

4.6 HYDROLOGY AND WATER QUALITY

This chapter evaluates potential hydrology and water quality impacts that could result from the proposed project. The analysis addresses surface water quality, groundwater quantity, and stormwater drainage. Mitigation measures for potential impacts are identified where applicable.

Information in this chapter comes from the Preliminary Drainage Report for the Placer Retirement Residence (included as Appendix H), San Juan Water District 2015 Urban Water Management Plan, the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, California Department of Water Resources (DWR), Granite Bay Community Plan, Placer County General Plan, State and Regional Water Quality Control Boards, the Federal Emergency Management Agency, as well as existing federal, State, and local regulations.

4.6.1 ENVIRONMENTAL SETTING

REGIONAL SETTING

The project site is located within the Granite Bay Community Plan area within Placer County, California. The Community Plan area encompasses approximately 25 square miles of developing countryside in the western region of the County and is roughly bounded by Dick Cook Road to the north, Sierra College Boulevard to the west, Folsom Lake to the east, and the Sacramento County line to the south. Elevations range from 200 feet above mean sea level (msl) to 600 feet msl. The climate of Placer County and the project site is generally characterized by warm summers and mild winters. Monthly averages of daily extreme temperatures range from 39 degrees Fahrenheit to 52 degrees Fahrenheit in January and from 58 degrees Fahrenheit to 90 degrees Fahrenheit in July. Annual precipitation averages 25 inches, approximately 90 percent of which occurs between the months of November and April.

SURFACE WATER FEATURES

The Sacramento River Basin encompasses approximately 27,000 square miles and is bounded by the Sierra Nevada to the east, the Coast Ranges to the west, the Cascade Range and Trinity Mountains to the north, and the Sacramento-San Joaquin Delta (Delta) to the southeast. The Sacramento River Basin is the largest river basin in California, capturing, on average, approximately 22 million acre-feet of annual precipitation. The Sacramento River is approximately 327 miles long, and its major tributaries are the Pit and McCloud Rivers, which join the Sacramento River from the north, and the Feather and American Rivers, which are tributaries from the east. Numerous additional tributary streams and creeks flow from the east and west.

Six small tributaries of the Sacramento River run through the greater Sacramento area, including Dry Creek.

The project site is located within the Dry Creek watershed, which generally includes the communities of Granite Bay and Loomis and the eastern portions of the cities of Rocklin and Roseville, as well as portions of northern Sacramento County. The lower end of the Dry Creek watershed is on the Sacramento Valley floor, and the headwaters are located in the Sierra Nevada foothills. Major surface hydrologic features near the project site are the American River, Folsom Lake and Lake Natoma, and multiple small creeks and irrigation canals.

Surface Water Quality

Surface water quality is affected by land development, agriculture, grazing, and urban runoff. Other potential sources of pollutants include vehicle traffic and residential usage of pesticides. Common pollutants that may be present in low concentrations include hydrocarbons, heavy metals, and nutrient concentrations (phosphates and nitrogen compounds). Pollutants vary in urban runoff due to elapsed time between rainfall, intensity of precipitation, and surrounding land uses. The greatest contribution of pollutants to surface waters generally occur during the first rain event of the year, as precipitation transports contaminants from surfaces and upper soils into local drainages. Urban development results in increased impervious surfaces, which increase the rate and volume of runoff and can result in erosion and siltation impacts.

The reaches of the Sacramento and American rivers that flow through the Sacramento urban area are listed on the California State Water Resources Control Board (SWRCB) 2012 Section 303(d) list of impaired water bodies as required by the Federal Clean Water Act. The segment of the Sacramento River from Knights Landing to the Sacramento-San Joaquin Delta is listed as impaired by three pesticides (Chlordane, Dichlorodiphenyltrichloroethane [DDT], and Dieldrin), mercury, polychlorinated biphenyls (PCBs), and unknown toxicity (SWRCB 2017a). The Lower American River from Nimbus Dam to the confluence with the Sacramento River is listed as impaired by mercury, PCBs, and unknown toxicity. Dry Creek is not included on the 2012 Section 303(d) list.

Constituents found in urban runoff vary as a result of differences in rainfall intensity and occurrence, geographic features, the land use of a site, as well as vehicle traffic and percent of impervious surface. In the Sacramento area, there is a natural weather pattern of a long dry period from May to October. During this seasonal dry period, pollutants contributed by vehicle exhaust, vehicle and tire wear, crankcase drippings, spills, and atmospheric fallout accumulate within the urban watershed. Precipitation during the early portion of the wet season (generally, November through April) washes these pollutants into the stormwater runoff, which can result

in elevated pollutant concentrations in the initial wet weather runoff, if not properly intercepted and managed.

Existing Drainage

The site is currently undeveloped, consisting of a grassy pasture with scattered trees near the center of the property, clustered along the Linda Creek Treelake Tributary and the proposed entrance driveway. The Linda Creek Treelake Tributary flows along the southern edge of the property, separating the site from Old Auburn Road. The creek is surrounded by dense trees and vegetation which create a natural buffer between the site and the adjacent roadways. The site is located in Zone "X" as shown on the FEMA FIRM Panel0601C1051H, dated November 2, 2018 (See Appendix H).

The project site generally drains from north to south at an average slope of approximately 5%. A high point at the north property line divides onsite flows generally toward the southwest and southeast corners of the site where they drain into the Linda Creek Treelake Tributary, which enters the site from the southeast corner of the property, flowing beneath Sierra College Boulevard in three large box culverts. Drainage on the property is shown in **Figure 4.6-1: Existing Drainage Patterns**. A smaller branch of the tributary adds additional flow under Sierra College Boulevard near the northeast corner of the property. This drainage flows south, adjacent to Sierra College Boulevard, combining with the main creek flows. The main creek flows directly west, immediately north of and adjacent to Old Auburn Road, and exits the property to the south in dual box culverts which pass beneath Old Auburn Road. The main Linda Creek Treelake Tributary channel would remain undisturbed by onsite development to preserve the natural character of the site and maintain the buffer that the creek provides as well as to provide a generous setback from the adjacent roadways to the new building.

A narrow riparian corridor is located along these eastern and southern boundaries along the unnamed tributary and the Linda Creek Treelake Tributary. The main stream of Linda Creek is located approximately one mile west of the project site. The elevation at northern border ranges from 215 feet to 220 feet above mean sea level (MSL), while the southern portion of the site ranges from an elevation of 195 to 200 feet MSL as shown in Figure 4.6-1.

Flood Hazards

Placer County's Floodplain Management Program is managed through the Department of Public Works and Facilities and is administered in accordance with the Federal Emergency Management Agency's (FEMA) policies. The intent of the program is to implement corrective and preventive measures for reducing flood damage to properties, protect public health and safety, reduce

damage from new construction, reduce the risk of erosion damage and project natural and beneficial floodplain functions. The County's program also provides opportunity for homeowners, renters, and business owners to purchase federally-backed flood insurance through the National Flood Insurance Program (NFIP). By implementing floodplain management activities, residents of Placer County's unincorporated areas qualify for flood insurance premium rate reductions.

Groundwater

The project site is located in the North American Subbasin, which is part of the larger Sacramento Valley Groundwater Basin. The North American Subbasin (DWR Basin No. 5-21.64) is located in the eastern central portion of the Sacramento Valley Groundwater Basin. The surface area of the subbasin is approximately 548 square miles and is generally bounded by the Bear River to the north, the Feather River to the west, and the Sacramento River to the south. The eastern boundary is a north-south line extending from the Bear River south to Folsom Lake, which passes about 2 miles east of the City of Lincoln. The project site lies along this eastern boundary. DWR estimates the total storage capacity of the subbasin at approximately 4.9 million acre-feet; however, there are no published reports that indicate the actual amount of groundwater in storage in the subbasin. Groundwater levels in southwestern Placer County and northern Sacramento County have generally decreased for the last 40 years or more, with many wells experiencing declines at a rate of about 1½ feet per year. If groundwater is drawn at a rate greater than it is replenished well overdraft occurs. Overdraft can lead to numerous problems, including lowering of water levels, ground subsidence, loss of aquifer storage, seawater intrusion, and a reduction in groundwater quality. However, the California DWR currently, does not describe the North American Subbasin as being in a state of overdraft. Additionally, information provided on the California DWR website, mapping of groundwater levels show an overall rise in groundwater levels in the Northern Sacramento Valley Groundwater Basin from Spring of 2016 through Spring of 2017 in all three shallow, intermediate, and deep wells.

The potential for local groundwater recharge by percolation of precipitation depends upon the surface soil infiltration conditions, including the soil and landscape propensity for contributing to runoff compared to infiltration. Under natural conditions, less than five percent of total recharge to the Sacramento Valley Groundwater Basin is attributable to Placer County. Much of western Placer County, including the proposed project, consists of Hydrologic Group D soils, which are characterized by high runoff and low infiltration potential. The major geologic formations that underlie western Placer County (Riverbank, Turlock Lake, and Mehrten, for example) also impede infiltration of rainwater and irrigation water.



Source: Kimley-Horn., 2018

FIGURE 4.6-1: Existing Drainage Patterns
 Placer Retirement Residence
 Placer County

During the Geotechnical Investigation prepared for the proposed project, in the higher elevations portions of the site, ground water was not encountered to a depth up to 21.5 feet. In the lower elevation portions of the site, adjacent to the Linda Creek Treelake Tributary in the southeastern portion of the site, groundwater was encountered at a depth of approximately 7 feet on February 9, 2016. Fluctuations in the level of ground water may occur due to variations in rainfall, temperature, and other factors. Depth to groundwater can also vary significantly due to localized pumping, irrigation practices, and seasonal fluctuations. Therefore, it is possible that groundwater may be higher or lower than the levels observed.

Beneficial Uses

The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan), described in the section below under Regulatory and Planning Framework, identifies existing beneficial uses, limited beneficial uses, and potential beneficial uses for surface water and groundwater bodies. Numerical and narrative water quality objectives provided in the Basin Plan are designed to protect those uses.

4.6.2 REGULATORY AND PLANNING FRAMEWORK

FEDERAL

Clean Water Act. The Clean Water Act (CWA) was enacted with the primary purpose of restoring and maintaining the chemical, physical, and biological integrity of the Nation's waters. The CWA directs states to establish water quality standards for all "waters of the United States" and to review and update such standards on a triennial basis. The U.S. EPA has delegated responsibility for implementation of portions of the CWA, including water quality control planning and control programs, such as the National Pollutant Discharge Elimination System (NPDES) Program, to the SWRCB and the nine Regional Water Quality Control Boards (RWQCB).

The SWRCB establishes statewide policies and regulations for the implementation of water quality control programs mandated by federal and state water quality statutes and regulations. The RWQCBs develop and implement Water Quality Control Plans (Basin Plans) that consider and address regional beneficial uses, water quality characteristics, and water quality problems. The RWQCB implements a number of federal and state laws, the most important of which are the state Porter-Cologne Water Quality Control Act and the federal CWA.

Section 301 of the CWA prohibits the discharge of any pollutant into the nation's waters without a permit. Section 307 of the CWA describes the factors that U.S. EPA must consider in setting effluent limits for priority pollutants, and Section 402 of the CWA contains general requirements regarding NPDES permits.

Under Section 404 of the CWA, the U.S. Army Corps of Engineers (USACE) has the authority to regulate activity that could discharge fill or dredge material or otherwise adversely modify wetlands or other waters of the U.S. Under Section 401, the CWA requires that an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the United States) first obtain a certificate from the appropriate state agency stating that the fill is consistent with the State's water quality standards and criteria. In California, the authority to either grant certification or waive the requirement for permits is delegated by the SWRCB to the nine regional boards. The CVRWQCB is the appointed authority for Section 401 compliance in the project site.

Water Quality Standards. Section 303 of the federal CWA requires states to adopt water quality standards for all surface water of the United States. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria may be employed (e.g., biomonitoring) where numerical standards cannot be established or where narrative criteria are needed to supplement numerical standards. Section 303(d) requires that the states make a list of waters that are not attaining standards even after technology-based limits are put into place. For waters on this list (and where the U.S. EPA administrator deems they are appropriate), the states are to develop total maximum daily loads (TMDLs) that are established at the level necessary to implement the applicable water quality standards. Federal regulations require that an implementation plan is developed along with the TMDL. Section 303(d), 303(e), and their implementing regulations require that approved TMDLs are incorporated into water quality control plans. The U.S. EPA has established regulations (40 CFR 122) requiring that NPDES permits are revised to be consistent with any approved TMDL. Development in the plan area would be subject to the water quality standards set forth in the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan).

NPDES Waste Discharge Regulations. The NPDES permit system was established as part of the CWA to regulate point source discharges. Point sources include a municipal or industrial discharge at a specific location or pipe. Nonpoint pollution sources are diffuse and originate over a wide area rather than from a definable point. Nonpoint pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances (i.e., "end-of-pipe" locations). As defined in the federal regulations, such nonpoint sources are generally exempt from federal NPDES permit program requirements; however, urban stormwater runoff and construction site runoff are diffuse sources regulated under the NPDES permit program because they are conveyed in a discrete system and discharged at a specific location(s).

For stormwater runoff, the NPDES program establishes a comprehensive stormwater quality program to manage urban stormwater and minimize pollution to the maximum extent

practicable. The NPDES program consists of: (1) characterizing receiving water quality; (2) identifying harmful constituents; (3) targeting potential sources of pollutants; and (4) implementing a comprehensive Stormwater Management Program. The U.S. EPA implemented the NPDES stormwater program in two phases. Phase I addressed large dischargers and construction activities that affect 5 acres of ground disturbance or greater, while Phase II, which was implemented in 1999, adds smaller dischargers and construction activities that affect 1 or more acres. The goal of the NPDES diffuse source (stormwater) regulations is to improve the quality of stormwater discharged to receiving waters through the use of best management practices (BMPs). BMPs are intended to reduce impacts to the Maximum Extent Practicable (MEP), a general standard created by Congress to allow regulators the flexibility necessary to tailor programs to the site-specific nature of municipal stormwater discharges. Regulations do not define a single MEP standard but reducing impacts to the MEP generally relies on BMPs that emphasize pollution prevention and source control, with additional structural controls as needed. The proposed project would be subject to the NPDES permit system as described below under the State and Regional/Local regulations.

Title 40 of the Code of Federal Regulations (40 CFR) includes U.S. EPA regulations to implement the NPDES permit system. Section 402 of the CWA contains general requirements regarding NPDES permits, while Section 307 of the CWA describes the factors that U.S. EPA must consider in setting effluent limits for priority pollutants. Each specific NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge.

Federal Emergency Management Agency. Placer County is a participant in NFIP, a federal program administered by FEMA. Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 adopted a desired level of protection, which is developments should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once in 100 years, although such a flood may occur in any given year. The County is occasionally audited by the DWR to ensure the proper implementation of FEMA floodplain management regulations. According to FEMA Flood Insurance Rate Map (FIRM) Panel 0601C1051H, the project site is mapped as a Zone X on the FEMA flood hazard zone. Zone X is an area of minimal flood hazard (FEMA, 2018).

STATE

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) regulates water quality within California and establishes the authority of the SWRCB and the nine regional water boards. The quality of water resources in the Central Valley is regulated under the jurisdiction of the Central Valley RWQCB.

State Water Resources Control Board. As previously discussed, the SWRCB and the RWQCB are responsible for ensuring implementation and compliance with the provisions of the federal CWA and California’s Porter- Cologne Water Quality Control Act. As discussed above, the project site is situated within the jurisdiction of the CVRWQCB, which has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within the CVRWQCB’s jurisdiction.

Water Quality Control Plan (Basin Plan). Beneficial uses are designated by the CVRWQCB and published in the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan). The Basin Plan designates beneficial uses to be protected (e.g., water supply or freshwater habitat), water quality objectives that would support protection of those uses, and a program of implementation. The Sacramento River has been classified by the CVRWQCB as having the following beneficial uses: municipal and domestic water supply; agricultural irrigation; recreation – contact, canoeing and rafting, and other noncontact; warm and cold freshwater, migration, and spawning habitat; wildlife habitat; and navigation. The American River beneficial use classifications are municipal and domestic water supply; agricultural irrigation; industrial service supply and hydropower; recreation – contact, canoeing and rafting, and other noncontact; warm and cold freshwater, migration, and spawning habitat; and wildlife habitat.

NPDES Construction General Permit. The California Construction Stormwater Permit (Construction General Permit, Order No. 2012-006-DWQ, amends 2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ), adopted by the SWRCB, regulates construction activities that include clearing, grading, and excavation resulting in soil disturbance of at least one acre of total land area. The Construction General Permit authorizes the discharge of storm water to surface waters from construction activities. It prohibits the discharge of materials other than storm water, as well as all discharges that contain a hazardous substance in excess of reportable quantities established at 40 Code of Federal Regulations 117.3 or 40 Code of Federal Regulations 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.

The Construction General Permit requires that all developers of land where construction activities would occur over more than one acre do the following:

- Complete a Risk Assessment to determine pollution prevention requirements pursuant to the three Risk Levels established in the General Permit
- Eliminate or reduce non-storm water discharges to storm sewer systems and other waters of the Nation
- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP), which specifies BMPs that would reduce pollution in storm water discharges to the Best Available

Technology Economically Achievable/Best Conventional Pollutant Control Technology standards

- Perform inspections and maintenance of all BMPs

In order to obtain coverage under the NPDES Construction General Permit, the Legally Responsible Person must electronically file all Permit Registration Documents with the SWRCB prior to the start of construction. Permit Registration Documents must include:

- Notice of Intent
- Risk Assessment
- Site Map
- SWPPP
- Annual Fee
- Signed Certification Statement

Typical BMPs contained in a SWPPP are designed to minimize erosion during construction (minimization of vegetation disturbance), stabilize construction areas (soil binders), control sediment (fiber rolls and sand bags), control pollutants from construction materials (vehicle fueling and maintenance only in designated areas), and control post construction runoff quality and quantity to avoid localized flooding (final site stabilization, including hydroseeding). BMPs implemented in compliance with the General Construction Permit must also control the rate or amount of surface runoff from the project site such that flooding on- or off-site would not occur. The SWPPP must also include the inspection and maintenance of all BMPs.

Urban Level of Flood Protection. The Urban Level of Flood Protection Criteria was developed in response to requirements from the Central Valley Flood Protection Act of 2008, enacted by Senate Bill (SB) 5 (2007), to strengthen the link between flood management and land use. California DWR developed these criteria as a systematic approach to assist affected cities and counties within the Sacramento-San Joaquin Valley in making findings related to an urban level of flood protection before approving certain land-use decisions. In preparing these criteria, DWR used its broad experience and expertise in flood management and planning to address concerns related to flood protection and flood risk management. The project site is not located within a flood hazard zone that is mapped as either a special hazard area or an area of moderate hazard on FEMA's official (i.e., effective) FIRM and would not meet these criteria.

LOCAL

Placer County NPDES Phase II Municipal Regional Stormwater Sewer Permit. Placer County is a designated municipal permittee under the U.S. Environmental Protection Agency's NPDES which regulates stormwater flows into natural water bodies. Placer County has a Phase II permit (General Permit No. CAS000004) that regulates storm water discharges from small municipal separate storm sewer systems (MS4s) serving a population of 100,000 people or more. Under the Phase II NPDES program, Placer County is permitted in the western county area and in the Truckee River Basin. The project site is located in the western county area.

This project is located within the permit area covered by Placer County's Small Municipal Separate Storm Sewer System (MS4) Permit (State Water Resources Control Board National Pollutant Discharge Elimination System (NPDES), pursuant to the NPDES Phase II program. Project-related stormwater discharges are subject to all applicable requirements of said permit.

The project shall implement permanent and operational source control measures as applicable. Source control measures shall be designed for pollutant generating activities or sources consistent with recommendations from the California Stormwater Quality Association (CASQA) Stormwater BMP Handbook for New Development and Redevelopment, or equivalent manual.

West Placer Storm Water Quality Design Manual. The West Placer Storm Water Quality Design Manual has been developed cooperatively between Placer County, the City of Roseville, the City of Lincoln, the City of Auburn, and the Town of Loomis to provide a consistent approach to address storm water management within the West Placer region. The boundary encompasses the urbanized areas of western Placer County and projects within this boundary (except the City of Rocklin), as well as major planning project areas under review by the participating jurisdictional agencies. The Manual provides guidance for projects that are required to comply with CWA regulations and presents low impact development (LID) design standards to reduce runoff, treat storm water, and provide baseline hydromodification management. The Manual is a regulatory compliance tool that addresses the requirements of the SWRCB Water Quality Order No. 2013-001- DWQ, NPDES General Permit No. CAS000004, Waste Discharge Requirements for Storm Water Discharges from Small MS4s (Phase II MS4 Permit).

The West Placer Storm Water Quality Design Manual is intended to satisfy the specific requirements of the Phase II MS4 Permit and County Aquatic Resources Program CARP, as discussed above. Additional design requirements imposed by other regulations and permits, such as construction and industrial permits, local grading ordinances, CAL Green, California Environmental Quality Act (CEQA), and hydraulic design for flood control, still apply as

appropriate. Consistent with the CWA and the Phase II MS4 Permit, the Manual requires storm water controls to reduce pollutants to the MEP.

Storm water controls as required by the storm water permitting process generally include requirements for LID strategies that focus on preserving key elements of a project site's pre-development hydrologic function. LID strategies use BMP's that in part, recharge groundwater supplies, and protect and enhance natural habitat and biodiversity by implementing designs that infiltrate, evapotranspire, or biotreat storm water runoff. These strategies protect receiving waters and maintain hydrologic functions and facilitate on-site infiltration of stormwater.

Placer County Code. Chapter 15.48 of the Placer County Code contains ordinances that regulate grading, erosion, and sediment control.

Article 15.48 Grading, Erosion, and Sediment Control

The ordinances under this article were enacted to regulate grading on property within unincorporated areas of Placer County to:

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

Section 15.48.050 Water obstruction

This section of the Placer County Code states that:

No person shall do or permit to be done any grading which may obstruct, impede or interfere with the natural flow of stormwaters, in such manner as to cause flooding where it would not otherwise occur, aggravate any existing flooding condition or cause accelerated erosion. This section applies whether such waters are unconfined upon the surface of the land or confined within land depressions or natural drainage ways, unimproved channels or watercourses, or improved ditches, channels or conduits.

Section 15.48.570 Drainage—General

This section of the Placer County Code states that:

Any drainage structure(s) or device(s) carrying surface water runoff required by this article shall be designed and constructed in accordance with standards herein, the current Placer County flood control and water conservation district stormwater management manual and criteria authorized by the agency director.

Section 15.48.580 Drainage discharge requirements

This section of the Placer County Code states that:

All drainage facilities shall be designed and engineered to carry surface and subsurface waters to the nearest adequate street, storm drain, natural watercourse, or other juncture.

Section 15.48.590 Drainage—Water accumulation

This section of the Placer County Code states that:

All areas shall be graded and drained so that drainage will not cause erosion or endanger the stability of any cut or fill slope or any building or structure.

Section 15.48.600 Drainage protection of adjoining property

This section of the Placer County Code states that:

When surface drainage is discharged onto any adjoining property, it shall be discharged in such a manner that it will not cause erosion or endanger any cut or fill slope or any building or structure.

Section 15.48.630 Erosion and sediment control

The following shall apply to the control of erosion and sediment from grading operations:

- a) *Grading plans shall be designed with long-term erosion and sediment control as a primary consideration. Erosion prevention and source control are to be emphasized over sediment controls and treatment.*
- b) *Grading operations during the rainy season shall provide erosion and sediment control measures except upon a clear demonstration, to the satisfaction of the community development resource agency that at no stage of the work will there*

be any substantial risk of increased sediment discharge from the site. Temporary mulch, revegetation, or other stabilization methods shall be applied to areas where permanent revegetation or landscaping cannot be immediately implemented. Unless otherwise exempted in this article, grading activity must be scheduled to ensure completion or winterization by October 15th of each year.

- c) Grading activity shall be conducted such that the smallest practicable area of erodible land is exposed at any one time during grading operations and the time of exposure is minimized. Land disturbance shall be limited to the minimum area necessary for construction.*
- d) Natural features, including vegetation, terrain, watercourses and similar resources shall be protected and preserved wherever possible. Units of grading shall be clearly defined and marked to prevent damage by construction equipment.*
- e) Permanent vegetation and structures for erosion and sediment control shall be installed as soon as possible.*
- f) Adequate provision shall be made for effective maintenance of temporary and permanent erosion and sediment control structures and vegetation. Sediment and other construction related wastes shall be retained and properly managed on the site or properly disposed of off-site.*
- g) No topsoil shall be removed from the site unless otherwise directed or approved by the community development resource agency. Topsoil overburden shall be stockpiled and redistributed where appropriate within the graded area after rough grading to provide a suitable base for seeding and planting. Runoff from the stockpiled area shall be controlled to prevent erosion and resultant sedimentation of receiving water.*
- h) Runoff shall not be discharged from the site in quantities or at velocities substantially above those which occurred before grading except into drainage facilities, whose design has been specifically approved by the community development resource agency.*
- i) The permittee shall take reasonable precautions to ensure that vehicles do not track or spill earth materials into public streets and shall immediately remove such materials if this occurs.*
- j) All cut and fill slopes shall be adequately stabilized to prevent erosion and failure through temporary and permanent means.*

- k) *Control measures shall be employed to prevent transport of dust off the project site or into any drainage course or water body.*

Section 15.48.670 Vehicular Ways–Drainage

This section of the Placer County Code states that:

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

Article 15.52 Flood Damage Prevention Regulations

The purpose of the Flood Damage Prevention Ordinance is to promote public health, safety, and general welfare, and to minimize public and private losses due to flood conditions. It includes detailed methods on reducing flood losses as discussed below.

Section 15.52.040 Methods of reducing flood losses

In order to accomplish its purpose, this article includes methods and provisions for:

- a) *Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increase in erosion or flood heights or velocities;*
- b) *Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;*
- c) *Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;*
- d) *Controlling fill, grading, dredging, and other development which may increase flood damage; and*
- e) *Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.*

Placer County Flood Control and Water Conservation District. The Placer County Flood Control and Water Conservation District (PCFCWCD) was formed by Senate Bill 1312, which became effective on August 23, 1984. PCFCWCD formulates regional strategies for flood management. In 1990, PCFCWCD developed a Stormwater Management Manual (SWMM) that presents policy, guidelines, and specific criteria for evaluating hydrologic and hydraulic conditions associated with new development within the context of regional stormwater issues. The manual was revised in 1992, 1994, and 1997.

Stormwater Quality Design Manual for the Sacramento and South Placer Regions. The Stormwater Quality Design Manual for the Sacramento and South Placer Region (Design Manual) outlines planning tools and requirements to reduce urban runoff pollution to the maximum extent practicable from new developments. The Design Manual is intended to satisfy the regulatory requirements of participating agencies' respective municipal stormwater permits.

The permits require the municipalities to regulate and manage the quality of urban runoff throughout their jurisdictions, including runoff from new developments. Control measures are described in the Design Manual to serve as the BMPs to reduce pollutants in urban runoff to the MEP. The BMPs include the promotion of effective stormwater quality control measures that are optimally integrated into the site and project design. This approach reflects LID measures.

Construction and operational activities are addressed in the Design Manual. Typical BMPs associated with construction activities include erosion control blankets, straw wattles/fiber rolls, covering graded areas with mulch or seeding to prevent erosion.

Placer County Land Development Manual. The Placer County Land Development Manual includes minimum standards for the design and construction of development improvements. Section 5 includes the standards for drainage improvements such as drainage design considerations, drainage reports, mapping drainage areas, and design criteria for culverts, roadways, drainage disposal by pumping, and subsurface drainage. The drainage design considerations also include information on easements and fencing. This Land Development Manual is intended to supplement the Placer County and Water Conservation District Storm Water Management Manual (SWMM).

Placer County Flood Control and Water Conservation District Storm Water Management Manual. The Placer County Storm Water Management Manual is intended to provide consistent specific guidance and requirements for stormwater management. The specific guidance and requirements are related to drainage systems, storage facilities, streams and channels, and erosion/ sedimentation.

NPDES Permit for City of Roseville Dry Creek Wastewater Treatment Plant (No. CA0079502).

Wastewater generated from the proposed project would be conveyed to the City of Roseville Dry Creek Wastewater Treatment Plant. The treatment plant discharges tertiary treated effluent to Dry Creek which is a tributary to the Natomas East Main Drainage Canal and the Sacramento River. The NPDES Permit includes limitations to achieve applicable water quality standards. The effluent limitations are for biochemical oxygen demand, total suspended solids, ammonia nitrogen, and nitrate plus nitrite. The permit requires the City of Roseville to monitor and report on the released effluent to ensure compliance.

Placer County General Plan. The Placer County General Plan includes policies that call for the County to ensure that land uses and new development are compatible with federal, State and local water quality, drainage, and flood control regulations. General Plan health and safety policies applicable to the proposed project are discussed in *Table 4.6-1: General Plan Goals and Policies - Hydrology and Water Quality*.

Granite Bay Community Plan. The Natural Resources, Open Space and Cultural Resources chapters define conservation goals and policies and provide a framework for the conservation and utilization of natural, open space, air quality and cultural resources and protection of the aesthetic qualities of the community. The GBCP recognizes the local rivers and streams including Miners Ravine, Linda Creek, and Strap Ravine and the importance of maintaining their integrity as well as local tributaries to ensure water quality is not impacted. Accordingly, the Dry Creek Watershed Comprehensive Resource Management Plan found that the loss of riparian vegetation, stream bank erosion, and sedimentation of the streams have contributed to the decline of water quality in the watershed. The GBCP also recognizes that the potential dangers associated with flooding may occur in the vicinity of waterways within the community. Streams and riparian corridors form an integral part of the land and water related ecosystem and that it is the responsibility of the County, in consultation with federal and state agencies, to ensure that the natural heritage features, functions, linkages and hazards associated with the watercourse corridors are respected. Goals and policies related to water quality in the GBCP are discussed in *Table 4.6-2: Granite Bay Community Plan Goals and Policies - Hydrology and Water Quality*.

Table 4.6-1: General Plan Goals and Policies – Hydrology and Water Quality

General Plan Goals and Policies	Consistency Determination	Analysis
<p>Goal 4.E: To manage rainwater and stormwater at the source in a sustainable manner that least inconveniences the public, reduces potential water-related damage, augments water supply, mitigates storm water pollution, and enhances the environment.</p>	<p>Consistent</p>	<p>The project is consistent with this goal. The proposed drainage system would reduce potential water-related damage. The proposed bioretention basin would provide opportunities for groundwater recharge, and stormwater pollution would be reduced through the use of vegetated swales, landscape areas, and bioretention basins for sediment settling. Additional stormwater quality BMPs such as a system to separate and trap debris, sediment, and oil and grease from stormwater runoff are also proposed to be implemented to reduce stormwater pollution.</p>
<p>Policy 4.E.4: The County shall ensure that new storm drainage systems are designed in conformance with the Placer County Flood Control and Water Conservation District's Stormwater Management Manual and the County Land Development Manual.</p>	<p>Consistent</p>	<p>The project is consistent with this policy. A Preliminary Drainage Study was prepared for the project and concluded that the water quality swales, and bioretention facilities are in conformance with the standards in the Placer County Flood Control and Water Conservation District's Stormwater Management Manual and the County Land Development Manual.</p>
<p>Policy 4.E.5: The County shall continue to implement and enforce its Grading, Erosion and Sediment Control Ordinance and Flood Damage Prevention Ordinance.</p>	<p>Consistent</p>	<p>The project is consistent with this policy. The proposed project includes BMPs to reduce erosion and control sediment during construction activities.</p>
<p>Policy 4.E.6: The County shall continue to support the programs and policies of the watershed flood control plans developed by the Flood Control and Water Conservation District.</p>	<p>Consistent</p>	<p>The project is consistent with this policy. The project would comply with the requirements of the Placer County Flood Control and Water Conservation District.</p>

Table 4.6-1: General Plan Goals and Policies – Hydrology and Water Quality

General Plan Goals and Policies	Consistency Determination	Analysis
<p>Policy 4.E.7: The County shall prohibit the use of underground storm drain systems in rural and agricultural areas, unless no other feasible alternatives are available for conveyance of stormwater from new development or when necessary to mitigate flood hazards</p>	Consistent	<p>The project is consistent with this policy. The project is not in a rural area, but it is in an area of transition surrounded on three sides by urban development in the City of Roseville, and on the fourth side by suburban development in unincorporated Placer County. Therefore, the proposed underground storm drain system is not prohibited on the project site. Water from the project site is released to the Linda Creek Treelake Tributary through bio retention basins. There are no storm drain connections offsite.</p>
<p>Policy 4.E.8: The County shall consider recreational opportunities and aesthetics in the design of stormwater ponds and conveyance facilities.</p>	Consistent	<p>The project is consistent with this policy. The on-site water quality bioretention basins would be landscaped around the northern portion of its perimeter for aesthetic reasons, with the remaining portions maintained in such a manner as to protect its detention capacity. The two vegetated swales would be landscaped and maintained in a similar manner. The basins would be too small to be viable for recreational purposes but would be aesthetically compatible with landscaping within the development. All other stormwater facilities would be constructed underground.</p>
<p>Policy 4.E.10: The County shall strive to improve the quality of runoff from urban and suburban development through use of appropriate site design measures including, but not limited to vegetated swales, infiltration/sedimentation basins, riparian setbacks, oil/grit separators, rooftop and impervious area disconnection, porous pavement, and other best management practices (BMPs).</p>	Consistent	<p>The project is consistent with this policy. The proposed project would improve stormwater quality exiting the project site through the incorporation of LID site measures and BMPs, including disconnected roof drains, vegetated swales, large pervious areas, and a system that separates and traps debris, sediment, and oil and grease from stormwater runoff.</p>

Table 4.6-1: General Plan Goals and Policies – Hydrology and Water Quality

General Plan Goals and Policies	Consistency Determination	Analysis
<p>Policy 4.E.11: The County shall require new development to adequately mitigate increases in stormwater peak flows and/or volume. Mitigation measures should take into consideration impacts on adjoining lands in the unincorporated area and on properties in jurisdictions within and immediately adjacent to Placer County.</p>	<p>Consistent</p>	<p>The project is consistent with this policy. The proposed drainage system that includes bioretention basins, landscape swales, LID features and BMPs would reduce peak discharges from the site. The Placer County Flood Control and Water Conservation District Update to the Dry Creek Watershed Flood Control Plan dated November 2011 suggests that detention is not required within the Dry Creek watershed unless increases in stormwater peak flows negatively impact downstream facilities.</p>
<p>Policy 4.E.12: The County shall encourage project designs that minimize drainage concentrations and impervious coverage and maintain, to the extent feasible, natural site drainage conditions.</p>	<p>Consistent</p>	<p>The project is consistent with this policy. The proposed drainage system that includes a bioretention basin, landscape swales, LID features and BMPs would reduce peak discharges from the site. The Placer County Flood Control and Water Conservation District Update to the Dry Creek Watershed Flood Control Plan dated November 2011 suggests that detention is not required within the Dry Creek watershed unless increases in stormwater peak flows negatively impact downstream facilities.</p>
<p>Policy 4.E.13: The County shall require that new development conforms with the applicable programs, policies, recommendations, and plans of the Placer County Flood Control and Water Conservation District.</p>	<p>Consistent</p>	<p>The project is consistent with this policy. The implementation of the proposed project would be required to be consistent with the Placer County Flood Control and Water Conservation District Stormwater Management Manual. The project includes a drainage system with stormdrain pipes and vegetated swales conveying storm water to several proposed bioretention basins. The project includes BMPs to reduce potential impacts on water quality prior to the stormwater exiting the project site. The proposed drainage system is consistent with the County’s applicable programs, plans, recommendations, and plans for stormwater.</p>

Table 4.6-1: General Plan Goals and Policies – Hydrology and Water Quality

General Plan Goals and Policies	Consistency Determination	Analysis
<p>Policy 4.E.14: The County shall require projects that have significant impacts on the quantity and quality of surface water runoff to allocate land as necessary for the purpose of detaining post-project flows, evapotranspiring, infiltrating, harvesting/using, and biotreating stormwater, and/or for the incorporation of mitigation measures for water quality impacts related to urban runoff.</p>	Consistent	The project is consistent with this policy. The proposed project includes the allocation of land for the construction of a bioretention basin and vegetative swales to infiltrate and treat flows from the project site.
<p>Policy 4.E.15: The County shall require that new development in primarily urban development areas incorporate Low Impact Development measures to reduce the amount of runoff, to the maximum extent practicable, for which retention and treatment is required.</p>	Consistent	The project is consistent with the policy. The proposed project includes LID site measures and BMPs, as discussed above, to reduce runoff from the project site.
<p>Goal 6.A: To protect and enhance the natural qualities of Placer County's rivers, streams, creeks and groundwater.</p>	Consistent	The project is consistent with this policy. The proposed drainage system that includes a bioretention basin, landscape swales, LID features and BMPs would infiltrate and treat flows from the site and therefore protect the County's rivers, streams, creeks and groundwater.
<p>Policy 6.A.2: The County shall require all development in the 100-year floodplain to comply with the provisions of the Placer County Flood Damage Prevention Ordinance.</p>	Consistent	The project is consistent with this policy. The project is in compliance with the Placer County Flood Damage Prevention Ordinance.
<p>Policy 6.A.6: The County shall require development projects to comply with the</p>	Consistent	The project is consistent with this policy. The proposed project would comply with the Federal Clean Water Act National Pollutant Discharge Elimination System

Table 4.6-1: General Plan Goals and Policies – Hydrology and Water Quality

General Plan Goals and Policies	Consistency Determination	Analysis
<p>municipal and construction stormwater permit requirements of the Federal Clean Water Act National Pollutant Discharge Elimination System (NPDES) Phase I and II programs and the State General Municipal and Construction permits. Municipal requirements affecting project design and construction practices are enacted through the County's Stormwater Quality Ordinance. Separate construction permits may be required by and obtained through the State Water Resources Control Board.</p>		<p>(NPDES) Phase I and II programs and the State General Municipal and Construction permits requirements through the incorporation of the proposed LID measures and BMPs.</p>
<p>Policy 6.A.7: All new development and redevelopment projects shall be designed so as to minimize the introduction of pollutants into stormwater runoff, to the maximum extent practicable, as well as minimize the amount of runoff through the incorporation of appropriate Best Management Practices.</p>	<p>Consistent</p>	<p>The project is consistent with this policy. The proposed project includes LID site measures and BMPs, as discussed above, to reduce runoff from the project site as well as minimize the introduction of pollutants into stormwater runoff. Pollutant source control measures include enclosed trash collection areas, water efficient irrigation systems, drought tolerant landscaping, maintenance of catch basins as well as bioretention basins that infiltrate and treat flows from the site.</p>
<p>Policy 6.A.8: The County shall support implementation of Low Impact Development site design and Watershed Process Management requirements for new and redevelopment projects in accordance with the NPDES Phase I and II programs, and applicable NPDES permits.</p>	<p>Consistent</p>	<p>The project is consistent with this policy. The proposed project includes LID measures and BMPs, as discussed above, to treat runoff from the project site as well as minimize the introduction of pollutants into stormwater runoff.</p>

Table 4.6-1: General Plan Goals and Policies – Hydrology and Water Quality

General Plan Goals and Policies	Consistency Determination	Analysis
<p>Policy 8.B.1 The County shall promote flood control measures that maintain natural conditions within the 100-year floodplain of rivers and streams.</p>	Consistent	<p>The project is consistent with this policy. The County has previously dedicated this area within an existing drainage easement (per 97-0040426, official records) that precludes any habitable development within this area. Additionally, the Placer County Flood Control and Water Conservation District adopted the Dry Creek Watershed Flood Control Plan (dated November 2011) as a comprehensive approach to manage the Dry Creek Watershed. In addition to reviewing new development applications to minimize downstream impacts during peak storm events, the Placer County Flood Control and Water Conservation District collects fees from new developments to fund drainage improvement projects within the watershed.</p>
<p>Policy 8.B.5: The County shall coordinate with neighboring jurisdictions to mitigate the impacts of new development in Placer County that could increase or potentially affect runoff onto parcels downstream in a neighboring jurisdiction.</p>	Consistent	<p>The project is consistent with this policy. The project must comply with the Placer County's Dry Creek Watershed Drainage Improvement ordinance, which requires new development that increases impervious surface areas within the Dry Creek watershed to pay fees to fund drainage improvement projects within Placer County.</p>
<p>Policy 8.B.6: The County shall prohibit the construction of facilities essential for emergencies and large public assembly in the 100-year floodplain, unless the structure and access to the structure are free from flood inundation.</p>	Consistent	<p>The project is consistent with this policy. No such features would be constructed within the floodplain as part of this project.</p>
<p>Policy 8.B.7: The County shall require flood control structures, facilities, and improvements to be designed to conserve resources,</p>	Consistent	<p>The project is consistent with this policy. The project would retain areas along the Linda Creek Treelake Tributary as undeveloped land. Under the Modified Frontage Improvements option, the project would development a public multi-purpose</p>

Table 4.6-1: General Plan Goals and Policies – Hydrology and Water Quality

General Plan Goals and Policies	Consistency Determination	Analysis
<p>incorporate and preserve scenic values, and to incorporate opportunities for recreation, where appropriate.</p>		<p>pathway that would bring people through the riparian area onsite and preserve the scenic value of the existing mature trees along Old Auburn Road. Under the Full Frontage Improvements option, bike lanes and a sidewalk would be provided along the Old Auburn Road frontage, but impacts on the floodplain, wetland habitat, and the mature trees along Old Auburn Road would occur.</p>

Table 4.6-2: Granite Bay Community Plan Goals and Policies

Granite Bay Community Plan Goals and Policies	Consistency Determination	Analysis
<p>Goal 5.2.2: Protect the quality of air and water resources consistent with adopted federal, state, and local standards.</p>	Consistent	<p>The project is consistent with this goal. The proposed project would protect water resources through the use of vegetated swales, landscape areas, and the proposed bioretention basin for sediment settling. Additional stormwater quality BMPs such as a system to separate and trap debris, sediment, and oil and grease from stormwater runoff are also proposed to be implemented to reduce stormwater pollution.</p>
<p>Goal 5.2.3: Ensure that land use planning contributes to the protection, improvement, and restoration of water resources and that all new development has a minimum impact on the established natural environment.</p>	Consistent	<p>The project is consistent with this goal. The proposed project would reduce the peak stormwater discharges from the project site with the implementation of the proposed drainage system as well as the proposed LID features and BMPs. The proposed bioretention basin would provide opportunities for groundwater recharge.</p>
<p>Goal 5.2.4: Pursue and implement sound storm water management practices and sustainable management practices to help ensure protection from flooding and erosion and maintain, and where feasible, improve water quality.</p>	Consistent	<p>The project is consistent with this goal. The proposed drainage system as well as the proposed LID features and BMPs would ensure protection from flooding and erosion and maintain/improve water quality.</p>

4.6.3 POTENTIAL IMPACTS AND MITIGATION MEASURES

Significance Criteria

Based on the Placer County environmental review thresholds, impacts related to hydrology and water quality would be considered significant if the project would:

- Violate any federal, state, or county potable water quality standards
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lessening of local groundwater supplies (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
- Increase the rate or amount of surface runoff
- Create or contribute runoff water which would include substantial additional sources of polluted water
- Otherwise substantially degrade surface water quality
- Otherwise substantially degrade ground water quality
- Impact the watershed of important surface water resources, including but not limited to Lake Tahoe, Folsom Lake, Hell Hole Reservoir, Rock Creek Reservoir, Sugar Pine Reservoir, French Meadows Reservoir, Combie Lake, and Rollins Lake
- 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 improvements 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
- Alter the direction or rate of flow of groundwater

Methodology

The following impact analyses are based on existing hydrologic and water quality information and the drainage report prepared for project site and included as Appendix H. It is assumed that all aspects of the project would comply with all applicable laws, regulations, design standards, and plans. Impacts on water quality were evaluated by considering the type of pollutants the project would generate during construction and operation and whether meeting the requirements of applicable regulations would reduce potential impacts to a less-than significant level. Onsite drainage impacts were evaluated in the same manner. The analysis of impacts to groundwater considers how construction of the project could influence groundwater recharge (based on increases in impervious surfaces as a result of the project) and existing and projected conditions of the groundwater basin (quantity and quality). An analysis of impacts to water supply, sewer, and stormwater infrastructure is included in Chapter 4.10, Utilities and Service Systems.

POTABLE WATER QUALITY

Significance Criteria 4.6-1: Violate any federal, state or county potable water quality standards? (Less Than Significant)

Potable water would be served to the proposed project by the San Juan Water District. This development would not damage any existing water facilities or infrastructure. Further, there is no public potable water infrastructure located on site that would be affected by the proposed project. The proposed project would receive potable water from an existing water main located in Old Auburn Road. The connection would conform to all water quality standards and would be overseen by the San Juan Water District.

The proposed project does not include land uses or activities that would be expected to elevate pollutant concentrations in receiving waters to potentially significant levels. As such, the proposed project would not create adverse impacts by the discharging of identified pollutants to an already impaired water body (as listed on the Clean Water Act 303(d) list). Additionally, no impacts to beneficial water resources such as a municipal water supply have been identified. As discussed in Significance Criteria 4.6-3 below, the project would be required to prepare a construction SWPPP which would identify BMPs during the construction phase of the proposed project to avoid or minimize potential impacts on water quality during construction. To address potential operational impacts on water quality the applicant is required to demonstrate through the preparation of a Stormwater Quality Management Plan (SWQP) how BMPs have been incorporated into the project design such that the project conforms to the water quality performance standards specified in the County's Phase II NPDES Municipal Separate Storm Sewer

System Permit and other County water quality design guidelines such as the West Placer Stormwater Quality Design Manual and the Placer County Land Development Manual.

Therefore, the proposed project would not interfere with potable water quality or delivery, and additionally, would not result in substantial degradation potable water quality. Potential impacts are considered **less than significant** and no mitigation is required.

Option 1: Full Frontage Improvements - (Less Than Significant Impact)

Construction of the Full Frontage Improvements option would occur within the same project area, and with the exception of widening Old Auburn Road, have the same project components. The proposed roadway improvements along the project frontage would be required to implement the same construction and post construction BMPs to avoid and minimize water quality impacts as the rest of the project. Potential impacts on potable water supplies would be the same as discussed above and potential impacts are considered **less than significant**. No additional impacts have been identified under this option and no mitigation is required.

Option 2: Modified Frontage Improvements (the Proposed Project) - (Less Than Significant Impact)

The Modified Frontage Improvements option proposes minor modifications to the existing roadway surface and does not propose significant new construction along the project frontage. No additional impacts have been identified under this option. Impacts are **less than significant** and no mitigation is required.

GROUND WATER SUPPLY

Significance Criteria 4.6-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a new deficit in aquifer volume or a lessening of local groundwater supplies (i.e. the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?) (Less Than Significant Impact)

The proposed project would rely on water supply sourced from San Juan Water District (District). According to District's 2015 Urban Water Management Plan, the District does not have access to groundwater in its retail service area, nor does it include groundwater in any of its supplies. The District provides treated surface water to both its retail service area and wholesale customer agencies. The District's water supply right and contracts total 82,200 acre-feet per year of surface water from Folsom Lake, which is fed from the North and South Forks of the American River. The

proposed project would be served by these existing water supplies. In addition, the proposed project does not include installation of a new groundwater well, or use of any existing water well.

Currently, the project site consists of open undeveloped grassland on relatively flat but slightly sloping topography to the southeast. The project area overlies the eastern margin of the North American Sub-Basin of the Sacramento Valley Groundwater Basin. The Basin is not adjudicated and the subbasin is not listed as being in a state of overdraft. As described under Environmental Setting, above, under natural conditions, less than five percent of total recharge to the Sacramento Valley Groundwater Basin is attributable to Placer County. Much of western Placer County, including the proposed project, consists of Hydrologic Group D soils, which are characterized by high runoff and low infiltration potential. The major geologic formations that underlie western Placer County (Riverbank, Turlock Lake, and Mehrten, for example) also impede infiltration of rainwater and irrigation water. Areas outside of Placer County in the Dry Creek Watershed have similar conditions. The following discussion identifies whether or to what extent construction or operation of the project could result in activities that substantially deplete groundwater supplies, substantially interfere with groundwater recharge, or alter the direction or rate of groundwater flow.

Construction

Proposed construction activities would not include site dewatering or other forms of construction related groundwater extraction. Therefore, project construction would not result in the substantial depletion of groundwater supplies or alter the direction or rate of groundwater flow. Soil compaction from placement of equipment and construction materials on construction sites can temporarily interfere with groundwater recharge, but because the project site is characterized by low infiltration potential soils and little recharge would occur within the project site, temporary construction activities would not interfere substantially with groundwater recharge. Impacts to groundwater supplies, recharge, and flow during project construction would be **less than significant**.

Operation

Project operation would rely on water supply provided by the San Juan Water District. According to San Juan Water District 2015 Urban Water Management Plan, the District does not have access to groundwater in its retail service area, nor does it include groundwater in any of its supplies. Additionally, the proposed project would not include installation of a new groundwater well or use any existing well. Therefore, the proposed project would not directly rely upon and/or deplete groundwater supplies. As project operation would not involve groundwater well drilling or extraction, the proposed project would not alter the direction or rate of groundwater flow.

The proposed project would result in the construction of new impervious surfaces within the project site. Impervious surfaces prevent the infiltration of groundwater into the subsurface, which can reduce the amount of water that recharges the groundwater basin. The proposed project would result in the construction of approximately 171,414 square feet of new surfaces (including the retirement building, garages, accessory buildings, drive, and walks and patios). The balance of the project site, approximately 217,595 square feet, or 56% would consist of pervious landscaping and open space. As such, portions of the project site would be covered with impervious surfaces, which would limit the potential for groundwater percolation to occur on the project site. However, given the relatively large size of the groundwater basin in Placer County, the areas of impervious surfaces added as a result of project implementation would not substantially affect the recharge capabilities of the local groundwater basin. Additionally, LID strategies use BMP's such as bioretention basins that in part, recharge groundwater supplies, and protect and enhance natural habitat and biodiversity by implementing designs that infiltrate, evapotranspiration, or biotreat storm water runoff. The project would result in a **less than significant** impact related to depletion of groundwater supplies and interference with groundwater recharge.

Option 1: Full Frontage Improvements - (Less Than Significant Impact)

Roadway frontage improvements under this option would result in widening Old Auburn Road northward onto the project site. The proposed widening would result in the removal of approximately 0.43-acre of perennial stream and associated riparian habitat that currently allows surface water infiltration. This option would add approximately an additional 5 percent of impervious surface area to the project site. While the proposed roadway improvements would create additional impervious area, surface water runoff would still be directed to the remaining areas of Linda Creek Treelake Tributary and associated riparian habitat onsite where surface water infiltration could occur. As such, the proposed roadway improvements result in an incremental increase to the impervious surface area but would not result in a substantial adverse impact on groundwater quality or groundwater recharge. Impacts are considered **less than significant** and no mitigation is required.

Option 2: Modified Frontage Improvements (the Proposed Project) - (Less Than Significant Impact)

The Modified Frontage Improvements option proposes minor modifications to the existing roadway surface and does not propose significant new construction along the project frontage. The proposed roadway improvements would result in an incremental increase to the impervious surface area on the project site but would not result in a substantial adverse impact on

groundwater quality or groundwater recharge. Impacts are considered **less than significant** and no mitigation is required.

DEGRADE SURFACE WATER QUALITY

Significance Criteria 4.6-3: Implementation of the proposed project could degrade surface water quality or contribute runoff water which could include substantial additional sources of polluted water. (Less Than Significant with Mitigation Incorporated)

Construction

The delivery, handling, and storage of construction materials and wastes, as well as the use of construction equipment, could result in stormwater contamination that could degrade water quality and result in the violation of a water quality standard. Spills or leaks from heavy equipment and machinery can result in oil and grease contamination, and some hydrocarbon compound pollution associated with oil and grease can be toxic to aquatic organisms at low concentrations. Staging areas and building sites can also be a source of pollution because of the use of paints, solvents, cleaning agents, and metals during construction. Impacts associated with metals in stormwater include toxicity to aquatic organisms, such as bioaccumulation, and the potential contamination of drinking supplies. Pesticide use (including herbicides and fungicides) during site preparation work (as opposed to pesticide use for landscaping) is another potential source of stormwater contamination. Pesticide impacts to water quality include toxicity to aquatic species and bioaccumulation in larger species. Larger pollutants, such as trash, debris, and organic matter, are additional pollutants that could be associated with construction activities. Potential impacts include human health hazards and aquatic ecosystem damage.

Construction of the proposed project would require compliance with and coverage under the Construction General Permit, which requires the preparation and implementation of a SWPPP by a Qualified SWPPP Developer (QSD). The SWPPP would address site-specific conditions related to construction; identify the sources of sediment and other pollutants that may affect the quality of storm water discharges during construction; and describe the implementation and maintenance of erosion control and sediment control BMPs that would reduce or eliminate erosion and sedimentation, the presence of pollutants adhering to sediment, the presence of nonsediment pollutants in storm water, and pollutants related to non-storm water discharges (e.g., construction vehicle wash water, dust control water runoff).

The Construction General Permit requires that specific minimum water quality BMPs are implemented during construction, as well as additional BMPs that are required for non-stormwater management, erosion control, sediment control, run-on and run-off control; all of

these BMPs would be identified in the SWPPP, which would also provide a construction site monitoring program to ensure that the BMPs are properly implemented. Examples of minimum BMPs include good site management ‘housekeeping’ for construction materials, waste management, vehicle storage and maintenance, landscape materials, and measures to control the air deposition of site materials during construction. Specifically, these BMPs could include soil binders, drainage swales, sediment traps, fiber rolls, sand bags, stabilized construction entrances, and wind erosion control.

In addition, a Qualified SWPPP Practitioner (QSP) would ensure compliance with the SWPPP through regular monitoring and visual inspections during construction activities. The SWPPP would be amended and BMPs revised, as determined necessary through field inspections, to protect against substantial erosion or siltation on- or off-site.

The implementation of the potential BMPs identified above as part of the SWPPP and the construction site inspection and monitoring, as required by the Construction General Permit (as discussed in the Regulatory Setting above), would protect water quality to the maximum extent practicable throughout the entirety of the construction activities and potential impacts are considered **less than significant**.

Operation

Development of the proposed project would result in the conversion of undeveloped land to a residential care home, parking lots, and roadways with associated amenities including associated landscaping, trail, gardens, and patios. These new land uses would result in new stormwater pollutants being introduced to the plan area. Pollutants associated with the operational phase of the proposed project include nutrients, oil and grease, metals, organics, pesticides, bacteria, sediment, and trash and other debris. Nutrients that could be present in post-construction stormwater include nitrogen and phosphorous resulting from fertilizers applied to landscaping and atmospheric deposition. Excess nutrients can affect water quality by promoting excessive and/or a rapid growth of aquatic vegetation, which reduces water clarity and results in oxygen depletion. Pesticides, which are toxic to aquatic organisms can bioaccumulate in larger species, such as birds and fish, and can also enter stormwater after application on landscaped areas of the proposed project. Oil and grease can enter stormwater from vehicle leaks, traffic, and maintenance activities. Metals may enter stormwater as surfaces corrode, decay, or leach. Clippings associated with landscape maintenance and street litter may be carried into stormdrains. Pathogens (from sanitary sewer overflows, spills and leaks from portable toilets, pets, wildlife, and human activities) can affect water contact recreation and non-contact water recreation. Urban development results in increased impervious surfaces, which increase the rate and volume of runoff and can result in erosion and siltation impacts.

Development of the proposed project could also increase the amount of polluted non-stormwater runoff (e.g., car wash water, other wash water, landscape irrigation runoff). This non-stormwater runoff could flow down sidewalks, parking areas, and streets, and pick up additional pollutants deposited on these impervious surfaces prior to discharge into the storm drain system and surface waters.

As discussed in Significance Criteria 4.6-2, above, the proposed would provide stormwater treatment LID BMP's located throughout the site to treat the initial runoff in compliance with the West Placer Storm Water Quality Design Manual. In addition to controlling peak flows, the LID site measures are designed to reduce the amount of sediments and pollutants that could reach downstream water and include:

- Tree planting and preservation: Proposed landscaping includes planting evergreen and deciduous trees onsite to provide shade, landscaping buffers, and reduce stormwater runoff volumes. Existing trees are to remain where practicable to preserve the site's existing tree canopy.
- Rooftop and Impervious area disconnection: Building rooftops and courtyard areas would be directed to depressed landscape areas via downspouts and overland flow.
- Vegetated Swales: Vegetated swales would be used where appropriate to treat initial runoff through its contact time within the landscaped area; and
- Bioretention: Stormwater quality flow would be directed to bioretention areas for treatment through physical, biological and chemical treatment processes. The locations of the bioretention basins are shown on Figure 4.6-2.

The project would be required to comply with the following permits and plans:

- Phase II NPDES Municipal Separate Storm Sewer System Permit (No. CAS000004);
- NPDES Permit for City of Roseville Dry Creek Wastewater Treatment Plant (No. CA0079502);
- West Placer Stormwater Quality Design Manual (Design Manual) BMPs, and LID site measures to reduce pollutants in storm water and non-stormwater discharges to the Maximum Extent Practicable;
- Placer County Land Development Manual

- Placer County Flood Control and Water Conservation District Storm Water Management Manual
- Placer County and Granite Bay Community Plan policies related to hydrology and water quality, and the protection and preservation of natural resources.

These regulations require that surface water runoff from on- and off-site impervious surfaces (including roads) is 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 County Engineering and Surveying Division (ESD). BMPs are required to be designed 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, or other County approved methodology. Post-development (permanent) BMPs for the project include, but are not limited to: vegetated swales and permanent underground water quality treatment vault. Project BMPs are required to be maintained as required to ensure effectiveness. Water quality treatment facilities are not permitted within any identified wetlands area, floodplain, or right-of-way areas unless specifically approved in that location.

Significant increases in surface water pollutants conveyed in surface water runoff from the proposed development would be a significant impact. However, the use of a water quality swale, landscaped buffer areas, and bioretention basins, would ensure water runoff is sufficiently treated before flowing off-site. **Figure 4.6-2: Proposed Drainage Plan** shows the locations of proposed bioretention areas and where surface water would flow onsite once construction is completed. The LID BMPs incorporated as design elements would ensure that the proposed project would not result in an increase in associated offsite erosion, siltation, and would reduce surface water pollution exiting the project site. Implementation of Mitigation Measure HYD-1, would ensure compliance with these water quality protection measures and that BMPs are incorporated into the final design of the project. As such, implementation of Mitigation Measures HYD-1 through HYD-4 would reduce potential impacts on water quality to **less than significant**.

Mitigation Measures

HYD-1: Water Quality BMPs. Prior to approval of improvement plans, the project applicant shall demonstrate to the satisfaction of the Development Review Committee, that the project implements applicable permanent and operational source control measures. Source control measures shall be designed for pollutant generating activities or sources consistent with recommendations from the California Stormwater Quality Association (CASQA) Stormwater BMP Handbook for New Development and Redevelopment, or equivalent manual, and shall be shown

on the Improvement Plans. The project is located within the permit area covered by Placer County's Small Municipal Separate Storm Sewer System (MS4) Permit (State Water Resources Control Board National Pollutant Discharge Elimination System (NPDES), pursuant to the NPDES Phase II program. Project-related stormwater discharges are subject to all applicable requirements of said permit.

The project is also required to implement Low Impact Development (LID) standards designed to reduce runoff, treat stormwater, and provide baseline hydromodification management as outlined in the West Placer Storm Water Quality Design Manual.

HYD-2: Stormwater Quality Control Plan. Prior to approval of improvement plans, the project applicant shall provide to the satisfaction of the Development Review Committee, a final Storm Water Quality Plan (SWQP) shall be submitted, either within the final Drainage Report or as a separate document that identifies how this project would meet the Phase II MS4 permit obligations. Site design measures, source control measures, and Low Impact Development (LID) standards, as necessary, shall be incorporated into the design and shown on the Improvement Plans. In addition, per the Phase II MS4 permit, projects creating and/or replacing one acre or more of impervious surface (excepting projects that do not increase impervious surface area over the pre-project condition) are also required to demonstrate hydromodification management of stormwater such that post-project runoff is maintained to equal or below pre-project flow rates for the 2 year, 24-hour storm event, generally by way of infiltration, rooftop and impervious area disconnection, bioretention, and other LID measures that result in post-project flows that mimic pre-project conditions.

HYD-3: Diversion Around Trash Storage Areas. Prior to approval of improvement plans, the project applicant shall provide to the satisfaction of the Development Review Committee, improvement plans that show all stormwater runoff shall be diverted around trash storage areas to minimize contact with pollutants. Trash container areas shall be screened or walled to prevent off-site transport of trash by the forces of water or wind. Trash containers shall not be allowed to leak and must remain covered when not in use.

HYD-4: Waste Discharger Identification. Prior to construction commencing, the project applicant shall provide to the satisfaction of the Development Review Committee, evidence to the Engineering and Surveying Division of a Waste Discharged Identification (WDID) number generated from the State Regional Water Quality Control Board's Stormwater Multiple Application & Reports Tracking System (SMARTS). This serves as the Regional Water Quality Control Board approval or permit under the National Pollutant Discharge Elimination System (NPDES) construction stormwater quality permit.

Option 1: Full Frontage Improvements - (Less Than Significant Impact with Mitigation Incorporated)

Construction of the Full Frontage Improvements option would occur within the same project area, and with the exception of widening of Old Auburn Road, have the same project components.

Construction

Construction impacts in relation to degrading surface water quality or contributing runoff which could include substantial additional sources of polluted water, would be substantially the same as discussed above, with the exception of the work required to construct the new westbound lane of Old Auburn Road. Construction of the new lane would require completely filling the southerly reach of Linda Creek Treelake Tributary as well as substantial modifications to the bed and bank of the northerly reach of the tributary.

Construction activities within perennial tributary would result in clearing the existing vegetation, rough grading including filling and compacting, finish grading to contour the ground for the new lanes and to modify the northerly tributary, and either revegetation or placement of hardscape (or use of both) to stabilize the bed and bank.

Work within this area would result in increased potential for erosion during wind and rain events and the deposition of these materials in downstream waters. In addition, the listed construction activities would utilize heavy equipment such as bull dozers, tractors, and scrapers. Use of this equipment could result in spills of fuels, oils, greases, or solvents within the work area. If these materials are washed downstream or enter the subsurface water column, they would have the potential to degrade water quality. As noted above, the preparation and implementation of a SWPPP is required to manage potential water quality impacts from construction activities and construction equipment. Therefore, construction activities for the roadway improvements would be addressed by a SWPPP and potential impacts are considered **less than significant** and no additional mitigation is required.

Operation

Operational impacts in relation to degrading surface water quality or contribute runoff which could include substantial additional sources of polluted water, would be substantially the same as discussed above. The same project components including LIDs, BMP's, and conformance with permitting requirements as detailed in the listed mitigation would be required. Similar measures would be required to capture and treat storm water from the new Old Auburn Lane westbound lane. These measures would ensure that substantial amounts of polluted runoff would not be

received by downstream water. Implementation of Mitigation Measures HYD-1 through HYD-4 would reduce potential impacts to **less than significant** and no additional mitigation is required in this regard.

Option 2: Modified Frontage Improvements (the Proposed Project) - (Less Than Significant Impact with Mitigation Incorporated)

The Modified Frontage Improvements option proposes minor modifications to the existing roadway surface and does not propose significant new construction along the project frontage. Construction of the minor roadway improvements would be required to implement the same construction and post construction BMPs to avoid and minimize water quality impacts as the rest of the project. Implementation of Mitigation Measure HYD-1 through HYD-4 would reduce potential impacts to **less than significant** and no additional mitigation is required in this regard.

DEGRADE OR ALTER GROUNDWATER QUALITY

Significance Criteria 4.6-4: Otherwise substantially degrade ground water quality? (Less Than Significant Impact).

The proposed project could result in the release of pollutants into natural waters, during construction and operation of the proposed project. As discussed above, in Significance Criteria 4.6-3, construction would involve the delivery, handling, and storage of construction materials and wastes, and spills or leaks from heavy equipment and machinery could. Spills of materials including oils, greases, fuels, paints, solvents, cleaning agents, and metals during construction, and pesticide use (including herbicides and fungicides) during site preparation could infiltrate the ground and enter subsurface water flows.

The proposed project would provide stormwater treatment BMP's located throughout the site to treat the initial runoff in compliance with the West Placer Storm Water Quality Design Manual. Onsite flows would be conveyed through the proposed BMP's to the Linda Creek Treelake Tributary to ensure that peak flows entering the creek from the project site would pass downstream prior to the peak flows from the Linda Creek watershed arriving at the site.

Therefore, although the construction and operation of the proposed project would involve alterations of the existing landscape and topography of the project site, the proposed project would not substantially degrade groundwater quality in the area. Use of the described LID design features would receive flow from some of the impervious surfaces, which would allow some of the stormwater runoff to infiltrate the ground surface such that it would not adversely affect the groundwater quality. Therefore, impacts would be **less than significant** and mitigation is not required.

Option 1: Full Frontage Improvements - (Less Than Significant Impact)

Construction of the Full Frontage Improvements option would occur within the same project area, and with the exception of roadway improvements to Old Auburn Road, have the same project components. Impacts in relation to degrading groundwater quality would be **less than significant**. No mitigation is required.

Option 2: Modified Frontage Improvements (the Proposed Project) - (Less Than Significant Impact)

The proposed project, under the Modified Frontage Improvements option would occur within the same project area and have the same project components. Impacts in relation to degrading groundwater quality would be **less than significant**. No mitigation is required.

STORMWATER DRAINAGE AND SURFACE RUNOFF

Significance Criteria 4.6-5: Substantially alter the drainage pattern or the site or area or increase the rate or amount of surface runoff. (Less Than Significant with Mitigation Incorporated)

Currently, onsite surface water runoff flows to the southeast or southwestern portion of the site. Due to the existing topography, the site has three drainage management areas. As shown in *Table 4.6-3: Pre-Development Peak Flow Summary*, the project site has total 10-year and 100-year peak flows of 17.5 cubic feet per second (cfs), and 35.4 cfs, respectively. Flows from the east portion of the site are confined to the Linda Creek Treelake Tributary which enters the site in a well-defined channel conveyed beneath Sierra College Boulevard in three box culverts at the southeast corner of the site. This channel flows west along the southern property line before exiting the site under Old Auburn Road. An additional culvert near the northeast corner of the site conveys smaller flows under Sierra College Boulevard and combines with the Linda Creek Treelake Tributary channel. The Linda Creek Treelake Tributary channel passes offsite flows through the site along their historic route. Runoff from Old Auburn Road, at the south edge of the site, drains directly to the main Linda Creek Treelake Tributary channel via sheet flow and a drain inlet located at the west leg of the Sierra College Boulevard and Old Auburn Road intersection.

Table 4.6-3: Pre-Development Peak Flow Summary

Storm Event	Watershed 1	Watershed 2	Watershed 3	Total
10-year	3.8 cfs	5.5 cfs	6.6 cfs	15.9 cfs
100-year	7.2 cfs	11.1 cfs	13.2 cfs	31.5 cfs

cfs = cubic feet per second

Source: Kimley-Horn, 2018

The proposed project would result in placement of impervious surfaces that would change the rate, duration, and quantity of stormwater runoff, and could potentially result in erosion and related water quality effects or flooding in the receiving water. As a result of the proposed development, the project would use five drainage management areas to convey stormwater runoff to the Linda Creek Treelake Tributary.

New development in the County is not permitted to adversely impact offsite properties. To control stormwater runoff, the project design includes stormwater management features that would direct and control the flow of surface water on the project site. The features would be sized to accommodate the required stormwater quality flow. Stormwater would be directed as follows:

- Stormwater from Watersheds 1 and 5 would be directed to drain inlets within the drive aisle of the parking area to a stormwater bioretention basin in the southwest corner of the site where water would be detained and slowly released into the Linda Creek Treelake Tributary onsite.
- Drainage from Watershed 2 would be collected in the drive aisle and conveyed to a drain inlet near the Emergency Vehicle Access at the northeast corner of the site. This flow would be conveyed to a storm water bioretention basin located along the east side of the property.
- Runoff from Watershed 3 would be conveyed to a low point along the southern drive aisle, to a drain inlet and then to a bioretention basin for treatment before discharge to the Linda Creek Treelake Tributary onsite.
- Runoff from Watershed 4 would be conveyed in the drive aisle to a drain inlet near the southeast corner of the site. Low flows would be detained in the basin before entering the Linda Creek Treelake Tributary.

As shown in *Table 4.6-4, Post Development Peak Flow Summary*, the five watersheds would result in 10-year peak flow of 18.3 cfs, and 100-year peak flow of 36.1 cfs, or an increase of approximately 16.3% and 14.6%, respectively.

Table 4.6-4: Post-Development Peak Flow Summary

Storm Event	Watershed 1	Watershed 2	Watershed 3	Watershed 4	Watershed 5	Total	% Increase
10-year	2.9 cfs	6.1 cfs	3.2 cfs	4.9 cfs	1.1 cfs	18.5 cfs	16.3
100-year	5.7 cfs	12.1 cfs	6.3 cfs	9.8 cfs	2.2 cfs	36.1 cfs	14.6

cfs = cubic feet per second

Source: Kimley-Horn, 2018

Therefore, although the proposed project would alter the site and drainage characteristic, the post-construction runoff volumes and rate of run-off would be very similar compared to existing conditions. Thus, the changes in volume and flow would not be substantial such that the downstream flows are anticipated to be significantly altered. In addition, the proposed development would not significantly change the location where stormwater flows enters or exits the project site. The Placer County Flood Control and Water Conservation District Update to the Dry Creek Watershed Flood Control Plan dated November 2011 suggests that detention is not required within the Dry Creek watershed unless increases in stormwater peak flows negatively impact downstream facilities.

The final design of the drainage facilities must be shown on the final improvement plans prior to beginning construction. Implementation of the following Mitigation Measures HYD-5 and HYD-6 would reduce potential impacts to **less than significant**.

Mitigation Measures

HYD-5: Final Drainage Study. Prior to approval of improvement plans, the project applicant shall provide to the satisfaction of the Development Review Committee the Preliminary Drainage Report provided during environmental review submitted in final format. The Final Drainage Report may require more detail than that provided in the preliminary report, and would be reviewed in concert with the Improvement Plans to confirm conformity between the two. 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 proposed improvements, all appropriate calculations, watershed maps, changes in flows and patterns, and proposed on- and off-site improvements and drainage easements to accommodate flows from this project. The report shall identify water quality protection features and methods to be used during construction, as well as long-term post-construction water quality measures. The Final Drainage Report shall be prepared in conformance with the requirements of Section 5 of the Land Development Manual and the Placer County Storm Water Management Manual that are in effect at the time of improvement plan submittal.

Implementation of Mitigation Measure HYD-5 and HYD-6 would ensure that the project would not have an adverse effect to on- or offsite hydrology by providing proper design of stormwater facilities based on final project plans, in accordance with the West Placer Storm Water Quality Design Manual. Therefore, this impact would be reduced to **less than significant**.

HYD-6: Drainage Improvement and Flood Control Fees. This project is subject to the one-time payment of drainage improvement and flood control fees pursuant to the "Dry Creek Watershed Interim Drainage Improvement Ordinance" (Ref. Chapter 15, Article 15.32, Placer County Code.). The current estimated development fee is \$1,854 per acre, payable to the Engineering and Surveying Division prior to Building Permit issuance. The fees to be paid shall be based on the fee program in effect at the time that the application is deemed complete.

Option 1: Full Frontage Improvements - (Less Than Significant Impact with Mitigation Incorporated)

Construction of the Full Frontage Improvements option would occur within the same project area, and with the exception of the widening of Old Auburn Road, have the same project components. Impacts in relation to diverting a drainage pattern or the rate or flow would be increased under this option. This option would require diverting a portion of the existing Linda Creek Treelake Tributary as a result of the proposed road widening. This diversion would result in an increase in the volume of water that flows through other portions of the stream channel and increases the rate and amount of surface water runoff in this area. These increases in flow and runoff could result in erosion and sedimentation downstream which would be considered a significant impact. Potential impacts would be reduced to **less than significant** on stormwater runoff with the implementation of Mitigation Measures HYD-5 and HYD-6. No additional mitigation is required.

This impact is reduced to less than significant because prior to making the roadway improvements, the final design of the project site would be required to demonstrate that the proposed improvements do not result in flooding (upstream or downstream) and that the project's stormwater facilities can provide adequate capacity to accommodate stormwater flows such that the project does not result in significant adverse conditions downstream or upstream with regard to erosion or sedimentation.

Option 2: Modified Frontage Improvements (the Proposed Project) - (Less Than Significant Impact with Mitigation Incorporated)

The proposed project under the Modified Frontage Improvements option proposes minor modifications to the existing roadway surface and does not propose significant new construction

along the project frontage that would adversely affect existing drainage patterns along adjacent Linda Creek Treelake Tributary. This option includes a pedestrian-bike path through the site. The pedestrian-bike path does not result in any significant changes to the existing drainage patterns. The path would require a crossing of the tributary, but the crossing would be a span of the tributary and no fill or structures within the perennial stream are required. Impacts to drainage patterns would be **less than significant** with the implementation of Mitigation Measures Mitigation Measures HYD-5 and HYD-6. No additional mitigation is required.

IMPORTANT SURFACE WATERS

Significance Criteria 4.6.6: Impact the watershed of important surface water resources, including but not limited to Lake Tahoe, Folsom Lake, Hell Hole Reservoir, Rock Creek Reservoir, Sugar Pine Reservoir, French Meadows Reservoir, Combie Lake, and Rollins Lake? (Less Than Significant Impact)

Stormwater would be discharged from the project site. However, stormwater discharged from the project site would not flow into an important water resource such as Lake Tahoe, Folsom Lake, Hell Hole Reservoir, Rock Creek Reservoir, Sugar Pine Reservoir, French Meadows Reservoir, Combie Lake, or Rollins Lake. Impacts in relation to watershed of important surface water resources, would be **less than significant** and mitigation is not required.

Option 1: Full Frontage Improvements - (Less Than Significant Impact)

Construction of the Full Frontage Improvements option would occur within the same project area, and with the exception of improvements to Old Auburn Road, have the same project components. Impacts on watersheds of important surface water resources, would be **less than significant** and mitigation is not required.

Option 2: Modified Frontage Improvements (the Proposed Project) - (Less Than Significant Impact)

The proposed project, under the Modified Frontage Improvements option would occur within the same project area and would have the same project components. Impacts in relation to watersheds of important surface water resources, would be **less than significant** and mitigation is not required.

FLOOD HAZARDS**Significance Criteria 4.6-7: 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, or place within a 100-year flood hazard area improvements which would impede or redirect flood flows? (Less Than Significant Impact)**

As discussed in Environmental Setting above, according to FEMA, the project site is mapped as Zone X. Within Zone X, the project site is considered to be a minimal flood risk and is not mapped in any FEMA flood hazard zone. A portion of the southernmost area of the site adjacent to the Linda Creek Treelake Tributary is in a local 100-year floodplain. The 100-year flood water surface elevations were modeled for the proposed development in the Preliminary Drainage Report prepared for the project. The 100-year flood would have a maximum water surface elevation of 196.28 feet on the project site. The proposed building pad would be graded to a finished floor elevation of 205 feet for the proposed building and a minimum elevation of 200 feet for the parking areas. The project has been designed to be free from inundation during a 100-year storm event. The finished floor elevation of the proposed residences would exceed the minimum of 2 feet above the base flood elevation as established by Section 15.52.170(C.1) of the Placer County Code.

The PCFCWCD is responsible for providing flood protection to residences and businesses in the County from floods equal to or less than the “one percent flood.” Development within the project site would not be located within a designated Special Flood Hazard Area and would comply with Placer County Code (Section 15.52.170), which requires new housing to not be placed within a 100-year flood zone and to design drainage facilities to protect areas from 100-year storm events. The proposed project drainage facilities and grading would be designed to convey the 100-year flows from the Linda Creek Treelake Tributary onsite to the connection points of the existing storm drain system in a manner that avoids the proposed residences. Consistent with flood control regulations, no grading or development would occur that would place residences within a 100-year flood hazard area and would not impede flows or redirect flows to other areas where they could have an adverse impact. Therefore, impacts would be **less than significant** and no mitigation is required.

Option 1: Full Frontage Improvements - (Less Than Significant Impact)

Construction of the Full Frontage Improvements option would occur within the same project area, and with the exception of improvements to Old Auburn Road, have the same project components. However, the proposed frontage improvements for Old Auburn Road would be developed within the 100-year floodplain and would remove the smaller of two existing channels

for the Linda Creek Treelake Tributary perennial stream along the southern boundary of the property. These roadway improvements would result in surface water being redirected to the larger channel onsite. The result is that the 100-year flood surface water elevations would rise 0.08-foot or less at the culvert where the water flows offsite at the culvert under Sierra College Boulevard. **Figure 4.6-3: Full Frontage Improvement Floodplain** shows what the floodplain would look like under the Full Frontage Improvements option. The water surface elevation would gradually decrease upstream. There is an increase of 0.01-foot in water surface elevation offsite. Under this option, the maximum water surface elevation would be 195.93 feet or 0.02-foot higher than the Modified Frontage Improvements option. This flood area would slightly increase under this option compared to the Modified Frontage Improvements option as the two southernmost bioretention basins would be flooded during a 100-year storm. The bioretention basin in the southwest corner would be flooded with approximately three inches of water. This bioretention basin has approximately 9 feet of freeboard, so the surface water would not overtop this basin during a 100-year flood. The bioretention basin in the southeast corner would be flooded with approximately 3 inches of water. This bioretention basin has approximately 6 feet of freeboard, so the surface water would not overtop this basin during a 100-year flood.

Under this option, the proposed development would be free from inundation during a 100-year storm event. The finished floor elevation of the proposed residences would exceed the minimum of 2 feet above the base flood elevation as established by Section 15.52.170(C.1) of the Placer County Code.

While this impact is slightly greater than the Modified Frontage Improvement option, potential impacts are considered **less than significant** and no mitigation measures are required.

Option 2: Modified Frontage Improvements (the Proposed Project) - (Less Than Significant Impact)

The proposed project, under the Modified Frontage Improvements option would occur within the same project area and have the same project components as what was evaluated above. This option would not include any roadway frontage improvements along Old Auburn Road, and as such, would not result in any additional changes to the 100-year floodplain beyond what was evaluated for the proposed project above. **Figure 4.6-4: Modified Frontage Improvement Floodplain** shows what the floodplain would look like under the Modified Frontage Improvements option. The result is that the 100-year flood surface water elevations would decrease 0.01-foot or less at the culvert where the water flows offsite at the culvert under Sierra College Boulevard. Potential impacts as result of flooding are considered **less than significant** and no mitigation is required.

FAILURE OF DAM OR LEVEE

Significance Criteria 4.8-6: Place 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? (No Impact)

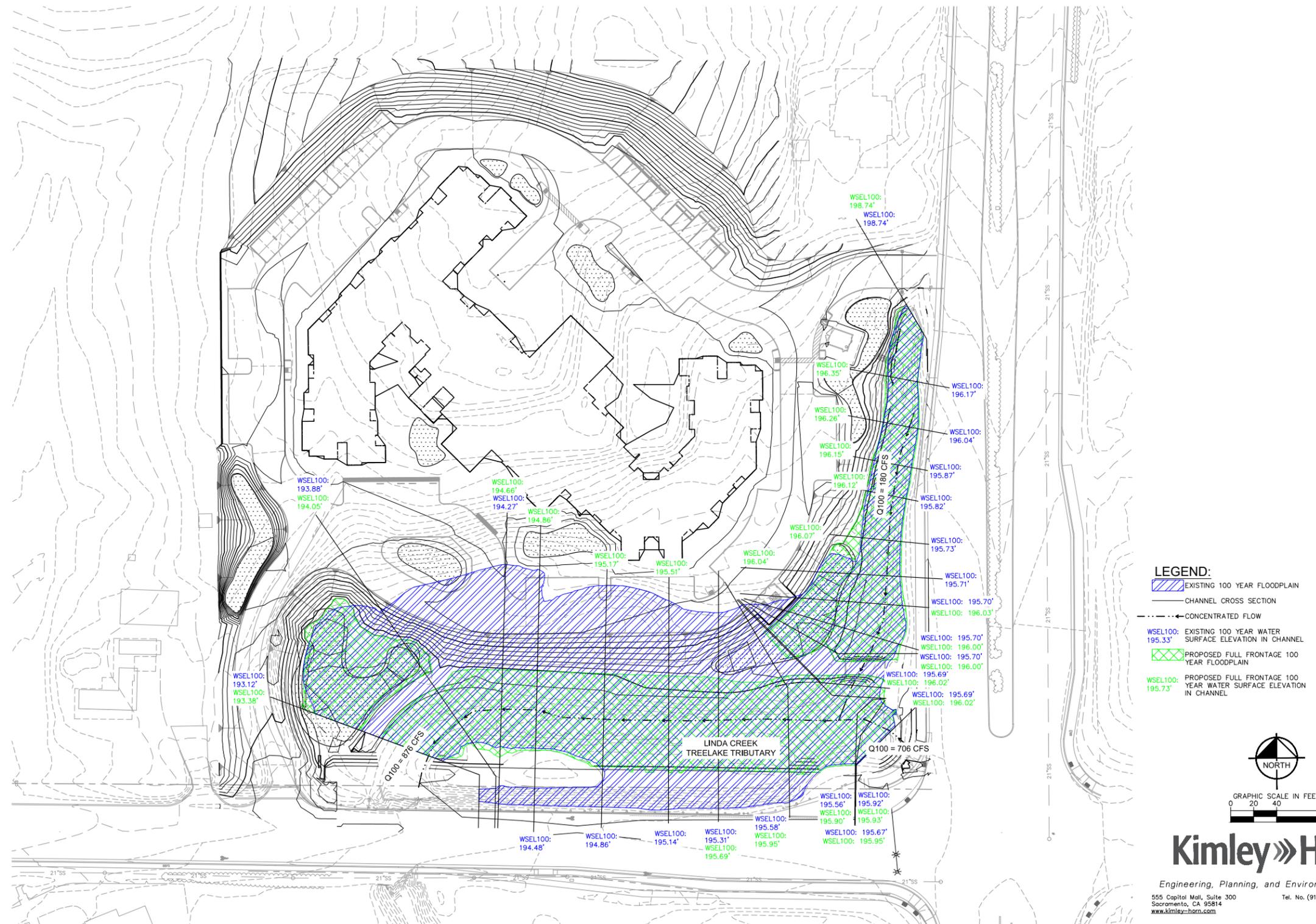
There are no levees or dams that are located within or in immediate proximity to the project site. The project site, however, is located approximately 3 miles west of Folsom Lake and four miles from the spillway. The project site is at an elevation of approximately 220 feet and the base of the spillway is at an elevation of approximately 150 feet. Based on the elevation differences and area topography, the proposed project would not place people or structures at risk due to the failure of the dam and impacts would not occur. The project would have **no impact** in this regard. No mitigation is required.

Option 1: Full Frontage Improvements - (No Impact)

Construction of the Full Frontage Improvements option would occur within the same project area, and with the exception of improvements to Old Auburn Road, have the same project components. Impacts in relation to the failure of a dam or levee would not occur. The project would have **no impact** in this regard. No mitigation is required.

Option 2: Modified Frontage Improvements (the Proposed Project) - (No Impact)

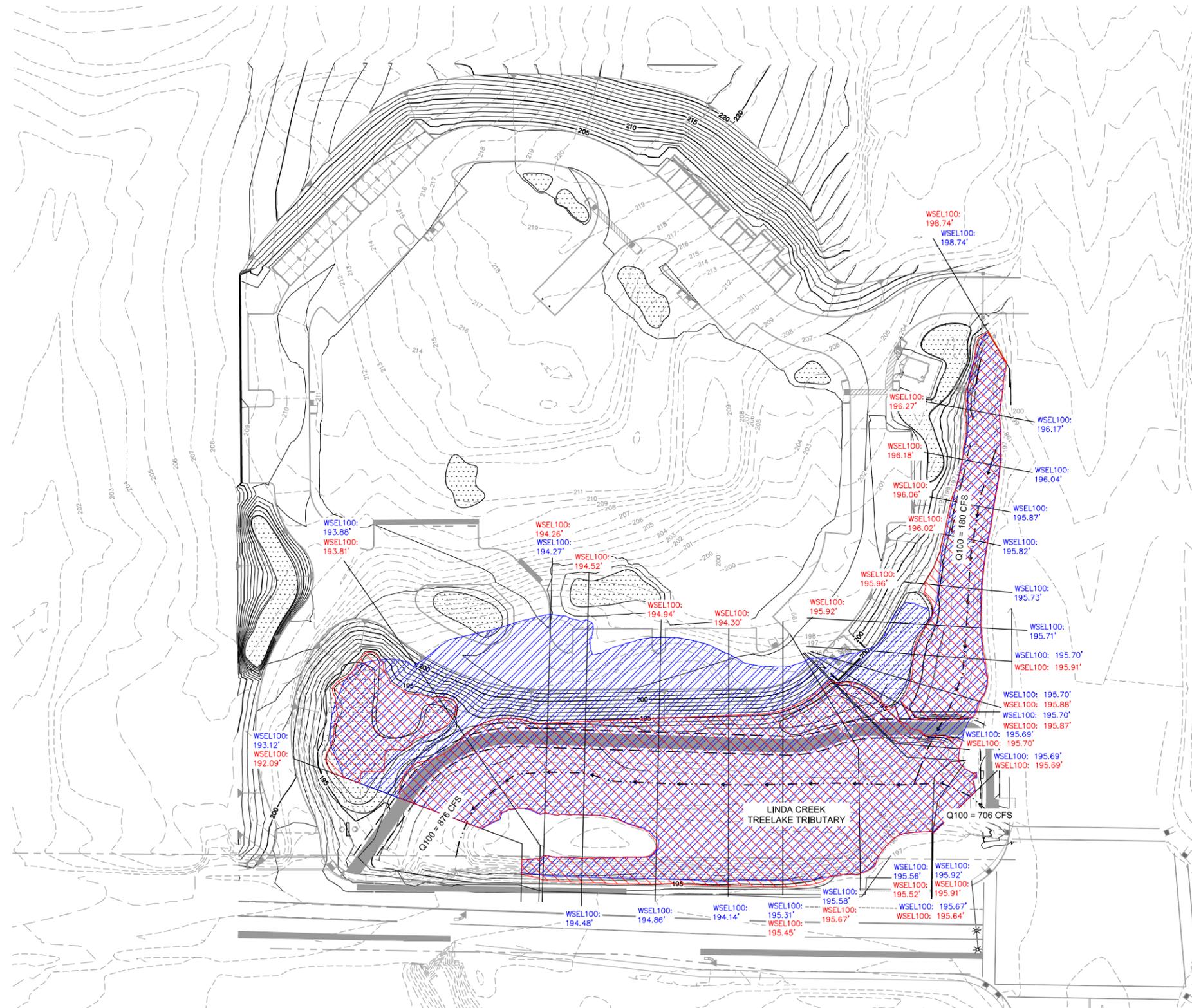
The proposed project, under the Modified Frontage Improvements option would occur within the same project area and have the same project components. Impacts in relation to the failure of a dam or levee would not occur. The project would have **no impact** in this regard. No mitigation is required.



Source: Kimley-Horn., 2018

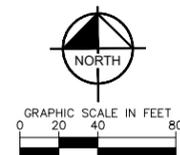
FIGURE 4.6-3: Full Frontage Improvement Floodplain
 Placer Retirement Residence
 Placer County

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LEGEND:

- EXISTING 100 YEAR FLOODPLAIN
- CHANNEL CROSS SECTION
- CONCENTRATED FLOW
- WSEL100: EXISTING 100 YEAR WATER SURFACE ELEVATION IN CHANNEL
- PROPOSED 100 YEAR FLOODPLAIN
- WSEL100: PROPOSED 100 YEAR WATER SURFACE ELEVATION IN CHANNEL



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Source: Kimley-Horn., 2018

FIGURE 4.6-4: Modified Frontage Improvement Floodplain
 Placer Retirement Residence
 Placer County

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4.6.4 CUMULATIVE IMPACTS

Table 5-1: Cumulative Projects in Chapter 5.5 of this EIR provides a list of related projects and other possible development in the area determined as having a direct potential to interact with the proposed project (to the extent that a significant cumulative effect could occur). In addition to the projects listed in Table 5-1, the geographic scope for cumulative impacts to hydrology and water quality includes past, present, and reasonably foreseeable projects identified as cumulative development within the Dry Creek Watershed. Impacts of the proposed project would be cumulatively considerable if they have the potential to combine with similar impacts of the identified cumulative projects. Cumulative effects related to hydrology and water quality resulting from implementation of the proposed project, along with development in the vicinity, may expose more persons and property to potential water quality hazards. Cumulative development may also adversely affect downstream water quality, thereby impacting surface and groundwater supplies.

Implementation of the proposed project, in combination with future development within the Dry Creek Watershed could contribute to a cumulative degradation of water quality due to the generation of pollutants from construction and operational activities and as a result of increased urban runoff. The proposed project as well as future development within the watershed are subject to the General Construction Permit, which require the implementation of a SWPPP and BMPs to reduce water pollution to the maximum extent practicable during construction activities. In addition, future development is subject to the NPDES municipal separate storm sewer system (MS4) permit and associated BMPs to reduce storm water pollutants during operational activities. These measures are effective at reducing the pollutant load from new developments, though they do not eliminate water pollution entirely. Given the existing regulatory requirements for development projects within the watershed and the efficacy of standard BMPs, the cumulative water quality impacts are considered less than cumulatively considerable with the implementation of Mitigation Measure HYD-1 through HYD-6.

Implementation of the proposed project, in combination with future development within the Dry Creek Watershed would contribute to a cumulative increase in urban runoff that could alter existing drainage patterns. Operational activities associated with the proposed project would not contribute to a potential, substantial, cumulative, drainage pattern alterations because the project would retain storm water flows onsite prior to release to offsite in the same general area as existing flows. As a result, the project's contribution to the cumulative alteration of an existing drainage pattern during construction would be less than cumulatively considerable and thus **less than significant** with the implementation of Mitigation Measure HYD-1 through HYD-6.

4.6.5 REFERENCES – HYDROLOGY AND WATER QUALITY

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