to determine the extent of soil and ground water contamination. Initial sampling within the Hotel parcel phase one area (see Figure IV.J-1 in the Hazards and Public Safety section) indicates that it is likely that no further remediation would be required in this area. Sampling is planned for the adjacent Donner Pass Road alignment which is to be abandoned, and is expected to be similar to the phase one area. Results of the investigation for the area within the balloon track indicate required remediation will likely be limited to removal of petroleum-contaminated near-surface soils. The eastern portion of the site was determined to require no remediation.²¹ Based on the information provided by the proponent's consultants as cited in the Draft Master Plan, groundwater within the Plan Area (except in the area of the Berry-Hinckley facility) is unaffected by past uses.

f. Town of Truckee Policies. Town policies related to Hydrology and Water Quality are listed below.

2025 General Plan Policies

Goal SAF-2: Reduce hazards associated with flooding.

P2.1: Continue to work with appropriate local, State and federal agencies (particularly FEMA) to maintain the most current flood hazard and floodplain information and use it as a basis for project review and to guide development in accordance with federal, State and local standards.

P2.2: Continue to participate in the National Flood Insurance Program (NFIP).

P2.3: Incorporate stormwater drainage systems in development projects to effectively control the rate and amount of runoff, so as to prevent increases in downstream flooding potential.

P2.4: Discourage development within the Truckee River floodplain and adjacent to other waterways to minimize risks associated with flooding.

Goal LU-4: Coordinate land development with provision of services and infrastructure.

P4.5 Require new infrastructure and development to be designed and built to manage stormwater runoff and to minimize or eliminate harmful impacts to property prone to flooding, water quality, and riparian, wetland, and meadow habitats. When infrastructure is replaced or retrofitted, require the upgrading of stormwater management systems to minimize or eliminate these impacts.

Goal COS-11: Protect water quality and quantity in creeks, lakes, natural drainages and groundwater basins.

P11.1: Minimize excessive paving that negatively impacts surface water runoff and groundwater recharge rates.

²¹ Town of Truckee, 2007, Truckee Railyard Master Plan: Public Review Draft, 26 November, 2007.

P11.2: Protect surface and groundwater resources from contamination from runoff containing pollutants and sediment, through implementation of the Regional Water Quality Control Board's Lahontan Region's, Best Management Practices.

P11.3: Cooperate with State and local agencies in efforts to identify and eliminate all sources of existing and potential point and non-point sources of pollution to ground and surface waters, including leaking fuel tanks, discharges from storm drains, auto dismantling, dump sites, sanitary waste systems, parking lots, roadways, and logging and mining operations.

P11.4: Enforce guidelines set forth by the Regional Water Quality Control Board Lahontan Region regarding waste discharge associated with domestic wastewater facilities such as septic tank leach-field systems.

P11.5: Require new development projects that have the potential to impact local water quality through increased stormwater runoff or erosion to include analysis of water quality impacts as a component of project review and to integrate mitigation measures that would reduce identified impacts to an acceptable level.

P11.6: Utilize Low Impact Development and Best Management Practices established in the Regional Water Quality Control Board's Truckee River Hydrologic Unit Project Guidelines for Erosion Control, and the State of California Stormwater Best Management Practices Handbooks, and other resources such as the Practice of Low Impact Development (US Department of Housing and Urban Development) and Water Quality Model Code and Guidebook (State of Oregon, Department of Land Conservation and Development) as guidelines for water quality and erosion control measures required by the Town.

P11.9: Recognize the importance of stormwater management in protecting all water resources in Truckee, for example, flood control, surface and ground water quality, and river, stream and lake health.

Actions

A11.1: Establish coverage limitations for impervious paved areas in new development, and encourage the use of permeable paving materials and other water quality management practices to minimize stormwater runoff and the loss of groundwater recharge from paving. Such limitations shall take into account Policy P13.2 under Goal COS-13, concerning particulate matter pollution associated with unpaved roads.

1997 Downtown Specific Plan (DSA) Policies

DSA Policy 13: Pursue environmental characterization of critical sites and develop strategies to resolve soil contamination problems that may hinder development Downtown.

DSA Water Quality Protection Policies: New private and public development including new parking areas shall comply with the Lahontan Erosion Control Guidelines and BMPs.

The Town shall work with responsible property owners and Lahontan to identify and remedy existing untreated discharges within the DSA to implement General Plan Conservation and Open Space Policy 63.

2. Relevant Railyard Draft Master Plan Policies

The Draft Master Plan includes specific policies related to hydrology and storm drainage. New development within the Master Plan Area would be subject to the following hydrology and storm drainage policies within the Draft Master Plan:

Policies

4.b: Achieve multiple resource conservation goals through the design of public open spaces. Open space can provide natural habitat for wildlife, storm water management/ infiltration and winter snow storage.

4.d: Require site design to incorporate Low Impact Development (LID) principles including storm water infiltration, retention and treatment on site, consistent with NPDES storm water standards.

4.f: Restore Trout Creek while striving to balance natural, wildlife, habitat, flood control, social and cultural elements (including recreation and interpretive signage) to create a healthy and sustainable environment.

4.g: Embrace Trout Creek as an urban stream and reinforce this natural asset while creating a place for human enjoyment.

3. Impacts and Mitigation Measures

This section analyzes the impacts related to hydrology and water quality that could result from implementation of the Draft Master Plan. The subsection begins with criteria of significance, which establish the thresholds for determining whether a project impact is significant. The latter part of this section presents the potential impacts and recommends mitigation measures, as appropriate.

a. Criteria of Significance. The project would have a significant effect on hydrology or water quality if it would:

- Violate any water quality standards or waste discharge requirements.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- Otherwise substantially degrade water quality.
- 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.
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
- 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.
- Inundation by seiche, tsunami, or mudflow.

The significance criteria identified above are based on Section 15065 and Appendix G of the CEQA Guidelines.

b. Less-than-Significant Hydrology and Storm Drainage Impacts. The Master Plan Area would not be exposed to threats from coastal flooding hazards, including tsunami, extreme high tides, or seiche. The site is not located within a mapped dam failure inundation zone. These potential impacts are therefore less than significant.

The restoration of Trout Creek is a separate project being conducted by the Town of Truckee, and the goals of this project include reducing flooding hazards, improving the riparian habitat, and minimizing erosion and sedimentation to the creek. As part of the restoration project, a new bridge has been completed at the intersection of Trout Creek and Donner Pass Road. Design and restoration plans for additional sections of the creek both upstream and downstream of the bridge are currently under development by the Town and its consultants. The downstream sections will be designed in coordination with the proposed Master Plan for the Railyard redevelopment.²² Elements of the Railyard Draft Master Plan are specifically designed to work in conjunction with the creek restoration project. The Railyard Draft Master Plan proposes the relocation of the existing balloon track, which currently constricts the Trout Creek channel causing flow impedance and backwater flooding during high flow events. As part of the separate restoration project, Trout Creek would be realigned and new culverts and/or bridges constructed during the phased development of the proposed project. Relocation of the balloon track further to the east would allow the current creek to be widened to handle increased flows. The proposed Master Plan project would alter the course of Trout Creek though keeping near the centerline of the current alignment, include two new creek crossings for relocation of the

²² Town of Truckee, 2007. *Capital Improvement Projects of 2007*. Accessed 6/27/08 at: www.townoftruckee.com/CIP%202007.html.

balloon track, widen the channel to accommodate increased flow during 100-year flood events, introduce opportunities for meanders to form in the widened bed, and enhance riparian and restore wetland habitat along the creeks route.²³ The work would be completed to reduce erosion and flooding and enhance biotic resource values.²⁴ Flooding impacts, including any reduction in floodplain area or depth, would be reevaluated by FEMA upon request of the Town and a Letter of Map Amendment (LOMA) issued, subject to evaluation of the new conditions.²⁵ The in-channel restoration work on Trout Creek work would be conducted under permit from the relevant resource agencies (see permitting discussion in the Biology section of this EIR, Section IV.H) so potential impacts associated with creek alteration would be less than significant. Potential impacts to hydrology and water quality are therefore less than significant.

The proposed project includes a policy that site design would incorporate Low Impact Development (LID) principles including stormwater infiltration, retention and treatment on site, consistent with NPDES, Lahontan Water Board and Town of Truckee stormwater standards. LID uses urban design concepts which mimic natural (pre-development) hydrologic processes by reducing the amount of impervious coverage and maintaining site infiltration. The Railyard Draft Master Plan includes a Stormwater Management Concept which emphasizes LID and utilizes landscaped areas to control and treat stormwater at its source, increase infiltration and reduce runoff. The proposed project would not use local groundwater for water supply (see Section IV.K, Utilities, for discussion of potable water supply for the project) and therefore would not affect aquifer levels by groundwater withdrawal. As a result, the project would not deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. These potential impacts are therefore less-than-significant.

The Railyard Draft Master Plan includes a policy to maintain a minimum 20-foot setback for development beyond the mapped 100-year floodplain. As a result, the project does not propose to 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, nor place within a 100-year flood hazard area structures which would impede or redirect flood flows. The project would include activities with the 100-year flood hazard zone (relocation

²³ Town of Truckee, 2007, Truckee Railyard Master Plan: Public Review Draft, 26 November, 2007.

²⁴ PWA, LTD., 2003. Trout Creek Restoration Project; Design Documentation Report, 21 May.

²⁵ Conditional LOMA. Federal flood insurance requirements apply to structures, not to properties; however, if a structure is proposed, a property owner may submit data for a conditional LOMA. The technical requirements are the same as for a LOMA for an existing structure; however, the review is based on proposed conditions. Upon completion of the structure, the property owner must still apply for a LOMA to have the Federal flood insurance requirement removed. www.fema.gov/library/.

of the Balloon Track and adjustment of the Trout Creek alignment, as discussed above) in coordination with the separate Trout Creek Restoration Project. As the stated goals of both projects include the improvement of habitat, reduction of flood hazard and protection of the creek, this is a less-than-significant impact.

c. Significant Hydrology and Storm Drainage Impacts. Implementation of the Draft Master Plan could result in the following significant impacts related to hydrology and water quality.

(1) Construction-Period Impacts. Construction and grading within the Plan Area would require temporary disturbance of surface soils. During the construction period, grading and excavation activities would result in exposure of soil to runoff, potentially causing erosion and entrainment of sediment (and potentially contaminants associated with releases that may have occurred as a result of past industrial uses) in the runoff. Soil stockpiles and excavated areas on the Plan Area would be exposed to runoff and, if not managed properly, the runoff could cause erosion and increased sedimentation and pollutants in stormwater.

Impact HYD-1: Construction activities could result in degradation of water quality in the receiving waters by reducing the quality of stormwater runoff. (S)

The potential for pollutant releases is present at most construction sites given the types of materials used, including fuels, oils, paints, and solvents. Once released, these substances could be transported to the receiving waters in stormwater runoff, wash water, and dust control water, potentially reducing water quality. In addition, the Plan Area is the location of historic chemical releases that have affected soil quality. Erosion of contaminated soils could result in the transport of pollutants (along with the sediments) to the receiving waters.

The Basin Plan includes specific guidelines for construction projects, including prohibition of discharge of sediments to waters listed as impaired for sediment on the Clean Water Act (CWA) Section 303(d) list. In this case, Basin Plan requirements are generally enforced through implementation and required compliance with applicable NPDES permits. The NPDES Construction General Permit requires a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

Mitigation Measure HYD-1: The project proponent shall prepare a Storm Water Pollution Prevention Plan (SWPPP) designed to reduce potential impacts to surface water quality throughout the construction period of the project. The SWPPP must be maintained on-site and made available to Town inspectors and/or Water Board staff upon request. The SWPPP shall include specific and detailed Best Management Practices (BMPs) designed to mitigate construction-related pollutants. At minimum,

BMPs shall include practices to minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) with stormwater. The SWPPP shall specify properly designed centralized storage areas that keep these materials out of the rain.

An important component of the stormwater quality protection effort is the knowledge of the site supervisors and workers. To educate on-site personnel and maintain awareness of the importance of stormwater quality protection, site supervisors shall conduct regular tailgate meetings to discuss pollution prevention. The frequency of the meetings and required personnel attendance list shall be specified in the SWPPP.

The SWPPP shall specify a monitoring program to be implemented by the construction site supervisor, which must include both dry and wet weather inspections. In addition, in accordance with SWRCB Resolution No. 2001-046,²⁶ monitoring would be required during the construction period for pollutants that may be present in the runoff that are “not visually detectable in runoff.”²⁷

BMPs designed to reduce erosion of exposed soil may include, but are not limited to: soil stabilization controls, watering for dust control, perimeter silt fences, placement of fiber rolls, and sediment basins. The potential for erosion is generally increased if grading is performed during the rainy season as disturbed soil can be exposed to rainfall and storm runoff. If grading must be conducted during the rainy season, the primary BMPs selected shall focus on erosion control; that is, keeping sediment on the site. End-of-pipe sediment control measures (e.g., basins and traps) shall be used only as secondary measures. If hydro-seeding is selected as the primary soil stabilization method, then these areas shall be seeded by September 1 and irrigated as necessary to ensure that adequate root development has occurred prior to October 1. Entry and egress from the construction site shall be carefully controlled to minimize off-site tracking of sediment. Vehicle and equipment wash-down facilities shall be designed to be accessible and functional during both dry and wet conditions.

The Town of Truckee Department of Engineering shall review and approve the SWPPP prior to approval of the grading plan. Town staff may require more stringent stormwater treatment measures, at their discretion. Implementation of this mitigation would reduce the level of significance of this impact to a less-than-significant level.
(LTS)

²⁶ State Water Resources Control Board, 2001. Modification of Water Quality Order 99-08-DWQ State Water Resources Control Board (SWRCB) National Pollutant Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity.

²⁷ Construction materials and compounds that are not stored in water-tight containers under a water-tight roof or inside a building are examples of materials for which the discharger may have to implement sampling and analysis procedures.

(2) **Operation-Period Impacts.** New construction and intensified land uses at the Plan Area would result in increased vehicle use and potential discharge of associated pollutants. Increased numbers of vehicles and parking facilities at the Plan Area would likely result in increased leaks of fuel, lubricants, tire wear, and fallout from exhaust, which will contribute petroleum hydrocarbons, heavy metals, salt or deicing chemicals, and sediment to the pollutant load in runoff and snowmelt being transported to receiving waters. Snow storage can result in an accumulation of dirt, oil, debris, and trash in snow piles which will result in a seasonal increase in the release of these pollutants during periods of rain and thaw, primarily the first flush resulting from warm spring weather. Runoff from the landscaped areas at the proposed project may contain residual pesticides and nutrients. The Water Board's Basin Plan makes note of deicing salt and traction sand²⁸ in stormwater runoff contributing to vegetation mortality (including trees) in roadside environments. This in turn can increase erosion and sedimentation problems. Long-term degradation of runoff water quality from the site could impact local water quality in Trout Creek and/or the Truckee River. The Truckee River is listed as impaired for sediment on the CWA Section 303(d) list.²⁹

Impact HYD-2: Post-construction site uses could result in degradation of water quality in the receiving waters by reducing the quality of stormwater and snowmelt runoff. (S)

The proposed project does not specifically identify selected BMPs to treat stormwater runoff prior to discharge to Trout Creek or the Truckee River. Untreated discharge from the site would likely contain elevated levels of pollutants and therefore could result in a significant impact to water quality requiring mitigation.

Mitigation Measure HYD-2: Project proponents shall have a storm water management plan (SWMP) prepared by a qualified professional, prior to issuance of the grading permit(s). The SWMP shall demonstrate, through detailed hydraulic analysis, that implementation of proposed drainage plans would result in treatment of the runoff from the site (in compliance with the Town NPDES permit). The qualified professionals preparing the design-level SWMP shall consider additional measures designed to mitigate potential water quality degradation of runoff from all portions of the completed development. In general, passive, low-maintenance Best Management Practices (BMPs) (e.g., grassy swales, porous pavements) are preferred by the Water Board. The Town shall ensure that the project design includes features and operational BMPs to reduce potential impacts to surface water quality associated with operation of

²⁸ Application of road traction sand is a management practice designed to improve vehicle traction on snow- and ice-covered roads. When traffic grinds the sand into smaller particles it can become suspended in runoff, transported off-site and deposited into waterways, potentially impacting aquatic life habitat.

²⁹ Water Board, 2003, op. cit.

the project to the maximum extent practicable. These features shall be included in the SWMP and final development drawings.

The SWMP includes by reference Attachment 4 of WQO 2003-0005-DWQ (CAS000004), which provide specific design standards applicable to the project based on the size and nature of the proposed project. As specified by the MS4 General Permit, all new development projects, regardless of size, should incorporate appropriate source control and site design measures that minimize stormwater pollutant discharges to the maximum extent practicable. The proposed project would be required to comply with the terms of the SWMP and WQO Attachment 4, including (but not limited to):

- **Numeric Sizing Criteria for Pollutant Removal Treatment Systems.** The project must include source controls, design measures, and treatment controls to minimize stormwater pollutant discharges. Treatment controls must be sized to treat a specific amount – about 85 percent – of average annual runoff.
- **Operation and Maintenance of Treatment Measures.** Treatment controls often do not work unless adequately maintained. The permit requires an operations and maintenance (O&M) program, which includes: 1) identifying the properties with treatment controls; 2) developing agreements with private entities to maintain the controls, and 3) periodic inspection, maintenance (as needed), and reporting.
- **Limitation on Increase of Peak Stormwater Runoff Discharge Rates.** Urbanization creates impervious surfaces that reduce the landscape's natural ability to absorb water and release it slowly to creeks. These impervious surfaces increase peak flows in creeks and can cause erosion. Projects must evaluate the potential for this to occur and provide mitigation as necessary.

As per Water Board Basin Plan implementation guidance regarding salt and traction sand use for road and walkway maintenance, salt or traction sand shall be applied in a careful, well-planned manner, by competent, trained crews. Should even the "proper" application of salt be shown to cause adverse water quality impacts, the Water Board would require that it no longer be used in environmentally sensitive areas. Should an alternate deicer be shown to be effective, environmentally safe, and economically feasible, its use shall be encouraged in lieu of salt. The design and implementation of BMPs for the project shall integrate, as feasible, features that will minimize the impact of deicing compounds and sedimentation impacts related to sanding or other ice control methods, including considering impacts related to accumulated pollutants in seasonal snow storage and the relatively sudden release of the accumulated materials during periods of thaw and rain. BMPs shall be sized appropriately and operations and maintenance schedules shall account for these seasonal differences.

The design team for the development project shall review and incorporate as many concepts as practicable from *Start at the Source, Design Guidance Manual for Storm-*

*water Quality Protection*³⁰ and the California Stormwater Quality Association's *Stormwater Best Management Practice Handbook, New Development and Redevelopment*. Any enclosed parking areas shall not be drained to the stormwater conveyance system. The garages should be dry-swept or, if washdown water is used the effluent should be discharged to the sanitary sewer system under permit from the Town of Truckee.

The Town of Truckee Department of Engineering shall review and approve the SWMP prior to approval of the grading plan. Town staff may require more stringent stormwater treatment measures, at their discretion. Implementation of this mitigation would reduce the level of significance of this impact to a less-than-significant level. (LTS)

Impact HYD-3: Dewatering may contain contaminants and if not properly managed could cause health and safety-related impacts to construction workers and the environment. (S)

Groundwater at the Plan Area could be encountered at about 20 feet below the ground surface (and on a seasonal basis may be present at shallower depths) and may therefore be encountered during excavation for building foundations, utilities, and other improvements.

There are two general classes of pollutants that may result from dewatering operations; sediment, and chemical compounds. High sediment content in dewatering discharges is common because of the nature of the operation in which soil and water mixes in the turbulent flow of high volume pump intakes. Chemical pollutants are most commonly found in dewatering in areas with a history of groundwater contamination (e.g., leaks to the subsurface from historical uses). The Plan Area has a history of industrial activity (refer to Section IV.J, Hazards and Public Safety, of this EIR for discussion of identified areas of potential subsurface contamination and impacts and mitigations required before site development). Direct discharge of dewatered groundwater to the storm drainage system could result in water quality impacts to the receiving waters.

Mitigation Measure HYD-3: The SWPPP shall include provisions for the proper management of construction-period dewatering activities. At minimum, all dewatering shall be contained prior to discharge to allow the sediment to settle out, and filtered, if necessary to ensure that only sediment-free water is discharged to the storm or sanitary sewer system, as appropriate. In areas of suspected groundwater contamination (i.e., near sites where chemical releases are known or suspected to have occurred), the groundwater shall be analyzed by a State-certified laboratory for the suspected pollutants prior to discharge. Based on the results of the analytical testing,

³⁰ Bay Area Stormwater Management Agencies Association, 1999. *Start at the Source, Design Guidance Manual for Stormwater Quality Protection*.

the project proponent shall acquire the appropriate permit(s) prior to discharge of the dewatering effluent. Discharge of the dewatering effluent may require a permit from the Water Board (for discharge to the storm sewer system) and/or the Town of Truckee (for discharge to the sanitary sewer system).

Proper implementation of the mitigation measure described above would reduce this impact to a less-than-significant level. (LTS)

Impact HYD-4: Alteration of the site drainage patterns could potentially result in exceedance of the capacity of downstream stormwater conveyance structures, resulting in localized flooding. (S)

Under the existing conditions, most of the Plan Area is undeveloped pervious surfaces. Although the details of the specific elements to be developed at the project are unknown, it is expected that the project would result in an increase in the amount of impervious surfaces relative to the existing conditions. The project proposes to implement Low Impact Development (LID) design standards and participate in the Leadership in Energy and Environmental Design Neighborhood Development (LEED-ND) Pilot Program.³¹ The LEED-ND Rating System integrates the principles of smart growth, urbanism and green building into the first national system for neighborhood design. LEED-ND certification provides independent, third-party verification that a development's location and design meet accepted high levels of environmentally responsible, sustainable development.³² A key feature of LEED-ND development includes advanced stormwater management.³³ Participation in these programs would encourage design decisions that should reduce significantly the impacts of the proposed project on hydrology and water quality. However, the specific site design, and hence the potential severity of the impact is unknown. As the future drainage patterns (which have not yet been specified) may change so that drainage amounts directed toward particular subareas may increase or decrease, a substantial increase in drainage directed to a particular subarea and conveyance system may result in exceedance of the capacity of the system. This could result in localized flooding during extreme storm events.

Restoration of Trout Creek to a more stable and naturally-functioning creek channel corridor upstream and within the Master Plan Area has been proposed by the Town of Truckee. Approximately 6,000 feet of natural creek channel corridor would be restored with a combination of channel modification and floodplain restoration. The restoration plan is a

³¹ Town of Truckee, 2007, Truckee Railyard Master Plan: Public Review Draft, 26 November, 2007.

³² U.S. Green Building Council, updated. LEED for Neighborhood Development: LEED Rating Systems. accessed 2-8-08 at: www.usgbc.org/DisplayPage.aspx?CMSPageID=148.

³³ U.S. Green Building Council, 2008. LEED for Neighborhood Development Pilot Draft Project Checklist, May. Accessed 7/1/08 at: www.usgbc.org/ShowFile.aspx?DocumentID=4109.

separate project from the proposed Master Plan project, but as the areas overlap and some Master Plan elements (i.e., balloon track relocation, Glenshire Drive reroute, and site grading activities) are interdependent with the restoration, the creek restoration efforts would be coordinated with Master Plan development.³⁴ It is anticipated that the restoration of Trout Creek would, when completed, result in a significant reduction in flooding in the restoration area, including the area of the proposed Master Plan project. Changes in the 100-year floodplain within the area of the Trout Creek restoration, as compared to the most recent FIRM mapping, would be resolved by the Letter of Map Amendment (LOMA) process with FEMA, possibly resulting in new boundaries for the 100- and 500-year flood zones.³⁵

Mitigation Measure HYD-4: The project shall implement Low Impact Development (LID) design standards and participate in the Leadership in Energy Environmental Design Neighborhood Development (LEED-ND) Pilot Program, including advanced stormwater management techniques, as feasible.

As a condition of approval of the final grading and drainage plans for the project, the project proponent shall demonstrate through the preparation of a detailed hydraulic analysis, to be prepared by a licensed professional, that implementation of the proposed drainage plans would not increase total off-site peak flow rates, or exceed the capacities of local system components or if redirected drainage would exceed the capacity of downstream components, that the project would construct improvements and/or increase the conveyance capacity of these undersized components. The project must use drainage components that are designed in compliance with Town of Truckee standards. The grading and drainage plans shall be reviewed for compliance with these requirements by the Town of Truckee Planning, Building, and Engineering Departments. Any improvements deemed necessary by the Town will be part of the conditions of approval.

Implementation of this mitigation measure would reduce potential impacts associated with increased peak runoff volumes to a less-than-significant level. (LTS)

Impact HYD-5: Existing water supply wells present the potential for migration of urban pollutants to the aquifer. (S)

The Plan Area has a long history of use, and groundwater is relatively shallow at the site. No abandoned water supply wells are known to exist on the site; however, it is possible that 'forgotten' wells may exist within the Plan Area. If a well was not fitted with an effective sanitary seal when constructed, or if the seal has been damaged since installation or were to

³⁴ Town of Truckee, 2007, *Truckee Railyard Master Plan: Public Review Draft*, 26 November, 2007.

³⁵ Town of Truckee, 2006. *Request for Proposals, Trout Creek Restoration Project*, 12 October.

be damaged during grading and construction of the project, surface water (potentially containing pollutants) could seep into the well(s) and the underlying aquifer, causing water quality degradation.

Mitigation Measure HYD-5: During the Railyard Draft Master Plan development process, any existing water supply well within the proposed Plan Area shall either be:

HYD-5a: Inspected by a qualified professional to determine whether the well is properly sealed at the surface to prevent infiltration of water-borne pollutants into the well casing or surrounding gravel pack. The California Well Standards require an annular (ring-shaped) surface seal of at least 20 feet. If the wells are found not to comply with this requirement, the project sponsor shall retain a qualified well driller to install the required seal. Documentation of the inspections and seal installations, if any, shall be provided to the Town prior to final approval of any future grading plans; or

HYD-5b: Properly abandoned in compliance with the California Department of Water Resources, California Well Standards, and Nevada County Community Development Agency, Environmental Health Department prior to final approval of the grading plan.

Implementation of one of the above mitigation measures would reduce this impact to a less-than-significant level. (LTS)