4.10 HYDROLOGY AND WATER QUALITY

This chapter of the Draft Environmental Impact Report (EIR) describes the potential hydrology and water quality impacts associated with the adoption and implementation of the proposed project. This chapter describes the regulatory framework and existing conditions, identifies criteria used to determine impact significance, provides an analysis of the potential hydrology and water quality impacts, and identifies proposed General Plan 2050 goals, policies, and actions that would minimize any potentially significant impacts.

4.10.1 ENVIRONMENTAL SETTING

4.10.1.1 REGULATORY FRAMEWORK

Federal Regulations

Clean Water Act

The United States Environmental Protection Agency (EPA) is the lead federal agency responsible for water quality management and the Clean Water Act (CWA) is the principal statute governing water quality. It establishes the basic structure for regulating discharges of pollutants into the waters of the United States and gives the USEPA authority to implement pollution control programs. In California, the authority is delegated to the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs).

The CWA regulates direct and indirect discharge of pollutants; sets water quality standards for all contaminants in surface waters; and makes it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit is obtained under its provisions. The CWA mandates permits for wastewater and stormwater discharges; requires states to establish site-specific water quality standards; and regulates other activities that affect water quality, such as dredging and the filling of wetlands. The CWA also provides loans for the construction of wastewater treatment plants as well as nonpoint source pollution control and estuary protection projects through the Clean Water State Revolving Fund.

Permits to dredge or fill waters of the United States are administered by the United States Army Corps of Engineers (USACE) under Section 404 of the CWA. “Waters of the United States” are defined as territorial seas and traditional navigable waters, perennial and intermittent tributaries to those waters, lakes and ponds and impoundments of jurisdictional waters, and wetlands that have a surface connection with and are adjacent to jurisdictional waters. The regulatory branch of the USACE is responsible for implementing and enforcing Section 404 of the CWA and issuing permits. Any activity that discharges fill material and/or requires excavation in waters of the United States must obtain a Section 404 permit. Before issuing the permit, the USACE requires that an analysis be conducted to demonstrate that the proposed project is the least environmentally damaging alternative. Also, the USACE is required to comply with the National Environmental Policy Act before it may issue an individual Section 404 permit.

Under Section 401 of the CWA, every applicant for a Section 404 permit that may result in a discharge to a water body must first obtain State Water Quality Certification that the proposed activity will comply with State water quality standards. Certifications are issued in conjunction with USACE Section 404 permits for dredge and fill discharges. In addition, an application for Individual Water Quality Certification and/or Waste Discharge Requirements must be submitted for any activity that would result in the placement of dredged or fill material in waters of the State that are not jurisdictional to the USACE, such as isolated wetlands, to ensure that the proposed activity complies with State water quality standards. In California. The authority to either grant water quality certification or waive the requirement is delegated to the North Coast RWQCB (Region 1).

Under federal law, the EPA has published water quality regulations under Volume 40 of the Code of Federal Regulations. 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.

When water quality does not meet CWA standards and compromises designated beneficial uses of a receiving water body, Section 303(d) of the CWA requires that water body be identified and listed as "impaired." Once a water body has been designated as impaired, a Total Maximum Daily Load (TMDL) must be developed for the impairing pollutant(s). A TMDL is an estimate of the total load of pollutants from point, nonpoint, and natural sources that a water body may receive without exceeding applicable water quality standards, with a factor of safety included. Once established, the TMDL allocates the loads among current and future pollutant sources to the water body.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established by the CWA to regulate municipal and industrial discharges to surface waters of the United States, including discharges from municipal separate storm sewer systems (MS4s). 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. Under the NPDES program, all facilities that discharge pollutants into waters of the U.S. are required to obtain an NPDES permit.

Requirements for stormwater discharges are also regulated under this program. In California, the NPDES permit program is administered by the SWRCB through the nine RWQCBs. The City of Santa Rosa lies within the jurisdiction of the North Coast RWQCB (Region 1) and is subject to the waste discharge requirements of the Phase I MS4 Permit (Order No. R1-2014-0030; NPDES No. CA0025054) that regulates stormwater discharges from the City of Santa Rosa; portions of unincorporated Sonoma County; Sonoma

County Water Agency; the cities of Cotati, Cloverdale, Healdsburg, Rohnert Park, Sebastopol, and Ukiah; and the town of Windsor.

Under Provision Section D of the MS4 permit (Planning and Land Development), the co-permittees use their planning authorities to include appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. This goal is to be accomplished primarily through the implementation of low-impact development (LID) techniques. In addition, each co-permittee must develop a Hydromodification Control Plan that requires all new development or redevelopment projects that create or replace one acre or more of impervious surfaces to implement stormwater control measures such that post-development runoff volumes remain the same or lower than pre-development volumes.

National Flood Insurance Program

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 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. FEMA's minimum level of flood protection for new development is the 100-year flood event, also described as a flood that has a 1-in-100 chance of occurring in any given year. According to FEMA maps, there are several portions of the EIR Study Area within a 100-year floodplain.

As required by the FEMA regulations, all development constructed within the 100-year floodplain (as delineated on the Flood Insurance Rate Map) must be elevated so that the lowest floor is at or above the base flood elevation level. Local cities and counties have the authority to require the lowest floor to be at a higher elevation than the FEMA requirements to account for climate change and sea level rise. The term "development" is defined by FEMA as any human-made change to improved or unimproved real estate, including, but not limited to, buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials. Per these regulations, if development in these areas occurs, a hydrologic and hydraulic analysis must be performed prior to the start of development and must demonstrate that the development does not cause any rise in base flood elevation levels. Following completion of any development that changes existing 100-year floodplain boundaries, the NFIP directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a Flood Insurance Rate Map revision, as soon as practicable, but not later than six months after such data become available.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act provides the basic authority for the United States Fish and Wildlife Service (USFWS) to evaluate impacts to fish and wildlife from proposed water resource development projects. This act requires that all federal agencies consult with the USFWS, the National Marine Fisheries Service, and state wildlife agencies (i.e., the California Department of Fish and Wildlife [CDFW]) for activities that affect, control, or modify waters of any stream or bodies of water. Under this act, the

USFWS has responsibility for reviewing and commenting on all water resources projects. For example, the USFWS would provide consultation to the USACE regarding issuance of a Section 404 permit.

If a project may result in the "incidental take" of a listed species, an incidental take permit is required. An incidental take permit allows a developer to proceed with an activity that is legal in all other respects but that results in the "incidental taking" of a listed species. A Habitat Conservation Plan must also accompany an application for an incidental take permit. The purpose of a Habitat Conservation Plan is to ensure that the effects of the permitted action or listed species are adequately minimized and mitigated.

State Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Water Code Sections 13000 et seq.) is the basic water quality control law for California. This act established the SWRCB and divided the state into nine regional basins, each under the jurisdiction of a RWQCB. The SWRCB is the primary state agency responsible for the protection of California's water quality and groundwater supplies. The RWQCBs carry out the regulation, protection, and 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. As described previously, Santa Rosa is within the jurisdiction of the North Coast RWQCB (Region 1).

The Porter-Cologne Act also authorizes the SWRCB and RWQCBs to issue and enforce Waste Discharge Requirements, NPDES permits, Section 401 water quality certifications, or other approvals. Other State agencies with jurisdiction over water quality regulation in California include the California Department of Health Services for drinking water regulations, the CDFW, and the Office of Environmental Health and Hazard Assessment.

State Water Resources Control Board

In California, the SWRCB has broad authority over water quality control issues. 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. It also regulates public drinking water systems, NPDES wastewater discharges, water quality monitoring, water recycling programs, landfill disposal, water rights, and implements drought restrictions.

Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. Regional boundaries are based on watersheds, and water quality requirements are based on the unique differences in climate, topography, geology, and hydrology for each watershed. Each RWQCB makes water quality decisions for its region, including setting standards, issuing waste discharge requirements, determining compliance with these requirements, and taking appropriate enforcement actions. 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 City of Santa Rosa is within the jurisdiction of the North Coast RWQCB (Region 1), which regulates surface water and groundwater quality in the watershed that

encompasses the counties of Del Norte, Glenn, Humboldt, Lake, Marin, Mendocino, Modoc, Siskiyou, Sonoma, and Trinity.

SWRCB Construction General Permit

Construction activities that disturb one or more acres of land that could impact hydrologic resources must comply with the requirements of the newly reissued SWRCB Construction General Permit (Order WQ 2022-0057-DWQ; NPDES No. CAS000002), which was adopted on September 8, 2022, and becomes effective on September 1, 2023. Under the terms of the permit, applicants must file Permit Registration Documents (PRD) with the SWRCB prior to the start of construction. The PRDs include a Notice of Intent, risk assessment, site map, Stormwater 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.

Applicants must also demonstrate conformance with applicable best management practices (BMP) and prepare a SWPPP containing 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 site. 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 weekly visual monitoring program, a sampling program to ensure compliance with water quality standards, and on-site collection of samples and inspection of BMPs prior to, during, and after qualifying precipitation events. Water quality monitoring has a schedule based on the risk level of the site.

SWRCB Industrial General Permit

The Statewide General Permit for Stormwater Discharges Associated with Industrial Activities, Order No. 2014-0057-DWQ and amended by 2015-0122-DWQ (2018), implements the federally required stormwater regulations in California for stormwater associated with industrial activities that discharge to waters of the United States. This regulation covers facilities that are required by federal regulations or by the RWQCBs to obtain an NPDES permit. Dischargers are required to eliminate non-stormwater discharges, develop SWPPPs that include BMPs, conduct monitoring of stormwater runoff, and submit all compliance documents via the SWRCB's SMARTS program.

SWRCB Trash Amendments

On April 7, 2015, the SWRCB adopted an amendment to *The Water Quality Control Plan for Ocean Waters of California* to control trash. In addition, the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California added Part 1, *Trash Provisions*. Together, they are collectively referred to as "the Trash Amendments." The Trash Amendments apply to all surface waters of California and include a land-use-based compliance approach to focus trash controls on areas with high trash-generation rates. Areas such as high density residential, industrial, commercial, mixed urban, and public transportation stations are considered priority land uses. There are two compliance tracks for Phase I and Phase II MS4 permittees:

- Track 1: Permittees must install, operate, and maintain a network of certified full capture systems in storm drains that capture runoff from priority land uses.
- Track 2: Permittees must implement a plan with a combination of full capture systems, multi-benefit projects, institutional controls, and/or other treatment methods that have the same effectiveness as Track 1 methods.

The Trash Amendments provide a framework for permittees to implement their provisions. Full compliance must occur within 10 years of the permit, and permittees must also meet interim milestones such as average load reductions of 10 percent per year. The Trash Amendments require municipalities to install certified trash control systems, such as filters, on all catch basins no later than December 2, 2030.[1]

California Department of Fish and Wildlife

The CDFW protects streams, water bodies, and riparian corridors through the streambed alteration agreement process under Sections 1600 to 1616 of the California Fish and Game Code. The Fish and Game Code stipulates that it is "unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake" without notifying the CDFW, incorporating necessary mitigation, and obtaining a streambed alteration agreement. CDFW's jurisdiction extends to the top of banks and often includes the outer edge of riparian vegetation.

Sustainable Groundwater Management Act of 2014

In the midst of a major drought in 2014, a three-bill legislative package consisting of Assembly Bill (AB) 1739, Senate Bill (SB) 1168, and SB 1319, collectively known as the Sustainable Groundwater Management Act (SGMA), was signed into law on September 16, 2014.[2] The Governor's signing message states "a central feature of these bills is the recognition that groundwater management in California is best accomplished locally." Under SGMA, in groundwater basins that are designated as medium and high priority, local public agencies and groundwater sustainability agencies (GSA) must assess conditions in their local groundwater basins and then prepare groundwater sustainability plans (GSP).

California Water Code Section 13751: Water Wells

Section 13751 of the Water Code requires a well completion report (WCR) to be completed by each person who digs, bores, or drills a water well, cathodic protection well, groundwater monitoring well, or geothermal heat exchange well or abandons or modifies an existing well. The WCR should be filed with Department of Water Resources (DWR) within 60 days of the date that construction, alteration, abandonment, or destruction of a well is completed.[3] Completed WCRs are sent to and maintained at the DWR regional office that serves the area where the well is located.

[1] State Water Resources Quality Control Board, September 2022, Storm Water Program: Trash Implementation Program, https://www.waterboards.ca.gov/water_issues/programs/stormwater/trash_implementation.html, accessed April 4, 2023.

[2] Department of Water Resources, 2022, Sustainable Groundwater Management Act (SGMA), https://water.ca.gov/programs/groundwater-management/sgma-groundwater-management, accessed April 5, 2023.

[3] California Department of Water Resources, 2023, Well Completion Reports, https://water.ca.gov/Programs/Groundwater-Management/Wells/Well-Completion-Reports, accessed April 5, 2023.

California Plumbing Code

The latest version of the California Plumbing Code was issued in 2022 and became effective as of January 1, 2023. The code is updated on a three-year cycle. It specifies technical standards for the design, materials, workmanship, and maintenance of plumbing systems. One of the purposes of the plumbing code is to prevent conflicting plumbing codes within local jurisdictions. Among many topics covered in the code are water fixtures, potable and non-potable water systems, and recycled water systems. The City of Santa Rosa adopts the California Plumbing Code under SRCC Section 18-24.010, *Citation of California Plumbing Code*.

Water Conservation in Landscaping Act of 2006

The Water Conservation in Landscaping Act includes the State of California's Model Water Efficient Landscape Ordinance (MWELO), which requires cities and counties to adopt landscape water conservation ordinances. The MWELO was revised in July 2015 via Executive Order B-29-15 to address the ongoing drought and to build resiliency for future droughts. State law requires all land use agencies, which includes cities and counties, to adopt an ordinance that is at least as efficient as the MWELO prepared by DWR.

The 2015 revisions to the MWELO improve water savings in the landscaping sector by promoting efficient landscapes in new developments and retrofitted landscapes. The revisions increase water-efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, greywater usage, and on-site stormwater capture, and by limiting the portion of landscapes that can be covered in turf. New development projects that include landscape areas of 500 square feet or more, and rehabilitated landscape projects with an area equal to or greater than 2,500 square feet, are subject to these requirements.. This applies to residential, commercial, industrial, and institutional projects that require a permit, plan check, or design review.[4] The City of Santa Rosa adopts the MWELO Ordinance in the Santa Rosa City Code (SRCC) Title 14, Chapter 14-30, *Water Efficient Landscape*.

Regional Regulations

North Coast Basin Water Quality Control Plan

The City of Santa Rosa is within the jurisdiction of the North Coast RWQCB (Region 1). The North Coast RWQCB addresses region-wide water quality issues through the creation and triennial update of the *Water Quality Control Plan* for the North Coast Region (Basin Plan). The Basin Plan was adopted in 1975 and most recently amended in 2018. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters designated in the Basin Plan.[5] The North Coast RWQCB also administers the MS4 permit for Sonoma County and the municipalities within the county, including the City of Santa Rosa.

[4] California Code of Regulations, Title 23, Division 2, Chapter 2.7, Section 490.1, *Applicability*.

[5] North Coast Regional Water Quality Control Board, updated August 20, 2021, An Introduction to the Basin Plan, https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/#amendment, accessed April 5, 2023.

Municipal Regional Stormwater NPDES Permit

Municipal stormwater discharge in the City of Santa Rosa is subject to the Waste Discharge Requirements of the MS4 Permit (Order No. R1-2014-0030; NPDES No. CA0025054). All new development or redevelopment projects that create or replace 10,000 square feet of impervious surfaces are subject to post-construction BMP implementation. Projects that create or replace more than one acre of impervious surface are also required to comply with the hydromodification provisions of the MS4 permit, which requires capturing and retaining 100 percent of the volume of runoff generated by a 1.0-inch rainfall event over a 24-hour period.

The treatment control BMPs should be properly selected, designed, inspected, and maintained according to the permit requirements. LID methods are the primary mechanisms for implementing such controls. Santa Rosa has prepared the Low Impact Development Technical Design Manual to assist developers in properly designing and sizing BMPs for new development and redevelopment projects.[6] The City requires submittal of documentation that the proposed projects meet these requirements by submitting the *2017 Storm Water LID Determination Worksheet.*

Santa Rosa Plain Subbasin Groundwater Sustainability Plan

Most of the City of Santa Rosa is within the Santa Rosa Valley, Santa Rosa Plain Groundwater Subbasin, which has been designated as a medium-priority groundwater basin and is not in critical overdraft.[7] Medium priority groundwater subbasins are required under SGMA to form a GSA and prepare a GSP. There are two other groundwater subbasins within the EIR Study Area along the eastern edge of Santa Rosa: the Santa Rosa Valley–Rincon Valley subbasin and the Kenwood Valley subbasin. Both are designated very low priority because of a total groundwater use of less than 1,000 acre-feet per year, and they are not required to prepare GSPs.

The Santa Rosa Plain GSA consists of the Sonoma County Water Agency (Sonoma Water), which prepared the GSP; Sonoma County; the cities of Cotati, Rohnert Park, Santa Rosa, and Sebastopol; the town of Windsor; Gold Ridge Resources Conservation District; Sonoma Resource Conservation District; and an organized group of mutual water and public utilities regulated companies (known as Independent Water Systems). The GSP was prepared in December 2021 and was approved by DWR in January 2023.[8] The GSP describes current and historical groundwater conditions, prepares a water budget, establishes sustainable yield criteria and a groundwater monitoring network, and develops management programs to ensure that the basin will meet its sustainability goals.[9]

[6] City of Santa Rosa, 2020. *Storm Water Low Impact Development Technical Design Manual.*

[7] Department of Water Resources, SGMA Data Viewer, https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#currentconditions, accessed April 5, 2023.

[8] Santa Rosa Plain Groundwater Sustainability Agency, Groundwater Sustainability Plan, https://santarosaplaingroundwater.org/gsp/, accessed April 5, 2023.

[9] Santa Rosa Plain Groundwater Sustainability Agency and Sonoma Water, December 2021, *Groundwater Sustainability Plan: Santa Rosa Plain Groundwater Subbasin*, http://santarosaplaingroundwater.org/wp-content/uploads/000_Santa_Rosa_GSP_508.pdf, accessed April 5, 2023.

Sonoma Water

Sonoma Water, previously known as the Sonoma County Water Agency, provides water supply, wastewater management, and flood protection to Sonoma County. Sonoma Water manages and maintains a water transmission system that provides naturally filtered Russian River water that is delivered to Santa Rosa under a contractual agreement. Santa Rosa is currently entitled to receive 56.6 million gallons of water per day (for the average-day peak month demand), up to a total annual volume of 29,100 acre-feet. This amount of water makes Santa Rosa the largest consumer of water in the Sonoma Water service area. Additionally, Sonoma Water has partnered with federal agencies to help build and manage a variety of flood protection projects, including Spring Lake, Matanzas Creek Reservoir, Piner Creek Reservoir, and Brush Creek Middle Fork Reservoir.[10] Sonoma Water also manages a proactive stream maintenance program for more than 80 miles of creeks throughout its service area, including those in Santa Rosa.[11]

Sonoma Water has also recently published the Flood Management Design Manual to be used by public agencies and private entities in Sonoma County that are designing, constructing, or maintaining waterways, channels, closed conduits, or culverts. It provides the methodology and criteria for analyzing storm drain systems and facilities that are necessary to convey stormwater runoff from large storm events. It replaces the previous Sonoma County Water Agency Flood Control Design Criteria.[12] The Santa Rosa *Storm Drain Design Standards,* as described below, uses this methodology for the hydrologic and hydraulic design of storm drains within the city.

Sonoma County Multi-Jurisdictional Hazard Mitigation Plan

The purpose of hazard mitigation planning is to reduce the loss of life and property by minimizing the impact of disasters. The *Sonoma County Multi-Jurisdictional Hazard Mitigation Plan* (MJHMP), updated in 2021, in accordance with the federal Disaster Mitigation Act of 2000, provides an assessment of natural hazards in the County and a set of actions to reduce or alleviate the loss of life, personal injury, and property damage from these hazards. The MJHMP was reviewed and approved by FEMA in order for the County to maintain eligibility for disaster relief funding.

An annex to the MJHMP provides an assessment of hazards and vulnerabilities specific to the City of Santa Rosa. The Santa Rosa annex includes a list of past natural hazard events and mitigation measures to address future hazards. For example, one of the mitigation measures is to update the City's emergency planning documents every five years to ensure consistency with state and federal law, location conditions, best practices, and the most recent science.

[10] Sonoma Water, Flood Protection Facilities, https://www.sonomawater.org/flood-protection-facilities, accessed April 5, 2023.

[11] Sonoma Water, Stream Maintenance Program, https://www.sonomawater.org/stream-maintenance-program, accessed April 5, 2023.

[12] Sonoma Water, 2020, *Flood Management Design Manual*, https://www.sonomawater.org/media/PDF/Water%20Resources/Flood%20Protection/Flood%20Management%20Design%20Manual/FMDM_Main_Body_Mar2020_ADA%20v2.pdf, accessed August 4, 2023.

Local Regulations

Santa Rosa City Code

The Santa Rosa City Code (SRCC) includes various directives to minimize adverse impacts to hydrology and water quality in Santa Rosa. The SRCC is organized by title, chapter, and section, and in some cases, articles. Most provisions related to hydrology and water quality impacts are in Title 14, *Potable and Recycled Water;* Title 16, *Storm Water Enterprise;* Title 17, *Environmental Protection;* Title 18, *Buildings and Construction*; Title 19, *Subdivisions;* and Title 20, *Zoning,* as follows*:*

- Chapter 14-12, *Wells*. This chapter describes the procedures for regulating the construction, reconstruction, and destruction of existing and abandoned water wells, test holes, and excavations within the City. The Chief Health Officer determines the requirements for the issuance of water well permits. The chapter also requires that all developed parcels in zones of groundwater contamination (i.e., the Red Zone) must be connected to the City's potable water supply system.
- 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. The policy was replaced by the Water Efficient Landscape Ordinance, which initially was enacted in January 2010 and most recently updated in 2016. The chapter applies to all new public and private projects with landscaping that require a 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.
- Chapter 15-08, *Pretreatment*. Section 15-08.050, *Wastewater Discharge Permit Classification,* regulates discharges to the sewer system based on the classification of wastewater discharged by users and provides a basis for sewer use charges. This section requires projects that discharge groundwater from construction dewatering to the sanitary sewer system to apply to the City for a wastewater discharge permit and pay the applicable user fee.
- 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 18-24, *California Plumbing Code*. This chapter adopts the California Plumbing Code which specifies technical standards for the design, materials, workmanship, and maintenance of plumbing systems, including requirements for water conservation systems.
- Chapter 18-42, *California Green Building Standards Code*. This chapter adopts by reference, with the additions, insertions, deletions and changes listed throughout, the California Green Building Standards Code which establishes building standards for sustainable site development, including water efficiency and water conservation measures that typically reduce water consumption by 20 percent.
- 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.
- Chapter 19-64, *Grading and Erosion Cont*rol. This chapter provides the grading and erosion control measures that shall be implemented during the design of all subdivisions. BMPs include minimizing soil exposure during the rainy season, retaining natural vegetation as feasible, divert runoff away from steep slopes, minimize length and steepness of slopes by benching or terracing, and trap runoff laden with sediment in basins to allow settlement prior to discharge to receiving waters.
- Chapter 20-30, *Standards for All Development and Land Uses*. Section 20-30.040, *Creekside Development*, provides minimum setbacks from waterways to provide protection for owners of riparian property and the public from the hazards of stream bank failures and flooding. In general, the setback area on either side of a natural or modified waterway shall be 50 feet from the top of the highest bank for new structures.

Citywide Creek Master Plan

The Citywide Creek Master Plan (CCMP), adopted in 2007 and updated in 2013, provides guidelines for the care, management, restoration, and enhancement of the network of creeks and waterways that flow through Santa Rosa, which affect water quality.[13] This plan was prepared in conjunction with Sonoma County and Sonoma Water. The CCMP addresses the nearly 100 miles of creeks that flow through Santa Rosa. The CCMP provides goals, objectives, and policies that focus on the preservation and enhancement of local creeks, the development of trails, and recreational and educational opportunities for residents of the City. The plan also provides maps for each watershed, a description of existing conditions, and recommendations for habitat restoration and recreational access. Implementation of the CCMP will occur over several years and be periodically updated. Project funding is anticipated from grants or other funding sources that are involved in restoring fish and wildlife habitat and improving recreational opportunities and access.

[13] City of Santa Rosa, County of Sonoma, and Sonoma County Water Agency, August 2013, *Santa Rosa Citywide Creek Master Plan*, https://www.srcity.org/DocumentCenter/View/13792/Santa-Rosa-Citywide-Creek-Master-Plan-PDF, accessed April 5, 2023.

The Santa Rosa Creek Design Guidelines are provided as an appendix to the CCMP and should be used in conjunction with the CCMP when developing projects to restore and enhance waterways in Santa Rosa. Also included in the appendices are restoration concept plans for Pierson Reach, Roseland Creek, Kawana Spring (Upper Colgan Creek), and Lower Colgan Creek.

Storm Water Low Impact Development Technical Design Manual

Recently revised in 2020 and applicable for all new development in Santa Rosa, the Storm Water Low Impact Development Technical Design Manual provides technical guidance for project designs that require the implementation of permanent stormwater BMPs intended to satisfy NPDES permit requirements.[14] The intention of the Stormwater Low Impact Development Technical Design Manual is to promote LID goals of minimizing adverse impacts from stormwater runoff; minimizing the percentage of impervious surfaces on land development projects and implementing mitigation measures to mimic the pre-development water balance; minimizing pollutant loadings from impervious surfaces such as rooftops, parking lots, and roadways; and properly selecting, designing, and maintaining treatment control BMPs and hydromodification control BMPs.

Storm Drain Standards

The City of Santa Rosa has established public storm drain standards to assist developers and their engineers in the design of storm drain facilities within the City.[15] The document provides the methodology for determining stormwater runoff rates and the hydraulic design criteria to be used in sizing storm drains. In general, drainage systems must be designed to accommodate flows from storms with recurrence intervals ranging from 10 to 100 years, depending on the waterway classification to which it discharges. Open channels that will be maintained by Sonoma Water must be designed as specified in the 2020 Sonoma Water *Flood Management Design Manual*.

4.10.1.2 EXISTING CONDITIONS

Topography and Climate

The City of Santa Rosa is in the Santa Rosa Plain, an alluvial plain that gently slopes from the Mayacamas Mountains and the Valley of the Moon in the east to Laguna de Santa Rosa in the west. The eastern edge of the city borders Hood Mountain Regional Park, and elevations in this area can range up to 1,200 feet above mean sea level (msl), whereas the non-contiguous westernmost portions of the city are at elevations of about 84 feet above msl. Downtown Santa Rosa is at an elevation of about 150 feet msl.

[14] Cities of Cloverdale, Cotati, Healdsburg, Rohnert Park, Santa Rosa, Sebastopol, and Ukiah, County of Sonoma, Sonoma Water, and Town of Windsor, revised December 2020, *Storm Water Low Impact Development Technical Design Manual*, https://www.srcity.org/DocumentCenter/View/14974/2017-Storm-Water-Technical-Design-Manual-Narrative-revised-1621, accessed April 5, 2023.

[15] City of Santa Rosa, 2005, *Public Storm Drain Standards.*

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 31 inches per year, with most of the rainfall occurring between the months of October and April.[16] 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.[17]

Regional Hydrology

The City of Santa Rosa is within the Laguna de Santa Rosa Watershed, which drains approximately 254 square miles in Sonoma County. Major tributaries include Windsor Creek, Mark West Creek, Santa Rosa Creek, Blucher Creek, and Copeland Creek. These creeks drain into Laguna de Santa Rosa, which flows into the Russian River, which ultimately flows into the Pacific Ocean. The watershed serves as an important stopover for thousands of birds migrating along the Pacific Flyway and is home to a wide variety of animals, including more than 200 species of birds, rare and endangered salmon, steelhead, salamanders, mountain lions, bobcats, coyote, mink, badger, and river otter. The watershed is also an important agricultural, recreational, and educational resource. Laguna de Santa Rosa serves as a natural holding basin during the wet season as an overflow area for the Russian River during flood events.[18]

There are nine subwatersheds that lie within the EIR Study Area, as shown on Figure 4.10-1, *Subwatersheds*, and described in the Santa Rosa Citywide Creek Master Plan. Water typically flows from east to west across the Santa Rosa Plain and eventually discharges into Laguna de Santa Rosa. The nine watersheds are described below:

- Santa Rosa Creek Subwatershed. This subwatershed drains approximately 78.6 square miles, including agricultural land, parks and open space, and urban land uses. Santa Rosa Creek originates on the northwestern slope of Hood Mountain and flows westward through the urban area of Santa Rosa and then agricultural land before flowing into Laguna de Santa Rosa north of Sebastopol. Tributaries of Santa Rosa Creek include Skyhawk Creek and College Creek. Steelhead and rainbow trout are present in Santa Rosa Creek. Additional reports applicable to this subwatershed include the Santa Rosa Creek Master Plan, Santa Rosa Creek Design Guidelines, and the Prince Memorial Greenway Project, which was constructed where the creek passes through the downtown area of Santa Rosa.
- Oakmont Creek Subwatershed. This subwatershed is in the eastern portion of the City; Oakmont Creek and 12 mostly seasonal creeks drain the hillslopes adjacent to Oakmont. Oakmont is divided into two separate subwatershed basins. There is a divide between the Sonoma Creek subwatershed which flows into San Pablo Bay, and the Santa Rosa Creek subwatershed, which flows into the Russian River. Three of the Oakmont creeks flow east to Sonoma Creek while the other creeks connect to

[16] National Weather Service, 2023, NOAA Online Weather Data for the Last 23 Years of Record, https://www.weather.gov/wrh/climate?wfo=mtr, accessed August 3, 2023.

[17] Western Regional Climate Center, updated October 31, 2012, Period of Record Monthly Climate Summary – Temperature, https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7965, accessed April 6, 2023.

[18] North Coast Regional Water Quality Control Board, 2023, Laguna de Santa Rosa: Hydrologic Sub-areas, https://www.waterboards.ca.gov/northcoast/water_issues/programs/watershed_info/russian_river/laguna_de_santa_rosa/, accessed August 3, 2023.

Oakmont Creek and flow to Santa Rosa Creek near the northeast boundary of Spring Lake. The headwaters of these creeks are mostly in Annadel State Park and Hood Mountain Regional Park. Tributaries to Oakmont Creek are Laurel Creek, Badger Creek, and Melita Creek.

- Brush Creek Subwatershed. Brush Creek and its tributaries originate in the hillsides surrounding Rincon Valley in northeast Santa Rosa. The major tributaries are Rincon Creek, Ducker Creek, and Austin Creek. Two creeks also flow into Austin Creek: Progress Creek and Promissory Creek. Although parts of Brush Creek have been modified due to urban growth, it is still home to migrating steelhead trout, the western pond turtle, sprawling oak trees, and many other riparian plants and animals. The headwaters of Brush Creek include two branches that join at the Brush Creek Reservoir, which is owned and operated by Sonoma Water.
- Matanzas Creek Subwatershed. Matanzas Creek flows from the northern slopes of Sonoma Mountain and across the agricultural and rural land of Bennett Valley before entering the City near Galvin Community Park. Downtown of South E Street, Matazanas Creek is routed underground to its confluence with Santa Rosa Creek at Santa Rosa Avenue near City Hall. The largest tributary to Matanzas Creek is Spring Creek, which begins in Annadel State Park. Matanzas Reservoir and the Spring Creek Dam and Diversion to Spring Lake are major flood control structures. Other tributaries include Lornadell Creek, Sierra Park Creek, and Cooper Creek.
- Piner Creek Subwatershed. Piner Creek and its tributaries drain the northwest portion of Santa Rosa. The tributaries include Nagasawa, Russell, Indian, Coffey, and Steele Creeks. Peterson Creek and its tributary Forestview Creek drain directly into Santa Rosa Creek. Piner and Russell Creeks begin east of US Highway 101 in the Fountaingrove neighborhood. Piner Creek flows into Fountaingrove Lake and continues under US Highway 101 in northwest Santa Rosa before joining Santa Rosa Creek west of Fulton Road. Russell Creek crosses under US Highway 101 and flows west and into Piner Creek. Coffey Creek and Steele Creek begin west of US Highway 101. Peterson Creek and Forestview Creek start in northwest Santa Rosa and flow southwest into Santa Rosa Creek. Most westward reaches of these creeks have been engineered to provide flood control.
- Paulin Creek Subwatershed. This subwatershed is located east of the Piner Creek subwatershed. Paulin Creek and its tributaries, Poppy Creek and Pomo Creek, flow into Piner Creek. Paulin Creek originates in the hillside above Hidden Valley, flows under US Highway 101, and joins with Pine Creek west of Marlow Road. Poppy Creek begins as an intermittent drainage in the Proctor Terrace neighborhood and flows into two City-owned ponds located north of the Rural Cemetery on Franklin Avenue. The creek flow is then diverted to storm drainpipes that rejoin the creek channel at Mendocino Avenue, wind through the Santa Rosa Junior College neighborhood, flows through Steele Lane Park, and joins Paulin Creek downstream of Major Drive. Pomo Creek is mainly underground but travels a short distance through Northwest Community Park before joining Paulin Creek.
- Southern Santa Rosa Creeks Subwatershed. This subwatershed is in the southern portion of the City and includes four creeks that flow into Laguna de Santa Rosa: Roseland Creek, Kawana Springs Creek, Colgan Creek, and Old Colgan Creek. These creeks are not considered to support steelhead trout, due to warm water temperatures, lack of stream habitat complexity, and limited summertime flows. Roseland Creek originates southwest of the US Highway 101 and State Route 12 interchange and flows into Laguna de Santa Rosa southeast of Sebastopol near the Laguna Treatment Plant. Just under 50 percent of Colgan Creek's 5,000-acre drainage area lies within the EIR Study Area and is mostly

channelized. Kawana Springs Creek (also known as Upper Colgan Creek) flows westward from its headwaters in the oak woodlands on Taylor Mountain to Colgan Avenue and joins Colgan Creek. The reach from Petaluma Hill Road to its confluence with Old Colgan Creek consists of a flood control channel owned and operated by Sonoma Water. In 2002, the City Council adopted the Lower Colgan Creek Restoration Concept Plan, and a second restoration concept plan for Kawan Springs Creek (Upper Colgan Creek) was adopted in 2007.

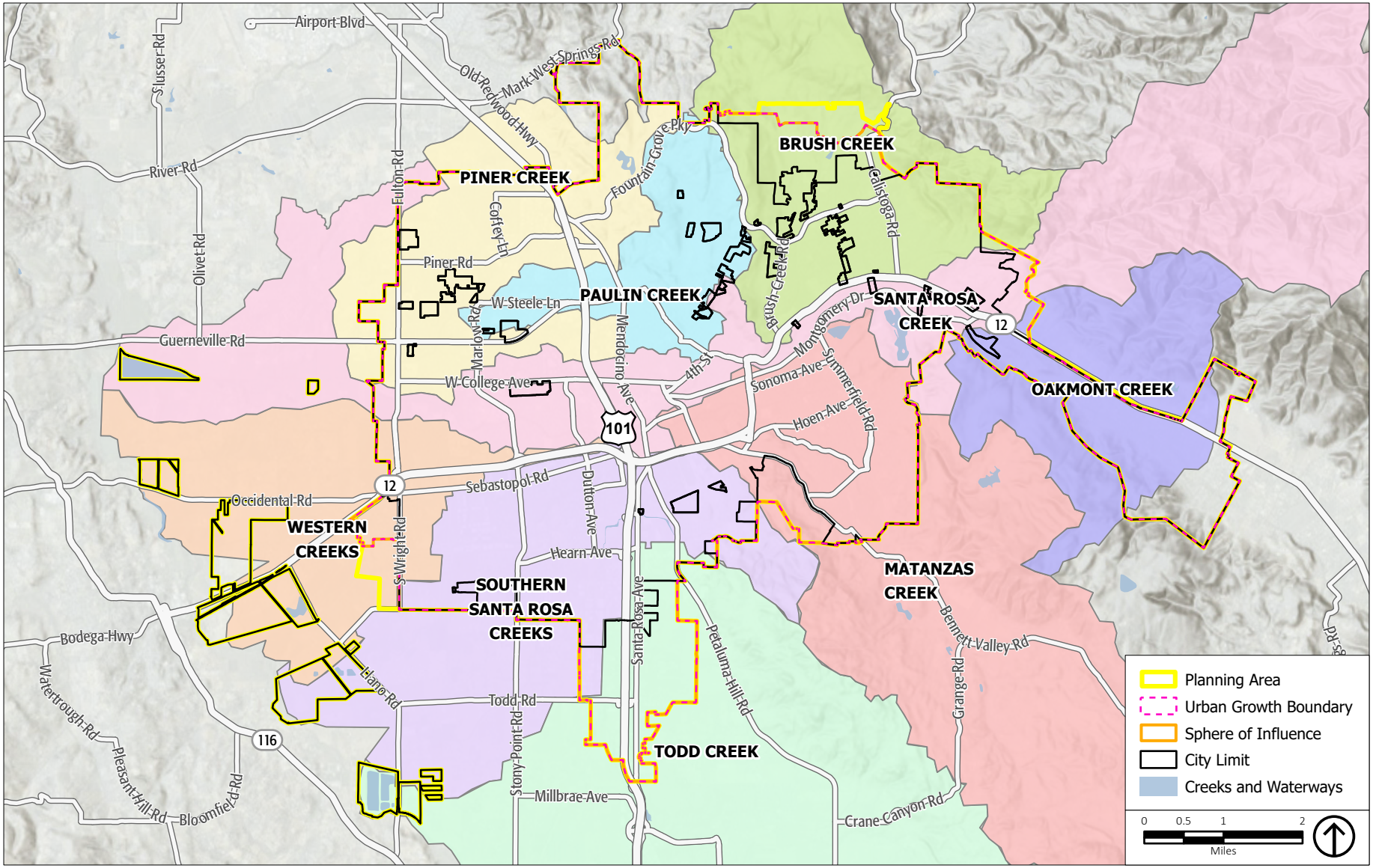
- Western Creeks Subwatershed. This subwatershed in the western portion of the city consists primarily of low gradient, seasonal creeks that originate at outfalls of the City's storm drain system west of US Highway 101 and flow into Laguna de Santa Rosa. The five creeks within this subwatershed are Gravenstein Creek, Naval Creek, Irwin Creek (also known as Spirit Creek), Riccas Creek, and Countryside Creek. Most of the areas through which these creeks flow are private property.
- Todd Creek Subwatershed. This subwatershed is located in a small area in the far southern portion of the city. Todd Creek begins on the western slope of Taylor Mountain and flows to the south and west to connect with Laguna de Santa Rosa. This creek is primarily a grass-lined, channelized stream. The tributaries to Todd Creek that flow through the city are Hunter Creek and Moorland Creek. Moorland Creek is channelized and begins along the Northwest Pacific Railroad and flows south to join Todd Creek. Hunter Creek begins on the west side of Taylor Mountain and is a modified channel with riprap along the banks at the confluence with Todd Creek.

Local Hydrology

The City's storm drain system consists of approximately 320 miles of storm drain lines and 75 miles of open channels and ditches. These facilities are part of an integrated system of roadside gutters, drainage ditches, pipelines, and creeks that are used to collect and convey the stormwater runoff to creeks within the city and ultimately into the Laguna de Santa Rosa. The City's storm drain system also makes use of stormwater detention facilities used to attenuate peak flows and allow for the settlement of sediment from the stormwater flows before continuing downstream. The Public Works Department works year-round cleaning silt, trash, and other pollutants out of the City's catch basins and storm drains, using a large vacuum truck. Sonoma Water's Stream Maintenance crews are responsible for removing sediment and vegetation in the creeks that flow through Santa Rosa. A more detailed discussion of the storm drain system is provided in Chapter 4.17, *Utilities and Service Systems*, of this Draft EIR.

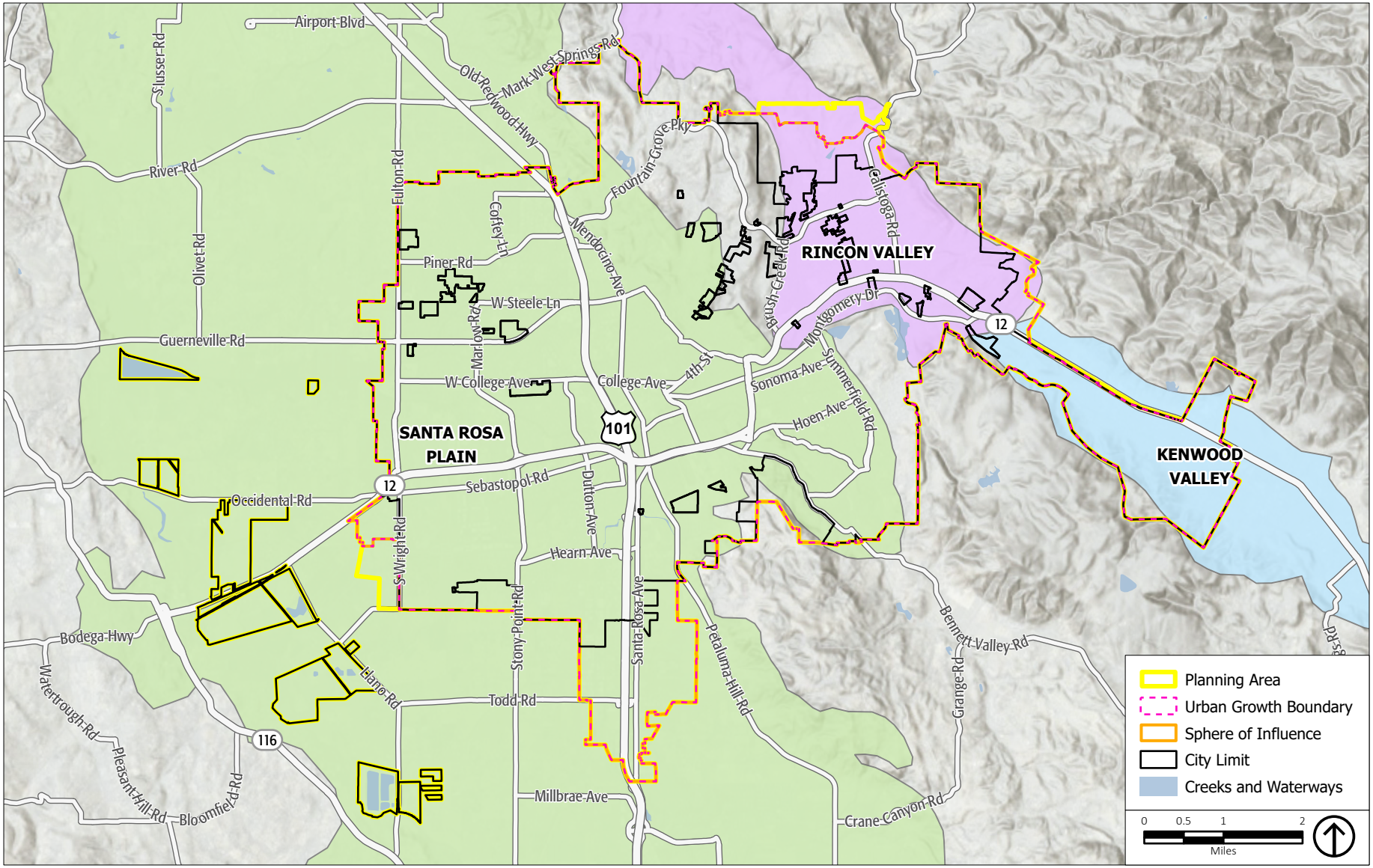
Groundwater Basin

Most of the EIR Study Area is within the Santa Rosa Plain Groundwater Subbasin, which is one of three subbasins within the larger Santa Rosa Valley Groundwater Basin. There are two other groundwater subbasins within the EIR Study Area along the eastern edge of the city—the Santa Rosa Valley–Rincon Valley Subbasin and the Kenwood Valley Subbasin. Both are designated very low priority because of a total groundwater use of less than 1,000 acre-feet per year, and they are not required to form GSAs or prepare GSPs. Figure 4.10-2, *Groundwater Subbasins,* shows the three groundwater subbasins in the EIR Study Area.



Source: City of Santa Rosa, 2013; ESRI, 2022; PlaceWorks, 2024.

Figure 4.10-1
Subwatersheds



Source: City of Santa Rosa, 2021; ESRI, 2022; PlaceWorks, 2024.

Figure 4.10-2
Groundwater Subbasins

The Santa Rosa Plain Subbasin is generally bounded on the west by low-lying hills of the Mendocino Range and on the east by the Sonoma Mountains and Mayacamas Mountains. The Subbasin includes the cities of Cotati, Rohnert Park, Santa Rosa, and Sebastopol; the town of Windsor; and areas of unincorporated Sonoma County. The Santa Rosa Plain Subbasin is designated by DWR as a medium-priority groundwater basin and is not in critical overdraft.[19]

The Santa Rosa Plain GSA consists of the Sonoma County Water Agency (Sonoma Water), which prepared the GSP; Sonoma County; the cities of Cotati, Rohnert Park, Santa Rosa, and Sebastopol; the town of Windsor; Gold Ridge Resources Conservation District; Sonoma Resource Conservation District; and an organized group of mutual water and public utilities regulated companies (known as independent water systems). The GSP was prepared in December 2021 and was approved by DWR in January 2023.[20]

The major water suppliers in the Subbasin are the cities and towns that are part of the GSA and Cal American Water–Larkfield. Most of the water suppliers rely primarily on imported Russian River water supplied by Sonoma Water, but they also pump groundwater for supplemental supply and for use during droughts and emergencies. Residences outside of the urban communities rely on individual domestic wells, which are estimated to number between 4,000 and 5,500. Agriculture, which accounts for 26 percent of the land use within the Subbasin, relies on groundwater and recycled water, where available, for irrigation of wine grapes. In 2020, imported water accounted for 45 percent of the water supply in the Subbasin, groundwater accounted for 35 percent, and recycled water for about 20 percent.[21] For further discussion on water supply, please refer to Chapter 4.17, *Utilities and Service Systems*, of this Draft EIR.

Groundwater aquifers are present at depths generally less than 200 feet below ground surface, where many residential wells are drilled, and at deeper depths, where most municipal, industrial, and agricultural wells are constructed. In general, groundwater flows from the highlands in the east to Laguna de Santa Rosa. Groundwater levels are relatively stable, and total groundwater pumping rates through the year 2040 are estimated to be only 39 percent of the sustainable yield.[22] The GSP describes projects and management actions that will be implemented to ensure that groundwater pumping rates remain below the sustainable yield.

Shallow groundwater is encountered in perched aquifers in Santa Rosa at depths ranging from 3 to 20 feet below ground surface.[23] Therefore, construction dewatering may be required with future development in the EIR Study Area. The City requires project applicants to evaluate dewatering options that avoid discharge to surface waters or the storm drain. If groundwater from construction activities is directed to the sanitary sewer, project applicants must apply for a one-time wastewater discharge permit from the City, as per SRCC Section 15.-08.050, *Wastewater Discharge Permit Classification.* The permit conditions

[19] Department of Water Resources, SGMA Data Viewer, https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#currentconditions, accessed August 12, 2023.

[20] Santa Rosa Plain Groundwater Sustainability Agency, Groundwater Sustainability Plan, https://santarosaplaingroundwater.org/gsp/, accessed August 12, 2023.

[21] Santa Rosa Plain Groundwater Sustainability Agency, Groundwater Sustainability Plan, https://santarosaplaingroundwater.org/gsp/, accessed August 12, 2023.

[22] Santa Rosa Plain Groundwater Sustainability Agency, Groundwater Sustainability Plan, https://santarosaplaingroundwater.org/gsp/, accessed August 12, 2023

[23] Gregg Drilling, 2023, Northern California Groundwater Depth Table.

may require filtering to remove sediment and/or monitoring to verify that the discharged groundwater is in accordance with the City's wastewater discharge requirements. If groundwater from dewatering activities is directed to surface water or the storm drain, project applicants must obtain coverage under the North Coast RWQCB Order No. R1-2020-0006 (NPDES No. CAG024902), *Waste Discharge Requirements for Low Threat Discharges to Surface Waters in the North Coast Region.* This requires project applicants to submit to the North Coast RWQCB a Notice of Intent (NOI), a Best Management Practice and Pollution Prevention (BMP/PP) Plan, and appropriate fees. The RWQCB permit requires the implementation of BMPs, such as settling tanks, to minimize sediment discharge, turbidity, and color impacts. A monitoring and reporting program is also required as part of the BMP/PP Plan with sampling and analysis of specified water quality parameters, such as turbidity, pH, specific conductance, and dissolved oxygen.

Water Quality

Surface water quality is affected by point-source and nonpoint-source pollutants. Point-source pollutants are emitted at a specific point, such as a pipe, and nonpoint-source pollutants are typically generated by surface runoff from diffuse sources, such as streets, paved areas, and landscaped areas. Point-source pollutants are controlled with pollutant discharge regulations or water discharge requirements. Nonpoint-source pollutants are more difficult to monitor and control, although they are important contributors to surface water quality in urban areas.

Stormwater runoff pollutants vary based on land use, topography, the amount of impervious surface, the amount and frequency of rainfall, and irrigation practices. Runoff in developed areas typically contains oil, grease, and metals accumulated in streets, driveways, parking lots, and rooftops, as well as pesticides, herbicides, particulate matter, nutrients, animal waste, and other oxygen-demanding substances from landscaped areas. The highest pollutant concentrations usually occur at the beginning of the wet season during the "first flush," when early rainfall flushes out pollutants that have accumulated on hardscape surfaces during the preceding dry months.

The North Coast RWQCB monitors surface water quality through implementation of the Basin Plan. Unlike other RWQCBs, which designate beneficial uses for individual surface water bodies and groundwater within their jurisdiction, the North Coast RWQCB designates beneficial uses on a watershed basis. Santa Rosa is in the Laguna de Santa Rosa watershed, which is further divided into the Laguna, Santa Rosa, and Mark West Hydrologic Subareas. The Laguna and Santa Rosa Hydrologic Subareas are in the EIR Study Area.

The beneficial uses for these watersheds are listed in Table 4.10-1, *Designated Beneficial Uses in the EIR Study Area*. The North Coast RWQCB further characterizes beneficial uses as existing or potential, as shown in the table.

TABLE 4.10-1 DESIGNATED BENEFICIAL USES IN THE EIR STUDY AREA

Hydrologic Subarea	Existing Beneficial Use
Laguna	AGR, IND, GWR, FRSH, NAV, POW, REC1, REC2, COMM, WARM, COLD, WILD, RARE, MIGR, SPWN
Santa Rosa	MUN, AGR, IND, GWR, NAV, REC1, REC2, COMM, WARM, COLD, WILD, RARE, MIGR, SPWN
	Potential Beneficial Use
Laguna	MUN, PRO, SHELL, AQUA
Santa Rosa	PRO, POW, SHELL, AQUA

Note: Designated Beneficial Use abbreviations:

AGR – Agricultural supply	COLD – Cold freshwater habitat	COMM – Commercial and sport fishing
FRSH – Freshwater replenishment	GWR – Groundwater recharge	IND – Industrial service supply
MIGR – Fish migration	MUN – Municipal and domestic supply	PRO – Industrial process supply
RARE – Preservation of rare and endangered species		
REC-1 – Water contact recreation	REC-2 – Non-contact water recreation	SPWN – Fish spawning
WARM – Warm freshwater habitat	WILD – Wildlife habitat	NAV – Navigation
POW – Hydropower generation	AQUA – Aquaculture	SHELL – Shellfish harvesting

Source: North Coast Regional Water Quality Control Board, 2018, Water Quality Control Plan for the North Coast Region.

The North Coast RWQCB also developed regulations regarding point source discharges to protect the Russian River, which include restrictions on wastewater discharge into the Russian River Watershed. Wastewater can only be discharged between October 1 and May 14 at a maximum rate of 1 percent of the flow in the river. At other times, wastewater discharges are prohibited. The City of Santa Rosa can discharge wastewater from its wastewater treatment plant at several points during the winter discharge season in compliance with these requirements.[24]

In addition to the establishment of beneficial uses and water quality objectives, another approach to improve water quality is a watershed-based methodology that focuses on all potential pollution sources and not just those associated with point sources. If a body of water does not meet established water quality standards under traditional point source controls, it is listed as an impaired water body under Section 303(d) of the CWA. For 303(d) listed water bodies, a limit is established that defines the maximum amount of pollutants that can be received by that water body. Listed impaired water bodies in the EIR Study Area and their associated pollutants of concern are presented in Table 4.10-2, *Listed Impaired Water Bodies in the EIR Study Area.* Also included are the water bodies that receive runoff and potential pollutants from the rivers and creeks within the EIR Study Area.

[24] North Coast RWQCB, 2023, Laguna de Santa Rosa: Hydrologic Sub-areas 114.21, 114.22, 114.23https://www.waterboards.ca.gov/northcoast/water_issues/programs/watershed_info/russian_river/laguna_de_santa_rosa/, accessed August 5, 2023.

TABLE 4.10-2 LISTED IMPAIRED WATER BODIES IN THE EIR STUDY AREA

Name	Pollutants of Concern
Santa Rosa Creek	Sedimentation/Siltation, Indicator Bacteria, Water Temperature, Manganese
Tributaries to Santa Rosa Creek	Sedimentation/Siltation, Indicator Bacteria, Water Temperature
Spring Lake (Santa Rosa Creek Reservoir)	Mercury
Tributaries to Laguna de Santa Rosa (except Santa Rosa Creek and its tributaries)	Indicator Bacteria, Dissolved Oxygen, Sedimentation/Siltation, Water Temperature
Laguna de Santa Rosa	Mercury, Sedimentation/Siltation, Water Temperature, Dissolved Oxygen, Phosphorus, Indicator Bacteria
Lower Russian River	Water Temperature, Aluminum, Sedimentation/Siltation, Specific Conductivity, Indicator Bacteria

Source: State Water Resources Control Board, 2023, 2018 Integrated Report Map, https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2018_integrated_report/2018IR_map.html, accessed August 5, 2023.

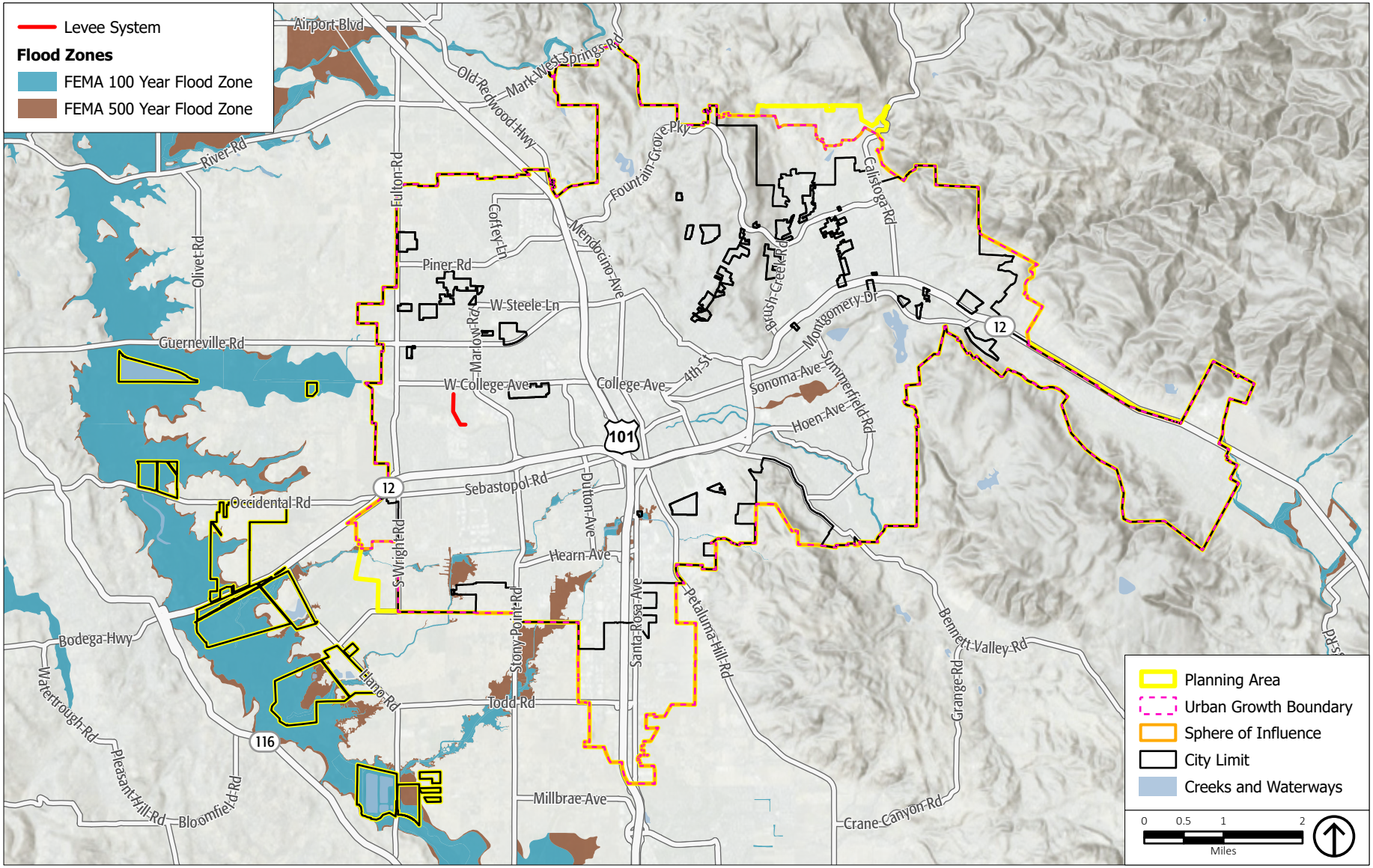
Once a water body has been placed on the 303(d) list of impaired waters, states are required to develop a TMDL threshold to address each pollutant causing impairment. A TMDL defines how much of a pollutant a water body can tolerate and still meet water quality standards. There are no approved TMDLs for any pollutants in the impaired water bodies on Table 4.10-2.

Flood Zones

FEMA identifies floodplain zones to assist cities with mitigating flooding hazards through land use planning. FEMA also outlines specific regulations for any construction within a 100-year floodplain. The 100-year floodplain is defined as an area that has a 1 percent chance of being inundated in any given year. FEMA also prepares maps for 500-year floods that indicate a risk of 0.2 percent of flooding in any given year. In some locations, FEMA also provides measurements of base flood elevations for the 100-year flood, which is the minimum height of the flood waters during a 100-year event. Base flood elevation is reported in feet above sea level. Depth of flooding is determined by subtracting the land's height above sea level from the base flood elevation. Areas within the 100-year flood hazard area that are financed by federally backed mortgages are subject to mandatory federal insurance requirements and building standards to reduce flood damage.

The main type of flooding that occurs in the EIR Study Area is riverine flooding. Riverine flooding occurs when the local creeks overtop their banks during extreme rainfall events. Flooding typically occurs during the winter within 24 to 48 hours after a storm event. Coupled with flat topography and a high groundwater table, stormwater runoff from these events can exceed the capacity of the City's storm drain system. Localized flooding can also occur in flat, urbanized areas of the City after heavy rain events.

A map of the EIR Study Area locations that are within the 100-year floodplains is shown on Figure 4.10-3, *Potential Flood Hazards*. FEMA maps areas at risk from inundation from a 100-year flood, which has a 1 percent chance of occurring in any year, and a 500-year flood, where the risk of flooding is 0.2 percent annually. These areas are primarily located along the creeks that run through the city, including Spring Creek, Matanzas Creek, Colgan Creek, Naval Creek, Roseland Creek, and Kawana Springs Creek.



Source: CalOES, 2021; FEMA, 2021; ESRI, 2022; PlaceWorks, 2024.

Figure 4.10-3
Potential Flood Hazards

Approximately 168 acres in the EIR Study Area are within the 100-year floodplain, and about 284 acres are in the 500-year floodplain.[25] Erosion is a secondary hazard related to flooding in Santa Rosa, especially along Matanzas Creek.

The noncontiguous areas of the EIR Study Area to the west are within the 100-year floodplain of Laguna de Santa Rosa. The 100-year flood zone is also known as a Special Flood Hazard Area; homeowners with mortgages within the Special Flood Hazard Area are required to be protected by flood insurance. Areas within the 500-year floodplain are also shown on Figure 4.10-3, but there are no restrictions on building within the 500-year floodplain. There also is one levee in the city, Sonoma County Levee 31, which is also shown on Figure 4.10-3. It is not FEMA accredited and is locally constructed, operated, and maintained.

Flooding has had serious impacts on Santa Rosa in the past, most notably the January 2006 flooding and landslides in the Russian River watershed. Seven days of heavy rain totaling almost seven inches resulted in Laguna de Santa Rosa reaching peak capacity and overflowing. The rising water in the Laguna created a backwater condition and subsequently raised the water levels in surrounding creeks, leading to erosion, sedimentation, and flooding. FEMA declared the flood a major disaster, and the City's Emergency Operations Center was activated to respond to the incident.[26] The most recent flooding was in January 2023 when Colgan Creek overflowed its banks and in March 2023 with flooding along State Route 12. The City's Laguna Treatment Plant has also experienced flooding on numerous occasions.[27] The southern portion of Santa Rosa is more prone to flooding because of its flat topography. Roseland and Colgan Creeks receive most of the stormwater from southern Santa Rosa and are prone to flooding. Climate change may result in more frequent intense storms, resulting in an increased risk of flooding in the future.

Dam Inundation

Dam failure is the uncontrolled release of impounded water behind a dam. Partial or complete dam failures can occur from one or more of the following causes:

- Earthquake
- Overtopping caused by floods that exceed the dam capacity due to inadequate spillway capacity
- Internal erosion caused by embankment or foundation leakage due to piping or rodent activity
- Improper design resulting in structural failure
- Movement or failure of the foundation
- Inadequate operation, maintenance, and upkeep
- Settling and cracking of concrete or embankment dams
- Failure of upstream dams on the same waterway

[25] City of Santa Rosa, 2016, *City of Santa Rosa Local Hazard Mitigation Plan,* prepared by Michael Baker International.

[26] City of Santa Rosa, 2016, *City of Santa Rosa Local Hazard Mitigation Plan,* prepared by Michael Baker International.

[27] Sonoma County, October 2021, *Multijurisdictional Hazard Mitigation Plan Update 2021, Volume 1: Area-Wide Elements*, https://permitsonoma.org/Microsites/Permit%20Sonoma/Documents/Planning/Long%20Range%20Plans/Hazard%20Mitigation%20Plan/Adopted-Sonoma-County-MJHMP-Volume-1-December-2021.pdf, accessed August 5, 2023.

Flash floods can 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, from days to weeks. However, dam failure is a very rare occurrence. No known failures have occurred on dams in Santa Rosa or Sonoma County.[28]

The California Water Code requires owners of all dams under California Division of Safety of Dams (DSOD) jurisdiction (except dams classified as low downstream hazard) to prepare dam inundation maps. These maps must be updated every ten years or when there are changes to downstream development or terrain. The dam inundation maps are submitted to DSOD for review and approval. Once the maps are approved, the dam owner must submit the map with the Emergency Action Plan to the California Office of Emergency Services for review and approval. The Office of Emergency Services 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. Dam inundation maps are used in the preparation of local hazard mitigation plans and general plan safety element updates.

For federally owned and maintained dams, the US Army Corps of Engineers has a Dam Safety Program that recognizes the catastrophic nature of potential dam failure and operates a comprehensive dam safety program, which includes: 1) periodic special engineering studies, 2) surveillance and monitoring programs, 3) routine inspections and maintenance activities, and 4) preparation of emergency response and preparedness plans.

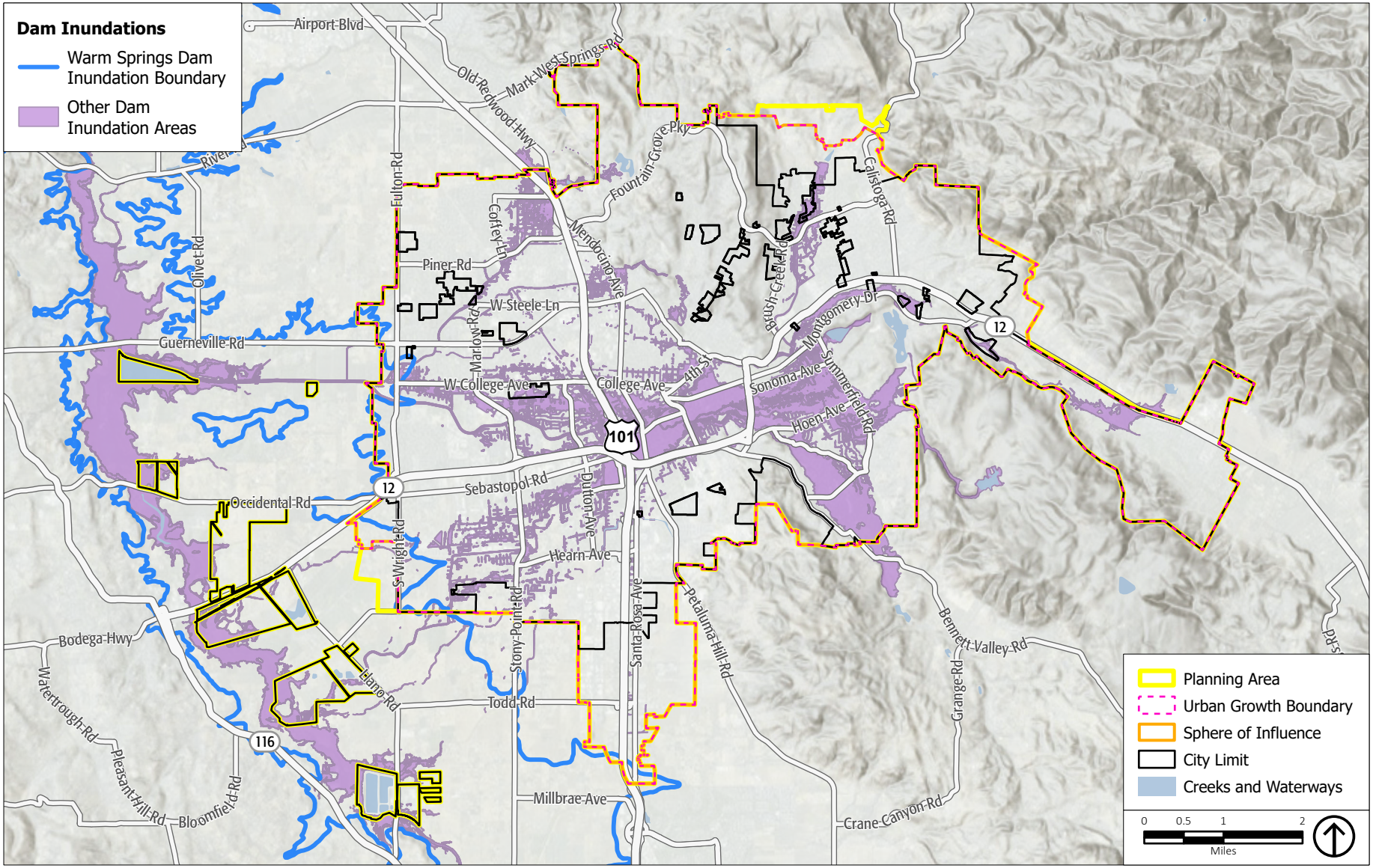
The inundation zones in the EIR Study Area are shown on Figure 4.10-4, *Dam Inundation Zones.* A list of the dams is in Table 4.10-3, *Dams with Inundation Zones in the EIR Study Area.*

TABLE 4.10-3 DAMS WITH INUNDATION ZONES IN THE EIR STUDY AREA

Dam Name	Owner	Water Course	Year Built	Hazard Rating
Warm Springs	Army Corps of Engineers	Dry Creek	1982	High
Annadel No. 1	CA Dept. of Parks and Recreation	Spring Creek	1956	Extremely High
Piner Creek	Sonoma Water	Paulin Creek	1962	Extremely High
Middle Fork Brush Creek	Sonoma Water	Brush Creek	1961	Extremely High
Matanzas Creek	Sonoma Water	Matanzas Creek	1963	Extremely High
Santa Rosa Creek Reservoir	Sonoma Water	Santa Rosa Creek	1963	Extremely High
Lake Ralphine	City of Santa Rosa	Santa Rosa Cr. Trib.	1882	Extremely High
Fountaingrove	City of Santa Rosa	Mark West Cr. Trib.	1953	Extremely High
Meadow Lane	City of Santa Rosa	Offstream	1979	High
Delta Pond	City of Santa Rosa	Russian River Trib.	1984	Significant
The Hill Ranch	Private Trust	Santa Rosa Creek	1955	High
Pond No. 2	City of Santa Rosa	Offstream	1962	Low

Source: Sonoma County Multijurisdictional Hazard Mitigation Plan, 2021; PlaceWorks, 2023.

[28] Sonoma County, October 2021, *Multijurisdictional Hazard Mitigation Plan Update 2021, Volume 1: Area-Wide Elements*, https://permitsonoma.org/Microsites/Permit%20Sonoma/Documents/Planning/Long%20Range%20Plans/Hazard%20Mitigation%20Plan/Adopted-Sonoma-County-MJHMP-Volume-1-December-2021.pdf, accessed August 5, 2023.



Source: CalOES, 2016; City of Santa Rosa, 2020; ESRI, 2022; PlaceWorks, 2024.

Figure 4.10-4
Dam Inundation Zones

All of the dams listed in Table 4.10-3, except the Warm Springs Dam, are under the jurisdiction of the DSOD. The Warm Springs Dam forms Lake Sonoma Reservoir and is owned and operated by the US Army Corps of Engineers. The reservoir provides water supply and flood management. Water supply releases from this dam are controlled by Sonoma Water and water released for flood control management is managed by the Army Corps of Engineers. Pond No. 2, which is within the City limits, is a relatively small dam (12 feet high with a storage area of 240 acre-feet) and has a low hazard rating. Dams classified as low downstream hazard do not have to prepare dam inundation maps.

Hazard classifications are based on potential downstream impacts to life and property if a dam were to fail when operating at full capacity. The hazard classification is not related to the condition of the dam. High hazard indicates that the dam failure could result in the loss of at least one human life, and extremely high hazard indicates that the dam failure is expected to cause considerable loss of human life or would result in an inundation area with a population of 1,000 people or more.[29]

The 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 Department of Emergency Management coordinates preparedness efforts to mitigate against, plan for, respond to, and recover from natural hazards, including the possibility of dam failure.

There are no state or local restrictions for development in dam inundation zones; however, each dam owner is required to prepare an emergency action plan (EAP) and coordinate its response to a dam incident with local authorities. The EAP is required to include warning and notification procedures that would involve the SoCo Alert system, Sonoma County's new emergency notification system, the Sonoma Department of Emergency Management, Sonoma County Sheriff's Department, and the Sonoma Valley Fire District. The City of Santa Rosa supplements the SoCo Alert System with the CivicReady Public Safety Alerts and Notifications System for residents and businesses to receive text messages, emails, or phone calls from the City's Emergency Operations Center.

The Sonoma County Department of Emergency Management maintains copies of the most recent dam EAPs and inundation maps and uses this information to plan notification for downstream areas in the event of a dam failure. Also, the Santa Rosa Emergency Operations Center manages and maintains emergency plans and training for City staff and the community.

Tsunami

A tsunami is a series of traveling ocean waves generated by a catastrophic event such as an earthquake, submarine landslide, or volcanic eruption. The EIR Study Area is approximately 25 miles from San Pablo Bay and 15 miles from the Pacific Ocean and is not within any mapped tsunami inundation zone.[30]

[29] California Division of Safety of Dams, 2023, Downstream Hazard, https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/All-Programs/Division-of-Safety-of-Dams/Files/Publications/Division-of-Safety-of-Dams-Definitions-for-Downstream-Hazard-and-Condition-Assessment.pdf, accessed August 8, 2023.

[30] California Department of Conservation, 2022, Sonoma County Tsunami Hazard Areas, https://www.conservation.ca.gov/cgs/tsunami/maps/sonoma, accessed April 6, 2023.

Seiche

A seiche is an oscillation of a body of water in an enclosed or semi-enclosed basin, such as a reservoir, harbor, lake, or storage tank. Seiches can be created by winds, earthquakes, or tsunamis. Bodies of water such as reservoirs, ponds, lakes, or large aboveground storage tanks can experience seiche waves up to several feet in height during a strong earthquake. The water sloshes back and forth until the wave motion is dampened by friction.

Although a seiche could theoretically occur at any of the reservoirs with dam inundation zones that impact the city or are in the city, seiches associated with dams and reservoirs typically create waves that are one foot high or less. Dams are designed to have a freeboard height below the top of the dam that accounts for wave action on the surface of the reservoir. Therefore, it is unlikely that a seiche would occur and cause overtopping of a dam or reservoir, resulting in downstream flooding. to significantly impact the EIR Study Area. Seismic activity could result in seiches occurring and impacting the aboveground water tanks in the city. However, the tanks are constructed to withstand seismic events and would not result in failure that would cause significant flooding.

4.10.2 STANDARDS OF SIGNIFICANCE

The implementation of the proposed project would result in a significant impact related to hydrology and water quality if it would:

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

4.10.3 IMPACT DISCUSSION

As described in Chapter 4.0, *Environmental Analysis*, of this Draft EIR, some proposed General Plan 2050 policies and actions are required as means to mitigate environmental impacts under the California Environmental Quality Act. These policies and actions are fully enforceable at the discretion of the decision-maker through permit conditions, agreements, or other legally binding instruments. These mitigating policies and actions use the imperative "shall," include performance criteria, and are marked with an asterisk (*). Note that all actions are required to be implemented by the City and therefore the imperative "shall," if explicitly not stated, is implied.

HYD-1 Implementation of the proposed project could violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.

Construction

Buildout under the proposed project would involve soil disturbance, construction, and operation of land uses that could generate pollutants affecting stormwater. Clearing, grading, excavation, and construction activities have the potential to impact water quality through soil erosion and increasing the amount of silt and debris carried in runoff. Additionally, the use of construction materials, such as fuels, solvents, and paints, may present a risk to surface water quality. Finally, the refueling and parking of construction vehicles and other equipment on-site during construction may result in oil, grease, or related pollutant leaks and spills that may discharge into the storm drain system.

To minimize these potential impacts, future development that involves the disturbance of one acre or more of land would require compliance with the Construction General Permit (CGP) Order WQ 2022-0057-DWQ, which includes the preparation and implementation of a SWPPP. A SWPPP requires the incorporation of BMPs to control sediment, erosion, and hazardous materials contamination of runoff during construction and prevent contaminants from reaching receiving water bodies. The CGP also requires that prior to the start of construction activities, the project applicant must file PRDs with the SWRCB, which includes a Notice of Intent, risk assessment, site map, annual fee, signed certification statement, and a SWPPP. The construction contractor is required to maintain a copy of the SWPPP at the site and implement all construction BMPs identified in the SWPPP during construction activities. Prior to the issuance of a grading permit, the project applicant is required to provide proof of filing of the PRDs with the SWRCB.

Submittal of the PRDs and implementation of the SWPPP throughout the construction phase of development pursuant to the proposed project will address anticipated and expected pollutants of concern from construction activities. For future construction projects that disturb less than one acre of land, project applicants would be required to implement an effective combination of erosion and sediment control BMPs, as specified in the RWQCB MS4 permit. For example, minimum BMPs for sediment control include measures such as silt fences, fiber rolls, sandbag barriers, and stabilized construction site entrance/exit. SRCC Chapter 19-64 also contains requirements for controlling erosion

and sediment during construction. The City confirms implementation of appropriate BMPs through construction site inspections.

Operation

Potential future development and activities under the proposed project may result in long-term impacts to the quality of stormwater and urban runoff, subsequently impacting downstream water quality and/or San Francisco Bay. Future development can potentially create new sources for runoff contamination through changing land uses. As a consequence, future development within the EIR Study Area as a whole may have the potential to increase the post-construction pollutant loadings of certain constituent pollutants associated with the proposed land uses and their associated features, such as landscaping.

To help prevent long-term impacts associated with land use changes and in accordance with the requirements of the MS4 permit (Order No. R1-2015-0030) and the City's Low Impact Development Technical Design Manual, all new development and redevelopment projects that involve the creation and/or replacement of 10,000 square feet or more of impervious surface must incorporate LID site design, source control, and stormwater treatment measures to address post-construction stormwater runoff. These projects would be required to submit a Storm Water Low Impact Development Determination Worksheet and submit an Initial and Final Storm Water Low Impact Development Submittal (SWLIDS) to be reviewed and approved by the City of Santa Rosa. The City's Low Impact Development Technical Design Manual is updated periodically to reflect the latest MS4 permit requirements; therefore, potential future development over the buildout horizon of the proposed project would need to comply with the latest thresholds and reissuance of the MS4 permit.

In addition, projects that create and/or replace one acre or more of impervious surfaces must comply with the hydromodification requirements specified in the MS4 permit and the City's Low Impact Development Technical Design Manual. The hydromodification provisions require that projects capture 100 percent of the volume of runoff generated by a 1-inch, 24-hour storm event. The MS4 permit and City also require that all projects treat such stormwater on-site for the pollutants of concern and install trash capture devices. For all projects that create and/or replace 10,000 square feet of impervious surface but less than one acre of impervious surface, any increase in stormwater volume from the 1-inch, 24-hour storm event must be captured onsite and trash capture requirements must be implemented. Projects creating and/or replacing one acre or more of impervious surface must comply with the hydromodifications described above.

The SWLIDS submitted to the City shall also contain a maintenance and inspection section that includes the scope and frequency of BMP inspections, regularly scheduled maintenance, recordkeeping requirements, and a declaration of covenant stating that ongoing maintenance of BMPs on private property is the owner's responsibility. This declaration also must be recorded at the County Recorder's Office so that it will be attached to the title of the land and must include a map of all site BMPs.

As part of the statewide mandate to reduce trash within receiving waters, the City is required to adhere to the requirements of the California Trash Amendments. The requirements include the installation and maintenance of trash screening devices at all public curb inlets, grate inlets, and catch basin inlets. The trash screening devices must be certified trash full capture systems and must be installed on all inlets by

2030. As described in the Low Impact Development Technical Design Manual, trash capture requirements must be met for new development and redevelopment projects in all areas of the site, including both existing areas and new or replaced impervious areas.

Additionally, all potential future development under to the proposed project would be required to comply with the requirements of the SRCC, which prohibits illicit discharge into the storm drain system (Section 17-12.140) and includes policies to reduce the pollutants in stormwater (Section 17-12.170). All development that discharges storm water associated with industrial activity shall also comply with the requirements of the General Industrial Permit (Order No. 2014-0057-DWQ) and amended in 2018 by Order No. 2015-0122-DWQ.

Summary

Chapter 3, *Circulation, Conservation, and Greenhouse Gas Reduction*, and Chapter 5, *Safety, Climate Resilience, Noise, and Public Services and Facilities*, of the proposed General Plan 2050 contain goals, policies, and actions that require local planning and development decisions to consider impacts to hydrology and water quality, including during construction and operation of potential future development. The following goals, policies, and actions would serve to minimize potential adverse impacts on water quality and stormwater discharge:

- Goal 3-5: Protect, expand, maintain, and restore natural resources, open space, and the limited remaining agricultural land.
  - Policy 3-5.3: Conserve and protect creeks, wetlands, vernal pools, wildlife ecosystems, rare plant habitats, and waterways from development.
    - Action 3.5-5: Explore options that help to conserve wetlands and rare plants, riparian habitat and other sensitive natural communities, and essential habitat for special- status species, such as:
      - Avoidance of sensitive habitat.
      - Clustered development.
      - Transfer of development rights.
      - Compensatory mitigation, such as habitat restoration or creation.
    - Action 3-5.6: Protect high-quality wetlands and vernal pools from development and other activities.
    - Action 3-5.8: Inventory wetlands, floodplains, marshlands, and adjacent lands that could potentially support climate adaptation (e.g., through flood management, filtration, or other beneficial ecosystem services) and mitigation (e.g., carbon sequestration).
    - *Action 3-5.10: Continue to implement existing regulations and procedures, including subdivision guidelines, zoning, design review, and environmental law, to conserve wetlands and rare plants, riparian habitat and other sensitive natural communities, and essential habitat for special-status species.

- Policy 3-5.4: Use existing (and/or restore historical) natural features and ecosystem processes for conservation, preservation, or sustainable management of open space, including, but not limited to, aquatic or terrestrial vegetated open space, systems that provide clean water, conserve ecosystem values and functions, and provide a wide array of benefits to people and wildlife.
    - *Action 3-5.11: Require a qualified biologist to prepare a biological resource assessment as part of project approval for proposed development on sites that may support special-status species, sensitive natural communities, important wildlife corridors, or regulated wetlands and waters to identify potential impacts and measures for protecting the resource and surrounding habitat.
- Policy 3-5.5: Maintain, restore, and protect the city's waterways.
    - Action 3-5.14: Implement the Citywide Creek Master Plan and promote a "one water" approach that teaches preservation and stewardship of local creeks and water resources.
    - Action 3-5.15: Periodically review the status of local creeks and plan for ongoing restoration, planning, and stewardship, as identified in the Citywide Creek Master Plan.
    - Action 3-5.16: Seek funding to maintain and restore citywide creeks, including for recreational opportunities linked to creeks as well as for flood control.
    - Action 3-5.17: Implement stormwater pollution prevention outreach to increase community awareness of pollution impacts to creeks and preserve waterways.
- Policy 3-5.6: Restore channelized waterways and avoid creating additional channelized waterways unless no other alternative is available to protect human health, safety, and welfare.
    - Action 3-5.18: Restore and enhance the ecological function of channelized waterways, consistent with the Citywide Creek Master Plan, and avoid channelizing additional segments of the waterways system.
- Policy 3-5.7: Ensure that construction adjacent to creek channels is sensitive to the natural environment, preserves topography and vegetation along the creek, does not disrupt or pollute the waterway, and provides an adequate setback buffer.
    - *Action 3-5.19: Require new development along channelized waterways to establish an ecological buffer zone between the waterway and development that also provides opportunities for multiuse trails and recreation.
    - *Action 3-5.20: Require new development to maintain an adequate setback from channelized waterways to recognize the 100-year flood elevation, with setbacks in the Zoning Code as minimums and larger setbacks encouraged in accordance with Restoration Concept Plans to meet restoration and enhancement goals.

- Policy 3-5.8: Encourage multiple use of waterways, including:
  - Flood mitigation and storage;
  - Groundwater recharge;
  - Opportunities for restoration and stewardship;
  - Climate adaptation;
  - Wildlife habitats;
  - Passive recreational open space uses;
  - Nature study;
  - Pedestrian and bicycle circulation; and
  - Other compatible outdoor uses.

- Goal 3-6: Use nature- and science-based strategies to preserve and create environments that provide ecosystem benefits.
  - Policy 3-6.2: Protect groundwater recharge areas, particularly creeks and riparian corridors.
    - Action 3-6.1: Work with the Santa Rosa Plain Groundwater Sustainability Agency to identify and map groundwater recharge areas and provide groundwater recharge area maps to local agencies to foster planning that protects groundwater supplies.
- Goal 5-2: Effectively manage the potential effects of flooding and dam failure.
  - Policy 5-2.6: Manage, maintain, and improve stormwater drainage and capacity.
    - Action 5-2.12: Require dedication, improvement, and ongoing maintenance of stormwater management and retention areas as a condition of development approval.
    - Action 5-2.13: Identify and collect development impact fees needed to pay for mitigation of stormwater management impacts for new development.
    - *Action 5-2.14: Require improvements that maintain and improve the storm drainage system citywide and prioritize areas needing significant investment, consistent with the Santa Rosa Citywide Creek Master Plan goals of preserving natural conditions of waterways and minimizing channelization of creeks.
    - *Action 5-2.15: Ensure creek-side paths and trails are consistent with the Citywide Creek Master Plan and Active Transportation Plan and are incorporated into stormwater improvement projects along creek corridors.
  - Policy 5-2.7: Provide storm drainage facilities that accommodate increased development and enhanced water quality.
    - Action 5-2.16: Cooperate with Sonoma Water and the Northern California Regional Water Quality Control Board on assessments of stormwater drainage facilities to ensure adequate capacity to accommodate increases in residential and commercial development.
    - *Action 5-2.17: Require implementation of best management practices for all new development to reduce discharges of nonpoint-source pollutants to the storm drain system.
- Goal 5-9: Provide adequate and high-quality city services for water, wastewater, recycled water, stormwater, and solid waste.
  - Policy 5-9.1: Ensure water quality, water service delivery, and wastewater treatment are sufficient to meet the needs of current and future residents.

- Action 5-9.3: Maintain water, wastewater, and recycled water system integrity and capacity by continuing to prioritize maintenance and preserve funding for maintenance, rehabilitation, and replacement of existing infrastructure.
- Action 5-9.8: Evaluate the City's long-term water supply strategies, including development of new sources of water supply, enhanced water-efficiency programs, and implementation of appropriate growth-control measures, if deemed necessary by the City.
- Action 5-9.9: Work with State agencies to identify water quality issues and apply for remediation funds, as needed.

- Policy 5-9.2: Maintain water quality and encourage Santa Rosa Water customers to save water.
  - Action 5-9.12: Regularly monitor water quality to maintain high levels of water quality for human consumption and for other life systems in the region.
  - Action 5-9.13: Require new development projects to provide water-efficient landscaping in accordance with the City's Water Efficient Landscape Ordinance.
  - Action 5-9.14: Continue to comply with statewide regulations for long- term urban water use efficiency.
  - Action 5-9.15: Promote water efficiency through public education, incentives, rebates, technical assistance, customer programs, and information about indoor and outdoor water use efficiency measures.
- Policy 5-9.4: Ensure that adequate wastewater capacity is available to serve existing and future needs of the city.
  - *Action 5-9.30: Evaluate stormwater capture and reuse consistent with goals of the Santa Rosa Citywide Creek Master Plan and the MS4 National Pollutant Discharge Elimination System (NPDES) permit to preserve natural conditions of waterways, minimize channelization of creeks, and protect water quality, and identify, educate, and label to promote community awareness that storm drains flow untreated into creeks.
  - Action 5-9.32: Employ a multi-benefit "one-water" approach for new capital projects to include stormwater quality (low-impact development features) on a large scale, flood mitigation, creek restoration, and increased groundwater recharge.
- Policy 5-9.6: Identify and work with partners to address impacts from groundwater threats and solid waste.
  - Action 5-9.39: Consult with appropriate regional, State, and federal agencies to monitor water quality and address local sources of groundwater and soil contamination, including underground storage tanks, septic tanks, and industrial uses, as necessary, to achieve State and federal water quality standards.

Potential future development under the proposed General Plan 2050 has the potential to impair water quality and as such impacts from the proposed project are potentially *significant*.

Impact HYD-1: Impacts to water quality could occur from implementation of the proposed project.

Significance with Mitigation: Less than significant. Implementation of the proposed General Plan 2050 goals, policies, and actions listed above would reduce impacts related to water quality. Specifically, proposed *Action 3-5.10 and *Action 3-5.11 require the evaluation and mitigation of sensitive habitats, which includes wetlands and waterways, and would ensure impacts to water quality would be mitigated. Proposed *Action 3-5.19 and *Action 3-5.20 require that new development along channelized waterways establish an ecological buffer zone between the waterway and development and that adequate setbacks be maintained to protect water quality. Proposed *Action 5-2.14 and *Action 5-2.15 require improvements that maintain and improve the storm drainage system citywide and that ensure creekside paths and trails are developed consistent with the Citywide Creek Master Plan, which ensures runoff is captured and water quality is protected. Proposed *Action 5-2.17 requires implementation of best management practices for all new development to reduce discharges of nonpoint-source pollutants to the storm drain system. Lastly, proposed *Action 5-9.30, requires the evaluation of stormwater capture and reuse consistent with goals of the Santa Rosa Citywide Creek Master Plan and the MS4 NPDES permit. Implementation of the proposed General Plan 2050 goals, policies, and actions, in conjunction with adherence to MS4 permit requirements, the CGP, and the City's Low Impact Development Technical Design Manual, would ensure that potential future development under the proposed project would not violate any water quality standards or waste discharge requirements for both construction and operational phases, and impacts would be *less than significant.*

HYD-2	**Implementation of the proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.**

Implementation of the proposed project would result in a significant environmental impact if it would 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. Potential future development under the proposed project could result in an increase in impervious surfaces, thus reducing groundwater recharge.

Groundwater Use

Most of the City of Santa Rosa lies within the Santa Rosa Plain Groundwater Subbasin, which is designated by DWR as a medium-priority groundwater basin and is not in critical overdraft. The City of Santa Rosa is one of ten entities that have formed a GSA and prepared a GSP for this groundwater subbasin. There are two other groundwater subbasins along the eastern edge of the city, the Santa Rosa Valley–Rincon Subbasin and the Kenwood Valley Subbasin. These subbasins are designated by DWR as very low priority and are not required to form GSAs or prepare GSPs because of limited groundwater withdrawal. Santa Rosa does not pump groundwater from these subbasins for municipal water supply.

Most of the City's water supply (about 93 percent) is purchased from Sonoma Water, which provides surface water from the Russian River watershed. Sonoma Water supplements its surface water supplies with groundwater from three wells in the Santa Rosa Plain Subbasin. However, annual production from these wells has declined over the past five years (2016–2020) to an average of 20 acre-feet per year (AFY).[31] The City of Santa Rosa supplements its water supplies from Sonoma Water with groundwater pumped from six municipal wells in the Santa Rosa Plain Subbasin. Over the past three years (2020–2022), the City pumped an average of 1,234 AFY from the municipal groundwater wells.[32]

With buildout of the proposed General Plan 2050, the City anticipates a groundwater pumping rate of up to 2,300 AFY. This is less than the City's historical groundwater pumping rate of 2,870 AFY and well below the 50-year maximum pumping rate projection in the GSP of 3,500 AFY. A pumping rate of up to 2,300 AFY is not anticipated to exceed the groundwater subbasin's sustainable yield.[33] In addition, the GSP contains future projects that will ensure the sustainability of the groundwater subbasin, including aquifer recharge, stormwater capture and recharge, and aquifer storage and recovery.

Potential future development over the buildout horizon of the proposed project would be required to implement the water-efficient requirements specified in the CALGreen (SRCC Chapter 18-42) and California Plumbing Codes (SRCC Chapter 18-24) and the MWELO (SRCC Chapter 14-30) requirements for water efficient landscaping. Future projects that meet the criteria under California Water Code Section 10912 would be required to prepare a water supply assessment that demonstrates that project water demands would not exceed water supplies. In addition, residential, commercial, and industrial water usage can be expected to decrease in the future as a result of the implementation of water conservation practices.

Groundwater Recharge

Although potential future development over the buildout horizon of the proposed project would increase the amount of impervious surfaces and could potentially impact groundwater recharge, these projects would be required to implement BMPs and LID measures in accordance with the MS4 permit and the City's Low Impact Development Technical Design Manual. New development or redevelopment projects would be required to implement site design measures, source control measures, stormwater treatment measures, and hydromodification measures to be included in a SWLIDS that must be submitted and approved by the City. These measures minimize the impact of impervious surfaces by including permeable pavement, drainage to landscape areas and bioretention areas, and the collection of rooftop runoff in rain barrels or cisterns. These measures also increase the potential for groundwater recharge. In addition, the GSP prepared for the Santa Rosa Plain Subbasin includes future projects that would promote groundwater recharge, including aquifer recharge, stormwater capture and recharge, and aquifer storage and recovery.

[31] Sonoma Water, 2021, 2020 Urban Water Management Plan, https://www.sonomawater.org/media/PDF/Water%20Resources/Water%20Supply/UWMP/Sonoma%20Water%202020%20UWMP_June%202021-ADA.pdf, accessed August 9, 2023.

[32] City of Santa Rosa, 2023, SB 610 Water Supply Assessment for the Santa Rosa General Plan 2050.

[33] City of Santa Rosa, 2023, SB 610 Water Supply Assessment for the Santa Rosa General Plan 2050.

If construction dewatering is required for future development within the EIR Study Area and extracted groundwater is discharged to the sanitary sewer, project applicants must apply for a one-time wastewater discharge permit from the City, pursuant to SRCC Section 15.08.050. If groundwater is discharged to surface water or the storm drain, project applicants must obtain coverage under the North Coast RWQCB Order No. R1-2020-0006. Construction dewatering could have a temporary effect on the shallow groundwater aquifer, but this effect would be limited in terms of the quantity of groundwater withdrawn and the duration of the withdrawal. Therefore, construction dewatering would not result in a significant impact in terms of groundwater recharge.

Summary

Chapter 5, *Safety, Climate Resilience, Noise, and Public Services and Facilities,* of the proposed General Plan 2050 contains goals, policies, and actions that require local planning and development decisions to consider impacts to hydrology and water quality, including groundwater. In addition to the goals, policies, and actions listed under impact discussion HYD-1, the following goals, policies, and actions would serve to minimize potential adverse impacts to groundwater:

- Goal 5-2: Effectively manage the potential effects of flooding and dam failure.
  - Policy 5-2.2: Promote the enhancement and expansion of open space for flood management and passive recreation where appropriate and safe.
    - Action 5-2.5: Protect floodplains by retaining and expanding, as feasible, open space areas that can retain stormwater, recharge groundwater/aquifers, and prevent/reduce flooding.
- Goal 5-9: Provide adequate and high-quality city services for water, wastewater, recycled water, stormwater, and solid waste.
  - Policy 5-9.1: Ensure water quality, water service delivery, and wastewater treatment are sufficient to meet the needs of current and future residents.
    - Action 5-9.11: Continue working with the Santa Rosa Plain Groundwater Sustainability Agency to implement the Groundwater Sustainability Plan and achieve sustainability of local groundwater resources.
  - Policy 5-9.4: Ensure that adequate wastewater capacity is available to serve existing and future needs of the city.
    - Action 5-9.28: Improve stormwater management to increase infiltration, provide treatment, promote groundwater recharge, reduce flood risk, capture trash, and enhance the environment.

Compliance with the SRCC requirements for new construction, water efficient landscaping, and the General Plan 2050 goals, policies, and actions identified above would further protect groundwater resources. Therefore, the proposed project would not significantly interfere with groundwater recharge and would not substantially deplete groundwater supplies and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

HYD-3	**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 through the addition of impervious surfaces, in a manner which would: i) result in substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows.**

Potential new development or redevelopment within the EIR Study Area and changes in land use could result in an increase in impervious surfaces. This in turn could result in an increase in stormwater runoff, higher peak discharges to storm drains, the potential to cause nuisance flooding in areas without adequate drainage facilities, and the potential to cause erosion or siltation in streams. Increases in tributary flows can exacerbate creek bank erosion or cause destabilizing channel incision.

Erosion and Siltation

All potential future development under the proposed project would be required to implement construction-phase BMPs as well as post-construction site design, source control measures, and treatment controls in accordance with the requirements of the CGP, the SRCC, the MS4 Permit, and the City's Low Impact Development Technical Design Manual. Typical construction BMPs include silt fences, fiber rolls, catch basin inlet protection, water trucks, street sweeping, and stabilization of truck entrance/exits. Each new development or redevelopment project that disturbs one or more acre of land would be required to prepare and submit a SWPPP to the SWRCB that describes the measures to control erosion and sedimentation due to construction activities.

Once future development projects have been constructed, the MS4 permit requirements for new development or redevelopment projects must be implemented and include site design measures, source control measures, LID, and treatment measures that address stormwater runoff and would reduce the potential for erosion and siltation. Site design measures include limits on clearing, grading, and soil compaction; minimizing impervious surfaces; conserving the natural areas of the site as much as possible; complying with stream setback ordinances; and protecting slopes and channels from erosion. LID measures include the use of permeable pavements, directing runoff to pervious areas, and the construction of bioretention areas. The SWLIDS report submitted to the City must also include operation and maintenance procedures and an agreement to maintain any stormwater treatment and control facilities for perpetuity. Adherence to the streambed alteration agreement process under Sections 1601 to 1606 of the California Fish and Game Code would further reduce erosion and siltation impacts that may occur due to streambed alterations. Projects subject to hydromodification must also maintain the pre-project creek erosion potential by implementing various control measures.

In addition, as described under impact discussion GEO-2 in Chapter 4.7, *Geology and Soils*, of this Draft EIR, Chapter 5, *Safety, Climate Resilience, Noise, and Public Services and Facilities,* of the proposed General Plan 2050 includes proposed Policy 5-1.5, which requires the City to promote erosion-control strategies that reduce hazards to structures, properties, and drainages. This policy is supported by proposed Action 5.1-9 and Action 5-1.10, which require the City to identify enhanced erosion-control measures for properties that exhibit high erosion potential, are in areas of steep slopes, or have experienced past erosion problems and ensure that each update to the Community Wildfire Protection Plan identifies slope stability, wildfire hazard areas, and mitigation strategies to reduce post-wildfire erosion. Implementation of these policies would further minimize impacts related to erosion.

Flooding On- or Off-Site

All potential future development under the proposed project must comply with the requirements of the MS4 Permit and the City's Low Impact Development Technical Design Manual. Regulated projects must implement BMPs, including LID BMPs and site design BMPs, which effectively minimize imperviousness, retain or detain stormwater on-site, decrease surface water flows, and slow runoff rates. Projects that create and/or replace one acre of impervious surface must also adhere to the hydromodification requirements of the MS4 permit and the Low Impact Development Technical Design Manual to ensure that 100 percent of the post-project runoff generated by a 1.0-inch, 24-hour storm event is infiltrated and/or retained on-site. Adherence to these regulatory requirements would minimize the amount of stormwater runoff from new development and redevelopment within the EIR Study Area.

Stormwater Drainage System Capacity

Potential future development that involves the creation and/or replacement of 10,000 square feet or more of impervious surfaces would trigger the implementation of site design measures to reduce stormwater runoff, pursuant to the MS4 Permit and the City's Low Impact Development Technical Design Manual. Prior to the issuance of grading permits, the City will require completion and submittal of a Final SWLIDS report for review and approval to ensure that these requirements are met. Stormwater treatment measures are required to temporarily detain site runoff for projects that create or replace 10,000 square feet or more of impervious surface, using specific numeric sizing criteria based on volume and flow rate. Implementation of these stormwater measures will reduce the amount of stormwater runoff that is ultimately discharged to the City's storm drain system and the creeks that run through Santa Rosa. Projects that create and/or replace one acre or more of impervious surfaces must also adhere to the hydromodification requirements of the MS4 permit and demonstrate that 100 percent of the post-project runoff generated by a 1.0-inch, 24-hour storm event is infiltrated and/or retained on-site.

Projects that meet the MS4 regulatory criteria would need to demonstrate that the regulatory requirements for the sizing and temporary on-site retention of stormwater runoff have been met by submitting a Stormwater Determination Worksheet and a SWLIDS report to the City for review and approval prior to the issuance of grading permits. This would minimize the amount of stormwater runoff from new development and redevelopment sites in the EIR Study Area. Also, as part of the permitting process, future development would be required to pay a stormwater assessment pursuant to SRCC Title 16, which is designed to mitigate the impacts of stormwater discharged into the creeks and waterways in

Santa Rosa. The assessments are used to evaluate and maintain the storm drain system, implement flood control improvements, respond to flooding issues, and restore creeks and habitat.

In addition, new development and redevelopment within the EIR Study Area would not create substantial additional sources of polluted runoff. During the construction phase, projects would be required to prepare SWPPPs, thus limiting the discharge of pollutants from the site. During operation, projects must implement BMPs and LID measures that minimize the amount of stormwater runoff and associated pollutants.

Redirecting Flood Flows

The discussion above regarding on- and off-site flooding is also applicable to the analysis of impeding or redirecting flood flows. Since new development projects are required to comply with the MS4 Permit and retain stormwater on-site via the use of bioretention facilities or other stormwater treatment measures, any flood flows would also be retained for a period of time on-site, which would minimize the potential for flooding impacts. Impact discussion HYD-4 discusses the potential for impeding or redirecting flood flows with development in areas within the 100-year floodplain.

Summary

Chapter 5, *Safety, Climate Resilience, Noise, and Public Services and Facilities,* of the proposed General Plan 2050 contains goals, policies, and actions that require local planning and development decisions to consider impacts related to hydrology and water quality, including drainage patterns. In addition to the goals, policies, and actions identified under impact discussions HYD-1 and HYD-2, the following goals, policies, and actions would serve to minimize potential adverse impacts related to erosion, flood flows, and storm drain capacity:

- Goal 5-1: Minimize community exposure to seismic and geologic hazards.
  - Policy 5-1.2: Promote erosion-control strategies that reduce hazards to structures, properties, and drainages.
    - Action 5-1.9: Identify enhanced erosion-control measures for properties that exhibit high erosion potential, are in areas of steep slopes, or have experienced past erosion problems.
- Goal 5-2: Effectively manage the potential effects of flooding and dam failure.
  - Policy 5-2.1: Ensure land use strategies consider flood impacts and stormwater management tactics to reduce the effects of future inundation.
    - Action 5-2.1: Ensure land use strategies consider flood impacts and stormwater management tactics to reduce the effects of future inundation.
    - Action 5-2.2: Complete and implement the Storm Drain Master Plan.
    - Action 5-2.3: Coordinate with Sonoma Water regarding flood zones, land use, and flood mitigation strategies.
    - Action 5-2.4: Employ flood mitigation strategies in the development of plans and projects along creeks and waterways.

- Policy 5-2.3: Comply with all applicable FEMA flood-management regulations and requirements.
  - Action 5-2.7: Continue to maintain and periodically update flood hazard data, and coordinate with federal, State, and local agencies responsible for flood hazard analysis and management activities.
  - Action 5-2.8: Continue to incorporate into public works projects features and appropriate standards that reduce flooding hazards, including daylighting culverts in urban areas such as downtown.
- Policy 5-2.4: Ensure that the design of new development in a flood zone provides adequate flood protection without negatively impacting adjacent or downstream properties.
  - Action 5-2.9: Require an evaluation of flood hazards and appropriate on-site mitigation options by a qualified professional for any project in a FEMA- and Department of Water Resources (DWR)– designated flood zone during the development review process.

With compliance with the MS4 permit, the City's stormwater requirements, and proposed General Plan 2050 goals, policies, and actions, potential future development under the proposed project would not result in substantial erosion or siltation and would not substantially increase the rate of surface runoff which would result in flooding, impede or redirect flood flows, or exceed the capacity of the drainage system. Impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

HYD-4	**Implementation of the proposed project would not, in a flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.**

Pollutant Release in Flood Hazard Zones

Buildout pursuant to the General Plan 2050 could involve development of some projects in FEMA 100-year flood zones. As shown on Figure 4.10-3, the land that borders the creeks that run through Santa Rosa are within the 100-year floodplain. Also, the noncontiguous areas west of the city are within the 100-year floodplain of Laguna de Santa Rosa.

Potential future development over the buildout horizon of the proposed project within the 100-year flood zones would be subject to floodplain requirements listed in SRCC Chapter 18-52. Prior to the start of construction or development within a Flood Hazard Area (i.e., 100-year floodplain), the City requires project applicants to obtain a development permit from the City's Floodplain Administrator and construct new development in accordance with the standards in SRCC Section 18-52.080, *Standards of Construction*. The standards of construction vary depending on whether the proposed structure is residential or nonresidential. In general, the standards of construction include provisions for flood risk reduction, including anchoring and flood-resistant materials and construction methods, with the lowest floors elevated at or one foot above the base flood elevation. No permits are issued by the City for structures within floodways, i.e., the drainage area necessary for a 100-year floodplain. Compliance with FEMA's

National Flood Insurance Program requirements and SRCC requirements would reduce potential flood hazards and ensure that pollutants are not released during flood inundation.

Additionally, as discussed in Section 4.10.1.1, *Regulatory Framework*, the Santa Rosa Jurisdictional Annex of the MJHMP includes hazard mitigation actions to help reduce the risk of damage or injury from floods. These actions include continued implementation of floodplain management measures, incorporation of FEMA guidelines into the planning process, and the assessment and mitigation of urban drainage flooding.

Pollutant Release in Dam Inundation Zones

As shown on Figure 4.10-4, areas of Santa Rosa are within the inundation zones of the various dams. The probability of dam failure is very low, and Santa Rosa and Sonoma County have never been impacted by a major dam failure. In addition, dam owners are required to maintain emergency action plans that include procedures for damage assessment and emergency warnings. An EAP identifies potential emergency conditions at a dam and specifies preplanned actions to help minimize property damage and loss of life should those conditions occur. EAPs contain procedures and information that instruct dam owners to issue early warning and notification messages to downstream emergency management authorities, such as the City's Santa Rosa Emergency Operations Center. Because the likelihood of catastrophic dam failure is very low, impacts related to the release of pollutants due to dam inundation are not considered significant.

Pollutant Release from Tsunamis and Seiches

Santa Rosa is approximately 25 miles from San Pablo Bay and 15 miles from the Pacific Ocean and is not within any mapped tsunami inundation zone. Therefore, there is no potential for the release of pollutants due to a tsunami.

Although seiches could theoretically occur at reservoirs within or in close proximity to Santa Rosa, the wave heights are usually one foot or less, and dams are typically designed with a freeboard height of at least three feet. Therefore, it is unlikely that a seiche would cause overtopping of a dam or reservoir, resulting in downstream flooding or the release of pollutants. Aboveground water storage tanks in the city could experience a seiche associated with a large earthquake. However, the tanks are constructed to withstand seismic events and would not result in failure that would cause significant flooding or the release of pollutants.

Summary

Chapter 5, *Safety, Climate Resilience, Noise, and Public Services and Facilities,* of the proposed General Plan 2050 contains goals, policies, and actions that require local planning and development decisions to consider impacts to hydrology and water quality, including release of pollutants. In addition to the goals, policies, and actions identified under impact discussions HYD-1, HYD-2, and HYD-3 the following goal, policy, and actions would serve to minimize potential adverse impacts related to inundation:

- Goal 5-2: Effectively manage the potential effects of flooding and dam failure.
    - Policy 5-2.5: Protect public and private properties from dam inundation

- Action 5-2.10: Coordinate with dam owners/operators to ensure that dam safety inspections are conducted annually, as required by the California Division of Safety of Dams (DSOD).
- Action 5-2.11: Prioritize investment in flood-control mitigation that also reduces impacts associated with dam failure.

The proposed General Plan 2050 goals, policies, and actions identified above would address the potential for flooding, dam inundation, and seiches. In conjunction with the implementation of the City's floodplain management requirements, and activation of the City's emergency response system in the case of a dam failure, the potential impact that there would be a release of pollutants from flooding, tsunamis, or seiches would be *less than significant*.

Significance without Mitigation: Less than significant.

HYD-5 Implementation of the proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Adherence to the State CGP, the SRCC, the MS4 Permit, and City's Low Impact Development Technical Design Manual would ensure that surface and groundwater quality are not adversely impacted during construction and operation of new development pursuant to the proposed General Plan 2050. As a result, site development will not obstruct or conflict with the implementation of the North Coast RWQCB's Basin Plan.

Most of the City's potable water supply is purchased from Sonoma Water, which provides surface water from the Russian River watershed. The City supplements its surface water supplies with groundwater obtained from municipal groundwater wells and accounts for about 6 percent of its total water demand. The City's groundwater supplies are from the Santa Rosa Plain Subbasin, which has been designated by DWR as a medium priority basin and is not in critical overdraft. The City is one of ten GSAs that prepared a GSP for the Santa Rosa Plain Subbasin that was approved by DWR in January 2023.

With buildout of the proposed General Plan 2050, the City anticipates a groundwater pumping rate of up to 2,300 AFY. This is less than the City's historical groundwater pumping rate of 2,870 AFY and well below the 50-year maximum pumping rate projection in the GSP of 3,500 AFY. A pumping rate of up to 2,300 AFY is not anticipated to exceed the groundwater subbasin's sustainable yield.[34] In addition, the GSP contains future projects that will ensure the sustainability of the groundwater subbasin, including aquifer recharge, stormwater capture and recharge, and aquifer storage and recovery. Therefore, the proposed General Plan 2050 would not obstruct or conflict with a groundwater management plan.

As described under impact discussion HYD-1, Chapter 3, *Circulation, Open Space Conservation, and Greenhouse Gas Reduction*, and Chapter 5, *Safety, Climate Resilience, Noise, and Public Services and Facilities,* of the proposed General Plan 2050 contain goals, policies, and actions that require local

[34] City of Santa Rosa, 2023, SB 610 Water Supply Assessment for the Santa Rosa General Plan 2050.

planning and development decisions to consider impacts to hydrology and water quality, including consistency with water quality control plans or sustainable groundwater management plans. With adherence to the proposed General Plan 2050 goals, policies, and actions, and continued compliance with State and City regulatory requirements, the proposed project would not obstruct or conflict with a water quality control plan or groundwater management plan, and impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

HYD-6	**Implementation of the proposed project would not, in combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to hydrology and water quality.**

The geographic context used for the cumulative assessment of hydrology, drainage, flooding, and water quality encompasses the subwatersheds in the EIR Study Area, as shown on Figure 4.10-1. Potential new development in these subwatersheds could increase impervious areas, thus increasing runoff and flows into the storm drainage systems. Potential future development would be required to comply with the MS4 Permit, implement BMPs that direct drainage to landscaped areas, and integrate bioretention facilities into the site design.

All projects would be required to comply with the SRCC and various water quality regulations that control construction-related and operational discharge of pollutants into stormwater. The water quality regulations implemented by the North Coast RWQCB take a basinwide 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 MS4 Permit encompasses all of the surrounding municipalities to manage stormwater systems and be collectively protective of water quality. Projects in these subwatersheds would implement structural and nonstructural source-control BMPs that reduce the potential for pollutants to enter runoff, and treatment control BMPs that remove pollutants from stormwater.

Projects in the watersheds may be constructed within 100-year flood zones or dam inundation zones. Projects within the 100-year flood zone would be mandated to purchase flood insurance through the National Flood Insurance Program. In addition, Sonoma County and other jurisdictions within these subwatersheds regulate development within flood zones in a similar manner as SRCC Chapter 18-52 and in compliance with FEMA standards to limit cumulative flood hazard impacts.

There have been no dam failures in Santa Rosa or Sonoma County, and the risk of a catastrophic dam failure causing flooding to downstream residents is very low. In addition, in the case of an imminent dam failure, the Sonoma County and Santa Rosa's Emergency Operations Plans would be activated to ensure that residents and businesses are notified and if necessary evacuated in a timely manner.

In summary, cumulative impacts to hydrology, drainage, and flooding would be *less than significant*, and impacts of the proposed project would not be cumulatively considerable.

Significance without Mitigation: Less than significant.

This page has been intentionally left blank.