SECTION 4.8 HYDROLOGY AND WATER QUALITY

4.8.1 Introduction

This section addresses potential hydrologic effects related to drainage and water quality associated with developing the project site. Site characteristics such as regional and local drainage and flooding conditions and water quality are described based on site-specific information and published technical information. The primary sources referenced to prepare this section include the following:

- Creekview Specific Plan Environmental Impact Report (EIR) (City of Roseville 2010)
- *City of Roseville General Plan 2025*, as amended February 2013 (City of Roseville 2013a)
- Stoneridge Specific Plan and Design Guidelines (City of Roseville 2007)
- Stoneridge Specific Plan Environmental Impact Report (City of Roseville 1998).

The documents listed above are available for review during normal business hours (Monday through Friday 8 a.m. to 5 p.m.) at the City of Roseville Permit Center, 311 Vernon Street, Roseville, California 95678.

During circulation of the Notice of Preparation (NOP) a comment letter was received from the Central Valley Regional Water Quality Control Board (CVRWQCB) that reiterated the need for the project applicant to comply with certain existing "general permits," depending upon the size of the project and the resources present. General permits applicable to the project are discussed in this section. A copy of the NOP and responses to comments received in response to the NOP is included in Appendix A.

4.8.2 Environmental Setting

Regional Setting

The City of Roseville (City) is located within the Pleasant Grove Creek and Dry Creek watersheds. The Pleasant Grove Creek watershed drains the northwest portions of the City and western Placer County into the Sacramento River. Local streams within the City ultimately drain the Dry Creek watershed in the Sacramento River via the Natomas East Main Drainage Canal in Sacramento County. The project site drains into the Dry Creek watershed.

Dry Creek Watershed

The Dry Creek watershed covers approximately 101 square miles and includes a portion of the City of Roseville and surrounding areas including Rocklin, Sacramento, and portions of both Placer and Sacramento counties. In the vicinity of the project site, the major tributaries to Dry Creek are Cirby Creek, Linda Creek, Miners Ravine, Secret Ravine, Antelope Creek, and Strap Ravine.

The proposed project would discharge stormwater runoff into Miners Ravine where there is a regional detention basin facility built to mitigate the increase of peak design flows downstream at Dry Creek. With the regional detention basin currently in place at Miners Ravine, the project would not be required to mitigate peak flows on-site.

On-Site Conditions

The project site is currently undeveloped. A detention basin in the southwest portion of the site was left over from when the master developer mass graded the SSP. It was for construction related erosion/sediment control (SWPPP) and is no longer needed.

Floodplain

According to the Federal Emergency Management Agency (FEMA) flood plain maps, the project site is not located within a designated 100-year floodplain. The project site is in an area designated Zone X, which is characterized as areas of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods (FEMA 2010).

Dam Failure Inundation

Folsom Dam is located approximately 7 miles southeast of the project site. While portions of the City could be subject to flooding in the event of failure of or damage to Folsom Dam, the project site is not located in an area that would be subject to dam failure inundation, according to the Placer County Office of Emergency Services.

Surface Water Quality

Surface water quality in the project area can generally be predicted based on the surrounding land uses. Most of the project area has been developed with a mix of residential and commercial uses. Runoff would be expected to contain urban pollutants such as oil, grease, metals, nitrogen, and phosphorus from fertilizers, pesticides and herbicides, bacteria, and sediment.

4.8.3 Regulatory Setting

Federal Regulations

Floodplain Development

FEMA determines floodplain boundaries for purposes of flood insurance requirements, and distributes Flood Insurance Rate Maps, which are used in the National Flood Insurance Program. These maps identify the locations of special flood hazard areas within the 100- year floodplain,

and in some cases also identify a regulatory floodway; however, no floodway or flood zones have been identified for this project site.

Water Quality

Section 303 of the federal Clean Water Act (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. Title 40 of the Code of Federal Regulations (40 CFR) contains U.S. Environmental Protection Agency (EPA) regulations to implement the National Pollutant Discharge Elimination System (NPDES) permit system, which was established by the CWA to regulate municipal and industrial discharges to surface waters of the United States. Each NPDES permit contains limits on allowable concentrations and emissions of pollutants contained in the discharge.

Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 307 of the CWA describes the factors that the EPA must consider in setting effluent limits for priority pollutants.

State Regulations

Urban Water Quality

The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs) are responsible for ensuring implementation and compliance with the provisions of the CWA, Porter–Cologne Water Quality Control Act, and NPDES programs. Along with the SWRCB and RWQCB, water quality protection is the responsibility of numerous water supply and wastewater management agencies, as well as city and county governments.

The project site is located within the jurisdiction of the Central Valley RWQCB (Region 5), which has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within its jurisdiction. Water quality objectives for the Sacramento River and its tributaries (e.g., Pleasant Grove Creek and Dry Creek) are specified in the Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin (Basin Plan) prepared by the RWQCB in compliance with the federal CWA and the State Porter–Cologne Act. The Basin Plan establishes water quality objectives and implementation programs to meet stated objectives and to protect the beneficial uses of water in the Sacramento–San Joaquin River Basin. Because the City of Roseville is located within the Central Valley RWQCB's jurisdiction, all discharges to surface water or groundwater are subject to the Basin Plan requirements.

Construction Site Runoff Management

On September 2, 2009, the SWRCB adopted Order 2009 0009-DWQ, NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities ("General Permit"), superseding Order 99-08-DWQ and establishing new requirements for stormwater discharges from construction activities. The new General Permit took effect on July 1, 2010, and applies to site disturbance as small as 1 acre, as described below.

Under the General Permit, any construction activity affecting 1 or more acres of land, or any activity that is part of a common plan of development or sale that disturbs 1 acre or more, as well as construction activities for linear overhead/underground utility projects that result in disturbance of 1 acre or more, must obtain a General Construction Activity Stormwater Permit Waste Discharge Identification Number. The September 2009 General Permit implements substantial changes from the prior permitting system, including risk-based assessments and numeric effluent limitations for projects covered under the General Permit. The General Permit also imposes effluent monitoring and reporting requirements.

Urban Runoff Management

The 1987 amendments to the CWA added Section 402(p), which requires the EPA to develop a comprehensive phased program to regulate stormwater quality discharges under the NPDES program. In November 1990, Phase I of the NPDES program was issued addressing stormwater discharges from municipal separate storm sewer systems (MS4s) serving populations over 100,000 and industrial activities including discharges from construction activities disturbing 5 acres or more. On December 8, 1999, the EPA published the NPDES Phase II regulations in the Federal Register as required by Section 402(p) of the CWA. NPDES Phase II regulations require small MS4s, those serving a population of less than 100,000 (at the time the amendments were finalized) and located in an urbanized area, to obtain a municipal stormwater permit.

As a Phase II community, the City of Roseville is currently required to operate under an NPDES Municipal Stormwater Permit administered by the State of California. The City of Roseville's Stormwater Management Plan was adopted and approved by the RWQCB in March 2003, at which time the City received a Phase II Stormwater Permit. The SWRCB is currently updating the General Phase II permit requirements, which are expected to be more in line with the current Phase I requirements. Upon the adoption of the updated General Phase II Permit by the state, the City will update its stormwater permit to comply with the new requirements.

Local Regulations

Placer County Flood Control and Water Conservation District

The Placer County Flood Control and Water Conservation District (PCFCWCD) formulates regional strategies for flood control management and regulates site-specific drainage impacts. The PCFCWCD's *Stormwater Management Manual* presents policy, guidelines, and specific development criteria for stormwater management. The main objective of the SMM is to reduce the effects of flooding through best management practices (BMPs). The manual was revised in 1992, 1994, and in 1997.

City of Roseville Stormwater Management Plan

The City's Stormwater Management Plan (SWMP), dated March 2003, contains a comprehensive set of priorities, activities, and strategies that comprise the City's minimum control measures and BMPs intended to address Phase II requirements, described in the prior subsection. The goal is to reduce pollutants in stormwater to the maximum extent practicable. The SWMP was prepared with input by a Citizen's Advisory Committee.

The SWMP identifies activities to implement the following six minimum control measures required under the General Permit: public outreach, public involvement, illicit discharge detection and elimination, construction site runoff, new development and redevelopment, and municipal operations.

The SWMP includes minimum required control measures for new development, such as structural and nonstructural control strategies, and long-term operation and maintenance of controls. It includes specific guidance for volume and flow control design parameters for structural controls such as detention ponds, vegetative areas, and runoff pretreatment.

The City adopted the Urban Stormwater Quality Management and Discharge Control Ordinance (Stormwater Ordinance) (Ord. 4395 Section 2 (part), 2006) in order to establish a regulatory framework to implement construction and post-construction stormwater controls. In March 2007, the City adopted the *Stormwater BMP Guidance Manual for Construction*, and in May 2007, the City adopted the *Stormwater Quality Design Manual*. The City has the authority during plan checks, as well as site inspections, to enforce the SWMP. Prior to final approval, the owner of any stormwater control structure will be required to submit an operations and maintenance manual and a proposed maintenance schedule. Additional detail on post-construction controls is provided in the SWMP, which is available on the City's website (www.roseville.ca.us).

City of Roseville 2013 Design/Construction Standards

The City's 2013 Design/Construction Standards regulate and guide the design and preparation of plans for construction of drainage (Section 10, Drainage) and related public improvements, and

establishes guidelines for all private works which involve drainage, grading, trees, and related improvements (City of Roseville 2013b).

City of Roseville General Plan

The *City of Roseville General Plan 2025* Safety Element and Open Space and Conservation Element include several goals and policies relating to hydrology and water quality. Those goals and policies applicable to the proposed project are listed below.

Flood Protection

Goal 1	Minimize the potential for loss of life and property due to flooding.
Goal 2	Pursue flood control solutions that are cost-effective and minimize environmental impacts.
Policy 5:	Require new developments to provide mitigation to insure that the cumulative rate of peak run-off is maintained at pre-development levels.
Policy 6:	Continue to implement the Storm Maintenance Program to keep creeks and storm drain systems free of debris.
Groundwater]	Recharge and Water Quality

- Policy 1:Utilize cost-effective urban run-off controls, including Best Management
Practices, to limit urban pollutants from entering the watercourses.
- **Policy 2:** Implement erosion control and topsoil conservation measures to limit sediments within watercourses.

4.8.4 Impacts

The analysis relies on information provided by the project applicant and a review of existing state and local requirements designed to address changes in stormwater flows and water quality.

The project site is not located within a 100-year flood hazard area; therefore, potential impacts associated with placing structure or exposing people to a significant risk of loss or injury associated with flooding is not further addressed. In addition, potential impacts associated with the failure of a dam or levee is not further addressed in this section because the project site is not located in an area that would be subject to dam failure inundation, according to Placer County.

Thresholds of Significance

Consistent with Appendix G of the CEQA Guidelines, the City's General Plan, and professional judgment, a significant impact would occur if the proposed project would do any of the following:

- Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Substantially degrade surface water quality due to increases in sediments, erosion, and urban contaminants generated by construction and/or operational activities or violate any water quality standards or waste discharge requirements;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or siltation on or off site; or
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

	Change the Rate of Stormwater Runoff Through
Impact 4.8-1	Development of New Impervious Surface Area
Applicable Policies and Regulations	City of Roseville 2013 Design/Construction Standards
	City's Manual for Stormwater Quality Control Standards for
	New Development
Significance with Policies and Regulations	Less than significant
Mitigation Measures	None required
Significance after Mitigation	Less than significant

The proposed project would develop a majority of the site with impervious uses (e.g., building, parking lot), leaving landscaped areas and grassy swales as pervious surface area. Collecting on-site surface stormwater runoff would be controlled by a series of "curb cuts" and drainage inlets. The majority of the parking areas and drive aisles' surface runoff would enter through strategically located curb cuts, and then discharge to grassy swales located throughout the site. Other areas would collect surface stormwater in drain inlets, which would then be piped and discharged to grassy swales. The swales would provide water quality treatment and also decrease flow duration times. The grassy swales would contain drain inlets to collect the treated stormwater flows that would then be discharged to existing storm drain stubs. Roof water from the building, and the outdoor pool area would enter a subsurface storm drain system located along the rear of the building, where it would discharge to its own grassy swale, again providing water quality treatment. The tennis courts are

designed to collect surface runoff in similar fashion with drain inlets and trench drains placed outside of the court areas which would ultimately discharge to its own grassy swale.

In-addition to grassy swales for water quality treatment, the project is proposing various sitebased design strategies to collect storm flows including:

- Separated sidewalks
- Drought tolerant and stormwater appropriate planting
- Landscape interceptor trees.

These stormwater quality control measures have been designed to comply with the requirements of the City's *Manual for Stormwater Quality Control Standards for New Development*, the City's 2013 Design/Construction Standards, Urban Stormwater Quality Management and Discharge Control Ordinance, and the *Stormwater Quality Design Manual for the Sacramento and South Placer Regions*.

As noted in 4.8.2 Environmental Setting, the proposed project would discharge stormwater runoff into Miners Ravine, where there is a regional detention basin facility built to mitigate the increase of peak design flows downstream at Dry Creek. The PCFCWCD, along with the City of Roseville and Placer and Sacramento counties, have constructed a regional flood control project located in the Dry Creek watershed. Necessary detention volume has been created to mitigate flooding associated with existing and future development within the watershed. With the regional detention basin currently in place at Miners Ravine, the project would not be required to mitigate peak flows on site. In addition, the City has issued a letter stating that there are adequate connections to the City's public storm drain system stubbed to the project site to support the project. Stormwater generated by the project would be accommodated within the storm drain infrastructure designed for the project and would not exceed the capacity of the proposed system. The rate of stormwater runoff created through the development of new impervious surface area would not require the expansion of existing facilities, the construction of which could cause significant environmental effects, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site. The project's on-site storm drain infrastructure and water quality features would accommodate development and stormwater flows generated on site and would not generate a substantial increase in additional sources of polluted runoff. Therefore, the impact is less than significant.

Impact 4.8-2	Degrade Surface Water Quality Due to Construction and/or Operational Activities or Violate Any Water Quality Standards or Waste Discharge Requirements
Applicable Policies and Regulations	City of Roseville 2013 Design/Construction Standards City's Manual for Stormwater Quality Control Standards for New Development City of Roseville Stormwater BMP Guidance Manual for Construction SWRCB NPDES Permit (State General Permit for Storm Water Discharges Associated With Construction and Land Disturbance Activities)
Significance with Policies and Regulations	Less than significant
Mitigation Measures	None required
Significance after Mitigation	Less than significant

Project development would involve the construction of the fitness building, driveways, parking lots, and on-site infrastructure, which would require grading, excavation, and other construction-related activities that could cause soil erosion at an accelerated rate during storm events. Without proper controls, sediment from erosion could have adverse effects on receiving water quality at the site and downstream, including Dry Creek. Such effects could include increased turbidity, which could result in adverse impacts on fish and wildlife and their habitat, increased municipal water treatment costs for turbidity removal, and impaired recreation and aesthetic values. Another potential source of water quality degradation during construction activities is heavy machinery and other construction equipment spills could result in the release of polluting constituents, such as heavy metals, oil, grease, and other petroleum hydrocarbons, to Dry Creek.

Contractors are required by state law to obtain coverage under the State General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (General Permit). Developers are also required by City ordinance (RMC Chapter 14.20) to fully comply with the state construction permit and reduce pollutants to the maximum extent practicable. Compliance with the General Permit requires a number of steps. The contractor must electronically file Permit Registration Documents before construction activity begins, including a Stormwater Pollution Prevention Plan (SWPPP), Notice of Intent, Site Map, and Risk Assessment. A grading permit, with associated requirements for dust control (consistent with the City's Improvement Standards) would be required before construction begins. Additionally, project construction is subject to the requirements of the NPDES, which requires preparation and implementation of a SWPPP. The SWPPP would identify measures taken to prevent sedimentation and erosion during project construction. Contractors will be required to prepare, and retain on site, an Erosion Control Plan in accordance with Sections 2 and 11 of the City of Roseville's Improvement standards. As part of the City's Stormwater Management Program, the City actively inspects construction sites to ensure compliance with the state construction permit. Compliance with the requirements of the City's 2013 Design/Construction Standards, State Construction Permit, Section 11, Grading, and the federal NPDES requirements would ensure that construction-related sediment or other contaminants would be reduced to the maximum extent practicable as required by law. In addition, compliance with NPDES requirements and the City's Stormwater Management Design Manual, along with the implementation of on-site BMPs would avoid violation of any water quality standards, avoid the creation of substantial additional sources of polluted runoff, and would avoid any substantial degradation of water quality associated with project operation (City of Roseville 2013b).

Therefore, the project would not result in substantial erosion, flooding, or polluted runoff, and the potential for water quality impacts is considered **less than significant.** Moreover, as noted earlier, the City's Construction Standards function as uniformly applied development standards within the meaning of California Environmental Quality Act (CEQA) Guidelines Section 15183, so that potential water quality impacts, being substantially mitigated by such standards, are exempt from CEQA under Section 15183.

4.8.5 Cumulative Impacts

The cumulative context to assess project impacts includes development within the Dry Creek watershed and in the vicinity of the project site. The watershed is used as the geographic unit for cumulative analysis based on the concept that many water quality problems, like the accumulation of pollutants or nonpoint source pollution, are best addressed at the watershed level. In addition, California's regulatory framework for protection of water quality focusses on the watershed.

Impact 4.8-3	Cumulative Increase in Stormwater Flows and Flooding
Applicable Policies and	City of Roseville Improvement Standards
Regulations	City's Manual for Stormwater Quality Control Standards for New Development
Significance with Policies and	Less than significant
Regulations	
Mitigation Measures	None required
Significance after Mitigation	Less than significant

Cumulative development in the Roseville area, which includes the Dry Creek watershed, would increase the amount of impervious surface which would, in turn, generate stormwater runoff peak flows. A regional detention basin has been constructed within the Dry Creek watershed to accommodate an increase in stormwater flows associated with existing and future development within the watershed. The City's General Plan policies require that individual projects mitigate their contribution of increased surface water flows to minimize the potential for increased on-

and off-site flooding; however, with the regional detention basin, the project would not be required to mitigate peak flows on site.

Because the regional detention facility in the Dry Creek watershed is in place and designed to accommodate stormwater flows associated with future development, the cumulative impact would be less than significant and the project's contribution would also be **less than significant**.

Impact 4.8-4	Cumulative Decrease in Water Quality Associated with Project Construction and Operation
Applicable Policies and Regulations	City of Roseville 2013 Design/Construction Standards City of Roseville Manual for Stormwater Quality Control Standards for New Development City of Roseville Stormwater BMP Guidance Manual for Construction SWRCB NPDES Permit (State General Permit for Storm Water Discharges Associated With Construction and Land Disturbance Activities)
Significance with Policies and Regulations	Less than significant
Mitigation Measures	None required
Significance after Mitigation	Less than significant

Once operational, the proposed project would drain into Miners Ravine and into the Dry Creek watershed. The changes in water quality that could occur as a result of construction activities and urban runoff would not be expected to differ from other development that contributes flows upstream of the project site.

Cumulative urban development within the Dry Creek watershed would involve soildisturbing construction activities, such as vegetation removal, grading, and excavation. These soil disturbances would expose soil to wind- and water-generated erosion, possibly at accelerated rates. Therefore, surface runoff would carry increased sediment loads. As previously described, sediment from erosion can have long and short-term water quality effects, including increased turbidity, which could result in adverse impacts on fish and wildlife habitat, and reduced water pump life due to abrasion. Development in the region would cause significant cumulative water quality impacts.

The City requires that erosion control plans be prepared and approved by the City to reduce water quality impacts during construction activities. The General Plan also requires that urban runoff measures, including BMPs and buffer areas, be implemented as part of individual project development to protect water quality after the project is constructed. The City of Roseville is developing a stormwater quality management program in accordance with adopted NPDES Phase II requirements, which would provide additional water quality protection in the future. Implementation of applicable state General Permit requirements for stormwater runoff during construction requirements would reduce potential degradation of receiving water quality attributable to project construction and operation such that the project's contribution would not be considerable, resulting in a **less-than-significant cumulative impact**.

4.8.6 Mitigation Measures

None required.

4.8.7 Sources

- City of Roseville. 1998. *Stoneridge Specific Plan Environmental Impact Report*. Prepared by EIP Associates. December 1998.
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