

CHAPTER 8

INFRASTRUCTURE

IN THIS CHAPTER

Water Supply Distribution | Stormwater Drainage and Water Quality | Dry Utilities



8.1 INFRASTRUCTURE FINDINGS

Water Supply and Distribution

1. The City's Water Department provides water service to approximately 178,000 people through 53,000 service connections. The Sonoma County Water Agency supplies most of the water, and the City uses groundwater to supplement the water supply.
2. The City has identified projects needed to increase water delivery capacity. Under the guidance of the Water Master Plan Update, the City has completed the 17 highest-priority capital improvement projects and 55 more projects are currently in design, planned, or under construction.

Wastewater Collection and Treatment

3. The City maintains 590 miles of sewer system infrastructure. The sewer system discharges into the Laguna Wastewater Treatment Plant, which can treat up to 21.34 million gallons per day before releasing it into the Russian River.
4. The Sanitary Sewer System Master Plan identifies several trunk line replacements or improvements needed to reduce the flow of stormwater and groundwater into the aging sewer system.

Stormwater Drainage and Water Quality

5. Santa Rosa uses a combination of closed conduit and open channel systems to convey stormwater runoff from six primary drainage basins to the major creeks that run through the city. The city's creeks discharge into the Laguna de Santa Rosa, which eventually discharges surface waters into the Russian River.
6. The southern portion of the city has flooded historically along Colgan Creek and Roseland Creek. The General Plan can support improvements to stormwater drainage by identifying needed improvements to the storm drain system.

Dry Utilities

7. Pacific Gas and Electric Company (PG&E) and Sonoma Clean Power provide gas and electricity services to the Santa Rosa community. The existing electricity supply system consists of both overhead and underground facilities.
8. The PG&E transmission system was the cause of some recent fires that devastated areas in Sonoma County, including parts of the city. PG&E has begun to service its transmission lines to help prevent future fires.

8.2 INTRODUCTION

Santa Rosa relies on a variety of infrastructure networks to provide critical utility services for residents and businesses. The age of the infrastructure, changes in population and population characteristics, and the constant evolution of environmental regulations all influence how well the existing infrastructure networks can provide reliable, safe, and environmentally considerate utility services to Santa Rosa.

This chapter includes an overview of the size, capacity, and limitations of the existing utility infrastructure in the city, including water supply, wastewater conveyance and treatment, storm drainage system, natural gas and electric facilities, and is divided into the following sections:

- Infrastructure Findings (Section 8.1)
- Introduction (Section 8.2)
- Regulatory Setting (Section 8.3)
- Water Supply and Distribution (Section 8.4)
- Stormwater Drainage and Water Quality (Section 8.5)
- Dry Utilities (Section 8.6)
- Sources (Section 8.7)

8.3 REGULATORY SETTING

The section below summarizes federal, State, regional, and local regulations that are related to the utility infrastructure in Santa Rosa.

Federal

Federal Clean Water Act

The Federal Clean Water Act (33 U.S.C. 1251 et seq.) creates the framework for regulating pollutant discharge into the waters of the United States and provides water quality standards for surface waters. The Clean Water Act was initially enacted in 1948 but was significantly revised and expanded in 1972.

The US Environmental Protection Agency (EPA), under the Clean Water Act, has set wastewater standards and made it unlawful to discharge pollutants from a point source to any navigable waters without obtaining a permit. Some of these point sources include pipes and human-made drainage channels that drain industrial or commercial facilities.

Federal Safe Drinking Water Act

The Safe Drinking Water Act (SDWA; 42 U.S.C. 300[f] et seq.) was established to ensure the protection of the quality of drinking water in the US. It authorizes the EPA to establish minimum health standards for public water system owners or operators to comply. Water suppliers are required to remove constituents or contaminants that exceed the maximum levels allowed. The primary regulatory agency in California with regard to enforcement of these standards is the Department of Health Services. If the water supplied by these agencies is not up to standards, the water supplier must notify its customers.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 introduced aggressive requirements for shifting the US toward energy independence and security (EPA 2007). These requirements include increasing the production of cleaner, renewable fuels and increasing the efficiency of products and energy for buildings and vehicles.

Energy Policy Act of 2005

The Energy Policy Act of 2005 (42 U.S.C. 1302 et seq.) provides resources to entities that develop or use technologies or integrate practices that reduce the production of greenhouse gases (GHG). Some energy production methods that are addressed include energy efficiency, renewable energy, and electricity and energy tax incentives.

Environmental Protection Agency

The EPA regulates stormwater discharge and maintenance activities under the National Pollutant Discharge Elimination System (NPDES) permit.

National Flood Insurance Act of 1968

The City of Santa Rosa has been a regular member of the National Flood Insurance Program since 1981. In participating communities that adopt adequate floodplain management policies, the Federal Emergency Management Agency (FEMA) can make affordable flood insurance available to property owners (42 U.S.C. 4001 et seq.).

National Pollutant Discharge Elimination System

The NPDES program was created in 1972 by the federal Clean Water Act. The NPDES program helps regulate water pollution by imposing regulations that control the pollutant at the source of discharge. The EPA has authorized state, tribal, and territorial governments to perform administrative, enforcement, and permitting aspects of the NPDES program (EPA 2020).

State

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations provide standards and requirements for the 21 different categories of appliances that are sold in California. They include federally regulated appliances as well as non–federally regulated appliances (CEC 2020).

2019 CALGreen Building Code

CALGreen mandatory green building standard codes were adopted in 2010. The 2019 CALGreen building codes were effective January 2020. The goals and initiatives of the CALGreen building code are to reduce GHG emissions from buildings, reduce water consumption, and promote environmentally friendly and cost-effective places to live and work (DGS 2020a).

2019 California Building Code, Building Energy Efficiency Standards

The 2019 building energy efficiency standards provide regulations for new commercial and residential buildings. Some requirements include efficient HVAC systems and lighting systems (DGS 2020b).

2019 California Plumbing Code

The 2019 California Plumbing Code is an overarching document that provides guidelines and requirements. Its purpose is to provide a universal document for reference and to prevent conflicting plumbing codes in local jurisdictions. Some topics covered in the code include potable and nonpotable water systems, water fixtures, and recycled water systems.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates utilities, ensures reliable access to utility infrastructure, and protects the environment and consumers (CPUC 2020). In relation to energy, the CPUC specifically regulates investor-owned electric and natural gas utilities operating in California, including Pacific Gas & Electric and Sonoma Clean Power, which serve the City of Santa Rosa. Some initiatives and mandates addressed by the CPUC relate to consumer electric costs, electric power procurement and generation, infrastructure, customer energy resources, energy efficiency, and energy rates.

California Senate Bill (SB) 610 and 221

SB 610 and SB 221 were amended in 2001 to ensure coordination between the local water and land use decisions and to confirm that California cities and communities are provided with adequate water supply. Specific projects are required to prepare a Water Supply Assessment (WSA). The WSA is composed of information regarding existing and forecast water demands as well as information pertaining to available water supplies for the new development.

Projects required to prepare a WSA include:

- Residential developments consisting of more than 500 homes.

- A business employing more than 1,000 people or having more than 500,000 square feet.
- A commercial office building employing more than 1,000 people or having more than 250,000 square feet of floor space.
- A hotel having more than 500 rooms.
- An industrial complex with more than 1,000 employees and occupying more than 40 acres of land.
- A mixed-use project that require the same or greater amount of water as a 500 dwelling-unit project.

SB 221 requires written verification that there is a sufficient water supply available for new residential subdivisions that include over 500 dwelling units. The verification must be provided before commencement of construction for the project.

California Sustainable Groundwater Management Act

The California Sustainable Groundwater Management Act (SGMA) was amended in 2014 and consists of AB 1739, SB 1168, and SB 1319. The SGMA provides a framework for sustainable groundwater management. It requires governments and water agencies that deal with high and medium priority basins, as assessed by the State's Department of Water Resources, to halt overdraft and implement measures to bring the groundwater basins back into sustainable levels of pumping and recharge. As the sustainability plans are implemented, the respective basins should return to sustainable levels within 20 years. The SGMA supports local agencies by providing guidance and financial and technical assistance.

California Urban Water Management Planning Act

The California Urban Water Management Planning Act and Section 10620 of the Water Code require that every urban water supplier in California prepare and adopt an urban water management plan (UWMP) and update it every five years. The UWMP describes the service area of the water supplier; projected 20-year water supply; demand for the service area in normal years, dry years and multiple dry years; and water recycling strategies.

Governor's Green Building Executive Order

The Governor's Green Building Executive Order was given in April 2012 (EO B-18-12). The Green Building Executive Order calls for the reduction of GHG emissions by achieving directives such as new government buildings to be net zero energy by 2025, reducing peak electrical loads, pursuing electrical vehicle systems, and obtaining, at a minimum, LEED silver certification for large government buildings.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act provides local jurisdictions and established agencies, such as the State Water Resources Control Board and the nine Regional Water Quality Control Boards, with the authority to enforce water quality standards over State water rights and quantity policies.

State Water Resources Control Board

The State Water Resources Control Board establishes statewide policies and regulations for California under the federal Clean Water Act and the Porter-Cologne Water Quality Control Act. The Board's role is to protect California's water resources—both surface waters and groundwater. The Board regulates water quality and mitigates for deficiencies in the state's water resources.

The Water Conservation Act of 2009

The Water Conservation Act of 2009, also known as Senate Bill X7-7, requires all water suppliers in California to increase their water use efficiencies. The goal of the bill is to reduce urban water usage by 20 percent by year 2020. Urban water suppliers who do not meet the 20 percent by 2020 goal will be ineligible for state water grants or loans. Water suppliers must determine baseline water usage and set goals to meet specified water reductions by certain years.

Regional

North Coast Regional Water Quality Control Board

The North Coast Regional Water Quality Control Board was created as a result of the California Porter-Cologne Water Quality Control Act. The Board's jurisdiction includes Del Norte, Glenn, Humboldt, Lake, Marin, Mendocino, Modoc, Siskiyou, Sonoma, and Trinity counties. The Board's purpose is to protect the water quality at the regional level by implementing and enforcing rules that regulate discharge.

Local

City of Santa Rosa General Plan 2035

The City of Santa Rosa 2035 General Plan contains policies and goals addressing water use and conservation, including a critical need to conserve existing water supplies by practicing efficient and sustainable water use (City of Santa Rosa 2009).

City of Santa Rosa 2015 Urban Water Management Plan

The City of Santa Rosa's Urban Water Management Plan has been prepared in accordance with the Urban Water Management Planning Act. The purposes of the UWMP is to discuss the city water system and water supply sources, as well as to document historical and projected water use in comparison to water supply and water demands during normal service years. This document also contains an Urban Water Shortage Contingency Plan in the event of severe, prolonged drought or loss of a water source (City of Santa Rosa 2015).

City of Santa Rosa 2014 Water Master Plan Update

The most recent version of the City's Water Master Plan (WMP) was updated in 2014 (City of Santa Rosa 2014b). Through the WMP, the City is able to review planning and funding issues associated with the need for additional water system infrastructure and implementation of a comprehensive capital improvement program to meet the maintenance needs of the existing water system and to accommodate planned future growth.

City of Santa Rosa 2007 Recycled Water Master Plan Update/Incremental Recycled Water Program

The Recycled Water Master Plan is used to assist City staff in deciding how to manage additional wastewater flows into the City's Regional Water Reuse System, including methods for managing current and future flows that are discharged and which are affected by new regulations. The goal of the Recycled Water Master Plan is to increase the reuse of recycled water by conveying additional recycled water to the Geysers steam field for recharge for future green power generation purposes (City of Santa Rosa 2007).

City of Santa Rosa Sewer System Management Plan

The most recent Sewer System Management Plan (SSMP) was updated in 2019. The purpose of the SSMP is to create a record of the activities and events that the City utilizes to manage its wastewater collection system. Some of these methods include maintaining the system to provide reliable service for the future, provide or increase capacities to allow for peak sewer flows, and minimize the number of sewer overflows. The plan should meet the requirements of the Regional Water Quality Board and the Statewide General Waste Discharge Requirements. It is important that system overflows are minimized because they pose as a hazard to natural drainage systems and the environment.

City of Santa Rosa 2014 Sanitary Sewer System Master Plan Update

Most recently updated in 2014, the Sanitary Sewer System Master Plan is used to support ongoing wastewater collection system capital improvement projects by identifying management, maintenance, and operational approaches to keeping the sewer system running and expanding to serve future needs (City of Santa Rosa 2014a).

City of Santa Rosa Groundwater Master Plan

Established in 2013, the Groundwater Master Plan provides the City with information on how the available groundwater resources could be effectively and sustainably utilized to meet current and future groundwater needs. Specific groundwater improvement projects and programs are identified in the Groundwater Master Plan to help the City establish a balanced use of the groundwater resources (City of Santa Rosa 2013b).

City of Santa Rosa Biosolids Management Strategic Plan

The Biosolids Management Strategic Plan, prepared in 2014, was developed to help the City obtain the long-term goal of achieving a full Class A biosolids program for a high control of pathogens. To support this goal, the Biosolids Management Strategic Plan identifies capital improvement projects to help the City maintain a multi-option biosolids disposition program, including optimization of the City's existing compost operation, while working toward improvements to support a pathway to a future Class A project (City of Santa Rosa 2014c).

City of Santa Rosa Municipal Code

In addition to the General Plan, the City of Santa Rosa's Municipal Code shapes the development in the city.

Community Wildfire Safety Program

PG&E has initiated a program to revitalize transmission systems in high fire threat districts in Napa and Sonoma Counties to help to prevent wildfires in these districts (PG&E 2020). Within these counties, 50 percent of PG&E's service area is in high fire threat districts. To prevent wildfires in these areas, PG&E has implemented plans to turn off power to certain districts during high fire risk scenarios—these are referred to as Public Safety Power Shutoff (PSPS). Currently Sonoma County is expected to experience one to three PSPS events every year, and PG&E plans to reduce the number of customers impacted by these events by 1/3 every year and restore power to customers twice as fast each year. PG&E is also planning to install sectionalizing devices, develop microgrids, and conduct targeted undergrounding to reduce the risk of wildfires and impacted customers due to PSPS. Currently PG&E is installing 45 new sectionalizing devices across Sonoma County, along with creating six new microgrid sites in Sonoma County and providing additional clearance between power lines and vegetation that exceeds current State fire safety standards (PG&E 2020).

8.4 WATER SUPPLY AND DISTRIBUTION

Water Supply Sources

The Russian River watershed is the primary potable water supply source for Santa Rosa (refer to **Figure 8-3**, in the Stormwater Drainage and Water Quality section, for a map of the city's six watersheds). The Sonoma County Water Agency (Sonoma Water) delivers water to the city under a contractual agreement. Diversion of surface waters and groundwater extraction is carried out by Sonoma Water, which holds water rights for the diversion of 92 million gallons of water per day (mgd). Sonoma Water is allowed an annual maximum extraction from the Russian River of 75,000 acre-feet per year, and an average annual extraction of about 3,870 acre-feet per year from three groundwater wells in the Santa Rosa Plain. Of this total available supply, 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 the city the largest consumer of water in the Sonoma Water service area.

Water is delivered to the city through transmission and delivery systems owned and operated by Sonoma Water. Santa Rosa receives potable water from Sonoma Water through a series of turnouts, check valves, and direct connections serving city pump stations along Sonoma Water's Santa Rosa Aqueduct and Sonoma Aqueduct. There are 59 physical connections between the City's distribution system and Sonoma Water's system, including 39 pressure-reducing valves, 16 check valves, and 4 pumping stations. **Figure 8-1** shows a map of the city's water system.

Sonoma Water has long been planning various water transmission and delivery system improvements as part of its "Water Supply, Transmission, and Reliability Project" (Water Project). The improvements that are part of the Water Project would increase the capacity of Sonoma Water's delivery and transmission system from 92 mgd to 149 mgd. The ability for Sonoma Water to deliver the entire entitled amount of water to Santa Rosa depends on completion of the Water Project improvements. However, due to decreases in annual and peak water demands over the last several years from the Sonoma Water contractors, Sonoma Water does not appear to have made any recent capacity improvements because the system can handle the current demand trends.

Table 8-1 summarizes the water delivery volumes to the city between 2010 and 2019. The city's water consumption from this source is generally trending downward.

Table 8-1: Water Delivery to City of Santa Rosa from Sonoma County Water Agency, Acre Feet per Calendar Year									
2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
18,514.4	17,180.0	19,353.9	20,692.4	16,908.0	15,341.0	15,741.0	16,585.3	17,689.6	17,116.1
Source: Schedule of Actual Water Deliveries in Acre Feet Through the Agency's Water Transmission System, Sonoma County Water Agency, various years of reporting.									

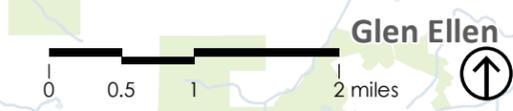
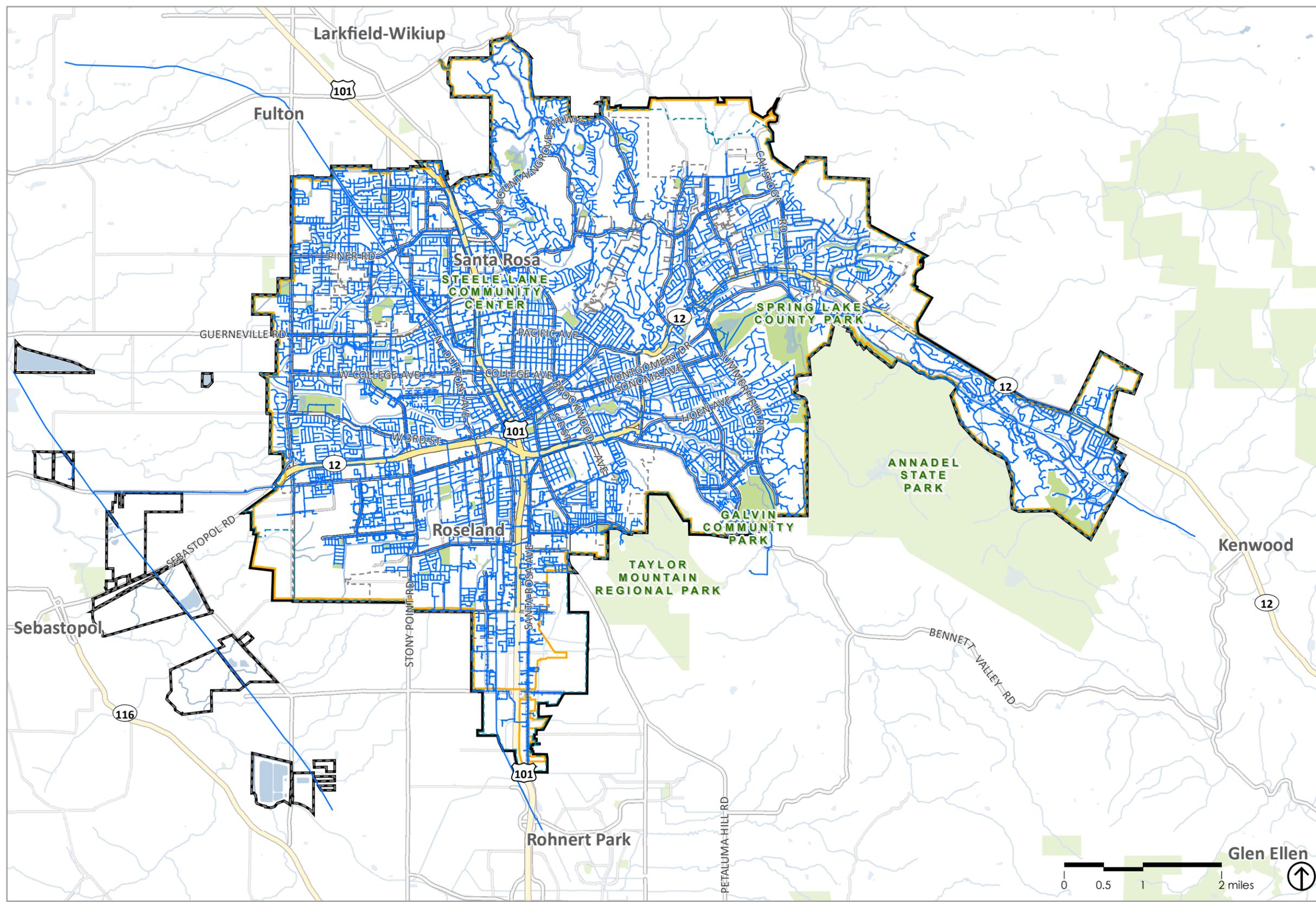
In addition to the water supplied by the Sonoma Water, two other water sources are available. The City owns two active production wells that together can pump up to 2,300 acre-feet per year to supplement the city's active potable water supply. The city typically uses these wells only in the summer and early fall months when water demand peaks. Demand on these wells ranges from 832 to 1,501 acre-feet, which is about 3.5 to 6.8 percent of the city's total annual water supply. Well extraction data from 2010 to 2019, depicted in **Table 8-2**, shows fluctuations in the year-to-year production and use of groundwater, with a general increased use of groundwater (other than 2018 and 2019 when the wells were undergoing pump replacement and other upgrades and repairs).

Table 8-2: Groundwater Use by the City of Santa Rosa, Acre-Feet per Year									
2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
913	1,259	791	1,131	1,134	1,198	1,227	1,309	0*	666**
Source: City of Santa Rosa, Production and Use Statistics, various years of reporting. * Both wells were offline for pump replacement. ** One well remained offline during most of 2019 for additional repairs.									

Figure 8-1
 Citywide Water System (2020)

Legend

-  Planning Area
-  City Limit
-  Urban Growth Boundary
-  Sphere of Influence
-  Water Mains



Additionally, the City owns and operates the Regional Water Reuse System, which provides approximately 140 acre-feet per year of recycled water for urban landscape irrigation. The City's recycled water is approved for nonpotable uses following treatment at the Laguna Regional Wastewater Treatment Plant. **Table 8-3** shows annual usage of recycled water for urban landscape irrigation from 2014 to 2019.

2014	2015	2016	2017	2018	2019
120	122	116	133	128	126
Source: City of Santa Rosa, various years of reporting.					

Total potable water consumption (considering the combination of Sonoma Water-provided water and water generated by the City's production wells) has seen a decline across most consumer types over the past 10 years. There was a modest increase in water use from 2017 to 2019 compared to 2014 to 2016, reflecting a slight rebound in water use after the State-mandated drought restrictions were lifted in June 2016. Water use for the Industrial and Irrigation meter sectors has been trending upward over the past 10 years. Generally, residential use accounts for approximately 73 to 75 percent of the city's total water consumption, with nonresidential and other nonrevenue sources accounting for between 25 to 27 percent of the total consumption.

Table 8-4 provides data on water use by consumer type from 2010 to 2019.

Consumer Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Single Family	9,865	9,826	10,613	10,940	9,006	8,186	8,365	9,008	8,578	8,745
Multifamily	3,208	3,191	3,308	3,390	3,073	2,910	2,924	2,979	2,966	2,798
Commercial	2,137	2,277	2,386	2,500	2,340	2,161	2,142	2,191	2,193	2,165
Industrial	220	223	234	285	268	251	283	262	309	299
Institutional	357	341	392	407	376	346	342	348	341	372
Irrigation	1,611	1,627	2,018	2,104	1,729	1,593	1,609	1,863	1,868	1,887
Other/Non-Revenue	2,029	954	1,194	2,197	1,250	1,092	1,303	1,243	1,435	1,516
Source: City of Santa Rosa 2014a, 2014b, various years of reporting.										

Water Distribution Infrastructure

The City operates a water distribution system that includes 20 booster pump stations, 624 miles of water mains, and over 53,000 water service connections. This system was evaluated in 2014 as part of the Water Master Plan update for its ability to meet the established water system service and performance standards under various existing water demand conditions. In general, the evaluation found deficiencies in meeting peak hour and maximum day demand flows to some localized, higher-elevation service locations. Mitigation for these peak hour and maximum day demand deficiencies involves the installation of individual or localized booster pumps in the affected low-pressure areas. Additionally, the WMP update identified several fire flow deficiencies at various booster pump stations in high-elevation pressure zones where mitigation would involve the replacement of the existing booster pumps. Pipeline capacity issues under fire flow conditions were noted at several locations across the city, and typically occurred in areas where the water main served users situated on a court or other dead-end roadway. The City has completed 17 of the 108 capital improvement projects planned at the time of the WMP update to remedy the identified deficiencies in the water distribution system. The City has 55 more capital improvement projects currently in design, planning, scoping, or under construction that were set at the time of the WMP update.

Wastewater Collection and Treatment

The City of Santa Rosa maintains its own sanitary sewer system. The City of Santa Rosa owns the Laguna Regional Wastewater Treatment Plant (WTP). This section describes the existing conditions of the wastewater conveyance and treatment facilities serving Santa Rosa.

Wastewater Collection Infrastructure

Santa Rosa's underground sewer collection system consists of 590 miles of sanitary sewer lines, more than 15,600 manholes, and 18 sewer lift stations, depicted in **Figure 8-2**. This system is of various ages, with much of the system dating back to the 1970s, and it is maintained by the City's Department of Public Works, Environmental Services division. Individual indoor waste drains are conveyed by the wastewater collection system to the Laguna Wastewater Treatment Plant, where the effluent is treated and eventually discharged into the Russian River.

The City plans to upgrade the aging infrastructure, as outlined in the Sewer System Management Plan. Most notably, the prioritized capital improvement projects focus on trunk line replacement in several areas to limit the inflow of stormwater into the aging sewer system. The top three identified future collection system projects include trunk line replacement from Melita Court to Mission Boulevard (Los Alamos Trunk Sewer), Mission Boulevard to Surrey Drive (Cross Town Trunk Sewer), and from Lombardi Lane to Todd Road (Airport Trunk Sewer).

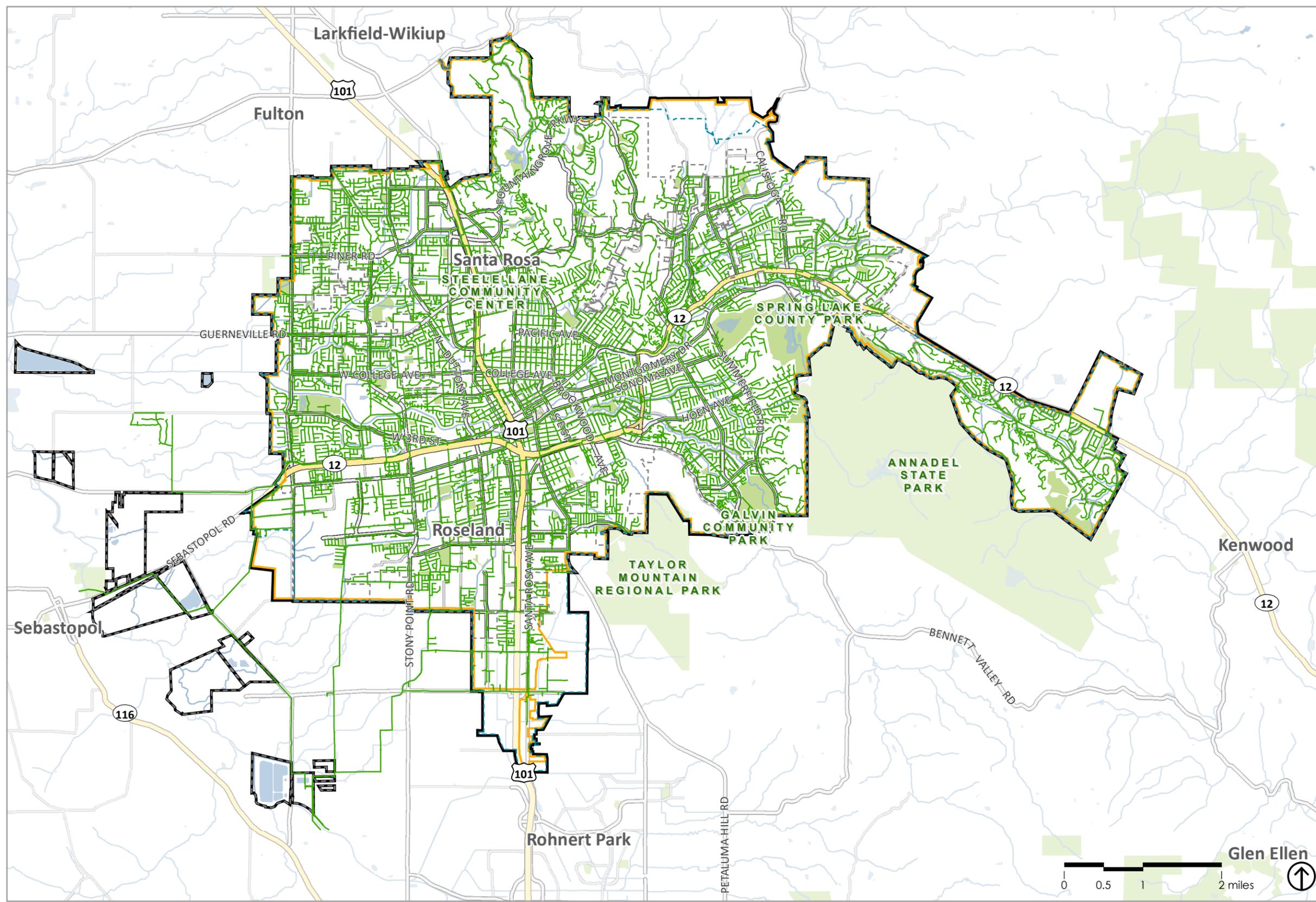
Wastewater Treatment

The Laguna Regional Wastewater Treatment Plant (WTP) has the capacity to treat up to 54 mgd of wastewater. Of the total average treatment flow, between 85 to 90 percent of the wastewater treated at the WTP is recycled for urban and agricultural irrigation and for use in the steam fields at the Geysers facility. The Incremental Recycled Water Program (IRWP) in the Recycled Water Master Plan update describes the approval and the implementation of improvements to the Laguna WTP to facilitate the eventual increase of the plant's capacity rating to 67 mgd. Of this total capacity, 19.4 mgd is expected to be generated by the city of Santa Rosa by the year 2035 and will be allocated to the city, meeting the city's wastewater treatment needs.

Figure 8-2
Citywide Sewer System (2020)

Legend

-  Planning Area
-  City Limit
-  Urban Growth Boundary
-  Sphere of Influence
-  Sewer Mains



8.5 STORMWATER DRAINAGE AND WATER QUALITY

Stormwater Collection System

The City of Santa Rosa maintains storm drain systems citywide. The system consists of 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 from the city to the system's discharge point at 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.

Stormwater Discharge

Runoff generated in Santa Rosa ultimately drains via nine watershed areas that ultimately discharge into the Laguna de Santa Rosa. Numerous major creeks and various tributaries convey the stormwater between the city's runoff-generating sources and the Laguna de Santa Rosa.

Santa Rosa Creek is a part of the city's largest drainage basin, draining the northern portion of the city as well as the downtown area. The eastern section of the city is drained through watersheds consisting of Brush Creek, Oakmont Creek, Spring Creek, and Matanzas Creek, which are tributaries to Santa Rosa Creek. Piner Creek and Paulin Creek collect runoff from the western portion of the city and are also tributaries to Santa Rosa Creek. To the south, Colgan Creek and Roseland Creek are used as storm drain system discharge points and are direct tributaries to Laguna de Santa Rosa. Todd Creek also provides drainage for a southern portion of the city and is a tributary to Laguna de Santa Rosa via the Bellevue-Wilfred Channel. Flooding has been known to occur in the southern portion of the city along Colgan Creek and Roseland Creek.

8.6 DRY UTILITIES

Pacific Gas & Electric and Sonoma Clean Power

PG&E and Sonoma Clean Power provide electrical services in Santa Rosa. PG&E is the sole provider for natural gas and electrical services to the city. PG&E and Sonoma Clean Power are regulated by the California Public Utilities Commission. Sonoma Clean Power sources energy that is distributed by the owned and operated PG&E transmission systems.

PG&E serves California in the areas north of Bakersfield and south of Eureka in the north, and from the Sierra Nevada in the east to the Pacific Ocean in the west. PG&E owns over 106,000 circuit miles of electric distribution lines, 18,000 circuit miles of interconnected transmission lines, 42,000 miles of natural gas distribution pipelines, and 6,400 miles of transportation pipelines. PG&E provides energy to over 5 million electricity customers and over 4 million natural gas customers.

According to the most recent (2016) available data, the PG&E energy generation profile consists of 0 percent coal; 12 percent large hydroelectric facilities; 17 percent natural gas; 24 percent nuclear; 14 percent energy from unspecified sources; and 33 percent eligible renewable energies, which includes biomass and waste, geothermal, small hydroelectric, solar, and wind. Within Sonoma County, Sonoma Clean Power has partnered with PG&E and functions as an additional electric generation service that is administered and billed through PG&E.

The City has expressed concern with the level of maintenance of transmission lines owned and operated by PG&E. The transmission system has been the culprit of a few recent fires that have devastated areas in Sonoma County, including parts of the city. PG&E has begun to service many of the less maintained transmission lines to prevent future fire events. PG&E has already begun many of these retrofits, including installing sectionalizing devices on transmission and distribution systems capable of redirecting power and limiting the size of outages during PSPS; developing microgrids that keep lights on in shutoff areas; conducting targeted undergrounding improvements; and increasing clearance requirements for vegetation around overhead lines. PG&E hopes to reduce the number of affected customers during PSPS events and reduce the number of wildfires caused by their transmission systems.

8.7 SOURCES

Reports and Data

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