

4.7 HYDROLOGY AND WATER QUALITY

This section characterizes the hydrologic setting of the Specific Plan Area and provides an evaluation of the effects the Specific Plan would have on water resources, flooding and water quality.

A. Regulatory Framework

This section summarizes key federal, State and city statutes, regulations and policies that would apply to the Specific Plan.

1. Federal Laws and Regulations

a. Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues Flood Insurance Rate Maps (FIRMs) that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection is established by FEMA, with the minimum level of flood protection for new development determined to be the 1-in-100 annual exceedence probability (AEP) (i.e. the 100-year flood event). FEMA maps have been prepared for the Specific Plan Area.¹

b. Federal Clean Water Act

The U.S. Environmental Protection Agency (EPA) is the lead federal agency responsible for water quality management. The Clean Water Act (CWA) of 1972 is the primary federal law that governs and authorizes water quality control activities by the EPA as well as the states. Various elements of the CWA address water quality. These are discussed below. Wetland protection elements administered by the U.S. Army Corps of Engineers (USACE) under

¹ Federal Emergency Management Agency, August 1981. *Flood Boundary and Floodway Map*, City of Santa Rosa, California, Sonoma County (Community Panel Numbers 060381 0001-0013).

Section 404 of the CWA, including permits to dredge or fill wetlands, are discussed in Section 4.7, Biological Resources.

Under Section 401 of the CWA, an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the United States) must first obtain a certificate from the appropriate State agency stating that the fill is consistent with the State's water quality standards and criteria. In California, the authority to either grant water quality certification or waive the requirement is delegated by the State Water Resources Control Board (SWRCB) to the nine regional water quality control boards (RWQCBs).

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point-source dischargers (municipalities and industries), Section 303(d) requires that the State develop a total maximum daily load (TMDL) for each of the listed pollutants. The TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. The TMDL can also act as a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. The TMDL prepared by the State must include an allocation of allowable loadings to point and nonpoint sources, with consideration of background loadings and a margin of safety. The TMDL must also include an analysis that shows the linkage between loading reductions and the attainment of water quality objectives. The EPA must either approve a TMDL prepared by the State or, if it disapproves the State's TMDL, issue its own. National Pollutant Discharge Elimination System (NPDES) permit limits for listed pollutants must be consistent with the waste load allocation prescribed in the TMDL. After implementation of the TMDL, it is anticipated that the problems that led to placement of a given pollutant on the Section 303(d) list would be remediated.

Under federal law, the EPA has published water quality regulations under Volume 40 of the Code of Federal Regulations (40 CFR). Section 303 of the CWA requires states to adopt water quality standards for all surface waters of

the United States. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question and (2) criteria that protect the designated uses. Section 304(a) requires the EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. In California, the EPA has designated the SWRCB and its RWQCBs with authority to identify beneficial uses and adopt applicable water quality objectives.

The NPDES permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring and other activities.

In November 1990, the EPA published regulations establishing NPDES permit requirements for municipal and industrial stormwater discharges. Phase 1 of the permitting program applied to municipal discharges of stormwater in urban areas where the population exceeded 100,000 persons. Phase 1 also applied to stormwater discharges from a large variety of industrial activities, including general construction activity if the project would disturb more than five acres. Phase 2 of the NPDES stormwater permit regulations, which became effective in March 2003, required that NPDES permits be issued for construction activity for projects that disturb between one and five acres. Phase 2 of the municipal permit system (known as the NPDES General Permit for Small MS4s) required small municipal areas of less than 100,000 persons to develop stormwater management programs. The RWQCBs in Cali-

California are responsible for implementing the NPDES permit system (see additional information below).

2. State Laws and Regulations

a. Water Quality

In California, the SWRCB has broad authority over water quality control issues for the State. The SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the State by the federal government under the CWA. Other State agencies with jurisdiction over water quality regulation in California include the California Department of Health Services (DHS) (for drinking water regulations), the California Department of Pesticide Regulation, the California Department of Fish and Game (CDFG) and the Office of Environmental Health and Hazard Assessment.

Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The regional boards are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans. The Specific Plan Area is within the jurisdiction of the North Coast RWQCB.

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) of 1969 is California's statutory authority for the protection of water quality. Under the act, the State must adopt water quality policies, plans, and objectives that protect the State's waters for the use and enjoyment of the people. The act sets forth the obligations of the SWRCB and RWQCBs to adopt and periodically update water quality control plans (Basin Plans). Basin Plans are the regional water quality control plans required by both the CWA and Porter-Cologne Act in which beneficial uses, water quality objectives and implementation programs are established for each of the nine regions in California. The Santa Rosa area falls under the Water Quality Control Plan (Basin Plan) for the North Coast Basin.² The act also requires waste dischargers to notify

² North Coast Regional Water Quality Control Board, 1995, Water Quality Control Plan (Basin Plan) for the North Coast Basin.

the RWQCBs of their activities through the filing of Reports of Waste Discharge (RWD) and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements (WDRs), NPDES permits, Section 401 water quality certifications, or other approvals.

b. Waterways

CDFG requires a Streambed Alteration Agreement prior to any construction activity occurring within the bed, channel or banks of any California river, stream or lake (see Fish and Game Code, Section 1601-1603).

3. Local Programs and Regulations

a. Relevant City of Santa Rosa General Plan Goals and Policies

The following lists applicable General Plan goals and policies most pertinent to the Specific Plan in regards to hydrologic or water quality and flooding issues.

i. Public Services and Facilities Element

Goal PSF-I: Manage, maintain and improve stormwater drainage and capacity.

- ◆ **Policy PSF-I-1:** Require dedication, improvement and maintenance of stormwater flow and retention areas as a condition of approval.
- ◆ **Policy PSF-I-2:** Require developers to cover the costs of drainage facilities needed for surface runoff generated as a result of new development.
- ◆ **Policy PSF-I-3:** Require erosion and sedimentation control measures to maintain an operational drainage system, preserve drainage capacity and protect water quality.
- ◆ **Policy PSF-I-4:** Require measures to maintain and improve the storm drainage system, consistent with goals of the Santa Rosa Waterways Plan, to preserve natural conditions of waterways and minimize paving of creek channels.
- ◆ **Policy PSF-I-5:** Cooperate with the Sonoma County Water Agency and the Northern California Regional Water Quality Control Board to con-

duct regular assessment of stormwater drainage facilities, to ensure that adequate drainage capacity is maintained throughout the system to accommodate increases in residential and commercial development.

- ◆ **Policy PSF-I-6:** Require implementation of Best Management Practices to reduce drainage system discharge of non-point source pollutants originating from streets, parking lots, residential areas, businesses, industrial operations and those open space areas involved with pesticide application.
- ◆ **Policy PSF-I-7:** Prepare and distribute information to increase awareness of businesses and residents about the need to reduce drainage system discharge of non-point source pollutants.
- ◆ **Policy PSF-I-8:** Develop a Standard Urban Stormwater Mitigation Plan (SUSMP) to reduce pollutants and runoff flows from new development and significant redevelopment projects.
- ◆ **Policy PSF-I-9:** Consider installation of creekside pathways, consistent with the City's Bicycle and Pedestrian Master Plan, when possible as part of stormwater improvement projects along the City's creek corridors.

ii. Noise and Safety Element

NS-C Prohibit development in high-risk geologic and seismic hazard areas to avoid exposure to seismic and geologic hazards.

- ◆ **Policy NS-C-7:** Require inspection for structural integrity of water storage facilities, water conveyance facilities, electricity transmission lines, roadways, water detention facilities, levees, and other utilities after a major seismic event, especially on the San Andreas or Rodgers Creek faults.

Goal NS-D: Minimize hazards associated with storm flooding.

- ◆ **Policy NS-D-1:** Ensure flood plain protection by retaining existing open areas and creating new open areas needed to retain stormwater, recharge aquifers and prevent flooding.
- ◆ **Policy NS-D-2:** Maintain current flood hazard data and coordinate with the Army Corps of Engineers, FEMA, Sonoma County Water Agency

and other responsible agencies to coordinate flood hazard analysis and management activities.

- ◆ **Policy NS-D-3:** Require that new development incorporate features into site drainage plans that would reduce impermeable surface area, increase surface water infiltration and minimize surface water runoff during storm events. Such features may include:
 - Additional landscape areas,
 - Parking lots with bio-infiltration systems,
 - Permeable paving designs, and
 - Stormwater detention basins.

- ◆ **Policy NS-D-4:** Incorporate features and appropriate standards that reduce flooding hazards, as described in Policy NS-D-3, into the City’s design standards.

b. Santa Rosa Storm Water Management Plan

In 1997, Santa Rosa was issued a joint NPDES permit with the County of Sonoma and Sonoma County Water Agency (SCWA) by the RWQCB. The NPDES permit identifies the Storm Water Management Plan (SWMP) implemented by the City to control and eliminate stormwater pollution discharge. The City must comply with the provisions of the permit by ensuring that new development and redevelopment mitigate water quality impacts to storm water runoff both during construction and operation periods of projects.

Under direction from the SWRCB, the City prepared a Standard Urban Stormwater Mitigation Plan (SUSMP). The SUSMP was developed in 2003 as a part of the NPDES permit for the City of Santa Rosa, the County of Sonoma and the SCWA. The purpose of the SUSMP is to manage the quality and quantity of storm water runoff in the Santa Rosa area and to aid in the conservation of natural areas in the region. The SUSMP describes and evaluates various “Best Management Practices” (BMPs) for storm water management and outlines procedures for BMP maintenance and inspection. Both private-sponsored and public capital improvement projects in the Santa Rosa area are governed by SUSMP requirements.

Additionally, a Notice of Intent (NOI) with the RWQCB is required to be covered under the State NPDES General Construction Permit for discharges of storm water associated with construction activity. A developer must propose control measures that are consistent with the State General Permit. A Storm Water Pollution Prevention Plan (SWPPP) must be developed and implemented for each site covered by the general permit. A SWPPP should include SUSMP BMPs designed to reduce potential impacts to surface water quality during construction of the project.³

c. Flood Control

The Flood Damage Prevention Ordinance (Chapter 7B) of the Sonoma County Code sets measures for the construction, location, alteration, conversion, or alteration of any structures or land contained within FEMA designated flood hazard zones in the county. A permit is required for development within a flood zone, and the development must adhere to the standards for fill placement and construction elevation set forth in the Ordinance.

In addition, the SCWA has adopted Flood Control Design Criteria for the design and construction of drainage structures and facilities within the county. Proposed projects are subject to review by SCWA; alternatives to the Flood Control Design Criteria must be approved prior to construction.⁴

B. Existing Conditions

This section discusses the existing hydrology and water quality setting of the Specific Plan Area.

³ Public Works Department. *Storm Water Management Plan*. City of Santa Rosa. (<http://ci.santa-rosa.ca.us/default.aspx?PageID=1171>), accessed on November 6, 2006.

⁴ Sonoma County Water Agency, 1983, *Flood Control Design Criteria*, Santa Rosa.

1. Climate and Topography

The Specific Plan Area is located in Downtown Santa Rosa, near the juncture of Highway 101 and Highway 12. The topography of the area is generally flat and slopes gently toward the southwest. Ground elevations range from approximately 140 feet above mean sea level (msl) at the western boundary of the Specific Plan Area to 165 feet above msl at the eastern boundary.

The regional climate is characterized as Mediterranean, with dry, mild summers and moist, cool winters. About 80 percent of the total annual precipitation occurs during the months of November through March, with an average annual precipitation of 30 inches. Average monthly temperatures range from a high of 83 degrees Fahrenheit in the summer to a low of 37 degrees Fahrenheit in the winter.⁵

2. Regional Hydrology

The Specific Plan Area is contained within the Santa Rosa Creek and Laguna de Santa Rosa sub-watersheds of the greater Russian River watershed (USGS Hydrologic Unit 18010110). Santa Rosa Creek, which passes through the southern portion of the Specific Plan Area, flows into the Laguna de Santa Rosa, which flows into the Russian River and ultimately drains into the Pacific Ocean near the town of Jenner on the Sonoma Coast. Together, the Santa Rosa Creek and Laguna de Santa Rosa sub-watersheds cover approximately 170 square miles in eastern and central Sonoma County.

Both the Santa Rosa Creek and Laguna de Santa Rosa sub-watersheds provide habitat for a number of rare, threatened and endangered species. The Laguna de Santa Rosa is the second largest freshwater wetland complex in Northern California and is an important migratory stopover for over 200 species of birds along the Pacific Flyway. Both the Laguna and Santa Rosa Creek are passageways for Coho salmon, Chinook salmon and steelhead. However, agricultural and urban developments over the past 150 years have significantly degraded the environmental quality of the major waterways of the region.

⁵ Western Regional Climate Center, 2006, *Period of Monthly Climate Summary for Santa Rosa, California (047965)*. (<http://www.wrcc.dri.edu>)

Santa Rosa Creek and the Laguna de Santa Rosa are currently listed on the Clean Water Act Section 303(d) List of Impaired Waterbodies. Impairments for Santa Rosa Creek are indicated to be pathogens, sedimentation-siltation, and elevated water temperature and impairments for Laguna de Santa Rosa are indicated to be excessive sedimentation-siltation, phosphorous, nitrogen, mercury, low dissolved oxygen and elevated water temperatures.⁶

3. Specific Plan Area Drainage

Santa Rosa Creek runs from east to west through the southern portion of the Specific Plan Area. Throughout the Specific Plan Area and larger Downtown area, the creek is contained in a trapezoidal channel for flood control purposes. The City is currently in the process of “naturalizing” Santa Rosa Creek in the Downtown area, including removing hardscape elements and providing habitat enhancement. Runoff from the paved surfaces of the Specific Plan Area is collected in curbside gutters and storm drain inlets and routed through the City’s subterranean storm drain system to various outlets along the creek.

In the vicinity of the proposed SMART rail station and in most areas south of the station site, the land within the existing railway easement (approximately 25 to 30 feet on either side of the railroad tracks) is unpaved. There are no storm drain inlets in these areas; surface runoff ponds on top of the soil and gravel beside the railroad tracks and eventually infiltrates into the sub-surface.

4. Groundwater

The California Department of Water Resources (DWR) defines State groundwater basins based on geologic and hydrogeologic conditions. According to the DWR, the Specific Plan Area is located in the Santa Rosa Plain Sub-basin of the greater Santa Rosa Valley Groundwater Basin. The primary water-bearing unit of the Santa Rosa Plain Sub-basin is the Merced Formation, a Pliocene marine deposit of fine sand and sandstone with thin interbeds of clay

⁶ California State Water Resources Control Board, 2006, Proposed 2006 CWA Section 303 (d), List of Water Quality Limited Segments, SWRCB Draft 303 (d) list release, dated September 15, 2006.

and silty-clay, some lenses of gravel and localized fossils.⁷ Lower water-bearing units in the Santa Rosa Plain Sub-basin include the Glen Ellen Formation and Alluvium.

The City maintains a total of six municipal groundwater wells within the Santa Rosa Plain Sub-basin of the Santa Rosa Valley Groundwater Basin. Two wells are operated primarily to provide some landscape irrigation, and these wells are also permitted by the California Department of Health Services (DHS) to operate during an emergency outage condition; the status of two wells (Farmers Lane Wells No. 1 and 2) were recently changed from emergency to active status (by DHS on July 20, 2005); one well is operated to provide minor amounts of landscape irrigation water supply only; and one well only provides water during an emergency outage condition. Since 2000, the City has only pumped an estimated 161 acre-feet of groundwater from these wells, which averages approximately 27 acre-feet per year (afy) for the last six years. Based on projected future use of the converted Farmers Lane wells, projected City groundwater pumpage is anticipated to be up to 2,300 afy, about 6.6 percent of the City's projected total water supply, by the year 2020.⁸

According to a 1982 DWR study,⁹ groundwater quality in the sub-basin is generally in compliance with drinking water quality standards; most groundwater problems in the basin are aesthetic issues associated with high hardness or high concentrations of iron and manganese.¹⁰ However, low-level contamination of groundwater exists within the Specific Plan Area due to the industrial history of the area. Groundwater quality within the Specific Plan

⁷ Cardwell, G.T., 1958, *Geology and Groundwater in the Santa Rosa and Petaluma Valley Areas*, US Geological Survey Water Supply Paper 1427.

⁸ City of Santa Rosa, December 12, 2006, Water Supply Assessment for Downtown Station Area Specific Plan, page 13.

⁹ Department of Water Resources, 1982, *Evaluation of Groundwater Resources in Sonoma Valley, Volume 2: Santa Rosa Plain*, DWR Bulletin 118-4.

¹⁰ Department of Water Resources, 2004, *California's Groundwater*, DWR Bulletin 118, Feb. 27, 2004 update.

Area is described in greater detail in Section 4.9, Hazardous Materials, of this EIR.

According to well log data maintained by the DWR, depth to groundwater in the Specific Plan Area ranges between seven and 25 feet below ground surface (bgs), with most groundwater located between nine and 15 feet bgs. Groundwater flow in the area is generally westerly.¹¹ However, based on the relatively shallow depth to groundwater and the depth of the creek channel, some local groundwater is assumed to flow into Santa Rosa Creek on a seasonal basis.

According to the DWR Bulletin 118, a groundwater model for the Santa Rosa Plain Sub-basin was prepared by the DWR in 1982. The 15-year period from 1960-61 through 1974-75 was selected as the study period for the Santa Rosa Plain Sub-basin because it contained a mixture of wet and dry years approximating long-term climatic conditions. Average annual natural recharge for the period 1960 to 1975 was estimated to be about 29,300 af. Average annual pumping during the same time period was estimated to be approximately 29,700 af, indicating that the annual natural recharge and the annual pumping within the sub-basin were essentially in balance.¹²

5. Flooding

The Specific Plan Area is not located within a flood hazard zone as delineated by the FEMA. No FIRM has been generated for the downtown Santa Rosa area (FEMA Community Panel Numbers 060381-0005, 0006, 0010, and 0011) because the area is considered to be of minimal flood concern.¹³

¹¹ Environmental Data Resources, Inc., 2006, The EDR Radius Map with GeoCheck.

¹² City of Santa Rosa, December 12, 2006, Water Supply Assessment for Downtown Station Area Specific Plan, page 24.

¹³ FEMA, 1981, Sonoma County Community Panel Numbers 060381-0005, 0006, 0010 and 0011.

C. Standards of Significance

The Specific Plan would have a significant impact regarding hydrology, drainage or water quality if it would:

- a. Violate any water quality standards or waste discharge requirements.
- b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
- d. Create or contribute runoff water, polluted runoff or degrade water quality that would include the following:
 - ◆ Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
 - ◆ Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
 - ◆ Otherwise substantially degrade water quality.
- e. Create a change in flood potential that would include the following:
 - ◆ Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
 - ◆ Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

- ◆ Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

D. Impact Discussion

This section discusses potential impacts that could occur regarding hydrology, groundwater resources and water quality. This discussion is organized by and responds to each of the potential impacts identified in the Standards of Significance.

1. Project Impacts

- a. Violate any water quality standards or waste discharge requirements.

During construction of proposed projects under the Specific Plan, especially during site grading activities, storm water runoff could remove sediment from exposed soil areas, creating an increase in the chance of runoff or wind mobilization, thereby causing increases in sediment loads in nearby storm drain systems and downstream waterways. Additionally, the grading process uses heavy construction equipment powered with diesel fuel or gasoline, and also requiring motor oil, hydraulic oils, and other potential contaminants. A leak, most common during refueling, could contaminate vicinity waterways. A release of construction materials such as concrete, asphaltic emulsion, or paint could also affect downstream water quality through surface runoff or groundwater seepage. The potential for violation of water quality standards and waste discharge requirements represents a *significant* impact both during and following construction.

- b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

The developments within the Specific Plan Area would utilize municipal water sources, which would include the use of some groundwater. As discussed in more detail in Section 4.13, Utilities, of this EIR, according to the Water

Supply Assessment completed for the Specific Plan, the City will be able to support the growth that would result from the Specific Plan, in combination with existing demands and planned future demands.¹⁴ In addition, the Water Supply Assessment determined that the groundwater supply would be adequate to support the projected amount of groundwater (2,300 acre-feet per year) anticipated to be pumped as a share of the potable water supply needed to support future growth within Santa Rosa, including the Specific Plan.¹⁵ As a result, the Specific Plan *would not substantially* deplete groundwater supplies since it would not result in the need to pump more water than can be supported by the locate groundwater basin.

The areas of development and redevelopment within the Specific Plan Area are previously developed sites, and redevelopment would not significantly alter the area available for recharge of the groundwater aquifer. Since the Specific Plan would not significantly alter groundwater recharge there is a *less than significant* impact to the groundwater of the area.

- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

None of the projects anticipated under the Specific Plan are likely to require substantial alteration of existing drainage patterns that would cause substantial erosion or siltation. Development would occur on a nearly level terrace with minimal required grading and few channels. The only work near major drainage channels would occur adjacent to Santa Rosa Creek or within the Laguna De Santa Rosa Watershed, possibly requiring some bank stabilization or the installation or reconstruction of new stormdrain outfalls. While none of these projects are planned to substantially alter the course of the adjacent waterways, unforeseen circumstances such as uncontrolled grading or place-

¹⁴ City of Santa Rosa, December 12, 2006, Water Supply Assessment for Downtown Station Area Specific Plan, page 39.

¹⁵ City of Santa Rosa, December 12, 2006, Water Supply Assessment for Downtown Station Area Specific Plan, pages 32-3.

ment of fill, and unregulated discharge of water, may alter drainage patterns sufficiently to contribute to substantial erosion or siltation.

However, development of sites adjacent to Santa Rosa Creek and Laguna de Santa Rosa Watershed will require permitting with the California Department of Fish and Game and the Sonoma County Water Agency, where applicable. The following describes the potential permits that may be required:

- ◆ **Streambed Alteration Agreement.** Any portions of the proposed project occurring along the banks of Santa Rosa Creek would be subject to the requirements for a CDFG Streambed Alteration Agreement. Restoration and enhancement of bank areas covered by concrete slabs and rip-rap would be included as part of any project located adjacent to the creek.
- ◆ **Sonoma County Water Agency Review.** Individual project applicants would be required to submit drainage design plans for review and approval by SCWA for any portions of the project occurring along the banks of Santa Rosa Creek. Applicants would be required to obtain a Revocable License from SCWA prior to construction within the Agency's property.

In addition, proposed projects under the Specific Plan would be required to comply with existing creek management plans and the City's General Plan Goals. These require the City to manage, maintain and improve stormwater drainage and capacity. Two policies most pertinent under this Goal are General Plan Policy PSF-I-1 and Policy PSF-I-9. These policies require dedication, improvement and maintenance of stormwater flow and retention areas as a condition of approval.

By complying with existing regulations and permitting processes, the potential impact related to altering drainage patterns and increases in siltation and/or erosion would be reduced to a *less than significant* level.

- d. Create or contribute runoff water, polluted runoff or degrade water quality.

Non-point source pollutants (NPS) are washed by rainwater from roofs, landscape areas and streets and parking areas into the drainage network. Development and redevelopment in the Specific Plan Area could increase the levels of NPS pollutants and litter entering Santa Rosa Creek. An increase in NPS pollutants could have adverse effects on wildlife, vegetation and human health. NPS pollutants could also infiltrate into groundwater and degrade the quality of potential groundwater drinking sources.

Pollutant concentrations in site runoff are dependent on a number of factors, including: a) land use conditions; b) site drainage conditions; c) intensity and duration of rainfall; d) the climatic conditions preceding the rainfall event; and d) implementation of water quality BMPs. Due to the variability of urban runoff characteristics, it is difficult to estimate pollutant loads for NPS pollutants. Increases in the levels of oil, grease, petroleum hydrocarbons, organics and toxicants, metals and possibly nutrients are likely. This represents a *significant* impact.

- e. Create a change in flood potential.

Since the Specific Plan Area is not within a designated FEMA flood plain, there is little or no increased risk of exposure of people or structures to flooding or danger of redirecting flood flows. However, development in the Specific Plan Area may result in increased runoff and flows to the municipal storm drain system due to new paving or surfacing, the addition or removal of storm drain inlets, or other changes to the existing storm drain system. Flows contributed by the Specific Plan may have an adverse impact on the capacity of stormdrain conveyance within the municipal system, ultimately affecting Santa Rosa Creek and Laguna de Santa Rosa Watershed.

Policy NS-D-3 under the General Plan requires that new development incorporate features into site drainage plans that would reduce impermeable surface area, increase surface water infiltration and minimize surface water runoff during storm events. Furthermore, Policy NS-C-7 under the General Plan

requires inspection of water storage facilities and water conveyance facilities to minimize the possibility of dam failure.

While the existing General Plan policies help to minimize changes to flooding potential, this is considered a *significant* impact.

2. Cumulative Impacts

Development within the Santa Rosa Urban Growth Boundary has the potential to result in a cumulative impact related to hydrology and water quality. However, the 2002 General Plan EIR identified that with the policies included in the General Plan, that the potential for development under the General Plan to result in a hydrology or water quality-related impact would be reduced to a less-than-significant level. The Specific Plan would be subject to the same General Plan policies, as well as the mitigation measure identified in this section. Therefore, the development of the lands within the Specific Plan Area is not expected to contribute to a cumulative hydrologic impact to the City of Santa Rosa area.

The Specific Plan calls for increased residential and mixed residential and commercial development. This will require the loss of some current open space consisting mainly of empty industrial tracts and yards. Peak runoff is likely to increase gradually, due to increased impervious surface area, as development proceeds. However, these impacts will be reduced through improvements to the storm drain network identified in Section 4.13 and mitigation measures included in this section, and will not contribute to the cumulative stormwater capacity. Additionally, Policy NS-D-3 under the General Plan requires that new development incorporate features into site drainage plans that would reduce impermeable surface area, increase surface water infiltration and minimize surface water runoff during storm events.

The impact to water quality depends almost entirely upon the effectiveness of best management practices and engineering controls to prevent contaminated runoff, leaks, or spills from entering the storm drain system and area waterways, especially Santa Rosa Creek. Adherence to the City's existing SWMP

and SUSMP policies of developing a SWPPP based on current BMP's will not result in a cumulative impact that would reduce water quality. Additionally, industrial areas, which are considered most likely to contain harmful pollutants, will be reduced and replaced with residential and mixed commercial, further reducing the possible impact to water quality.

The developments within the Specific Plan Area and the City of Santa Rosa would utilize municipal water sources, which include the use of some groundwater to supplement potable water sources. As discussed above, according to the 2006 Water Supply Assessment for the Downtown Station Area Specific Plan, the planned municipal supply is adequate to handle the projected cumulative water demand increase resulting from growth within Santa Rosa as well as the Specific Plan Area, and no depletion of the groundwater aquifer is anticipated. Therefore the Specific Plan would not contribute to a cumulative impact to ground water resources.

Taken together, the existing General Plan Policies, and requirements, along with the mitigation measures detailed below reduce the project's potential to contribute to a cumulative hydrologic and water quality impacts of Specific Plan area development to a level that is *less than significant*.

E. Impacts and Mitigation Measures

Impact HYDRO-1: Demolition and construction for future development and redevelopment proposed in the Specific Plan could potentially violate water quality standards or waste discharge requirements. This would be a *significant* impact.

Mitigation Measure HYDRO-1: Pursuant to the City of Santa Rosa Stormwater Management Plan (SWMP); grading, erosion control and stormwater ordinances; and National Pollutant Discharge Elimination System (NPDES) requirements, each developer shall develop and implement a Storm Water Pollution Prevention Plan(s) (SWPPP) for each in-

dividual development or redevelopment project site to protect water quality during and after construction. The Project SWPPP shall include the following mitigation measures for the construction period:

- ◆ Erosion control/soil stabilization techniques such as straw mulching, erosion control blankets, erosion control matting, and hydro-seeding, shall be utilized, in accordance with the regulations and recommendations outlined in the Santa Rosa Area Standard Urban Storm Water Mitigation Plan (SUSMP) adopted by the City of Santa Rosa, Sonoma County, and the Sonoma County Water Agency. Silt fences used in combination with fiber rolls shall be installed down slope of all graded slopes. Fiber rolls shall be installed in the flow path of graded areas receiving concentrated flows and around storm drain inlets.
- ◆ “Best management practices” (BMPs) shall be implemented for preventing the discharge of other construction-related NPDES pollutants beside sediment (i.e. paint, concrete, etc) to downstream waters.
- ◆ After construction is completed, all drainage facilities shall be inspected for accumulated sediment, and these drainage structures shall be cleared of debris and sediment.

Long-term mitigation measures to be included in the Project SWPPP shall include, but are not limited to, the following:

- ◆ Description of potential sources of erosion and sediment at the proposed project site. Industrial activities and significant materials and chemicals that could be used at the project site should be described. This will include a thorough assessment of existing and potential pollutant sources.
- ◆ Identification of BMPs to be implemented at the project site based on identified industrial activities and potential pollutant sources. Emphasis shall be placed on source control BMPs, with treatment controls used as needed.
- ◆ Development of a monitoring and implementation plan. Maintenance requirements and frequency shall be carefully described including vec-

tor control, clearing of clogged or obstructed inlet or outlet structures, vegetation/landscape maintenance, replacement of media filters, regular sweeping of parking lots and other paved areas, etc. Wastes removed from BMPs may be hazardous, therefore, maintenance costs should be budgeted to include disposal at a proper site. Parking lot areas shall be cleared of debris that may enter the storm drain system on a daily basis.

- ◆ The monitoring and maintenance program shall be conducted at the frequency agreed upon by the RWQCB and/or City of Santa Rosa. Monitoring and maintenance shall be recorded and submitted annually to the SWRCB. The SWPPP shall be adjusted, as necessary, to address any inadequacies of the BMPs.
- ◆ The applicant shall prepare informational literature and guidance on industrial and commercial BMPs to minimize pollutant contributions from the proposed development. This information shall be distributed to all employees at the project site. At a minimum the information shall cover: a) proper disposal of commercial cleaning chemicals; b) proper use of landscaping chemicals; c) clean-up and appropriate disposal of hazardous materials and chemicals; and d) prohibition of any washing and dumping of materials and chemicals into storm drains.

Significance After Mitigation: Less than significant.

Impact HYDRO-2: Increased levels of non-point source pollutants may enter the storm drains of the area and ultimately enter Santa Rosa Creek if not controlled through proper Stormwater Pollution Prevention. This would be a *significant* impact.

Mitigation Measure HYDRO-2: Developers will be required to prepare and implement a Specific Plan Area Storm Water Pollution Prevention Program (SWPPP), pursuant to NPDES requirements, as detailed in Mitigation Measure HYDRO-1.

Significance After Mitigation: Less than significant.

Impact HYDRO-3: Development in the Specific Plan area may create an increase in flood potential in downstream waters by increasing runoff levels. This would be a *significant* impact.

Mitigation Measure HYDRO-3: In accordance with the Santa Rosa Area Standard Urban Storm Water Mitigation Plan (SUSMP) and Sonoma County Water Agency flood control criteria, developers shall develop a Storm Drain Master Plan for individual projects that includes design drawings and calculations of the capacity of the proposed storm drain system for the project. SUSMP-recommended BMPs such as on-site storm water detention, storm drain line upgrades, or infiltration areas shall be incorporated into the project design, as well as storm water treatment controls such as catch basins, storm water separators, and or/other SUSMP-recommended treatment BMPs. The Storm Drain Plan shall also include a hydraulic analysis prepared consistent with Sonoma County Water Agency flood control design criteria to establish whether the existing municipal system has capacity to accommodate any increased flows resulting from the proposed project. The analysis shall include Rational Method calculations of pre- and post-development 10-year peak flows and shall take into account drainpipe slope and elevations, drainpipe size(s), and system head losses. The Storm Drain Plan shall be submitted to the City of Santa Rosa and the Sonoma County Water Agency for review prior to approval.

The Storm Drain Plan should be consistent with the City's SUSMP, SCWA flood control criteria, and General Plan Policies.

Significance After Mitigation: Less than significant.