

## HYDROLOGY AND WATER QUALITY

### 4.8 HYDROLOGY AND WATER QUALITY

This chapter includes an evaluation of the potential environmental consequences associated with the adoption and implementation of the proposed project that are related to hydrology and water quality. Additionally, this chapter describes the environmental setting, including regulatory framework and existing conditions, and identifies mitigation measures, if required, that would avoid or reduce significant impacts.

#### 4.8.1 ENVIRONMENTAL SETTING

##### 4.8.1.1 REGULATORY FRAMEWORK

###### Federal Regulations

###### *Clean Water Act*

The Clean Water Act (CWA) of 1977, as administered by the United States Environmental Protection Agency (USEPA), seeks to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The CWA employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The CWA authorizes the USEPA to implement water-quality regulations. The National Pollutant Discharge Elimination System (NPDES) permit program under Section 402(p) of the CWA controls water pollution by regulating stormwater discharges into the waters of the United States. California has an approved State NPDES program. The USEPA has delegated authority for water permitting to the State Water Resources Control Board (SWRCB) and the North Coast Regional Water Quality Control Board (RWQCB) (Region 1). Section 303(d) of the CWA requires that each state identify water bodies or segments of water bodies that are "impaired" (i.e., not meeting one or more of the water-quality standards established by the state). These waters are identified in the Section 303(d) list as waters that are polluted and need further attention to support their beneficial uses. Once the water body or segment is listed, the state is required to establish Total Maximum Daily Load (TMDL) for the pollutant causing the conditions of impairment. TMDL is the maximum amount of a pollutant that a water body can receive and still meet water-quality standards. Typically, TMDL is the sum of the allowable loads of a single pollutant from all contributing point and non- point sources. The intent of the 303(d) list is to identify water bodies that require future development of a TMDL to maintain water quality. In accordance with Section 303(d), the RWQCB has identified impaired water bodies within its jurisdiction, and the pollutants or stressors responsible for impairing the water quality. Stormwater from the Southeast Greenway Area drains via overland flow into drainage swales, existing City storm drains, , as well as onsite creeks, including Matanzas Creek, Sierra Park Creek, and Spring Creek, with eventual discharge into Santa Rosa Creek, Mark

## HYDROLOGY AND WATER QUALITY

West Creek, and the Middle Russian River. The Middle Russian River and Santa Rosa Creek are listed on the SWRCB's 303(d) list.<sup>1</sup>

### *National Pollutant Discharge Elimination System*

The CWA-established NPDES permit program regulates municipal and industrial discharges to surface waters of the United States from their municipal separate storm sewer systems (MS4s). Under the NPDES program, all facilities that discharge pollutants into waters of the United States are required to obtain a NPDES permit. Requirements for stormwater discharges are also regulated under this program.

The Regional Board has been issuing a National Pollutant Discharge Elimination (NPDES) Storm Water Permit jointly to the City of Santa Rosa, County of Sonoma and the Sonoma County Water Agency (SCWA). The project is subject to the Waste Discharge Requirements (WDR) of the Municipal Regional Permit (MRP) Order Number R1-2015-0030 and NPDES Permit Number CA0025054, issued on November 19, 2015. The MRP is effective as of January 6, 2016 and expires on January 5, 2021. The permit governs a variety of activities in the city of Santa Rosa such as industrial and commercial businesses, new and redevelopment projects, construction sites, storm drain operation and maintenance, creek monitoring, pesticide applications, and illegal dumping of water and other pollution in the City's storm drain.

### *National Flood Insurance Program*

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 mandate the Federal Emergency Management Agency (FEMA) to evaluate flood hazards. FEMA provides Flood Insurance Rate Maps (FIRMs) for local and regional planners to promote sound land use and floodplain planning and identify potential flood areas based on current conditions. To delineate a FIRM, FEMA conducts engineering studies called Flood Insurance Studies (FISs). Using information gathered in these studies, FEMA engineers and cartographers delineate Special Flood Hazard Areas (SFHAs) on FIRMs. The Southeast Greenway Area is identified on two FIRMs, with the southwestern edge of the Greenway in FIRM No. 06097C0741F dated October 16, 2012, and the rest of the Greenway in FIRM No. 06097C0733E dated December 2, 2008.<sup>2</sup> The FIRMs show that a small portion of the Southeast Greenway Area is within a 100-year floodplain (i.e., the floodplain associated with Matanzas Creek which crosses the Southeast Greenway Area just west of Hoen Avenue).

## State Regulations

### *Porter-Cologne Water Quality Act*

The Porter-Cologne Water Quality Act is the basic water-quality control law for California. Under this Act, the SWRCB has ultimate control over State water rights and water-quality policy. In California, the California EPA has delegated authority to issue NPDES permits to the SWRCB. The SWRCB, through its nine Regional Water Quality Control Boards (RWQCBs), carries out the regulation, protection, and

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<sup>1</sup> State Water Resources Control Board, 2012. Final 2012 Integrated Report (CWA Section 303(d) List / 305(b) Report), [http://www.waterboards.ca.gov/water\\_issues/programs/tmdl/2012state\\_ir\\_reports/category5\\_report.shtml](http://www.waterboards.ca.gov/water_issues/programs/tmdl/2012state_ir_reports/category5_report.shtml), Accessed May 2, 2017.

<sup>2</sup> Federal Emergency Management Agency. FEMA Flood Map Service Center. Accessed May 4, 2017. <https://msc.fema.gov/portal/search?AddressQuery=Santa%20Rosa%2C%20CA#searchresultsanchor>

## HYDROLOGY AND WATER QUALITY

administration of water quality in each region. Each regional board is required to adopt a Water Quality Control Plan, or Basin Plan, that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's ground and surface water, and local water-quality conditions and problems. The city is within the North Coast Basin and is under the jurisdiction of the North Coast RWQCB (Region 1). The North Coast RWQCB monitors surface water quality through implementation of the Water Quality Control Plan for the North Coast Basin (Basin Plan) and designates beneficial uses for surface water bodies and groundwater within Sonoma and adjacent counties. The Basin Plan for the North Coast Basin was last updated in 2011 and will continue to be updated as deemed necessary to maintain pace with technological, hydrological, political, and physical changes in the region.<sup>3</sup> This Basin Plan describes the water quality that must be maintained to support the designated beneficial uses and provides programs, projects, and other actions necessary to achieve the standards established in the Basin Plan. The Basin Plan also contains water quality criteria for groundwater.

### *Statewide General Construction Permit*

Construction projects of one acre or more are regulated under the General Construction Permit (GCP), Order No. 2012-0006-DWQ, issued by the SWRCB. Under the terms of the permit, applicants must file Permit Registration Documents (PRDs) with the SWRCB prior to the start of construction. The PRDs include a Notice of Intent (NOI), risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and a signed certification statement. The PRDs are submitted electronically to the SWRCB via the Stormwater Multiple Application and Report Tracking System (SMARTS) website.

The SWPPP must demonstrate conformance with applicable Best Management Practices (BMPs), including a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project location. The SWPPP must list BMPs that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for nonvisible pollutants if there is a failure of the BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Some sites may require implementation of a Rain Event Action Plan (REAP). The GCP also requires applicants to comply with post-construction runoff reduction requirements. Since the future potential development that could result from this project could disturb more than one acre, it would be subject to these requirements.

## Regional Regulations

### *Sonoma County Water Agency*

The SCWA is the flood control agency for the County. Their responsibilities include creek restoration, pollution prevention efforts, and groundwater recharge. The SCWA has partnered with federal agencies to help build and manage a variety of flood protection projects, including Warm Springs Dam, Spring Lake, Coyote Valley Dam, Matanzas Creek Reservoir, Piner Creek Reservoir, Brush Creek Middle Fork Reservoir

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<sup>3</sup> California Regional Water Quality Control Board, 2015. North Coast Basin (Region 1), Water Quality Control Plan (Basin Plan), May 2011. [http://www.waterboards.ca.gov/northcoast/water\\_issues/programs/basin\\_plan/083105-bp/basin\\_plan.pdf](http://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/083105-bp/basin_plan.pdf)

## HYDROLOGY AND WATER QUALITY

and Spring Creek Reservoir. The SCWA also manages a proactive stream maintenance program for more than 80 miles of creeks throughout its service area, including the three creeks that cross the Southeast Greenway Area.

### Local Regulations

#### *Urban Water Management Plan*

The City 2015 Urban Water Management Plan (UWMP) has been prepared in accordance with the Urban Water Management Planning Act. The 2015 UWMP addresses the City's water system and includes a description of the water supply sources, historical and projected water use, and a comparison of water supply to water demands during normal, single-dry, and multiple-dry years. The 2015 UWMP also addresses water use efficiency legislation, including the City's 2015 and 2020 water use targets, as required by the Water Conservation Act of 2009, and the implementation plan for meeting the City's 2020 water use targets.<sup>4</sup>

#### *Groundwater Master Plan*

Adopted by the Santa Rosa Board of Public Utilities on September 19, 2013, the overall objective of the Groundwater Master Plan (GWMP) is to provide a strategic road map for the City's Utilities staff, Board of Public Utilities, and City Council regarding how available groundwater resources could be most effectively used to meet the needs of the City's existing and future customers. The GWMP documents the need for additional emergency groundwater supply wells to provide for water service to residents in the event of an emergency.

#### *Storm Water Permit Compliance*

In order for the City to meet RWQCB permit requirements and reduce stormwater pollution, the City has provided stormwater design guidelines in a series of manuals since 2005. The Storm Water Low Impact Development (LID) Technical Design Manual was recently revised in 2017 and is applicable for all new development after May 3, 2017. The City's stormwater requirements require treatment of all tributary areas as well as hydromodification control with 100 percent capture of the post project volume for all projects creating or replacing 1.0 acre or more of impervious surface. All design requirements must be completed by using the Storm Water Calculator ([www.srcity.org/stormwaterLID](http://www.srcity.org/stormwaterLID)).

#### *Citywide Creek Master Plan*

The Santa Rosa Citywide Creek Master Plan provides guidelines for the care, management, restoration, and enhancement of approximately 90 miles of creeks in Santa Rosa. The Master Plan is used by City and County staff when planning creek enhancement and restoration activities, coordinating and expanding creekside trail systems, and making land use planning decisions concerning creeks. The Master Plan will be periodically updated and amended to reflect changing conditions and new opportunities that would increase the benefits to creeks within the community.

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<sup>4</sup> Urban Water Management Plan. 2015. City of Santa Rosa Water. <http://srcity.org/documentcenter/view/7065>

## HYDROLOGY AND WATER QUALITY

### *General Plan 2035*

The Public Services and Facilities (PSF), Open Space and Conservation (OSC), and Noise and Safety (NS) elements of the General Plan 2035 include the following environmental goals and policies relevant to hydrology and water quality and are applicable to the proposed project:

- **Goal PSF-A:** Provide recreational facilities and parks for all sectors of the community.
  - **Policy PSF-A-20:** Encourage multiple use of waterways, including:
    - Flood control;
    - Wildlife habitats;
    - Passive open space uses;
    - Nature study;
    - Pedestrian and bicycle circulation; and
    - Other compatible outdoor uses.
- **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 Citywide Creek Master 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 conduct 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-8:** Implement the Standard Urban Storm Water Mitigation Plan (SUSMP) in order to reduce pollutants and runoff s flows from new development and significant redevelopment projects.
  - **Policy PSF-I-9:** Consider installation of creekside pathways, consistent with the Citywide Creek Master Plan and Bicycle and Pedestrian Master Plan, when possible as part of stormwater improvement projects along the city’s creek corridors.
- **Goal OSC-A:** Maximize the benefits of open space.
  - **Policy OSC-A-8:** Coordinate with public and private entities to link open spaces with a network of paths and trails, including Sonoma County Water Agency access roads and the Bay Area Ridge Trail
- **Goal OSC-D:** Conserve wetlands, vernal pools, wildlife ecosystems, rare plant habitats, and waterways.
  - **Policy OSC-D-2:** Protect high quality wetlands and vernal pools from development or other activities as determined by the Vernal Pool Ecosystem Preservation Plan.

## HYDROLOGY AND WATER QUALITY

- **Policy OSC-D-9:** Ensure that construction adjacent to creek channels is sensitive to the natural environment. Ensure that natural topography and vegetation is preserved along the creek, and that construction activities do not disrupt or pollute the waterway.
- **Policy OSC-D-10:** Orient development and buildings toward creeks, while providing privacy, security, and an open transition between public and private open spaces.
- **Policy OSC-D-11:** New development along channelized waterways should allow for an ecological buffer zone between the waterway and development. This buffer zone should also provide opportunities for multi-use trails and recreation.
- **Policy OSC-D-12:** New development should maintain an adequate setback from channelized waterways to recognize the 100-year flood elevation, and allow for stream corridor restoration. Setbacks identified in the Zoning Code should serve as minimum setbacks. Larger setbacks are encouraged in accordance with Restoration Concept Plans to meet restoration and enhancement goals.
- **Goal OSC-E:** Ensure local creeks and riparian corridors are preserved, enhanced, and restored as habitat for fish, birds, mammals and other wildlife.
  - **Policy OSC-E-1:** Maintain creek areas using practices that protect and support fish and wildlife as well as help retain hydraulic capacity.
  - **Policy OSC-E-2:** Plan and perform stream maintenance activities that respect the balance of flood protection and environmental protection.
  - **Policy OSC-E-3:** Continue to support efforts towards healthy, clean, and safe creeks
  - **Policy OSC-F-2:** Cooperate with various public and private entities to create new public access trails along creeks to parks and open spaces within the Urban Growth Boundary, as well as connections to regional trail systems.
  - **Policy OSC-I-2:** Require non-residential projects requesting Conditional Use Permit or Design Review approval to provide water efficient landscaping in accordance with the city's Water Efficient Landscape Policy
  - **Policy OSC-I-6:** Protect groundwater recharge areas, particularly creeks and riparian corridors. Identify and protect other potential groundwater recharge areas.
- **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. Creek beds that are dry most of the year can provide flood retention needed for public safety.
  - **Policy NS-D-3:** Require that new development and redevelopment projects meet the requirements of the Storm Water Low Impact Development Technical Design Manual to reduce impermeable surface area, increase surface water infiltration, and minimize surface water runoff during storm events. Such features may include:
    - Additional landscape areas;
    - Vegetated swales with bioretention;
    - Rain gardens; and
    - Pervious pavement.
  - **Policy NS-D-4:** Incorporate features and appropriate standards that reduce flooding hazards.
  - **Policy NS-D-5:** Apply design standards and guidelines to new development that help reduce project runoff into local creeks, tributaries, and drainage ways.

## HYDROLOGY AND WATER QUALITY

- **Policy NS-D-6:** Evaluate flood hazards prior to approval of development projects within a Federal Emergency Management Agency (FEMA) designated flood zone. Ensure that new development within flood zones is designed to be protected from flooding without negatively affecting adjacent areas.

### *Santa Rosa City Code*

The Santa Rosa City Code (SRCC) contains the following regulations pertaining to hydrology and water quality issues in Title 14, *Potable and Recycled Water*, Title 16, *Storm Water Enterprise*, Title 17, *Environmental Protection*, and Title 18, *Building and Construction*.

- **Chapter 14-30, Water Efficient Landscape:** This chapter ensures efficient water use by establishing standards for landscape design appropriate to Santa Rosa's climate, soils, water resources, and land use and resource planning. The Water Efficient Landscape Policy was initially adopted by Resolution No. 21142 of the Santa Rosa City Council on December 22, 1992 in response to California's Government Code Section 65591, which requires local agencies to adopt water efficient landscape regulations.<sup>5</sup> The policy was replaced by the Water Efficient Landscape Ordinance which initially went into effect January 2010 and was most recently updated in 2016. The chapter applies to all new public and private projects with landscaping that require conditional use permit or design review by the City, or a Utilities certificate. This includes office, commercial, industrial, and institutional landscaping; park and greenbelt landscaping; developer-installed landscaping in multiple-family residential; and common areas of single-family residential developments.
- **Title 16, Storm Water Enterprise:** This title was added to the SRCC in 1996 to comply with the NPDES permit and to control and reduce flooding, property damage, erosion, and stormwater quality degradation. The code established a Storm Water Enterprise and Utility to prescribe and collect charges (special assessments) for the services and facilities of the enterprise, which are collected through the property tax rolls.
- **Chapter 17-12, Storm Water:** This chapter prohibits the impairment or obstruction of the natural flow of stormwaters in a channel, pipe, or storm drain system unless an encroachment permit or grading permit has been issued by the City Engineer or Chief Building Official. The chapter also addresses stormwater quality in accordance with the requirements of the NPDES permit, prohibits the discharge of non-stormwater into the City's storm drain system, and requires the reduction of pollutants in stormwater discharges by implementing BMPs and LID features for new development and redevelopment projects.
- **Chapter 18-52, Flood Damage Prevention:** This chapter is in accordance with FEMA regulations and establishes flood damage prevention measures that apply to all areas of special flood hazard (i.e., 100-year floodplains) within the city. It requires that buildings and development projects that are vulnerable to floods be protected against flood damage at the time of construction by obtaining a development permit and implementing construction standards specified in the chapter.

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<sup>5</sup> City of Santa Rosa. July 2007. Water Efficient Landscape Policy. <http://srcity.org/documentcenter/view/8472>

## HYDROLOGY AND WATER QUALITY

### 4.8.1.2 EXISTING CONDITIONS

This section includes a discussion of the existing hydrology and water quality conditions that apply to the Southeast Greenway Area.

#### Climate

Santa Rosa has a Mediterranean climate with cool, wet winters and hot, dry summers. In the summer, fog often moves in from the Pacific Ocean in the evenings and mornings but it usually clears to warm, sunny weather by late morning or noon before returning in the late evening. The mean annual precipitation is 30 inches per year, with most of the rainfall occurring between the months of October and April.<sup>6</sup> The average maximum temperature of 82.8 degrees Fahrenheit occurs in August and the average minimum temperature of 36.7 degrees Fahrenheit occurs in January.

#### Hydrology and Surface Drainage

The Southeast Greenway Area lies within the Laguna de Santa Rosa Watershed, as shown on Figure 4.8-1. The watershed encompasses an area of 254 square miles and runoff from the watershed drains into Santa Rosa Creek, which eventually drains into the Russian River and ultimately into the Pacific Ocean. The watershed consists of natural creek channels, engineered channels or conduits, water transfer canals, natural and artificial bodies of water, wetlands, riparian forests, and perennial marshes.<sup>7</sup> Matanzas Creek, Spring Creek, and Sierra Park Creek cross the Southeast Greenway Area.

The City of Santa Rosa Transportation and Public Works Department is responsible for maintaining the City's storm drain system, which includes a network of over 320 miles of underground storm drain pipes, and over 18,000 stormwater structures, such as catch basins.<sup>8</sup> Stormwater runoff is collected from City streets and properties via catch basins and storm drain pipes and is then discharged into local creeks that eventually flow into the Russian River.

The SCWA maintains the system of open channels and creeks that divert flow to the Russian River. Sonoma County is divided into nine flood control zones that are managed by the SCWA. The Southeast Greenway Area and City of Santa Rosa are located in Flood Control Zone 1A (Mark West Creek-Laguna de Santa Rosa Watershed). The SCWA provides system-wide maintenance and improvements activities funded through Zone 1A funds including the repair of box culverts and dam spillways; cleaning of side drains leading into channels from subdivisions or city streets; repair/replacement of in-channel control structures; removal of siltation in low-velocity channels to restore hydraulic capacity; repair of bank "wash-outs"; and removal of debris that collects in creek channels.

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<sup>6</sup> Western Regional Climate Center, 2017. Period of Record Monthly Climate Summary, accessed at <http://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7965> on June 6, 2017.

<sup>7</sup> Sonoma Resource Conservation District. 2012. Laguna de Santa Rosa. <http://www.sonomarcd.org/htm/ws-laguna-de-santa-rosa.htm>

<sup>8</sup> City of Santa Rosa. 2017. Accessed at <http://srcity.org/ArchiveCenter/ViewFile/Item/1075> on June 6, 2017.

**HYDROLOGY AND WATER QUALITY**



Source: City of Santa Rosa, 2017; PlaceWorks, 2017.

-  Southeast Greenway
-  Laguna de Santa Rosa Watershed
-  City Limit

Figure 4.8-1  
**Laguna de Santa Rosa Watershed**

## HYDROLOGY AND WATER QUALITY

Presently, there is no dedicated storm drain infrastructure that collects runoff from the Southeast Greenway Area other than drainage swales and three creeks that cross the site. The stormwater runoff from the site is conveyed by overland sheet flow to adjacent areas, streets and three waterways (Mantanzas Creek, Sierra Park Creek, and Spring Creek).

The Spring Creek Bypass is located along the southern boundary of the site extending from Franquette Avenue to the west and Summerfield Road to the east. It is an underground stormwater conduit that diverts a portion of the flow from Spring Creek and Sierra Park Creek to address local flooding problems. It eventually reconnects to Spring Creek at Franquette Avenue. However, stormwater from the site does not drain to this structure other than what is discharged by overland runoff into Sierra Park Creek and Spring Creek. The locations of the creeks and Spring Creek Diversion structure are shown on Figures 3-3 to 3.5 in Chapter 3, Project Description, of this Draft EIR.

### Groundwater

According to the California Division of Water Resources (DWR), the city and the western two-thirds of the Southeast Greenway Area lie within the Santa Rosa Plain Groundwater Subbasin, as shown on Figure 4.8-2.<sup>9</sup> The eastern third of the Southeast Greenway Area is not within any groundwater basin. The Santa Rosa Plain is bounded on the northwest by the middle reach of the Russian River floodplain, on the west by the upland hills of western Sonoma County, on the south by a series of low hills just south of Cotati, and on the east by mountains. The groundwater basin provides rural residential, municipal, agricultural, and industrial water supplies, and base flow to streams and surface water bodies. There are over 12,000 permitted water wells in the basin. The City's Water Department is the water purveyor for the residents and customers within the city boundaries. The Water Department receives 90 to 95 percent of its water supply from the SCWA, which is primarily surface water from the Russian River. The remaining 5 to 10 percent comes from the City's two municipal groundwater production wells.<sup>10</sup> The City also has a test boring in the Southeast Greenway Area and plans to develop groundwater well facilities in the Southeast Greenway Area for emergency water supply. According to the City's *2015 Urban Water Management Plan*, there are sufficient water supplies for normal, single-dry, and multiple dry years through 2040. According to the State Water Resources Control Board's (SWRCB's) Geotracker website, shallow groundwater in the vicinity of the Southeast Greenway Area is approximately 13.5 to 18.5 feet below ground surface (bgs).<sup>11</sup> Therefore, it is possible that future housing and/or commercial development would require construction dewatering if subterranean parking or deep excavations are necessary. Also, the construction of bridges or pedestrian paths over the three creeks that cross the Southeast Greenway Area may require diversion dams. Future potential development resulting from implementation of the proposed project would be required to develop and submit a construction dewatering plan with the permit application to the City and monitoring during construction would be conducted to comply with the provisions of the NPDES permit. For additional discussion of groundwater as it relates to water supply, see Chapter 4.14, Utilities and Service Systems, of this Draft EIR.

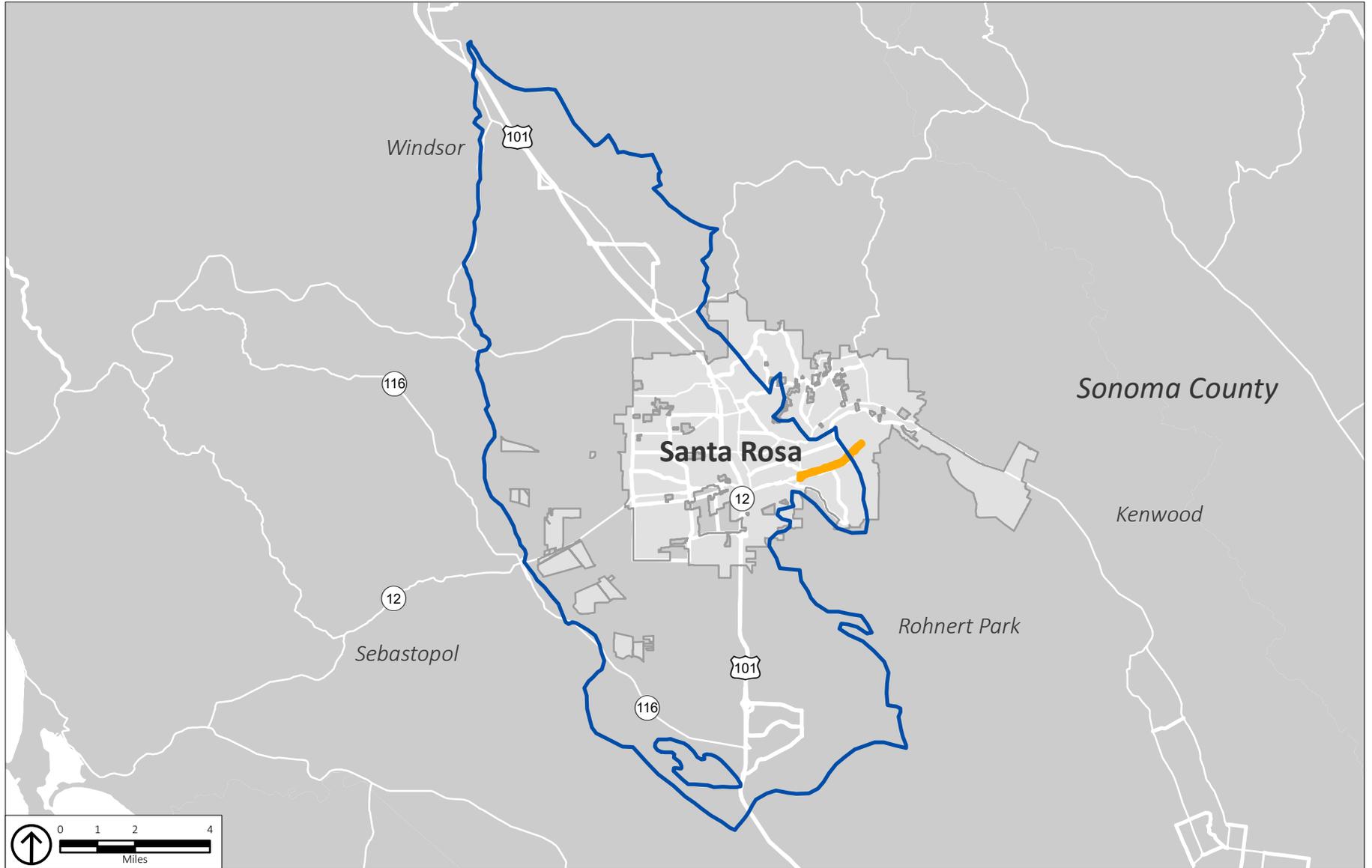
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<sup>9</sup> California Division of Water Resources (DWR), 2016. *California's Groundwater, Bulletin 118 – Interim Update 2016*.

<sup>10</sup> City of Santa Rosa, 2017. *Santa Rosa Water Department – Groundwater*. Accessed at <http://ci.santa-rosa.ca.us/857/Groundwater>, on June 8, 2017.

<sup>11</sup> State Water Resources Control Board (SWRCB), 2017. GeoTracker website – remediation case for Santa Rosa Fire Station at 1775 Yulupa Avenue. Accessed at [https://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0609750796](https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0609750796) on June 7, 2017.

## HYDROLOGY AND WATER QUALITY



Source: California Department of Water Resources, 2017; City of Santa Rosa, 2017; PlaceWorks, 2017.

-  Southeast Greenway
-  Santa Rosa Plain
-  City Limit

Figure 4.8-2  
Santa Rosa Plain Groundwater Subbasin

## HYDROLOGY AND WATER QUALITY

### Water Quality

The North Coast RWQCB monitors surface water quality through implementation of the *Basin Plan* and designates beneficial uses for surface water bodies and groundwater within the city and the surrounding communities. The beneficial uses of the surface water bodies to which stormwater from the site would discharge are summarized in Table 4.8-1.

**TABLE 4.8-1 DESIGNATED BENEFICIAL USES OF SURFACE WATERS NEAR PROJECT SITE**

Water Body	Designated Beneficial Use
<b>Surface Water</b>	
Laguna Hydrologic Subarea	MUN (potential), AGR, IND, PRO (potential), GWR, FRSH, NAV, POW, REC1, REC2, COMM, WARM, COLD, WILD, RARE, MIGR, SPWN, SHELL (potential), AQUA (potential)
Santa Rosa Hydrologic Subarea	MUN, AGR, IND, PRO (potential), GWR, NAV, POW (potential), REC1, REC2, COMM, WARM, COLD, WILD, RARE, MIGR, SPWN, SHELL (potential), AQUA (potential)
Mark West Hydrologic Subarea	MUN, AGR, IND, PRO (potential), GWR, FRSH, NAV, POW (potential), REC1, REC2, COMM, WARM, COLD, WILD, RARE, MIGR, SPWN, SHELL (potential), AQUA (potential)
<b>Groundwater</b>	
Santa Rosa Valley	MUN, AGR, IND, PRO (potential)

Notes: All beneficial uses are existing uses, except where noted as potential. MUN = Municipal and Domestic Supply, AGR = Agricultural Supply, IND = Industrial Service Supply, PRO = Industrial Process Supply, GWR = Groundwater Recharge, FRSH = Freshwater Replenishment, NAV = Navigation, POW = Hydropower Generation, REC1 = Water Contact Recreation, REC2 = Non-Contact Water Recreation, COMM = Commercial and Sport Fishing, WARM = Warm Freshwater Habitat, COLD = Cold Freshwater Habitat, WILD = Wildlife Habitat, RARE = Rare, Threatened, or Endangered Species, MIGR = Migration of Aquatic Organisms, SPWN = Spawning, Reproduction, and/or Early Development, SHELL = Shellfish Harvesting,, AQUA = Aquaculture.  
Source: North Coast RWQCB. Water Quality Control Plan.

In accordance with Section 303(d) of the Clean Water Act, the State must present to USEPA a list of impaired water bodies that do not meet water quality standards. Once a water body has been placed on the 303(d) list of impaired waters, states are required to develop a Total Maximum Daily Load (TMDL) to address each pollutant causing impairment. Santa Rosa Creek and its tributaries are listed as impaired for indicator bacteria, sedimentation/siltation, and temperature. TMDLs for these pollutants are currently under development by the North Coast RWQCB.

The Basin Plan also contains water quality criteria for groundwater. The Southeast Greenway Area is within the Santa Rosa Plain groundwater subbasin. Groundwater in the Santa Rosa area generally meets or exceeds primary and secondary drinking water standards for municipal use. Naturally occurring elements such as iron, manganese, boron, and arsenic are widely variable in groundwater and can pose problems in some areas.<sup>12</sup> In order to protect the quality and beneficial reuse of groundwater, the City as well as other cities and water districts in the area developed a Salt and Nutrient Management Plan in 2013 to manage salts, nutrients, and other significant chemical compounds on a watershed or basin-wide basis.<sup>13</sup>

Groundwater contamination can result from releases of hazardous materials from underground storage tanks or historical industrial activities. There are no RWQCB or Department of Toxic Substance Control

<sup>12</sup> City of Santa Rosa, 2016. *Urban Water Management Plan*.

<sup>13</sup> City of Santa Rosa, 2016. *Urban Water Management Plan*.

## HYDROLOGY AND WATER QUALITY

(DTSC) hazardous waste cleanup sites within or in close proximity to the Southeast Greenway Area that would pose a threat due to the migration of contaminated groundwater.<sup>14</sup> If groundwater dewatering activities are required as part of the construction efforts, it does not appear that contaminated groundwater would be present beneath the Southeast Greenway Area.

### Flooding

FEMA prepares maps of the 100-year floodplains for communities in the United States. For areas within the 100-year floodplain, there is a one percent chance of flooding for any given year and these areas are considered to be at high-risk. Maps are also available for 500-year floods, which mean that in any given year, the risk of flooding in the designated area is 0.2 percent. Areas within the 100-year floodplain that are financed by federally backed mortgages are subject to mandatory federal insurance requirements and building standards to reduce flood damage. According to FEMA Maps 06097C0741F and 06097C0733E, the Southeast Greenway Area is outside of the 100-year floodplain, except for a small portion of the site on either side of Matanzas Creek, which crosses the Southeast Greenway Area just west of Hoen Avenue. The area of the Southeast Greenway Area that is within the 100-year floodplain is shown on Figure 4.8-3. It is not anticipated that any housing or structures would be constructed within this small area of the 100-year floodplain since they have been designated as creek enhancement or restoration area in the General Plan 2035.

### Dam Inundation

Dam failure is the uncontrolled release of impounded water behind a dam. Flooding, earthquakes, blockages, landslides, lack of maintenance, improper operation, poor construction, vandalism, and terrorism can all cause a dam to fail.<sup>15</sup> Dam failure can occur with little warning. Intense storms may produce floods in a few hours or even minutes for upstream locations. Flash floods occur within six hours of the beginning of heavy rainfall, and dam failure may occur within hours of the first signs of breaching. Other types of failures and breaches can take much longer to occur, from days to weeks. However, dam failure is a very rare occurrence. There is no historic record of dam failure in Sonoma County or Santa Rosa.<sup>16</sup>

The California Office of Emergency Services (CalOES) is required by State law to work with State and federal agencies, dam owners and operators, municipalities, floodplain managers, planners, and the public to make available dam inundation maps.<sup>17</sup> Dam inundation maps are used in the preparation of *Local Hazard Mitigation Plans* (LHMPs) and *General Plan Safety Element* updates. In addition, CalOES requires all dam owners to develop *Emergency Action Plans* (EAPs) for warning, evacuation, and post-flood actions in the event of a dam failure.

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<sup>14</sup> State Water Resources Control Board (SWRCB), *Geotracker Database*. Accessed on July 7, 2017 at <http://geotracker.waterboards.ca.gov/>.

<sup>15</sup> California Office of Emergency Services, 2013, *California Multi-Hazard Mitigation Plan*.

<sup>16</sup> Sonoma County, 2011, *Sonoma County Hazard Mitigation Plan*.

<sup>17</sup> California Office of Emergency Services, 2013, *California Multi-Hazard Mitigation Plan*.

## HYDROLOGY AND WATER QUALITY



Source: FEMA National Flood Hazard Layer, 2017; City of Santa Rosa, 2017; PlaceWorks, 2017.

- Southeast Greenway
- 100-Year Floodplain
- Spring Lake
- Creeks

Figure 4.8-3  
100-Year Floodplain

## HYDROLOGY AND WATER QUALITY

Portions of the Southeast Greenway Area are within the dam inundation zone of Matanzas Creek Reservoir. This dam is owned and operated by SCWA as a flood protection facility. It was constructed in 1963 and has a capacity of 1,500 acre feet. It is an earth dam with a height of 95 feet and crest length of 685 feet.<sup>18</sup> According to the CalOES dam inundation map, there are two portions of the site to the west and east that are within the dam inundation zone. The dam inundation zones at the site range from 675 to 1,000 feet in width. In the event of a major earthquake or catastrophic event, the dam inundation map indicates that flood waters would reach the Southeast Greenway Area in approximately 35 minutes. This should be sufficient time to implement evacuation efforts. Flood waters at the site would be limited per the CalOES dam inundation footprint and site elevations.

The State of California, Division of Safety of Dams (DSOD) inspects and monitors all jurisdictional dams through the Dam Safety Program. The dams are inspected twice a year and continually monitored for seepage and settlement. The Sonoma County Emergency Management Division coordinates preparedness efforts to mitigate against, plan for, respond to, and recover from natural hazards, including the possibility of dam failure.

### Tsunami, Seiche, and Mudflows

#### *Tsunami*

A tsunami is a series of traveling ocean waves generated by a rare, catastrophic event, which could include an earthquake, submarine landslide, or volcanic eruption. Tsunamis can travel over the ocean surface at speeds of 400 to 500 miles per hour (mph) or more, and wave heights at the shore can range from inches to an excess of 50 feet. Factors influencing the size and speed of a tsunami include the source and magnitude of the triggering event, as well as off-shore and on-shore topography. The Southeast Greenway Area is approximately 26 miles from San Pablo Bay and 21 miles from the Pacific Ocean and is not within any mapped tsunami inundation zone.

#### *Seiche*

A seiche is an oscillation wave generated in a closed or partially closed body of water, which can be compared to the back-and-forth sloshing in a bath tub. Seiches can be caused by winds, changes in atmospheric pressure, underwater earthquakes, tsunamis, or landslides into the water body. Bodies of water such as bays, harbors, reservoirs, ponds, and swimming ponds can experience seiche waves up to several feet in height during a strong earthquake. The Southeast Greenway Area is approximately 26 miles from San Pablo Bay and 21 miles from the Pacific Ocean. Accordingly, there are no bodies of water large enough near the Southeast Greenway Area that could result in a seiche impacting the site. Although a seiche could theoretically occur at Matanzas Creek Reservoir, the potential flooding impact would be much less than the mapped inundation zone and it is unlikely that any flood water would reach the Southeast Greenway Area.

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<sup>18</sup> California Division of Dam Safety, 2017. Jurisdictional Dams. Accessed at <http://www.water.ca.gov/damsafety/docs/Jurisdictional2017.pdf> on June 8, 2017.

## HYDROLOGY AND WATER QUALITY

### *Mudflows*

Mud and debris flows are mass movements of dirt and debris that occur after intense rainfall, earthquakes, and severe wildfires. The speed of a slide depends on the amount of precipitation, steepness of the slope, and alternate freezing and thawing of the ground. The Southeast Greenway Area is in a relatively flat area of the City and is not in a mapped rainfall induced landslide area, according to the Association of Bay Area Governments.<sup>19</sup>

### 4.8.2 STANDARDS OF SIGNIFICANCE

Adoption and implementation of the proposed project would have a significant environmental impact if it would place housing within a 100-year flood hazard area or expose people or structures to existing hazards from flooding, including flooding as a result of the failure of a levee or dam or if the project site would be potentially be inundated by seiche, tsunami, or mudflow or exacerbate any of these conditions per the December 2015 CA Supreme Court ruling in *California Building Industry Association v. Bay Area Air Quality Management District*. As previously discussed the FIRM shows that a small portion of the Southeast Greenway Area is within a 100-year floodplain (i.e., the floodplain associated with Matanzas Creek which crosses the Southeast Greenway Area just west of Hoen Avenue). However, the proposed project would not allow housing or any structures immediately adjacent to Matanzas Creek or within the 100-year floodplain. Further, while the Southeast Greenway Area is located within the Matanzas Creek dam inundation zone, future potential development under the proposed project would not cause or exacerbate failure of the dam. For example, a major seismic event, if sufficiently intense, would be the most likely cause of dam failure. The probability of dam failure is extremely low and there is no historic record of dam failure in Sonoma County or Santa Rosa.<sup>20</sup> Dams in California are continually monitored by various governmental agencies, including the California Division of Safety of Dams (DSOD), which conducts inspections twice a year and reviews all aspects of dam safety. The SCWA also maintains an Emergency Action Plans (EAP) that include procedures for damage assessment and emergency warnings. In addition, Sonoma County addresses the possibility of dam failure in the Hazard Mitigation Plan (HMP), which also provides emergency response actions. On a similar note, the adoption and implementation of the proposed project would not cause or exacerbate the effects of a seiche, tsunami or mudflow. The Southeast Greenway Area is approximately 26 miles from San Pablo Bay and 21 miles from the Pacific Ocean and is not within any mapped tsunami inundation zone. According to the ABAG landslide maps,<sup>21</sup> the Southeast Greenway Area is not within an area susceptible to mudflows. Although there could be a seiche associated with Matanzas Creek reservoir in the event of a large magnitude earthquake, the flooding impact would be much less than the area shown in the dam inundation map and most likely would not reach the Southeast Greenway Area. Accordingly, these topics are not discussed further in this Draft EIR.

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<sup>19</sup> Association of Bay Area Governments (ABAG), 2017. Rainfall Induced Landslide Areas. Accessed at <http://gis.abag.ca.gov/website/Hazards/?hlyr=existingLndslid> on June 8, 2017.

<sup>20</sup> Sonoma County, 2011, *Sonoma County Hazard Mitigation Plan*.

<sup>21</sup> United States Geological Survey, 1997, San Francisco Bay Region Landslide Information: Map Showing Principal Debris-Flow Source Areas, <https://pubs.usgs.gov/of/1997/of97-745/scl-sef.pdf>, accessed on February 23, 2017.

## HYDROLOGY AND WATER QUALITY

Implementation of the proposed project would result in a significant impact if it would:

1. Violate any water quality standards or discharge requirements.
2. 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.
3. 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.
4. 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.
5. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
6. Otherwise substantially degrade water quality.

### 4.8.3 IMPACT DISCUSSION

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<b>HYDRO-1</b>	<b>Implementation of the proposed project would not violate any water quality standards or discharge requirements.</b>
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Increasing the total area of impervious surfaces can result in a greater potential to introduce pollutants to receiving waters. Urban runoff can carry a variety of pollutants, such as oil and grease, metals, sediments, and pesticide residues from roadways, parking lots, rooftops, and landscaped areas, and deposit them into an adjacent waterway via the storm drain system.

#### Construction Impacts

Clearing, grading, excavation, and construction activities have the potential to impact water quality through soil erosion and increased silt and debris discharged into runoff. Additionally, the use of construction materials such as fuels, solvents, and paints may present a risk to surface water quality. Temporary storage of construction materials and equipment in work areas or staging areas could create the potential for a release of hazardous materials, trash, or sediment to the storm drain system.

Because this is a programmatic EIR, it is not known at this time the scope or details for individual projects within the Southeast Greenway Area. However, if construction of future potential development projects would disturb more than one acre of soil, compliance with the NPDES General Construction Permit would be required. The GCP requires the submittal of Permit Registration Documents (PRDs) to the SWRCB prior to the start of construction. The PRDs include a Notice of Intent (NOI), risk assessment, site map, annual fee, signed certification statement, SWPPP, and post-construction water balance calculations. The SWPPP describes the incorporation of BMPs to control sedimentation, erosion, and the potential for hazardous materials contamination of runoff during construction. New requirements by the SWRCB also require the SWPPP to include post-construction treatment measures aimed at minimizing stormwater runoff. The

## HYDROLOGY AND WATER QUALITY

proposed Plan must detail the BMPs that would be implemented to minimize the potential for stormwater pollutants.

Consistent with General Plan 2035 Policy OSC-D-9, construction adjacent to creek channels must preserve natural topography and vegetation along the creek, and must not disrupt or pollute the waterways. In addition, erosion and sedimentation control measures are required to maintain an operational drainage system and preserve drainage capacity during construction, in accordance with General Plan 2035 Policy PSF-I-3. Furthermore, the proposed Land Use and Livability Policy LUL-NN-1 requires the City to restore or enhance the areas around the three creeks that cross the Southeast Greenway: Matanzas Creek, Sierra Park Creek, and Spring Creek, consistent with the Citywide Creek Master Plan, which would further reduce any potential water quality impacts. Accordingly, adoption of the proposed project, with the implementation of the above standard permit conditions, would not result in significant construction-related water quality impacts. Construction-related impacts would be *less than significant*.

### Operational Impacts

Runoff from residential and commercial properties and parking lots typically contain oils, grease, fuel, antifreeze, and byproducts of combustion (such as lead, cadmium, nickel, and other metals), as well as fertilizers, herbicides, pesticides, and other pollutants. Precipitation at the beginning of the rainy season may result in an initial stormwater runoff (first flush) with high pollutant concentrations. Operational and maintenance impacts associated with the trail portion of the project would result in minimal impacts on water quality.

Water quality in stormwater runoff is regulated locally by the Santa Rosa Area MRP Permit, which requires compliance with the City of Santa Rosa and County of Sonoma's *Low Impact Development (LID) Technical Design Manual*, recently revised in 2017. Adherence to these guidelines require new development projects to incorporate LID design strategies and BMPs to reduce pollutants in runoff to the maximum extent practicable. Because this is a programmatic EIR, no development is being proposed. Therefore, the stormwater LID features and stormwater treatment measures that would result from future potential development will be implemented at the time those projects were to move forward.

The proposed project would incorporate minimization of impervious surfaces to the extent feasible, measures to detain or infiltrate runoff from stormwater, and agreements to ensure that the stormwater treatment and control facilities are maintained in perpetuity. These LID features are required on new developments that create 10,000 square feet or more of impervious surface.

In accordance with General Plan 2035 Policy PSF-I-8, the developer shall prepare and implement a Standard Urban Storm Water Mitigation Plan (SUSMP) in order to reduce pollutants and runoff flows from operation of the proposed project. Likewise, dedication, improvement, and maintenance of stormwater flow and retention areas are required as a condition of approval under General Plan 2035 Policy PSF-I-1. Pursuant to General Plan 2035 Policy PSF-I-9, the proposed project will also consider the installation of creekside pathways, consistent with the Citywide Creek Master Plan and Bicycle and Pedestrian Master Plan, when possible as part of stormwater improvement projects along the city's creek corridors. Finally, the City will cooperate with the SCWA and the North Coast RWQCB to conduct regular assessment of stormwater drainage facilities, to ensure that adequate drainage capacity is maintained throughout the

## HYDROLOGY AND WATER QUALITY

system to accommodate increases in residential and commercial development, as stipulated in General Plan 2035 Policy PSF-I-5.

Prior to the issuance of grading permits, a SUSMP will be prepared by the project applicant and submitted to the City for review and approval. The SUSMP will describe all of the site design, source control, and treatment measures as well as an operations and maintenance (O&M) plan that describes how the treatment control measures will be maintained for perpetuity. As a rule of thumb, the design goal is to infiltrate and/or reuse 100 percent of the calculated volume of stormwater generated by the developed site for the 85<sup>th</sup> percentile, 24-hour rain event.

Required compliance with the MRP and the implementation of LID and BMP site design features would render any potential operational impacts to water quality *less than significant*.

**Significance Without Mitigation:** Less than significant.

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**HYDRO-2      Implementation of the proposed project would not 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).**

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Implementation of the proposed project could result in a significant impact if potential future development would substantially deplete groundwater supplies or interfere substantially with groundwater recharge. The city is served by the Santa Rosa Water Department, which obtains 90 to 95 percent of its water supply from the SCWA; the Agency uses surface water from the Russian River. The remaining 5 to 10 percent comes from the City's two municipal groundwater production wells.<sup>22</sup> According to the City's *2015 Urban Water Management Plan*, the City has sufficient water supplies for normal, single-dry, and multiple dry years through 2040. Therefore, implementation of the project should not interfere with groundwater recharge.

The new trail, bike path, and recreational space associated with the proposed project would not lead to an increase in water demand. Future potential development of a joint school facility, plazas/trailheads, public gathering place, urban agriculture, and commercial and residential uses associated with the proposed project would create additional water demand. Additional discussion of the impacts associated with water supply is provided in Chapter 4.14, Utilities and Service Systems, of this Draft EIR. In addition, the proposed project would protect onsite groundwater recharge areas, including creeks and riparian corridors in accordance with General Plan 2035 Policy OSC-I-6, and implement LID features that prioritize infiltration. Additionally, proposed Land Use and Livability Policy LUL-NN-3 requires the City to increase stormwater infiltration and groundwater recharge in the Southeast Greenway Area. This would allow for percolation, groundwater recharge, and minimize stormwater runoff from the site, thus further reducing potential impacts to groundwater recharge.

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<sup>22</sup> City of Santa Rosa, 2016. *Santa Rosa Water Department – Groundwater*. Accessed at , 2016.

## HYDROLOGY AND WATER QUALITY

Future potential construction activities could result in short-term impacts to groundwater if the water table is high and construction dewatering was required. SWRCB's Geotracker website indicates that groundwater in the vicinity of the project site is approximately 13.5 to 18.5 feet bgs<sup>23</sup>. The trail, bike path, and recreational portion of the project would involve minimal grading and/or excavation and groundwater should not be encountered during construction activities. Groundwater may be encountered during construction associated with the residential and/or commercial aspects of the project. If temporary dewatering is necessary with discharge to surface water, then compliance with the North Coast RWQCB Order No. R1-2009-0045 is required. For discharge to the sanitary sewer, a short-term (one year) industrial wastewater discharge permit must be obtained from the City. Construction dewatering would be a temporary impact and the shallow aquifer is not used for potable water supply. Therefore, the impact to groundwater recharge would be *less than significant*.

There is sufficient water in future years for the city and if construction dewatering is necessary, it would be a short-term, temporary impact. Therefore, implementation of the proposed project would have a *less-than-significant* impact with respect to groundwater supplies and groundwater recharge and no mitigation measures are required.

**Significance Without Mitigation:** Less than significant.

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<b>HYDRO-3</b>	<b>Implementation of the proposed 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 substantially increase the amount of surface runoff in a manner which would result in substantial erosion or siltation on- or off-site.</b>
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Potential future development under the proposed project would not involve the alteration of a stream or river but could result in pathways, commercial, and residential uses near three existing creeks, including Matanzas Creek, Spring Creek, and Sierra Park Creek. Ground disturbance during future potential construction could result in a temporary alteration in drainage patterns. However, construction would be subject to the requirements of the GCP and would require preparation of a SWPPP to minimize erosion and siltation impacts. Pursuant to the MRP, any future projects would be required to implement construction phase BMPs, post-construction design measures that encourage infiltration in pervious areas, and post-construction source control measures to help keep pollutants out of stormwater. In addition, post-construction stormwater treatment measures are required for projects that create or replace 10,000 square feet or more of impervious surface.

Further, any potential future development under the proposed project would be required to comply with the General Plan 2035's following policies. In general, the policies serve to protect water resources in the city, including streams and drainage areas onsite.

- **Policy PSF-A-20:** Encourage multiple use of waterways, including:
  - Flood control;

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<sup>23</sup> State Water Resources Control Board (SWRCB), 2017. Geotracker website accessed at <http://geotracker.waterboards.ca.gov/gama/gamamap/public/default.asp?findaddress=True&city=Santa%20Rosa> on May 8, 2017.

## HYDROLOGY AND WATER QUALITY

- Wildlife habitats;
  - Passive open space uses;
  - Nature study;
  - Pedestrian and bicycle circulation; and
  - Other compatible outdoor uses.
- **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-9:** Consider installation of creekside pathways, consistent with the Citywide Creek Master Plan and Bicycle and Pedestrian Master Plan, when possible as part of stormwater improvement projects along the city's creek corridors.

With implementation of these erosion and sediment control measures and regulatory provisions to limit runoff, the proposed project would not result in significant increases in erosion and sedimentation and impacts would be *less than significant*.

Given the nature of the proposed project, there is limited potential for erosion or siltation to occur once future potential projects are constructed. In addition, the requirements to implement LID and BMP features, including source control and design measures to control stormwater runoff, would further reduce the potential for erosion or siltation. In addition, any future potential projects would be required to implement stormwater treatment measures to contain site runoff, using specific numeric sizing criteria based on volume and flow rates.

Pursuant to the MRP, any future potential projects would be required to implement construction phase BMPs, post-construction design measures that encourage infiltration in pervious areas, and post-construction source control measures to help keep pollutants out of stormwater. In addition, post-construction stormwater treatment measures are required for projects that create or replace 10,000 square feet or more of impervious surface. With implementation of these erosion and sediment control measures and regulatory provisions to limit runoff, any future potential development associated with the proposed project would not result in significant increases in erosion and sedimentation and impacts would be *less than significant*.

**Significance Without Mitigation:** Less than significant.

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<b>HYDRO-4</b>	<b>Implementation of the proposed 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 substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.</b>
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As described above under impact discussion HYDRO-3, the proposed project would not alter the course of a stream or river but will allow the future potential construction of a pathway and commercial and residential buildings near the existing creeks onsite, including Matanzas Creek, Spring Creek, and Sierra Park Creek. Potential future development under the proposed project would take place along the CalTrans right-of-way, which is currently undeveloped and thus would result in an increase in impervious surfaces with construction of buildings and associated landscaping and surface cover. However, as shown on Figure

## HYDROLOGY AND WATER QUALITY

3-9 in Chapter 3, Project Description, of this Draft EIR, this change in impervious surfaces would be limited and therefore would not significantly change drainage patterns or the rate and amount of surface runoff. In compliance with the provisions of the MRP, the project would implement site design, source control, and stormwater treatment measures to control the amount of stormwater runoff and therefore minimize the potential for on- or off-site flooding.

Further, the General Plan 2035 includes the following goals and policies with which potential future development under the proposed project would be required to comply. In general, the policies serve to prevent flooding and maintain the hydrological role of creeks and rivers in Santa Rosa.

- **Policy OSC-D-12:** New development should maintain an adequate setback from channelized waterways to recognize the 100-year flood elevation, and allow for stream corridor restoration. Setbacks identified in the Zoning Code should serve as minimum setbacks. Larger setbacks are encouraged in accordance with Restoration Concept Plans to meet restoration and enhancement goals.
- **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. Creek beds that are dry most of the year can provide flood retention needed for public safety.
- **Policy NS-D-4:** Incorporate features and appropriate standards that reduce flooding hazards.
- **Policy NS-D-6:** Evaluate flood hazards prior to approval of development projects within a Federal Emergency Management Agency (FEMA) designated flood zone. Ensure that new development within flood zones is designed to be protected from flooding without negatively affecting adjacent areas.

Compliance with the MRP along with the General Plan 2035 policies listed above would ensure that the rate and/or volume of surface runoff would not be substantially increased in a manner that results in on-site or off-site flooding and therefore, this impact is *less than significant*.

**Significance Without Mitigation:** Less than significant.

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<b>HYDRO-5</b>	<b>Implementation of the proposed project would not 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.</b>
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Potential future commercial, residential and school facilities land uses would not cover substantial portions of the 57-acre Southeast Greenway Area and therefore, the increase in impervious surfaces would not be significant. In addition, once detailed engineering drawings have been drafted and submitted for future projects, the City of would review the future proposal's planned connection to the City's storm drain system and will determine whether the storm drain can accept the stormwater runoff from the site without exceeding the capacity of the storm drain system. With the implementation of stormwater treatment control measures in accordance with the MRP and LID guidelines, the amount of stormwater runoff from the site would be controlled. Therefore the impact on the capacity of existing or planned storm drain systems would be *less than significant*.

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## HYDROLOGY AND WATER QUALITY

Runoff from the trail portions of the site is expected to drain via sheetflow to adjacent vegetated or undeveloped areas where it would infiltrate into the soil. Therefore, stormwater runoff would not require a connection to the existing storm drain system. The proposed project will cross several small drainage courses and the project will be designed to allow water to continue draining along its existing natural course. Such improvements would not change the capacity of the existing drainage channels or stormwater conveyance systems. Therefore, the Project would not result in stormwater runoff volumes that could exceed the capacity of existing or planned stormwater drainage systems, and the impact would be *less than significant*.

In addition, potential future development under the proposed project would comply with the following General Plan 2035 policies aimed at decreasing polluted runoff and maintaining the quality of the stormwater drainage systems in the city.

- **Policy PSF-I-1:** Require dedication, improvement, and maintenance of stormwater flow and retention areas as a condition of approval.
- **Policy PSF-I-4:** Require measures to maintain and improve the storm drainage system, consistent with goals of the Santa Rosa Citywide Creek Master 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 North Coast Regional Water Quality Control Board to conduct 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 OSC-E-1:** Maintain creek areas using practices that protect and support fish and wildlife as well as help retain hydraulic capacity.
- **Policy NS-D-5:** Apply design standards and guidelines to new development that help reduce project runoff into local creeks, tributaries, and drainage ways.

As previously discussed, BMP and LID features will be implemented during any future construction and project operation that will control and reduce the potential for sediment, debris, and other pollutants to be discharged into the storm drain or creeks. With implementation of these measures, the project would not result in substantial additional sources of polluted runoff and impacts would be *less than significant*.

**Significance Without Mitigation:** Less than significant.

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### **HYDRO-6      Implementation of the proposed project would not otherwise substantially degrade water quality.**

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As described under impact discussions HYDRO-1, BMPs and LID measures will be implemented across the Southeast Greenway Area during future potential construction and operation of the proposed project. These measures will control and prevent the release of sediment, debris, and other pollutants into the storm drain system. Implementation of BMPs during future construction will be in accordance with the

## HYDROLOGY AND WATER QUALITY

provisions of the SWPPP, which will minimize the release of sediment, soil, and other pollutants. In addition, the multi-use trail would be used by pedestrians, bicyclists, and equestrians with no motorized travel (except for routine maintenance). Therefore, this portion of the project would not generate pollutants, such as motor oil, trace metals, grease, and fuels associated with road contaminants. The trail would require minimal maintenance so the potential for the discharge of pollutants such as nutrients, organic compounds, or pesticides/herbicides that could impact stormwater runoff would be minimal.

Operational BMPs will be required to meet the MRP and the General Plan 2035 policies. These policies provide requirements to maintain water quality in Santa Rosa through the incorporation of site design, source control, and treatment control measures to treat and control runoff before it enters the storm drain system

- **Policy NS-D-3:** Require that new development and redevelopment projects meet the requirements of the Storm Water Low Impact Development Technical Design Manual to reduce impermeable surface area, increase surface water infiltration, and minimize surface water runoff during storm events. Such features may include:
  - Additional landscape areas;
  - Vegetated swales with bioretention;
  - Rain gardens; and
  - Pervious pavement.
- **Policy OSC-D-2:** Protect high quality wetlands and vernal pools from development or other activities as determined by the Vernal Pool Ecosystem Preservation Plan.
- **Policy OSC-E-3:** Continue to support efforts towards healthy, clean, and safe creeks.
- **Policy OSC-D-9:** Ensure that construction adjacent to creek channels is sensitive to the natural environment. Ensure that natural topography and vegetation is preserved along the creek, and that construction activities do not disrupt or pollute the waterway.

Compliance with the MRP, implementation of BMP and LID features, and adherence to the City's General Plan policies would ensure that the project does not substantially degrade water quality and the impact would be *less than significant*.

**Significance Without Mitigation:** Less than significant.

## HYDROLOGY AND WATER QUALITY

### 4.8.4 CUMULATIVE IMPACTS

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**HYDRO-7**      **Implementation of the proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to hydrology and water quality.**

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The geographic context used for the cumulative assessment of water quality and hydrology impacts is the Laguna De Santa Rosa Watershed, which encompasses the entire city of Santa Rosa and the Southeast Greenway Area. Cumulative impacts can occur when impacts that are significant or less than significant from a proposed project combine with similar impacts from other past, present, or reasonably foreseeable projects in a similar geographic area.

As discussed previously, future potential development within the Southeast Greenway Area would require conformance with State and local policies that would reduce hydrology and water quality impacts to *less than significant* levels. Any new development within the city would be subject, on a project-by-project basis, to independent CEQA review, if necessary, as well as policies in the General Plan 2035, design guidelines, zoning codes, adherence to the City's *Storm Water Ordinance* and other applicable City requirements that reduce impacts related to hydrology and water quality. More specifically, potential changes related to stormwater quality, stormwater flows, drainage, impervious surfaces, and flooding would be minimized via the implementation of stormwater control measures, retention, and LID measures, and review by City personnel to integrate measures to reduce potential flooding impacts.

Compliance with the City's *Storm Water Ordinance*, Sonoma County's LID regulations, and the North Coast RWQCB's MRP would require BMPs and LID features to be included in any proposed project. These BMPs include site design, source control, and treatment control measures that provide both flow control and treatment to runoff before it enters the storm drain system or receiving water bodies. In addition, all projects that disturb over 1 acre or more would be required to prepare a SWPPP with erosion and sediment controls that address construction impacts. Projects would also be required to mitigate potential water quality impacts through preparation and implementation of a project-specific SUSMP.

All cumulative projects would be subject to similar permit requirements. The water quality regulations implemented by the North Coast RWQCB take a basin-wide approach and consider water quality impairment in a regional context. For example, the NPDES Construction Permit ties receiving water limitations and basin plan objectives to terms and conditions of the permit, and the MRP works with all municipalities to manage stormwater systems to be collectively protective of water quality. For these reasons, impacts to water quality for the Southeast Greenway Area are not cumulatively considerable and the cumulative impact would be *less than significant*.

**Significance Without Mitigation:** Less than significant.

## **HYDROLOGY AND WATER QUALITY**

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