

# 5.8 Hydrology and Water Quality

## 5.8.1 INTRODUCTION

This section describes the environmental and regulatory settings and identifies potential impacts for hydrology and water quality resources. The analysis in this section is based, in part, on the following documents and resources:

- CGS Information Warehouse, California Department of Conservation, 2015
- *City of Redlands General Plan 2035*, City of Redlands, December 2017
- *City of Redlands Drainage Master Plan*, RBF Consulting, May 15, 2014
- *Redlands Transit Village Water Supply Assessment*, Fuscoe Engineering, Inc., January 26, 2022 (Appendix F)
- *Upper Santa Ana River Watershed Integrated Regional Water Management Plan*, Upper Santa Ana Water Resources Association, January 2015

## 5.8.2 REGULATORY SETTING

### 5.8.2.1 Federal Regulations

#### Clean Water Act

The United States Environmental Protection Agency (USEPA) is the federal agency that implements the Clean Water Act (CWA), which is responsible for water quality management. The purpose of the CWA is to protect and maintain the quality and integrity of the nation's waters by requiring states to develop and implement state water plans and policies.

**CWA Section 303, Total Maximum Daily Loads (TMDL):** Section 303 of the CWA requires states to establish water quality standards consisting of designated beneficial uses of water bodies and water quality standards to protect those uses for all Waters of the United States. Under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop lists of impaired waters. Impaired waters are waters that do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish a priority ranking for listed waters and develop action plans to improve their water quality. This process includes development of Total Maximum Daily Loads (TMDL) that set discharge limits for non-point source pollutants.

A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards. The Ducheny Bill (AB 1740) requires the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs) to post this list and to provide an estimated completion date for each TMDL.

**CWA Section 402, National Pollutant Discharge Elimination System (NPDES) Permit:** Direct discharges of pollutants into Waters of the United States are not allowed, except in accordance with the NPDES program established in Section 402 of the CWA. The main goal of the NPDES program is to protect human health and the environment. Pursuant to the NPDES program, permits that apply to storm water discharges from municipal storm drain systems, specific industrial activities, and construction activities (one acre [ac] or more)

have been issued. NPDES permits establish enforceable effluent limitations on discharges, require monitoring of discharges, designate reporting requirements, and require the permittee to include use of Best Management Practices (BMPs). Industrial (point source) storm water permits are required to meet effluent limitations, while municipal and construction permits are governed by the maximum extent practicable (MEP) or the Best Available Technology (BAT)/Best Control Technology (BCT) application of BMPs. SWRCBs are required to ensure that state-specific permits comply with the NPDES Permit.

### 5.8.2.2 State Regulations

#### Porter-Cologne Act

The Porter-Cologne Water Quality Control Act of 1969, codified as Division 7 of the California Water Code, authorizes the State Water Resources Control Board (SWRCB) to provide comprehensive protection for California's waters through water allocation and water quality protection. The SWRCB implements the requirements of CWA and establishes water quality standards that have to be set for certain waters by adopting water quality control plans under the Porter-Cologne Act. The Porter-Cologne Act establishes the responsibilities and authorities of the 9 Regional Water Quality Control Boards (RWQCB), including preparing water quality plans for areas in the region, and identifying water quality objectives and waste discharge requirements (WDRs). Water quality objectives are defined as limits or levels of water quality constituents and characteristics established for reasonable protection of beneficial uses or prevention of nuisance. Beneficial uses consist of all the various ways that water can be used for the benefit of people and/or wildlife.

The Specific Plan Area is within the Santa Ana River Watershed. The Santa Ana River Basin Water Quality Control Plan was adopted in February 2016. This Basin Plan gives direction on the beneficial uses of the waters, describes the water quality that must be maintained to support such uses, and provides programs, projects, and other actions necessary to achieve the established standards.

#### California Anti-Degradation Policy

A key policy of California's water quality program is the State's Anti-Degradation Policy. This policy, formally known as the Statement of Policy with Respect to Maintaining High Quality Waters in California (SWRCB Resolution No. 68-16), restricts degradation of surface and ground waters. In particular, this policy protects water bodies where existing quality is higher than necessary for the protection of beneficial uses. Under the Anti-Degradation Policy, any actions that can adversely affect water quality in all surface and ground waters must (1) be consistent with maximum benefit to the people of the state; (2) not unreasonably affect present and anticipated beneficial use of the water; and (3) not result in water quality less than that prescribed in water quality plans and policies (i.e., will not result in exceedances of water quality objectives).

#### California Construction General Permit

The State of California adopted a Statewide NPDES Permit for General Construction Activity (Construction General Permit) on September 2, 2009 (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ). The last Construction General Permit amendment became effective on July 17, 2012. The Construction General Permit regulates construction site stormwater management. Dischargers whose projects disturb one or more acres of soil, or whose projects disturb less than one acre, but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the general permit for discharges of stormwater associated with construction activity. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation, but does not include regular operational maintenance activities.

To obtain coverage under this permit, project operators must electronically file Permit Registration Documents, which include a Notice of Intent, a Stormwater Pollution Prevention Plan (SWPPP), and other compliance-related documents, including a risk-level assessment for construction sites, an active stormwater effluent monitoring and reporting program during construction, rain event action plans, and numeric action levels for pH and turbidity as well as requirements for qualified professionals to prepare and implement the plan. An appropriate permit fee must also be mailed to SWRCB.

The Construction General Permit requires project applicants to file a Notice of Intent with the SWRCB to discharge stormwater, and to prepare and implement a SWPPP for projects that will disturb greater than 1 acre of soil. The SWPPP would include a site map, description of stormwater discharge activities, and best management practices (BMPs) taken from the menu of BMPs set forth in the California Stormwater Quality Association BMP Handbook that will be employed to prevent water pollution. The SWPPP is required to include BMPs that will be used to control soil erosion and discharges of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. It must demonstrate compliance with local and regional erosion and sediment control standards, identify responsible parties, provide a detailed construction timeline, and implement a BMP monitoring and maintenance schedule. The Construction General Permit also requires the SWPPP to identify BMPs that will be implemented to reduce controlling potential chemical contaminants from impacting water quality. Types of BMPs include erosion control (e.g., preservation of vegetation), sediment control (e.g., fiber rolls), non-stormwater management (e.g., water conservation), and waste management. The SWPPP is also required to include BMPs to reduce pollutants in stormwater discharges after all construction phases have been completed at the site (post-construction BMPs).

### **California Water Resources Control Board Low Impact Development Policy**

The SWRCB adopted the Low Impact Development (LID) Policy which, at its core, promotes the idea of “sustainability” as a key parameter to be prioritized during the design and planning process for future development. The SWRCB has directed its staff to consider sustainability in all future policies, guidelines, and regulatory actions. LID is a proven approach to manage stormwater. The RWQCBs are advancing LID in California in various ways, including provisions for LID requirements in renewed Phase I municipal stormwater NPDES permits.

### **5.8.2.3 Regional Regulations**

#### **Santa Ana Regional Water Quality Control Board Water Quality Control Plan**

The City of Redlands is within the jurisdiction of the Santa Ana RWQCB. The RWQCB sets water quality standards for all ground and surface waters within its region through implementation of a Water Quality Control Plan (Basin Plan). The Basin Plan describes existing water quality conditions and establishes water quality goals and policies. The Basin Plan is also the basis for the Regional Board’s regulatory programs. To this end, the Basin Plan establishes water quality standards for all the ground and surface waters of the region. The term “water quality standards,” as used in the federal Clean Water Act, includes both the beneficial uses of specific water bodies and the levels of quality which must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions that are necessary to achieve and maintain target water quality standards. The Santa Ana Basin Plan has been in place since 1995, (with updates in 2008, 2011, 2016, and 2019). The goal of the Basin Plan is to protect public health and welfare and maintain or enhance water quality and potential beneficial uses of the water.

#### **Municipal Regional Stormwater NPDES Permit**

Within the San Bernardino County area of the Santa Ana River Basin, management and control of the municipal separate storm sewer system (MS4) is shared by a number of agencies, including the San Bernardino County Flood Control District, San Bernardino County, and the cities of Big Bear Lake, Chino, Chino Hills, Colton, Fontana, Grand Terrace, Highland, Lom a Linda, Montclair, Ontario, Rancho Cucamonga, Redlands, Rialto, San Bernardino, Upland, and Yucaipa. The San Bernardino County Public Works Department is the local enforcing agency of the MS4 NPDES Permit.

On January 29, 2010, the Santa Ana RWQCB issued an area wide MS4 permit to the County and municipalities in San Bernardino County. Waste discharge requirements for stormwater entering municipal storm drainage systems are set forth in the MS4 permit, Order No. R8-2010-0036, NPDES No. CAS618036. This permit expired on January 29, 2015. On August 1, 2014, the San Bernardino County Flood Control District submitted a Report of Waste Discharge (ROWD) on behalf of San Bernardino County and the 16 incorporated cities within San Bernardino County. The submitted ROWD serves as the permit renewal application for the fifth term MS4 permit for San Bernardino County.

Under the County's NPDES permit, priority projects—generally, redevelopment projects that add or replace 5,000 or more square feet of impervious surfaces, and new development projects that create 10,000 or more square feet of impervious surfaces—must implement LID BMPs to the maximum extent practicable. The MS4 Permit requires individual priority projects to prepare and implement a water quality management plan (WQMPs) that may include source control BMPs, mitigation measures, and treatment control BMPs.

## 5.8.2.4 Local Regulations

### San Bernardino County Stormwater Program

The Technical Guidance Document for Water Quality Management Plans (WQMPs) for the Santa Ana Region of San Bernardino County is the guidance document for the Project's stormwater design in compliance with Santa Ana RWQCB requirements for Priority Projects or Transportation Projects. The MS4 Permit requires that a preliminary project-specific WQMP be prepared for review early in the project development process and that a Final WQMP be submitted prior to the start of construction. A project specific WQMP is required to address the following:

- Develop site design measures using Low Impact Development (LID) principles
- Evaluate feasibility of on-site LID Best Management Practices (BMPs)
- Maximum hydrologic source control, infiltration, and biotreatment BMPs
- Select applicable source control BMPs
- Address post-construction BMP maintenance requirements

### City of Redlands General Plan

The following goals and policies from the City of Redlands General Plan 2035, adopted December 2017, are relevant to the proposed Project:

- Policy 6-P.19** Promote the protection of waterways in Redlands from pollution and degradation as a result of urban activities.
- Policy 6-P.20** Pursue creative, innovative, and environmentally sound methods to capture and use stormwater and urban runoff for beneficial purposes.

- Policy 6-A.35** Promote the use of Low Impact Development strategies, BMPs, pervious paving materials, and on-site infiltration for treating and reducing stormwater runoff before it reaches the municipal stormwater system.
- Policy 6-A.36** Require measures during construction and post construction to limit land disturbance activities such as clearing and grading and cut-and-fill; avoid steep slopes, unstable areas, and erosive soils; and minimize disturbance of natural vegetation and other physical or biological features important to preventing erosion or sedimentation
- Policy 6-A.38** Encourage development that reflects an integrated approach to building design, civil engineering, and landscape architecture that maximizes rainwater harvesting and stormwater retention for landscape irrigation.
- Policy 6-A.39** Require that new development provides landscaping and re-vegetation of graded or disturbed areas with drought-tolerant native or non-invasive plants.
- Policy 6-A.40** Maximize the amount of pervious surfaces in public spaces to permit the percolation of urban runoff.
- Policy 6-A.43** Ensure that post-development peak stormwater runoff discharge rates do not exceed the estimated pre-development rate. Dry weather runoff from new development must not exceed the pre-development baseline flow rate to receiving waterbodies.

### City of Redlands Water Efficient Landscape Requirements

Chapter 15.54 of the Redlands Municipal Code establishes the City's Water Efficient Landscape Requirements to promote the benefits provided by landscapes while recognizing the need to use water as efficiently as possible. The chapter requires applicable landscaping projects to submit a landscape documentation package that contains project information, hydrozone information table, water budget calculations, soil management report, and landscape, irrigation, and grading design plans. The chapter establishes requirements for irrigation scheduling, maintenance, and audits to ensure efficient use of water. The requirements also include provisions for non-potable water irrigation systems and encourage stormwater best management practices to increase on-site retention and infiltration.

### City of Redlands Municipal Code Requirements

The City's Municipal Code, Section 13.54, Storm Drains, provides regulation of discharges into the Redlands storm drain system. This is achieved by elimination of all nonpermitted discharges to Redlands separate storm sewers; control discharges to the Redlands separate storm sewers through prohibition of spills, dumping, or disposal of materials other than stormwater; and reduction of pollutants in stormwater discharges to the maximum extent practicable. City dischargers are required to comply with the applicable NPDES permit and follow the City's standard BMP practices.

Additionally, the City's Pretreatment and Regulation of Wastes Ordinance, codified under Section 13.52 of the City Municipal Code, further protects water quality in the City through uniform requirements for all users of the City's publicly owned treatment works. The ordinance enables the City to comply with all applicable state and federal laws, including the Clean Water Act (33 USC section 1251 et seq.) and the General Pretreatment Regulations (40 CFR part 403).

## 5.8.3 ENVIRONMENTAL SETTING

### Watershed

The proposed Transit Villages Specific Plan (TVSP, or Specific Plan) area covers approximately 947 acres (approximately 1.5 square miles) and is generally bounded to the west by Kansas Street, Redlands Boulevard, Alabama Street, and Tennessee Street; to the north by the I-10, Colton Avenue, and Sylvan Boulevard; to the east by Judson Street; and to the south by Citrus Avenue, Central Avenue, Redlands Boulevard, Olive Avenue, Brookside Avenue, Ash Street, Pine Avenue, Tennessee Street, and State Street. The Specific Plan Area is located within the Santa Ana River Watershed. The watershed is located south and east of Los Angeles and includes much of Orange County, the northwestern corner of Riverside County, the southwestern corner of San Bernardino County, and a small portion of Los Angeles County. The watershed is bounded on the south by the Santa Margarita watershed, on the east by the Salton Sea and Southern Mojave watersheds, and on the north and west by the Mojave and San Gabriel watersheds. Disputes over use of water led to the subdivision of the watershed into the Upper and Lower Santa Ana River Watersheds. The Specific Plan Area is in the Upper Santa Ana River Watershed.

The Upper Santa Ana River Watershed consists of many tributaries flowing to the Santa Ana River. These tributaries range from natural streams to concrete-lined channels. Many of the streams flow through heavily developed areas. The San Bernardino County Flood Control District (SBCFCD) operates and maintains many of the tributary systems that are deemed “regional” (750 cubic feet per second (cfs) or greater flow and/or 640 acres or greater of watershed as well as portions of the Santa Ana River). Smaller-scale control facilities are generally operated by local jurisdictions. This watershed is in an arid region and therefore has little natural perennial surface water. Surface waters start in the upper erosion zone of the watershed, primarily in the San Bernardino and San Gabriel mountains. This upper zone has the highest gradient and soils and geology that do not allow large quantities of percolation of surface water into the ground. A variety of downstream water storage reservoirs (Lake Perris, Lake Mathews, and Big Bear Lake) and flood control areas (Prado Dam area and Seven Oaks Dam area) have been created to hold surface water.

The Santa Ana River watershed is regulated by the Santa Ana RWQCB. The Santa Ana RWQCB manages a large watershed area, which includes most of San Bernardino County to the east and then southwest through northern Orange County to the Pacific Ocean. The Santa Ana RWQCB’s jurisdiction encompasses 2,800 square miles.

### **Groundwater Basin**

The Specific Plan Area is located in the Bunker Hill Subbasin of the Upper Santa Ana Groundwater Basin. The Bunker Hill Basin encompasses approximately 120 square miles of the Upper Santa Ana River watershed. It lies within San Bernardino County. The Bunker Hill Basin has approximately 5,976,000-acre feet of storage capacity and as of 1998, the total amount of water in storage in the Bunker Hill Subbasin was 5,890,300 acre feet. The Bunker Hill Subbasin contains several contamination plumes. The Redlands plume, located between Judson Street and Mountain Avenue in Redlands, is primarily composed of trichloroethylene (TCE), with lower levels of (tetrachloroethylene) PCE and dibromochloropropane (DBCP), and contaminates approximately 150,000 acre-ft of groundwater. The basin was adjudicated by the Western Judgment in 1969.

### **Water Quality**

**Water Quality Impairments:** Section 303(d) of the federal CWA requires states to identify water bodies that are “impaired,” or those that do not meet water quality standards and are not supporting their beneficial uses. Total Maximum Daily Loads (TMDLs) are then designed to serve as pollution control plans for these specific pollutants.

The Santa Ana River Watershed drains to the Santa Ana River, extends approximately 100 miles beginning at the crest of the San Bernardino Mountains and ending at the coast near Huntington Beach. Tributaries of

the Santa Ana River within the Upper Santa Ana River Watershed include Mill Creek, City Creek, Plunge Creek (a tributary of City Creek), Mission Zanja Creek (located upstream of San Timoteo Creek), San Timoteo Creek, East Twin Creek, Warm Creek, and Lytle Creek. The following tributaries have been placed on the 303(d) list for the identified impairments.

**Table 5.8-1: 303(d) Water Quality Impairments**

<b>Water Body</b>	<b>Impairments</b>
Big Bear Lake	Mercury, Noxious Aquatic Plants, Nutrients, PCBs
Grout Creek	Nutrients
Knickerbocker Creek	Pathogens
Lytle Creek	Pathogens
Mill Creek, Reach 1	Pathogens
Mill Creek, Reach 2	Pathogens
Mountain Home Creek	Pathogens
Mountain Home Creek, East Fork	Pathogens
Rathbone (Rathbun) Creek	Cadmium, Copper, Nutrients, Sediment/ Siltation
Santa Ana River, Reach 6	Cadmium, Copper, Lead
Santa Ana River, Reach 4	Pathogens
Santa Ana River, Reach 3	Copper (wet weather only), Lead, Pathogens
Summit Creek	Nutrients

Source: Upper Santa Ana River Watershed Integrated Regional Water Management Plan, 2020.

Two TMDLs have been adopted to address the above impairments in the Upper SAR: TMDLs for Bacterial Indicators in the Middle Santa Ana River Watershed (February 3, 2005), which addresses pathogens in the Santa Ana River, Reach 3, and Nutrient TMDL for Dry Hydrological Conditions for Big Bear Lake (April 21, 2006), which addresses nutrients in Big Bear Lake.

The City of Redlands has adopted the EPA's National Pollutant Discharge Elimination System (NPDES) regulations, which aims to reduce pollutants in urban runoff and stormwater flows. The Santa Ana RWQCB issued the County a Municipal Separate Storm Sewer System (MS4) Permit (Order No. R8-2010-0036), which establishes pollution prevention requirements for planned developments. The County participates in an Area-wide Urban Stormwater Runoff Management Program to comply with the MS4 Permit requirements. Runoff from the development upland site is managed and regulated under the NPDES MS4 Permit and associated Storm Water Management Program.

### **Groundwater Supply**

The Redlands Planning Area domestic water sources consist of both surface (about 50 percent of total supply) and groundwater (about 50 percent of total supply). The City of Redlands uses 15 wells that pump directly into the system or into reservoirs. Because of contamination, the City has wells that are not used for domestic purposes and are instead used for irrigation. It is anticipated that the contaminant levels will not decrease for many years due to the slow movement of water through the basin. Groundwater from the Bunker Hill Subbasin provides approximately half of Redland's water supply (13,601 acre-feet [AF] in 2020). A small portion (1,531 AF in 2020) of groundwater is also pumped from the Yucaipa Subbasin. The remaining supply comes from the Santa Ana River, Mill Creek, and the State Water Project (SWP). The basin was adjudicated by the Western Judgment in 1969 to regulate the amount of groundwater that can be pumped from the basin. Western Judgment allocated the Non-Plaintiffs' (agencies within San Bernardino County including

Redlands) rights 167,238 acre-feet per year (AFY), which equates to 72.05 percent of the safe yield. San Bernardino agencies are allowed to extract more than 167,238 AFY from the SBB, as long as they import and recharge a like amount of supplemental water into the basin. The Western-San Bernardino Watermaster provides an annual accounting of both the plaintiff and non-plaintiff extractions and a comparison to the safe yield. The Judgment requires the non-plaintiffs to provide replenishment water whenever the cumulative extractions exceed the cumulative safe yield.

### **Storm Drainage Facilities**

The TVSP area is approximately 947 acres of land that is divided into three planning areas referred to as transit villages, which generally circle each new Arrow station, as shown on Figure 3-4. As shown in Figure 3-3, the Specific Plan Area is developed and urbanized. The existing topography of the Specific Plan Area is relatively flat and, according to the City of Redlands Drainage Master Plan, the area generally drains from the east to the west via the existing storm drain system.

### **Soil Infiltration**

Recharge to the Bunker Hill Subbasin historically has resulted from infiltration of runoff from the San Gabriel and San Bernardino Mountains. The Santa Ana River, Mill Creek, and Lytle Creek contribute more than 60 percent of the total recharge to the groundwater system. The subbasin is also replenished by deep percolation of water from precipitation and resulting runoff, percolation from delivered water, and water spread in streambeds and spreading grounds. The Specific Plan Area is approximately 1.5 miles south of the Santa Ana River and site soils primarily consist of Ramona Sandy Loam, Tujunga Loamy Sand, and Hanford Coarse Sandy Loam. These soils are generally well draining and support stormwater infiltration.

### **Flood Zone, Tsunami, Seiche**

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) for the Specific Plan Area (06071C8716H and 06071C8712H) shows that the southern portion of the Specific Plan Area is located within "Zone X," which is an area of minimal flood hazard potential outside of the 0.2 percent annual chance flood. The northern portion of the Specific Plan Area is within "Zone AO", an area of 1 percent annual flood with flood depth of 1 to 3 feet (usually areas of ponding) where Base Flood Elevations have been determined.

A tsunami is a series of ocean waves caused by a sudden displacement of the ocean floor, most often due to earthquakes. The Specific Plan Area is over 50 miles from the Pacific Ocean, and outside of the Tsunami Hazard Zone identified by the California Department of Conservation Tsunami Hazard Area Map.

A seiche is a surface wave created when a body of water is shaken, usually by earthquake activity. Seiches are of concern relative to water storage facilities because inundation from a seiche can occur if the wave overflows a containment wall, such as the wall of a reservoir, water storage tank, dam, or other artificial body of water. There are no water bodies in the vicinity of the Specific Plan Area, and no existing risks related to seiche flood hazards exist on or near the site.

## **5.8.4 THRESHOLDS OF SIGNIFICANCE**

Appendix G of State CEQA Guidelines indicates that a project could have a significant effect if it were to:

- WQ-1 Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;

- WQ-2 Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- WQ-3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
- WQ-3 i) result in substantial erosion or siltation on- or off-site;
- WQ-3 ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
- WQ-3 iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
- WQ-3 iv) impede or redirect flood flows;
- WQ-4 In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or
- WQ-5 Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

The Initial Study established that the proposed Project would result in less than significant impacts related to Threshold WQ-1 and WQ-5; and no further assessment of these impacts is required in this Draft EIR.

### 5.8.5 METHODOLOGY

This evaluation of the significance of potential impacts related to hydrology and water quality is based on a review of published information and reports regarding regional hydrology, groundwater conditions, and surface water quality. The potential impacts on hydrology and water quality were evaluated by considering the general type of pollutants that operation of the Project would generate during construction and operation. In determining the level of significance, the analysis recognizes that development under the proposed Project would be required to comply with relevant federal, state, and regional laws and regulations that are designed to ensure compliance with applicable water quality standards and waste discharge requirements. Because the regional and local regulations related to water quality standards have been developed to reduce the potential of pollutants in the water resources (as described in the Regulatory Setting Section above), and are implemented to specific waterbodies, such as 303(d) TMDL requirements, or development projects such as grading and construction permit regulations, implementation of all relevant water quality and hydrology requirements would limit the potential of the proposed Project to a less than significant impact.

### 5.8.6 ENVIRONMENTAL IMPACTS

**IMPACT WQ-2: THE PROJECT WOULD NOT SUBSTANTIALLY DECREASE GROUNDWATER SUPPLIES OR INTERFERE SUBSTANTIALLY WITH GROUNDWATER RECHARGE SUCH THAT THE PROJECT MAY IMPEDE SUSTAINABLE GROUNDWATER MANAGEMENT OF THE BASIN.**

**Less than Significant Impact.** A Water Supply Assessment (WSA) was prepared for the Project in order to coordinate local water supply and land use decisions per Senate Bill 610 (SB 610). Future land uses within

the TVSP will utilize water from the local groundwater from the San Bernardino Basin (SBB) (also known as Bunker Hill Basin) and surface water supplies from Mill Creek and the Santa Ana River. Supplemental water is purchased from the State Water Project for direct deliveries only when the local sources cannot provide it or is needed for water quality.

Under the TVSP, it is estimated that buildout of the Specific Plan area would include the development of an additional 2,400 dwelling units, 265,000 square feet of retail commercial, 238,000 square feet of office, 220 hotel rooms, and 280,000 square feet of open space and park area. In 2020, approximately 13,916 AF of groundwater was pumped from the Bunker Hill and Yucaipa basins. The change in land use proposed under the TVSP would result in a net increase of approximately 570,746 gallons per day, or 639 AFY, with a total demand of 1,996 AFY. In 2020, the volume of water pumped from the Bunker Hill Subbasin of the San Bernardino Basin (SBB) and Yucaipa Subbasin was 13,916 AFY. Table 5.8-2 below shows projected groundwater supply sources for the City of Redlands.

**Table 5.8-2. Projected Groundwater Supplies (AFY)**

Water Supply	Additional Detail on Water Supply	Projected Water Supply				
		2025	2030	2035	2040	2045
		Reasonably Available Volume				
Groundwater (not desalinated)	Bunker Hill (part of SBB)	12,973	13,922	14,861	15,677	16,484
Groundwater (not desalinated)	Bunker Hill (part of SBB)	3,766	4,015	4,275	4,513	4,760
Groundwater (not desalinated)	Yucaipa	1,000	1,000	1,000	1,000	1,000
<b>Total</b>		<b>17,739</b>	<b>18,937</b>	<b>20,136</b>	<b>21,190</b>	<b>22,244</b>

Source: WSA, (Appendix F)

Even with the additional demand of 639 AFY from the proposed TVSP land uses (639 AFY in addition to existing 13,916 AFY is approximately 14,555 AFY), the City will have surplus groundwater supplies available over the next 25 years. The WSA, included as Appendix F, includes an analysis of reliability of the City's water supplies and concludes with a sufficiency analysis of water supply during normal, single-dry, and multiple dry years. The WSA identifies programs and activities that the City is managing to enforce lowering water demand and assist with sustainable water supply for the future. The City, inclusive of the proposed TVSP Project, will have an adequate supply of water now and 25 years into the future. The Western Judgment would continue to monitor and ensure the basins, as adjudicated, are pumped and replenished in accordance with imposed allocations and rights.

Additionally, the proposed Specific Plan would allow for additional development and redevelopment within the city that would increase the area of impervious surfaces. However, projects proposed within the Specific Plan area would be required to comply with City policies, such as Policy 6-A.40 and Policy 6-A.43, that

require post-development stormwater runoff of projects to not exceed pre-development rates and to maximize the amount of pervious surfaces for the percolation of urban runoff. Depending on the type or size of the project, each project would be required to provide a WQMP, or if no WQMP is required, comply with other requirements which would include measures to collect and infiltrate stormwater in compliance with the requirements of the NPDES stormwater permit (NPDES Permit No. CAS618036 and RWCB Order R8-2010-0036 for San Bernardino County) and support the recharge of the underlying groundwater basins. Therefore, the Project would not substantially interfere with groundwater recharge, and impacts would be less than significant.

**IMPACT WQ-3i: THE PROJECT WOULD NOT SUBSTANTIALLY ALTER THE EXISTING DRAINAGE PATTERN OF THE AREA, INCLUDING THROUGH THE ALTERATION OF THE COURSE OF A STREAM OR RIVER, IN A MANNER WHICH WOULD RESULT IN SUBSTANTIAL EROSION OR SILTATION ON- OR OFF-SITE.**

**Less than Significant Impact.** The proposed TVSP includes amending the GP2035 to establish a new land use designation to provide for infill development of new residential and commercial uses within 0.5 mile of each of the three new Arrow stations. The Transit Villages Overlay Zone (TVOZ) boundaries of the New York Street, Downtown, and University stations would be adjusted as part of this Specific Plan process, and the adopted TVSP boundary would be the TVOZ boundary. A form-based code that would be implemented by the proposed TVSP, which emphasizes building form, a mix and density of different transit-oriented development, pedestrian circulation, and public realm improvements and amenities.

The Specific Plan Area is transected by the Mill Creek Zanja (The Zanja) and bordered by the Morey Wash (Morey Arroyo). The Mill Creek Zanja was built in 1819 to convey water from Mentone to the Asistencia de Mission San Gabriel. Today, it carries drainage water and stormwater runoff. It runs through University Street and New York Street. The Morey Arroyo is also an artificial ditch that conveys drainage water and stormwater runoff. As previously identified, the Project site is located within a floodplain. The main cause of the flooding is a lack of conveyance capacities in the Zanja Channel, the Redlands Boulevard storm drain, and the Oriental storm drain.

### Construction

Construction of the proposed Project could result in demolition of the existing structures and vegetation removal, that would expose and loosen building materials and sediment, which has the potential to mix with storm water runoff and result in erosion or siltation off-site. However, the Specific Plan Area does not include any steep slopes, which reduces the erosion potential. Additionally, a large majority of soil disturbance would be related to excavation and backfill for installation of building foundations and underground utilities.

The existing NPDES Construction General Permit requires preparation and implementation of a SWPPP by a QSD for the proposed construction activities (included as PPP HYD-1). The SWPPP is required to address site-specific conditions related to potential sources of sedimentation and erosion and would list the required BMPs that are necessary to reduce or eliminate the potential of erosion or alteration of a drainage pattern during construction activities. Common types of construction BMPs include:

- Silt fencing, fiber rolls, or gravel bags
- Street sweeping and vacuuming
- Storm drain inlet protection
- Stabilized construction entrance/exit
- Vehicle and equipment maintenance, cleaning, and fueling
- Hydroseeding

- Material delivery and storage
- Stockpile management
- Spill prevention and control
- Solid waste management
- Concrete waste management

In addition, all grading plans within the City of Redlands require an accompanying set of “stand alone” Erosion Control Plans to minimize water and windborne erosion. Mandatory compliance with the SWPPP and the erosion control plan would ensure that the Project’s implementation does not violate any water quality standards or waste discharge requirements during construction activities implemented as part of the TVSP.

As part of the permitting approval process, construction plans would be required to demonstrate compliance with these regulations to minimize the potential of the Project to result in a degradation of the quality of receiving waters. Plans for grading, drainage, erosion control and water quality would be reviewed by the City’s Public Works Department prior to issuance of grading permits to ensure that the applicable and required BMPs are constructed during implementation of the Project.

Therefore, compliance with the City of Redlands Municipal Code Chapter 13.54, Storm Drains, MS4 Permit, and other applicable requirements, which would be verified during the City’s construction permitting process, would ensure that impacts of future development implemented as part of the TVSP impacts related to construction activities resulting in a degradation of water quality would be less than significant.

## Operation

The TVSP provides a land use plan and form-based code for the TVSP area that is anticipated to be developed by the year 2040. The form-based code provided by the TVSP would emphasize regulating the form of the built environment and public realm amenities, as compared to conventional zoning that primarily focuses on the land uses. However, under the TVSP, it is estimated that buildout of the Project Area would include the development of an additional 2,400 dwelling units, 265,000 square feet of retail commercial, 238,000 square feet of office, 220 hotel rooms, and 280,000 square feet of open space and park area. After completion of Project construction, the site would have a greater amount of impermeable surfaces. The increase in impervious surfaces could result in a potential increase in stormwater volume and peak runoff rates.

The TVSP area has historically experienced flooding during moderate storm events. Portions of the Project area, particularly the majority of the parcels within a quarter mile of the three stations, are located within the flood zone. Per the 2014 Master Plan of Drainage, the causes of the flooding in this area include both local and regional storm drain deficiencies. The main cause of flooding is lack of conveyance capacities in the Mission Zanja, the Redland Boulevard storm drain, and the Oriental storm drain. With a capacity of approximately 2,400 cubic feet per second (cfs), the Redlands Boulevard storm drain receives over 4,200 cfs from the Zanja and the Carrot storm drain, and 4,000 cfs from Reservoir Canyon and the Oriental storm drain. All four of these tributaries experience a confluence near the intersection of Redlands Boulevard and Ninth Street. Over the past three decades, the focus of several studies has been to reduce the flood potential from the Zanja and Reservoir Canyon storm drain. Several alternatives have been investigated and proposed as part of developing the draft TVSP, ranging from multiple detention basins to a downtown underground “bypass” pipeline that would direct Zanja flows around the Redlands Boulevard storm drain.

While the TVSP does not include specific drainage system improvements, the TVSP includes multiple recommendations related to drainage improvements within the Project Area including:

- Preparing and processing a Letter of Map Revision based on hydrologic modeling, included as Appendix A to the TVSP, in order to remove approximately 155 properties from being subject to the City's Floodplain Regulations;
- Implement the 2014 Master Plan of Drainage Alternative 1 for the Downtown Village;
- Explore opportunities to implement a diversion drainage system that intercepts Zanja channel flows near or east of North Grove Street, where it would be conveyed parallel to the Zanja and be discharged into the Zanja upstream of the I-10 underpass; and
- Increase the size of the Zanja at the Kansas Street, New York Street, and Tennessee Street crossings to increase flow capacity.

Projects built pursuant to the Specific Plan would be required to comply with requirements included under Chapter 3.56 of the City's Municipal Code, Storm Drain Facilities Fees. Section 3.56.030 of the City's Municipal Code states that:

"No development permit shall be approved for new development unless the city finds that the storm drain facilities proposed within the development satisfy the requirements of the city's master storm drain plan. To ensure consistency with the plan, the city may impose conditions to approval of the development which are necessary to implement the plan. The requirements of this chapter are imposed as a condition of development to ensure implementation of and consistency with the city's general plan and to protect the public health, safety and welfare by ensuring that adequate public facilities and improvements will be installed and available to serve new development prior to, or concurrently with, the need."

Additionally, development applicants are required to pay development storm drain impact fees per Section 3.56.040, Storm Drain Fees, established for the purpose of constructing the storm facilities provided in the City's Master Storm Drain Plan.

Development proposed through the Specific Plan would consist of infill development of new residential and commercial uses within 0.5 mile of each of the three new Arrow stations, which is not anticipated to result in direct modifications to existing drainage channels, Mill Creek Zanja and the Morey Wash. The Project could implement development that could result in substantial changes to existing drainage patterns within the Project area, through direct modification of existing storm drains or indirectly through the anticipated development of 2,400 dwelling units, 265,000 square feet of retail commercial, 238,000 square feet of office, 220 hotel rooms, and 280,000 square feet of open space and park area. However, drainage proposed as part of future development projects would comply with the City's Master Storm Drain Plan, which would facilitate improvements to the City's storm drain system.

Additionally, the MS4 permit requires any new development project to prepare a WQMP (included as PPP HYD-2) that includes post-construction BMPs to reduce the potential of erosion and/or sedimentation through site design and structural treatment control BMPs. As part of the permitting approval process for each project, proposed drainage and water quality design and engineering plans would be reviewed by the City's Engineering Division to ensure that the site-specific design limits the potential for erosion and siltation. Overall, the proposed drainage system and adherence to the existing regulations would ensure that Project impacts related to alteration of a drainage pattern and erosion/siltation from operational activities would be less than significant.

**IMPACT WQ-3ii: THE PROJECT WOULD NOT SUBSTANTIALLY ALTER THE EXISTING DRAINAGE PATTERN OF THE SITE OR AREA, INCLUDING THROUGH THE ALTERATION OF THE COURSE OF A STREAM OR RIVER, OR THROUGH THE ADDITION OF IMPERVIOUS SURFACES, IN A MANNER WHICH WOULD SUBSTANTIALLY**

**INCREASE THE RATE OR AMOUNT OF SURFACE RUNOFF IN A MANNER WHICH WOULD RESULT IN FLOODING ON- OR OFF-SITE.**

**Less than Significant Impact.** As described previously, the Specific Plan Area would consist of infill development of new residential and commercial uses within 0.5 mile of each of the three new Arrow stations, which is not anticipated to result in direct modifications to existing drainage channels, Mill Creek Zanja and the Morey Wash.

**Construction**

Construction of the proposed Project could require demolition of the existing building structures, including foundations, floor slabs, and utilities systems. These activities could temporarily alter the existing drainage pattern of the site and could result in flooding on- or off-site if drainage is not properly controlled. However, as described previously, implementation of the Project requires a SWPPP (included as PPP HYD-1) that would address site specific drainage issues related to construction and include BMPs to eliminate the potential of flooding or alteration of a drainage pattern during construction activities. This includes regular monitoring and visual inspections during construction activities. Compliance with the Construction General Permit and a SWPPP prepared by a QSD and implemented by a QSP (per PPP HYD-1) as verified by the City through the construction permitting process would prevent construction-related impacts related to potential alteration of a drainage pattern or flooding on or off-site from development activities. Therefore, impacts would be less than significant.

**Operation**

As discussed previously, the Project area contains areas of flood risk. Per the Redlands Floodplain Regulations, in a FEMA Flood zone any new “occupiable” finished floor must be at least two feet above the one percent (100-year) base flood elevation. Any floodplain cross-section modifications (earthen platforms) may not cause more than one-foot water surface elevation increase upstream. These floodplain conditions create significant challenges to existing and new development, especially in commercial zones where zero-step entries are required.

The buildout of the Project is anticipated to increase impervious surfaces, which would result in an increase of stormwater runoff volume and peak flow rates. While the TVSP does not include specific drainage system improvements, the TVSP includes multiple recommendations related to drainage improvements within the Project Area. Improvements would be implemented by the City as regional drainage improvements. However, projects proposed in implementation of the Specific Plan would be required to manage any increases of on-site runoff flows through either direct storm drain improvements, provided through direct modifications to storm drain facilities, or via payment of a storm drain development impact fee that will go towards funding storm drain projects to meet increased flows. As part of the permitting approval process, the proposed drainage design and engineering plans would be reviewed by the City’s Engineering Division to ensure that the proposed drainage would accommodate the appropriate design flows. Overall, the proposed drainage system and adherence to the existing NPDES permit regulations would ensure that Project impacts related to alteration of a drainage pattern or flooding from operational activities would be less than significant.

**IMPACT WQ-3iii: THE PROJECT WOULD NOT SUBSTANTIALLY ALTER THE EXISTING DRAINAGE PATTERN OF THE SITE OR AREA, INCLUDING THROUGH THE ALTERATION OF THE COURSE OF A STREAM OR RIVER OR THROUGH THE ADDITION OF IMPERVIOUS SURFACES, IN A MANNER WHICH WOULD CREATE OR CONTRIBUTE RUNOFF WATER WHICH WOULD EXCEED THE CAPACITY OF**

**EXISTING OR PLANNED STORMWATER DRAINAGE SYSTEMS OR PROVIDE SUBSTANTIAL ADDITIONAL SOURCES OF POLLUTED RUNOFF.**

**Less than Significant Impact.** As described previously, the Specific Plan Area would consist of infill development of new residential and commercial uses within 0.5 mile of each of the three new Arrow stations, which is not anticipated to result in direct modifications to existing drainage channels, Mill Creek Zanja and the Morey Wash.

**Construction**

As described in the previous response, construction of the proposed Project could require demolition and excavation activities that could temporarily alter the existing drainage pattern of the site and could result in increased runoff and polluted runoff if drainage is not properly controlled. However, as described previously, implementation of the Project requires a SWPPP (included as PPP HYD-1) that would address site specific pollutant and drainage issues related to construction of the Project and include BMPs to eliminate the potential of polluted runoff and increased runoff during construction activities. This includes regular monitoring and visual inspections during construction activities. Compliance with the Construction General Permit and a SWPPP prepared by a QSD and implemented by a QSP (per PPP HYD-1) as verified by the City through the construction permitting process would prevent construction-related impacts related to increases in runoff and pollution from development activities. Therefore, impacts would be less than significant.

**Operation**

The existing topography of the Specific Plan area is relatively flat and generally drains from the east to the west. The Project area drains to an existing storm drain network that is discharged to five drainage areas within the City, including Mission Zanja, Reservoir Canyon, Downtown, North City, and South City. The TVSP area has historically experienced flooding during moderate storm events. Development of the Project could increase impervious surface area within the TVSP area, which could result in additional stormwater runoff that could further exceed the existing drainage system and contribute to additional sources of stormwater pollutants. While the TVSP does not include specific drainage system improvements, the TVSP includes multiple recommendations related to drainage improvements within the Project Area. Additionally, the City's Master Drainage Plan outlines several alternatives that would reduce the City's flooding issues through incorporation of new stormwater infrastructure and BMPs, such as construction of a large culvert adjacent to Redlands Boulevard and implementation of a bypass structure for the Zanja drainage system. Projects proposed in implementation of the TVSP would be required to be consistent with the City's drainage plans. Additionally, projects would be required to manage any increases of on-site runoff flows through either direct storm drain improvements, provided through direct modifications to storm drain facilities, or via payment of a storm drain development impact fee that will go towards funding storm drain projects to meet increased flows. As part of the permitting approval process, the proposed drainage design and engineering plans would be reviewed by the City's Engineering Division to ensure that the proposed drainage would accommodate the appropriate design flows. Proposed project design would be reviewed for consistency during design check by the City.

Additionally, the MS4 permit requires any new development project to prepare a WQMP (included as PPP HYD-2), or if a WQMP is not required, comply with other measures that includes post-construction BMPs to reduce the potential of stormwater runoff pollution through site design and structural treatment control BMPs. As part of the permitting approval process for each project, proposed drainage and water quality design and engineering plans would be reviewed by the City's Engineering Division to ensure that the site-specific design would adequately treat and capture onsite stormwater runoff. Overall, with compliance to the

existing regulations as verified by the City's permitting process, Project impacts related to the capacity of the drainage system and polluted runoff would be less than significant.

**IMPACT WQ-3iv: THE PROJECT WOULD NOT SUBSTANTIALLY ALTER THE EXISTING DRAINAGE PATTERN OF THE SITE OR AREA, INCLUDING THROUGH THE ALTERATION OF THE COURSE OF A STREAM OR RIVER OR THROUGH THE ADDITION OF IMPERVIOUS SURFACES, IN A MANNER WHICH WOULD IMPEDE OR REDIRECT FLOOD FLOWS.**

#### **Less than Significant Impact.**

##### **Construction**

As described in the previous response, construction of the proposed Project could require demolition and excavation activities that could temporarily alter the existing drainage pattern of the site and could result in increased runoff. However, as described previously, implementation of the Project requires a SWPPP (included as PPP HYD-1) that would address site specific pollutant and drainage issues related to construction of the Project and include BMPs to eliminate the potential of increased runoff during construction activities. This includes regular monitoring and visual inspections during construction activities. Compliance with the Construction General Permit and a SWPPP prepared by a QSD and implemented by a QSP (per PPP HYD-1) as verified by the City through the construction permitting process would prevent construction-related impacts related to increases in runoff from development activities. Therefore, impacts would be less than significant.

##### **Operation**

As discussed previously, the Project area contains areas of flood risk. Per the Redlands Floodplain Regulations, in a FEMA Flood zone any new "occupiable" finished floor must be at least two feet above the one percent (100-year) base flood elevation. Any floodplain cross-section modifications (earthen platforms) may not cause more than one-foot water surface elevation increase upstream. These floodplain conditions create significant challenges to existing and new development, especially in commercial zones where zero-step entries are required.

The buildout of the Project is anticipated to increase impervious surfaces, which would result in an increase of stormwater runoff volume and peak flow rates. The City's Master Drainage Plan outlines several alternatives that would reduce the City's flooding issues through incorporation of new stormwater infrastructure and BMPs, such as construction of a large culvert adjacent to Redlands Boulevard and implementation of a bypass structure for the Zanja drainage system. Projects proposed in implementation of the TVSP would be required to be consistent with the City's drainage plans. While the TVSP does not include specific drainage system improvements, the TVSP includes multiple recommendations related to drainage improvements within the Project Area. Improvements would be implemented by the City as regional drainage improvements. However, projects proposed in implementation of the Specific Plan would be required to manage any increases of on-site runoff flows through either direct storm drain improvements, provided through direct modifications to storm drain facilities, or via payment of a storm drain development impact fee that will go towards funding storm drain projects to address the City's flooding issues. As part of the permitting approval process, the proposed drainage design and engineering plans would be reviewed by the City's Engineering Division to ensure that the proposed drainage would accommodate the appropriate design flows. Overall, the proposed drainage system and adherence to the existing NPDES permit regulations would ensure that Project impacts related to alteration of a drainage pattern or flooding from operational activities would be less than significant.

**IMPACT WQ-4: THE PROJECT WOULD NOT RISK RELEASE OF POLLUTANTS DUE TO PROJECT INUNDATION WITHIN A FLOOD HAZARD ZONE.**

**Less than Significant Impact.** As described previously, the Specific Plan Area would consist of infill development of new residential and commercial uses within 0.5 mile of each of the three new Arrow stations, which is not anticipated to result in direct modifications to existing drainage channels, Mill Creek Zanja and the Morey Wash.

**Construction**

As described in the previous response, construction of the proposed Project could require demolition and excavation activities that could temporarily alter the existing drainage pattern of the site and could result in increased polluted runoff. However, as described previously, implementation of the Project requires a SWPPP (included as PPP HYD-1) that would address site specific pollutant and drainage issues related to construction of the Project and include BMPs to eliminate the potential of polluted runoff and increased runoff during construction activities. This includes regular monitoring and visual inspections during construction activities. Compliance with the Construction General Permit and a SWPPP prepared by a QSD and implemented by a QSP (per PPP HYD-1) as verified by the City through the construction permitting process would prevent construction-related impacts related to increases in runoff and pollution from development activities. Therefore, impacts would be less than significant.

**Operation**

The project would facilitate the development of new residential uses within the TVSP area. Development of the Project could increase impervious surface areas and introduce additional residential uses within the TVSP area, which could result in additional sources of stormwater pollutants. The TVSP has historically experienced flooding and parts of the TVSP area are within a designated floodplain. While the TVSP does not include specific drainage system improvements, the TVSP includes multiple recommendations related to drainage improvements within the Project Area. Additionally, the City's Master Drainage Plan outlines several alternatives that would reduce the City's flooding issues through incorporation of new stormwater infrastructure and BMPs, such as construction of a large culvert adjacent to Redlands Boulevard and implementation of a bypass structure for the Zanja drainage system. Projects proposed in implementation of the TVSP would be required to be consistent with the City's drainage plans. Additionally, projects would be required to manage any increases of on-site runoff flows through either direct storm drain improvements, provided through direct modifications to storm drain facilities, or via payment of a storm drain development impact fee that will go towards funding storm drain projects to meet increased flows. As part of the permitting approval process, the proposed drainage design and engineering plans would be reviewed by the City's Engineering Division to ensure that the proposed drainage would accommodate the appropriate design flows. Proposed project design would be reviewed for consistency during design check by the City.

Additionally, the MS4 permit requires any new development project to prepare a WQMP (included as PPP HYD-2) that includes post-construction BMPs to reduce the potential of stormwater runoff pollution through site design and structural treatment control BMPs. As part of the permitting approval process for each project, proposed drainage and water quality design and engineering plans would be reviewed by the City's Engineering Division to ensure that the site-specific design would adequately treat and capture onsite stormwater runoff. Overall, with compliance to the existing regulations as verified by the City's permitting process, Project impacts related to the release of pollutants due to project inundation would be less than significant.

### 5.8.7 CUMULATIVE IMPACTS

**Water Quality:** The geographic scope for cumulative impacts related to hydrology and water quality includes the Santa Ana Watershed because cumulative projects and developments pursuant to the proposed Project could incrementally exacerbate the existing impaired condition and could result in new pollutant related impairments.

Related developments within the watershed would be required to implement water quality control measures pursuant to the same NPDES General Construction Permit that requires implementation of a SWPPP (for construction), a WQMP (for operation) and BMPs to eliminate or reduce the discharge of pollutants in stormwater discharges, reduce runoff, reduce erosion and sedimentation, and increase filtration and infiltration, in areas permitted. The NPDES permit requirements have been set by the SWRCB and implemented by the RWQCB to reduce incremental effects of individual projects so that they would not become cumulatively considerable. Therefore, overall potential impacts to water quality associated with present and future development in the watershed would not be cumulatively considerable with compliance with all applicable laws, permits, ordinances and plans. As detailed previously, the proposed Project would be implemented in compliance with all regulations, as would be verified during the permitting process. Therefore, cumulative impacts related to water quality would be less than significant.

**Drainage:** The geographic scope for cumulative impacts related to stormwater drainage includes the geographic area served by the existing stormwater infrastructure for the City's Master Drainage Plan area, from capture of runoff through final discharge points. As described above, TVSP does not include specific drainage system improvements; however, the TVSP includes multiple recommendations related to drainage improvements within the Project Area. Additionally, the City's Master Drainage Plan outlines several alternatives that would reduce the City's flooding issues. Projects proposed in implementation of the TVSP would be required to be consistent with the City's drainage plans. Additionally, projects would be required to manage any increases of on-site runoff flows through either direct storm drain improvements, provided through direct modifications to storm drain facilities, or via payment of a storm drain development impact fee that will go towards funding storm drain projects to meet increased flows. As a result, the proposed Project would not generate runoff that could combine with additional runoff from cumulative Projects that could cumulatively combine to impact drainage. Thus, cumulative impacts related to drainage would be less than significant.

**Groundwater Basin:** The geographic scope for cumulative impacts related to the groundwater basin is the Bunker Hill Subbasin of the Upper Santa Ana Groundwater Basin. As described previously, the volume of water that would be needed by the Project is within the anticipated groundwater pumping volumes. Therefore, the Project would not result in changes to the projected groundwater pumping that would decrease groundwater supplies. As a result, the proposed Project would not generate impacts related to the groundwater basin that have the potential to combine with effects from other projects to become cumulatively considerable. Therefore, cumulative impacts related to the groundwater basin would be less than significant.

### 5.8.8 EXISTING REGULATIONS, STANDARD CONDITIONS, AND PLANS, PROGRAMS, OR POLICIES

#### Existing Regulations

- Construction General Permit, Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ
- California Water Resources Control Board Low Impact Development (LID) Policy

- Regional MS4 Permit (Order No. R8-2010-0036)
- City Municipal Code, Section 13.52, Pretreatment and Regulation of Wastes Ordinance
- City Municipal Code, Section 13.54, Storm Drains
- City Municipal Code Chapter 3.56, Storm Drain Facilities Fees

### Standard Conditions

None.

### Plans, Programs, or Policies

**PPP HYD-1 National Pollutant Discharge Elimination System (NPDES).** Projects will be constructed in accordance with the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, NPDES No. CAS000002. Compliance requires a risk assessment, a SWPPP, and associated BMPs.

**PPP HYD-2 Santa Ana RWQCB MS4 Permit.** Projects will be constructed and operated in accordance with the Santa Ana RWQCB Municipal Stormwater (MS4) Permit for the part of the Santa Ana Basin in San Bernardino County in 2010 (Order No. R8-2010-0036). The MS4 Permit requires new development and redevelopment projects to adopt a WQMP to:

- Control contaminants into storm drain systems
- Educate the public about stormwater impacts
- Detect and eliminate illicit discharges
- Control runoff from construction sites
- Implement BMPs and site-specific runoff controls and treatments

## 5.8.9 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements Impacts WQ-1 through WQ-7 would be less than significant.

## 5.8.10 MITIGATION MEASURES

No mitigation measures are required.

## 5.8.11 LEVEL OF SIGNIFICANCE AFTER MITIGATION

No significant unavoidable adverse impacts related to hydrology and water quality have been identified and impacts would be less than significant.

## REFERENCES

Basin Technical Advisory Committee. Upper Santa Ana River Watershed Integrated Regional Water Management Plan. January 2015. Accessed: <https://www.sbvwd.org/docman-projects/upper-santa-ana-integrated-regional-water-management-plan/3802-usarw-irwmp-2015-ch1-9-final/file>

California Department of Water Resources. California's Groundwater (Bulletin 118), Upper Santa Ana Valley Groundwater Basin, Bunker Hill Subbasin. February 27, 2004. Accessed: [https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/8\\_002\\_06\\_BunkerHillSubbasin.pdf](https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/8_002_06_BunkerHillSubbasin.pdf)

City of Redlands. City of Redlands Drainage Master Plan. May 15, 2014. Accessed: [https://www.cityofredlands.org/sites/main/files/file-attachments/drainage\\_master\\_plan\\_2014.pdf?1584549796](https://www.cityofredlands.org/sites/main/files/file-attachments/drainage_master_plan_2014.pdf?1584549796)

City of Redlands. City of Redlands General Plan Update and Climate Action Plan Environmental Impact Report. July 21, 2017. Accessed: [https://www.cityofredlands.org/sites/main/files/file-attachments/redlands\\_deir\\_compiled\\_lo\\_071917\\_0.pdf?1554321669](https://www.cityofredlands.org/sites/main/files/file-attachments/redlands_deir_compiled_lo_071917_0.pdf?1554321669)

FEMA Flood Map Service Center. Accessed: <https://msc.fema.gov/portal/search>