

A P P E N D I X D

W A T E R S U P P L Y A S S E S S M E N T





SB 610 Water Supply Assessment
For the
Santa Rosa General Plan 2050

July 10, 2023

**Water Supply Assessment
For the
Santa Rosa General Plan 2050**

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Acronyms

Act	California Urban Water Management Planning Act
AFY	Acre-feet per year
ASR	Aquifer storage and recovery
CalWEP	California Water Efficiency Partnership
CDFW	California Department of Fish and Wildlife
cfs	cubic feet per second
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CUWCC	California Urban Water Conservation Council
CWC	California Water Code
DDW	Division of Drinking Water
DEIR	Draft Environmental Impact Report
DPH	Department of Public Health
DWR	Department of Water Resources
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
EUP	Excess Use Penalties
FERC	Federal Energy Regulatory Commission
FIRO	Forecast Informed Reservoir Operations
gpm	gallons per minute
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
IRWP	Incremental Recycled Water Program
LID	Low Impact Development
MGD	Million gallons per day
MOU	Memorandum of Understanding
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NOI	Notice of Intent
NOP	Notice of Preparation
PAD	pre-application document
PED	Planning and Economic Development Department
PG&E	Pacific Gas and Electric Company
PVP	Potter Valley Project
REF	Residential Equivalency Factor
SB	Senate Bill
SCTA	Sonoma County Transportation Authority
SF	square feet
SMC	Sustainability Management Criteria
UGB	Urban Growth Boundary
USACE	United States Army Corps of Engineers
UWMP	Urban Water Management Plan
VMT	Vehicle Miles Traveled
WSA	Water Supply Assessment
WSCP	Water Shortage Contingency Plan

EXECUTIVE SUMMARY

Senate Bill 610 of 2001 (SB 610) requires that water suppliers provide a Water Supply Assessment (WSA) to planning agencies for any proposed projects which are subject to the California Environmental Quality Act (CEQA) and would demand an amount of water equivalent to or greater than the amount of water required by a 500 dwelling unit project. The proposed Santa Rosa General Plan 2050 (General Plan 2050) is subject to CEQA, fits the definition of a “project” under California Water Code (CWC) 10912(a)(7), and is subject to SB 610 requirements. In this WSA, the City of Santa Rosa (City) updates projected water demands using the latest water use data and confirms that sufficient water supplies are available to meet the projected demands at buildout of the General Plan 2050, given potential future drought and climate change impacts. The City is both the public water system and land use planning agency for the project.

A WSA addresses the current and planned future water demand of the water supplier, the projected demand of the proposed project, the projected water supply of the water supplier, and then makes a determination on the sufficiency of its water supplies for the project, in addition to the existing and planned future uses. This WSA assesses water demand related to the change between development from existing conditions (defined as 2019 in the General Plan 2050) and the proposed buildout conditions outlined in the General Plan 2050. The water demand analyzed in this WSA is the increment of increased demand from 2019 conditions to the buildout conditions outlined in the General Plan 2050.

SB 610 requires the water supplier to analyze total projected water supply sufficiency for twenty (20) years following the request for the WSA, which for this WSA is through 2043. Although the General Plan 2050 projects development through the horizon year of 2050, for purposes of this WSA, and in light of the 20-year projection required by SB 610, the City is making the conservative assumption that the entire water demand would occur by 2043.

Existing water supply sources comprise the City’s projected water supply for the water demand projected for the General Plan 2050. The primary source of supply is a contractual entitlement limit from Sonoma Water as defined in the Restructured Agreement for Water Supply. Santa Rosa augments this with City groundwater sources and recycled water sources.

This WSA projects water demand for the General Plan 2050 to be a maximum of 6,484 acre-feet per year (AFY) beyond 2019 existing demands. This includes changes in density and land use as described in the General Plan 2050. As this WSA demonstrates, the City has sufficient existing and projected supply to meet all demands in both a normal year as well as a consecutive five dry year sequence. While there is a projected deficit of supply during a single-dry year scenario, the City has numerous demand management actions as part of its Water Shortage Contingency Plan (WSCP) to ensure demands do not exceed the available supply.

The WSA concludes that the City’s existing and projected water supplies are sufficient to meet the projected water demand associated with the General Plan 2050, in addition to current uses, for the 20-year projection, with implementation of demand management measures in dry years as needed.

1. ASSESSMENT

1.1 Introduction

California Water Code:

10910 (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.

10914 (a) Nothing in this part is intended to create a right or entitlement to water service or any specific level of water service.

(b) Nothing in this part is intended to either impose, expand, or limit any duty concerning the obligation of a public water system to provide certain service to its existing customers or to any future potential customers.

(c) Nothing in this part is intended to modify or otherwise change existing law with respect to projects which are not subject to this part.

(d) This part applies only to a project for which a notice of preparation is submitted on or after January 1, 1996.

The City of Santa Rosa (City) has prepared this Water Supply Assessment (WSA) for the Santa Rosa General Plan 2050 (Project) pursuant to California Water Code (CWC) sections 10910 and 10914 as required by Senate Bill 610 (SB 610). The proposed Project is subject to the California Environmental Quality Act (CEQA) and fits the definition of a “project” under CWC 10912(a)(7). Therefore, the General Plan 2050 is subject to SB 610 requirements.

To increase the accessibility of the information presented herein, each section of the WSA that responds directly to a requirement of the CWC begins with a recitation of the applicable language from the pertinent CWC provisions, as addressed in that section of the WSA.

The purpose of this WSA is to evaluate the water supply sufficiency for the Project in addition to existing and planned water uses over a 20-year horizon, in accordance with SB 610. The WSA does not reserve water, nor function as a “will serve” letter or any other form of commitment to supply water (per CWC section 10914). The provision of water service will continue to be undertaken in a manner consistent with applicable City policies and procedures, consistent with existing law.

1.2 Applicability

1.2.1 When a WSA is Required

California Water Code:

10910 (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.

10912. For the purposes of this part, the following terms have the following meanings:

(a) “Project” means any of the following:

(1) A proposed residential development of more than 500 dwelling units.

(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.

(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.

(4) A proposed hotel or motel, or both, having more than 500 rooms.

(5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

The title of the Project is the Santa Rosa General Plan 2050. The City Planning and Economic Development Department (PED) has determined that the Project is subject to CEQA. This General Plan fits the definition of a “project” under CWC 10912(a)(7).

As shown in **Table 1**, the Project includes the following net increase in development when compared with existing 2019 conditions:

Table 1 – Proposed Project Development ^a

Land Use Category	Net Increase Compared to 2019 Existing Conditions	Units
Residential Detached	11,810	Dwelling Units
Residential Attached	12,280	Dwelling Units
Retail	945,000	Square Feet
Office	2,100,000	Square Feet
Industrial	1,500,000	Square Feet
Public/Institutional	727,000	Square Feet
Park/Public Landscape	3,092,760	Square Feet
Hotels ^b	69	Rooms
Education	4,797	Students

^a The amount of growth associated with the Project was provided by Planning & Economic Development (PED), the City’s land use agency. The net growth projections they provided above were based on data from the Sonoma County Transportation Authority’s (SCTA’s) Vehicle Miles Traveled (VMT) Model, which was analyzed by the PED project team responsible for the development of the General Plan 2050.

^b Hotel rooms were projected directly from SCTA’s VMT Model; this projection is likely low (as acknowledged by the PED project team responsible for the General Plan 2050’s development). Ultimately, the number of hotel rooms in this WSA is consistent with other planning documents at the time of publishing. Additional hotel rooms are not expected to significantly alter water demand projections.

1.2.2 Public Water System Identified

California Water Code:

10910 (b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system whose service area includes the project site and any water system adjacent to the project site that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined in Section 10912, that may supply water for the project. If the city or county is not able to identify any public water system that may supply water for the project, the city or county shall prepare the water assessment required by this part after consulting with any entity serving domestic water supplies whose service area includes the project site, the local agency formation commission, and any public water system adjacent to the project site.

10912 (b) If a public water system has fewer than 5,000 service connections, then “project” means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system’s existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system’s existing service connections.

(c) “Public water system” means a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections. A public water system includes all of the following:

- (1) Any collection, treatment, storage, and distribution facility under control of the operator of the system that is used primarily in connection with the system.*
- (2) Any collection or pretreatment storage facility not under the control of the operator that is used primarily in connection with the system.*
- (3) Any person who treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption.*

The City of Santa Rosa Water Department (Santa Rosa Water) operates the public water system that provides water supply to the Project area. As of December 2020, the City's potable water system had 54,321 water connections serving 173,628 residents.¹ The City also owns and operates the Regional Water Reuse System (Regional System), which provides recycled water to the City's service area.

1.2.3 Requirement for Submittal of Assessment

California Water Code

10910 (g) (1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.

(2) Prior to the expiration of the 90-day period, if the public water system intends to request an extension of time to prepare and adopt the assessment, the public water system shall meet with the city or county to request an extension of time, which shall not exceed 30 days, to prepare and adopt the assessment.

(3) If the public water system fails to request an extension of time, or fails to submit the assessment notwithstanding the extension of time granted pursuant to paragraph (2), the city or county may seek a writ of mandamus to compel the governing body of the public water system to comply with the requirements of this part relating to the submission of the water supply assessment.

(h) Notwithstanding any other provision of this part, if a project has been the subject of a water supply assessment that complies with the requirements of this part, no additional water supply assessment shall be required for subsequent projects that were part of a larger project for which a water supply assessment was completed and that has complied with the requirements of this part and for which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has concluded that its water supplies are sufficient to meet the projected water demand associated with the proposed project, in addition to the existing and planned future uses, including, but not limited to, agricultural and industrial uses, unless one or more of the following changes occurs:

(1) Changes in the project that result in a substantial increase in water demand for the project.

(2) Changes in the circumstances or conditions substantially affecting the ability of the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), to provide a sufficient supply of water for the project.

(3) Significant new information becomes available that was not known and could not have been known at the time when the assessment was prepared.

In 2009, City Council adopted an earlier version of the Project, entitled the Santa Rosa General Plan 2035. In support of that effort, Santa Rosa Water provided a WSA in 2008.

Currently the City is updating the General Plan to extend the planning horizon through 2050. The land use planning agency for the Project is the City's Planning & Economic Development Department (PED). PED made a request to Santa Rosa Water to prepare this WSA for the Project on March 28, 2023. Per SB 610, the WSA must be completed within 90 days. Santa Rosa Water requested a 30-day extension as permitted by SB 610, which was granted by PED. This WSA was completed and approved within the allowed 120-day period by Resolution of the Santa Rosa City Council on July 25, 2023.

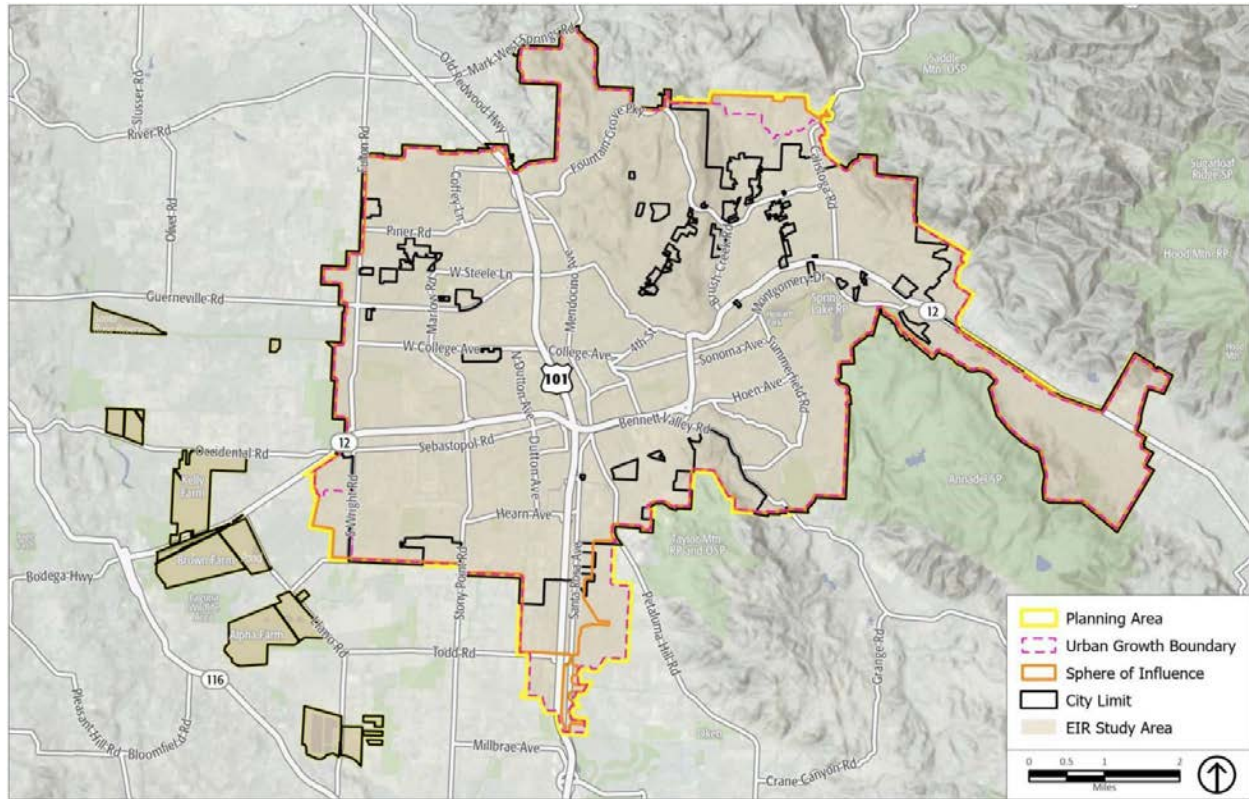
1.2.4 Project Description

The Project is described briefly in the Notice of Preparation (NOP) of a Draft Environmental Impact Report. The Project location follows the boundary of the adopted Sphere of Influence and Urban Growth Boundary (UGB), as shown in **Figure 1**. As detailed in **Section 1.5** of this WSA, the Project includes residential, office space, retail/commercial, light/general industrial, public/institutional, and park or public landscaped area development.

¹ City of Santa Rosa, 2020 Urban Water Management Plan, June 2021.

The Project is a comprehensive update of Santa Rosa’s General Plan, which was last updated in 2009 for a planning horizon of 2035. The Project extends the planning horizon to 2050 and includes revisions and updates to all State-required and community driven optional General Plan elements.

Figure 1 – Project Area^a



^a Source: Figure 2 (EIR Study Area) from Notice of Preparation of a Draft Environmental Impact Report (February 7, 2023)

1.3 Urban Water Management Plan and Other Resources

California Water Code

10910 (c) (1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).

(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).

(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system’s total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system’s existing and planned future uses, including agricultural and manufacturing uses.

In accordance with the California Urban Water Management Planning Act (Act), the City adopted its 2020 Urban Water Management Plan (UWMP) on June 8, 2021. As required by the Act, the City’s 2020 UWMP includes projected water supplies required to meet future demands. Though the Act only required supply

and demand projections through 2040, the 2020 UWMP provides supply and demand projections through 2045. The 2020 UWMP projected water is based on the assumed build out in the 2035 General Plan and anticipated additional growth projected by PED through 2045. This WSA projects water demand associated with buildout for the General Plan 2050 based on updated growth projections, as discussed in this WSA in **Section 1.5**, with buildout conservatively assumed to occur by 2043. Therefore, the City's 2020 UWMP water demand and supply projections and the Project's water demand projections provide the basis for the demand assessment in this WSA.

1.4 Existing Supplies

California Water Code:

10910 (d) (1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.

(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

(A) Written contracts or other proof of entitlement to an identified water supply.

(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.

(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.

(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

1.4.1 Water Supply Overview

The City currently has three sources of water supply, including potable water from Sonoma Water (a regional water wholesaler) and groundwater from the City's wells, and non-potable water (recycled water) from the Santa Rosa Regional Water Reuse System (Regional System) for urban landscape irrigation.

The City receives approximately 93 percent² of its potable water supply from Sonoma Water under the provisions of the Restructured Agreement for Water Supply (Restructured Agreement) executed in June 2006. The vast majority of current and projected future water delivered by Sonoma Water derives from surface water sources, with the remainder from groundwater.³

The City produces approximately six percent⁴ of its potable water supply from groundwater wells. In July 2005, the City received permission from the California Department of Public Health (now Division of Drinking Water, or DDW) to use two groundwater wells, formerly permitted as standby emergency wells, for full-time, active potable water supply. The supply source is permitted for regular production and can provide up to 2,300 AFY.

² Based on actual supplies used 2013-2022.

³ Sonoma Water, 2020 Urban Water Management Plan, June 2021.

⁴ City of Santa Rosa, June 2021.

The City serves approximately one percent⁵ of total demand for potable water in the urban system with recycled water. The City owns and operates the Regional System, which produces recycled water approved by the State for non-potable uses. The Regional System recycles nearly all of its treated wastewater each year, with the majority being used for the Geysers Recharge Project for geothermal production of electricity (discussed in more detail in **Section 1.4.5**). In recent years, the City’s urban water system has used an average of 108 AFY⁶ of recycled water for urban landscape irrigation, but the system can provide up to 140 AFY for urban non-potable uses.

Table 2 shows actual water usage for 2020 and projected water supplies for 2025-2045 (in five-year increments) based on Table 6-16 of the City’s 2020 UWMP to illustrate the projected volumes of water available for use by the City in a normal water year, by source of supply.

Table 2 – Existing and Planned Water Supplies (AFY)

Water Supply Sources	2020 actual usage ^a	2025 ^b	2030 ^b	2035 ^b	2040 ^b	2045 ^b
Sonoma Water ^c	18,024	29,100	29,100	29,100	29,100	29,100
City produced groundwater ^d	1,253	2,300	2,300	2,300	2,300	2,300
Recycled water ^e	110	140	140	140	140	140
Total	19,387	31,540	31,540	31,540	31,540	31,540

^a Source: Table 6-15, City 2020 UWMP

^b Source: Table 6-16, City 2020 UWMP

^c Water supplied from Sonoma Water is based on current Restructured Agreement Entitlement.

^d Based on Santa Rosa Groundwater Master Plan Mitigated Negative Declaration (GHD, September 11, 2013).

^e Recycled water supply shown is for urban use only (not agricultural) and represents the existing system.

The following sections describe the City’s existing supply sources in more detail. Supply for the Project will be met with existing sources: Sonoma Water contractual entitlement (**Section 1.4.2**), City groundwater (**Section 1.4.4**), and recycled water (**Section 1.4.5**).

1.4.2 Existing Wholesale Water Supply – Sonoma Water

The City receives the majority of its potable water supply from Sonoma Water. Sonoma Water is authorized to produce and deliver potable water for municipal and industrial purposes, to prevent the waste or diminution of water supplies, to control and conserve flood and storm waters to reduce potential damage to life and property, to provide sanitary sewage services, and to provide recreational services in connection with flood control and water conservation activities. Sonoma Water operates under direction of a Board of Directors that consists of the Sonoma County Board of Supervisors.

Sonoma Water delivers water on a wholesale basis to customers through its water transmission system. The primary water customers, collectively known as the Water Contractors, consist of the cities of Santa Rosa, Rohnert Park, Petaluma, Cotati, and Sonoma; the Town of Windsor; and the North Marin and Valley of the Moon Water Districts. Sonoma Water has the responsibility to supply water to the Water Contractors under the Restructured Agreement executed in June 2006. Sonoma Water also provides

⁵ *Ibid.*

⁶ *Ibid.*

water on a wholesale basis to and has authorized the exercise of its water rights by additional water purveyors, including but not limited to Marin Municipal Water District, the Forestville Water District, and California-American, Lawndale Mutual, Penngrove, and Kenwood Water Companies.

Sonoma Water's primary source of supply is the Russian River. Sonoma Water manages water releases at Coyote Valley Dam (commonly referred to as Coyote Dam), which creates Lake Mendocino on the East Fork of the Russian River, and at Warm Springs Dam, which creates Lake Sonoma on Dry Creek (a tributary to the Russian River), to provide water supply and maintain required minimum flows in the Russian River and Dry Creek. The United States Army Corps of Engineers (USACE) controls flood control releases from Coyote Valley Dam. Pacific Gas & Electric Company's (PG&E) Potter Valley Project (PVP) augments flows in the Russian River, through its diversion of a portion of the Eel River flows to the East Fork of the Russian River, upstream of Coyote Valley Dam.

Sonoma Water diverts surface water from the Russian River and delivers it to its customers through a transmission system. These diversion facilities extract Russian River underflow, as reported under Sonoma Water's surface water rights. Sonoma Water operates six radial collector wells adjacent to the Russian River (three at the Wohler production facility and three at the Mirabel production facility). Sonoma Water enhances production capacity during peak demand months by raising an inflatable dam on the Russian River near Mirabel that allows for operation of five infiltration ponds at Mirabel and increases the area of infiltration along the Russian River in the vicinity of the Wohler collector wells. Water pooled behind the inflatable dam is diverted into the infiltration ponds to recharge the aquifer in the vicinity of the Mirabel production facility. Backwater conditions along the river also result in increased infiltration in the Wohler area, thereby enhancing the production capacity of those collectors.

Sonoma Water holds appropriative water rights to Russian River and Dry Creek water by virtue of an assignment to Sonoma Water of Sonoma County's portion of the 1949 application to the State of California for the Coyote Valley Dam Project appropriative water rights and Sonoma Water's 1960 application for the Warm Springs Dam Project appropriative water rights. Four State Water Resources Control Board (State Water Board) permits⁷ currently authorize Sonoma Water to store water in Lake Mendocino (up to 122,500 acre-feet (AF)) and Lake Sonoma (up to 245,000 AF) and to divert and redivert 180 cubic feet per second (cfs) of water from the Russian River, up to 75,000 AFY.

The permits also establish minimum instream flow requirements for fish and wildlife protection and Russian River recreational considerations. These minimum instream flow requirements vary by hydrologic year type (i.e., dry water years versus normal water years) defined by the State Water Board's Decision 1610 (Decision 1610). Sonoma Water meets the various instream flow requirements set by Decision 1610 by making releases from Coyote Valley Dam and Warm Springs Dam. As required by the Biological Opinion, Sonoma Water has applied to the State Water Board to make changes to the minimum instream flow requirements of Decision 1610. The Biological Opinion requirements are discussed in **Section 1.4.3.1** of this WSA.

Sonoma Water also has three groundwater wells that augment surface water supply in dry years. They are located near the Laguna de Santa Rosa and feed directly into Sonoma Water's Russian River-Cotati

⁷ State Water Board Permit Numbers 12947A, 12949, 12950, and 16596.

Intertie Pipeline. These wells have been undergoing rehabilitation and Sonoma Water estimates their future production capacity at 2,300 AFY.

The Restructured Agreement provides for the finance, construction, and operation of existing and new diversion facilities, transmission lines, storage tanks, booster pumps, conventional wells, and appurtenant facilities. The Restructured Agreement currently provides the contractual relationship between Sonoma Water and the City and includes specific rates of delivery and maximum amounts of water that Sonoma Water is obligated to supply the City. The Restructured Agreement defines the City's entitlement limits as 29,100 AFY and an average of 40.0 million gallons per day (mgd) from Reach 1, 2 and 3a of the Intertie Aqueduct, 40.0 mgd from the Santa Rosa Aqueduct, 4.0 mgd from the Sonoma Aqueduct, or a maximum combined average total of 56.6 mgd for a one-month period from all aqueducts.

Though the City's existing supply from Sonoma Water is relatively reliable, the Restructured Agreement contains shortage provisions defined in Section 3.5 of that agreement. The Water Shortage Allocation Methodology (Shortage Methodology) adopted by the Sonoma Water Board in April 2006 further defines shortage provisions.⁸ The Restructured Agreement Section 3.5 provisions and the Shortage Methodology are designed to take the demand hardening associated with water conservation into account. The City has implemented an aggressive water conservation program over the past 32 years and has one of the lowest per capita water uses among all Sonoma Water contractors. This is recognized by the Shortage Methodology, which encourages water conservation. Under the Shortage Methodology, if Sonoma Water surface water rights and Russian River supply remain limited to 75,000 AFY and the Water Contractors' total demands reach Sonoma Water's 75,000 AFY available supply, then the City's allocation would still be 29,100 AFY, the City's full entitlement limit under the Restructured Agreement.⁹

1.4.3 Conditions Which Could Affect Sonoma Water Supply

The following conditions discussed in detail below, could affect the City's long-term sustainable water supply available from Sonoma Water:

- Threatened and Endangered Species – Biological Opinion
- Future operation of the Potter Valley Project

1.4.3.1 Threatened and Endangered Species – Biological Opinion

On October 31, 1996, the National Marine Fisheries Service (NMFS) published a final notice of determination listing coho salmon as threatened under the federal Endangered Species Act (ESA) within the Central California Coast Evolutionarily Significant Unit (ESU), which includes the Russian River. On August 18, 1997, NMFS published a final notice of determination listing steelhead as threatened under the ESA within the Central California Coast ESU, also including the Russian River. On September 16, 1999, NMFS listed the California Coast ESU of Chinook salmon as threatened.

In accordance with Section 7(a)(2) of the ESA, federal agencies must consult with the United States Fish and Wildlife Service and/or NMFS (depending on the species) to “ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any listed

⁸ John O. Nelson Report, April 2006.

⁹ Letter from Sonoma County Board of Supervisors, April 2006.

species or result in the destruction or adverse modification of designated critical habitat....” (50 CFR §402). The operation of Warm Springs and Coyote Valley dams and Sonoma Water’s rubber dam and fish screens all fall within the provisions of Section 7 of the ESA. In December 1997, the USACE, as the federal sponsor of the above two flood control and water supply projects, and Sonoma Water, as the local sponsor, entered into a Memorandum of Understanding with NMFS to begin the Section 7 consultation process. As part of the Section 7 consultation, a Biological Assessment was prepared to study the impact of current and potential future operations of facilities on the listed species in the Russian River. The final Biological Assessment was completed in September 2004.

As part of the Section 7 consultation process, the NMFS formed Biological Review Teams to conduct a status review of the three listed fish species by assembling the best available information on the condition of the fish species and quantifying risks faced by each ESU. Using the results of the status review, NMFS reevaluated the listing of the three fish species. On June 28, 2005, NMFS issued a final rule listing the status of coho as endangered and maintaining the threatened status of California Coast Chinook salmon. On January 5, 2006, NMFS issued a final determination listing the steelhead as threatened.¹⁰

On September 24, 2008, NMFS issued the Biological Opinion. The Biological Opinion analyzed the impacts of the current operation of the Warm Springs and Coyote Valley Dams as well as other facilities operated by the USACE, Sonoma Water, and the Russian River Flood Control and Water Conservation Improvement District in the Russian River Watershed for the next fifteen years. The Biological Opinion determined that the continued operation of some aspects of the flood control and water supply operations will have substantial adverse effects on both the coho salmon and steelhead but are not likely to impact the survival and recovery of the Chinook salmon in the Russian River. The three areas of most concern identified included the high summertime flows in the Russian River and Dry Creek, the high velocity of water in Dry Creek in the summer, and the practice of breaching the sandbar at the estuary during the summer months.¹¹

NMFS collaborated with the USACE and Sonoma Water to develop a Reasonable and Prudent Alternative, including eight Reasonable and Prudent Measures (RPMs), to implement over a 15-year timeframe to avoid jeopardy to the coho salmon and steelhead. The RPMs include the following: interim and permanent changes to the summertime flows in the Russian River and Dry Creek; changing the management of the Jenner estuary; restoring fish habitat along Dry Creek; conducting a feasibility study of constructing a pipeline to deliver water from Lake Sonoma to the mainstem of the Russian River; strengthening and expansion of the existing coho broodstock program; installation of a new back-up water supply pipeline to the Warm Springs Hatchery and construction of additional rearing facilities for the coho broodstock program; and monitoring of habitat and fish in the Russian River, Dry Creek, and the Jenner estuary.

Sonoma Water has steadily implemented fish habitat restoration work and monitoring under the review of NMFS. On October 4, 2018, NMFS reported in a letter to USACE that implementation of Dry Creek habitat restoration work has been “tremendously successful to date” and has allowed “critical water

¹⁰ National Marine Fisheries Service, Southwest Region, Biological Opinion for Water Supply, Flood Control Operations, and Channel Maintenance conducted by the U.S. Army Corps of Engineers, the Sonoma County Water Agency, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District in the Russian River watershed, September 24, 2008.

¹¹ Sonoma Water, Russian River Instream Flow and Restoration, The Biological Opinion: Frequently Asked Questions, October 2008.

supply and dam safety operations to continue unconstrained while also producing demonstrable benefits to the three ESA-listed salmonid species that inhabit the watershed.”¹²

The Biological Opinion also provides an Incidental Take Statement for the taking of the coho, steelhead and Chinook that may occur due to the implementation of the continued operations of the flood control and water supply operations and the associated RPMs.

The Biological Opinion requires the following temporary and permanent changes to the minimum instream flows in the Russian River and Dry Creek:

During Normal Years:

- Reduce the minimum flow requirement for the Russian River from the East Fork to Dry Creek from 185 cfs to 125 cfs between June 1 and August 31; and from 150 cfs to 125 cfs between September 1 and October 31.
- Reduce the minimum flow requirement for the Russian River between the mouth of Dry Creek and the mouth of the Russian River from 125 cfs to 70 cfs.
- Reduce the minimum flow requirement for Dry Creek from Warm Springs Dam to the Russian River from 80 cfs to 40 cfs from May 1 to October 31.

During Dry Years:

- Reduce the minimum flow requirement for the Russian River between the mouth of Dry Creek and the mouth of the Russian River from 85 cfs to 70 cfs.

In September 2009, Sonoma Water filed a petition with the State Water Board to permanently change the minimum instream flow requirements as outlined by the Biological Opinion. The petition is currently pending at the State Water Board and will not be acted on until Sonoma Water has completed compliance with CEQA. Until the petition is acted upon by the State Water Board, Sonoma Water will have to annually file a Temporary Urgency Change petition with the State Water Board to reduce the minimum instream flows during the months of May through October as required by the Biological Opinion.

The reduced flows required by the RPMs would provide enough water for Sonoma Water to meet existing water demands. The RPMs allow for restoration of fish habitat in Dry Creek to continue flows of 130 to 175 cfs to meet the water demands of Sonoma Water.¹³ However, the Biological Opinion clarified that, if the restoration work was not sufficiently effective, Sonoma Water would have to explore other alternatives, including a bypass pipeline. Sonoma Water released a draft feasibility study of a bypass pipeline in April 2011 and a final study report on September 15, 2011.

As described in Sonoma Water’s 2020 UWMP, Sonoma Water assumes that the Biological Opinion will remain in effect and that actions required by (and be subject to the restrictions set forth in) the Biological Opinion will be completed. Sonoma Water also assumes that it will engage in a new Section 7 consultation with NMFS and USACE and that a new Biological Opinion will be issued in the future. In its 2020 UWMP,

¹² Letter from Sam Rauch, Deputy Assistant Administrator for Regulatory Program, National Marine Fisheries Service, to Lt. General Todd Semonite, Chief of Engineers, and James Dalton, Director of Civil Works, United States Army Corps of Engineers, October 4, 2018.

¹³ Sonoma Water, October 2008.

Sonoma Water states that while the Russian River Biological Opinion is only in effect until 2023, “[The UWMP] also assumes that the requirements, terms and conditions similar to those in the existing Russian River Biological Opinion will continue to be applicable through 2045.” Furthermore, Sonoma Water’s 2020 UWMP states, “although it is likely that any future consultation and new Biological Opinion will have provisions that differ from the existing Russian River Biological Opinion, it is impossible for Sonoma Water to guess what new provisions might be added in future consultations.”

In anticipation of the expiration of the 2008 Biological Opinion in September 2023, Sonoma Water is working with NMFS, USACE, and CDFW to reinitiate consultation and develop a Biological Assessment for continuation of the USACE and Sonoma Water operations in the Russian River watershed. A draft Biological Assessment was submitted to NMFS and CDFW on December 9, 2022, and discussions regarding preparation of the final Biological Assessment are underway with the USACE, NMFS and CDFW.¹⁴ Given the long history of coordination and cooperation between Sonoma Water, USACE, NMFS, and CDFW, Sonoma Water reasonably assumes that any changes to the Russian River Biological Opinion will not affect Sonoma Water’s ability to deliver the quantities of water authorized under its existing water rights from its transmission system.¹⁵ This WSA similarly assumes that the requirements, terms and conditions in the existing Biological Opinion will continue to be applicable through 2045 such that supply availability is similar to current conditions.

In August of 2016, Sonoma Water released the Fish Habitat Flows and Water Rights Project (Fish Flow Project) Draft Environmental Impact Report (DEIR) for public review. The Fish Flow Project objectives include managing Lake Mendocino and Lake Sonoma water supply releases to provide instream flows that improve habitat for threatened and endangered fish species and updating Sonoma Water’s existing water rights to reflect current conditions. The Fish Flow Project would change Sonoma Water’s water right permits related to flows and diversions from the Russian River and Dry Creek. The new minimum instream flow requirements proposed by the Fish Flow Project were developed to meet the requirements of the Biological Opinion to improve habitat for threatened and endangered salmonid species. The Fish Flow Project does not propose to increase or otherwise change the quantities of surface water that Sonoma Water diverts under its water right permits, to obtain any new authorizations for new rights, or to construct new facilities.¹⁶ In response to release of the Draft EIR, Sonoma Water received numerous comment letters from the public and resource agencies. Based on extensive public input, Sonoma Water is currently working on revisions in anticipation of recirculating the Draft EIR.¹⁷

1.4.3.2 Future Operation of the Potter Valley Project

The Potter Valley Project (PVP) is a 9.4-megawatt hydropower project located on the Eel River and the East Branch of the Russian River in Mendocino and Lake Counties, about 15 miles northeast of the City of Ukiah. The PVP is currently owned and operated by Pacific Gas and Electric Company (PG&E) and is governed by a Federal Energy Regulatory Commission (FERC) license that expired on April 14, 2022. PVP features include Lake Pillsbury, a 76,876 acre-foot storage reservoir impounded by Scott Dam; Van Arsdale Reservoir, a 700 acre-foot storage reservoir impounded by the Cape Horn Diversion Dam; and a

¹⁴ Sonoma Water, Russian River Biological Opinion Update, Water Advisory Committee meeting, May 1, 2023.

¹⁵ Sonoma Water, June 2021.

¹⁶ Sonoma Water, Fish Habitat Flows and Water Rights Project Draft Environmental Impact Report, August 2016.

¹⁷ Sonoma Water, May 1, 2023.

tunnel and penstocks that divert Eel River water to the project's powerhouse located in Potter Valley. From the powerhouse, the diverted water flows into the East Branch of the Russian River, where it continues into Lake Mendocino, just outside Ukiah. Releases from Lake Mendocino go into the East Fork of the Russian River.

Diversions from the Eel River into the Russian River via PG&E's Potter Valley Project (PVP) are regulated by a number of agencies including the Federal Energy Regulatory Commission (FERC) and NMFS. The Eel River water is diverted through an inter-watershed tunnel to PG&E's hydroelectric facility in Potter Valley. Thereafter, the water flows down the east fork of the Russian River, is stored in Lake Mendocino, and is released to augment summer flows and maintain minimum instream flow requirements in the Russian River. Diversions have been reduced significantly since they began in 1908, due to concerns about endangered and threatened fish in both the Eel River and Russian River as identified by regulatory agencies.

In early 2017, PG&E initiated the multi-year re-licensing process by filing a NOI and a pre-application document (PAD) with FERC before the existing project license expired in 2022. In response, U.S. Representative Jared Huffman convened a PVP Ad Hoc Committee comprised of over 25 federal and state resource agencies, local counties, tribes, and environmental organizations to enable dialogue on the terms of a potential new license for PG&E.

On January 25, 2019, PG&E unexpectedly filed a Notice of Withdrawal of its NOI and PAD, indicating it was discontinuing efforts to relicense the PVP. On March 1, 2019, FERC issued a Notice Soliciting Applications for any party interested in seeking a new license to file an NOI and PAD by July 1, 2019. In May 2019, California Trout, Inc., the County of Humboldt, Mendocino County Inland Water and Power Commission, and Sonoma Water signed a Planning Agreement to undertake a Feasibility Study of a potential licensing proposal for the PVP. By signing the Planning Agreement, these entities committed to reaching a "Two-Basin Solution" with co-equal goals of improving fish passage and habitat on the Eel River and minimizing adverse impacts to water supply reliability, fisheries, water quality, and recreation in the Russian River and Eel River basins.

On June 28, 2019, the four parties to the Planning Agreement (Two Basin Solution Partnership) jointly filed with FERC an NOI to file an application for new license for the PVP. After the filing of the NOI, the Round Valley Indian Tribes signed the Planning Agreement. However, mainly due to a lack of funding for the necessary studies to pursue the license application, the Two Basin Solution Partnership was unable to provide the necessary studies and information as required by FERC. PG&E's license to operate the PVP expired on April 14, 2022, and no entity successfully followed the FERC process to take over the PVP, which resulted in a surrender of the license as the only remaining option for disposition of the PVP. On July 8, 2022, PG&E provided FERC with a plan and schedule of 30 months to submit an application to surrender its license and a plan to decommission the Project. PG&E is now operating the PVP on an annual license issued by FERC, which requires PG&E to operate under the same terms and conditions as the underlying FERC license until the surrender and decommissioning process is completed.

In order for Sonoma Water to communicate and appropriately advocate for its Water Contractors' interests throughout this process, the Water Advisory Committee to Sonoma Water adopted a resolution in October 2019 outlining the interests of the Water Contractors regarding the relicensing of the PVP. Sonoma Water has committed to a collaborative process ensuring the opportunity of meaningful input regarding the activities of Sonoma Water related to the PVP. To that end, Sonoma Water applied for and received grant funding to complete water supply resiliency planning in the Russian River watershed. These

efforts, referred to as the Russian River Watershed Water Supply Resiliency Project, include establishing a Russian River Water Users Forum comprised of water users that depend on PVP water to improve the understanding of water reliability uncertainties, help organize the water users, and eventually create a source of funding for continuing water transfers through the PVP and/or water supply planning and project implementation in the Russian River watershed. The scope of work also includes evaluating the feasibility and risks associated with obtaining and modifying critical PVP water diversion facilities necessary for continuing water transfers from the Eel River into the Russian River watershed, identifying conservation opportunities, conceiving new operational strategies, identifying new storage or conjunctive use facilities in Potter Valley, and modeling run-of-the-river operation of the PVP to verify viability/efficacy of this type of operation for water supply in the Russian River basin. Run-of-the-river assumes there is not a water storage reservoir upstream of the PVP diversion works.

Should these efforts fail to find a way to continue water diversions, water supply reliability downstream of Lake Mendocino could be impacted. A study published by the Huffman Ad Hoc Committee determined that, if there are no longer any diversions from the Eel River to the Russian River, then inflows to Lake Mendocino and storage in Lake Mendocino would be consistently lower than current baseline operations.¹⁸

The Sonoma Water 2020 UWMP acknowledged the PVP license would expire but assumed that PG&E or a successor entity would continue to operate the PVP under annual licenses issued by FERC and there would be no appreciable change to the amount of water discharged from the PVP into the Russian River system for the duration of the UWMP planning horizon.

It is unclear at this time what decommissioning and ultimate disposition of the PVP will look like. The Russian River Water Forum has convened and is exploring potential options for continuing Eel River diversions through the PVP in some form or another.¹⁹ It is also possible that decommissioning results in removal of all PVP facilities and cessation of all diversions from the Eel River, which could impact Sonoma Water's water supply in Lake Mendocino. That said, there are other potential options that would help offset this outcome, including proposed water supply alternative evaluations to be undertaken by the Russian River Water Forum, currently being coordinated by Sonoma Water staff.

There is still uncertainty around if or how the PVP will operate in the future. However, given the fact that a concerted multi-agency and State supported effort is underway to achieve a successful solution for water supply resiliency, there is some confidence that the associated water supply issues will be adequately addressed. Decommissioning the PVP, including the proposed removal of Scott Dam, will take many years. It is generally understood that limited import flows from the project will continue during this duration. As this WSA requires an assessment of water supply sufficiency for 20 years, this WSA assumes the PVP proceedings will not have a water supply impact during the term of this WSA.

It is important to note that the City of Santa Rosa's contract supplies from Sonoma Water are primarily met by direct diversions of unimpaired flow during the wet season and rediversion of stored water released from Lake Sonoma located in the Dry Creek watershed that has a mainstem Russian River

¹⁸ Huffman Ad-Hoc Committee, Pottery Valley Project Water Supply Working Group, Results of Initial Water Supply Modeling for Potter Valley Project and Russian River Alternatives, May 2019.

¹⁹ <https://russianriverwaterforum.org/>

confluence that is downstream of Lake Mendocino. The Eel River PVP diversion in the Upper Russian River does not contribute to Dry Creek/Lake Sonoma. Rather, the Eel River PVP diversion contributes flow to the East Fork of the Russian River, some of which is stored in Lake Mendocino where it is released and contributes to minimum instream flow requirements in the entire Russian River

If the PVP diversions were to cease altogether, there is the possibility that Sonoma Water would need to increase the releases from Lake Sonoma to satisfy minimum instream flows in the Lower Russian River that were historically augmented by Eel River transfers. Sonoma Water has begun work on a viability assessment of utilizing Forecast Informed Reservoir Operations (FIRO) at Lake Sonoma that is expected to be concluded by the end of 2024. If successful, there is a possibility that Sonoma Water could work with the U.S. Army Corps of Engineers to update the water control manual for Lake Sonoma to achieve the ability to store more water in certain scenarios. There is a high likelihood that this operational change could offset much of the impacts to Lake Sonoma from diminished diversions from the PVP.

1.4.4 Groundwater

California Water Code

10910 (f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:

(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

(2) (A) A description of any groundwater basin or basins from which the proposed project will be supplied.

(B) For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree.

(C) For a basin that has not been adjudicated that is a basin designated as high- or medium-priority pursuant to Section 10722.4, information regarding the following:

(i) Whether the department has identified the basin as being subject to critical conditions of overdraft pursuant to Section 12924.

(ii) If a groundwater sustainability agency has adopted a groundwater sustainability plan or has an approved alternative, a copy of that alternative or plan.

(D) For a basin that has not been adjudicated that is a basin designated as low- or very low priority pursuant to Section 10722.4, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water supply assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by subparagraph (D) of paragraph (4) of subdivision (b) of Section 10631.

Because the water supply for the proposed Project includes groundwater, the WSA includes the following additional information.

The City is located within the Santa Rosa Plain Subbasin of the Santa Rosa Valley Groundwater Basin, located at the confluence of the Santa Rosa, Bennett, and Rincon Valleys. By the late 1950's, the City was relying primarily on groundwater from this subbasin for its water supply, plus a small amount of surface water from Lake Ralphine. In June 1959, Sonoma Water began supplying surface water to the City and other water contractors. By the 1980s and until 2007, the City relied solely on purchased water deliveries from Sonoma Water to meet its water demands. In July 2005, the City received permission from the California Department of Public Health (DPH, now the Division of Drinking Water, or DDW) to change the status of two of its groundwater wells, formerly permitted as standby emergency wells, to full-time active status. These wells are now permitted for regular production of up to 2,300 AFY of potable supply. The City began using them for water supply in 2007. Including these two production wells, the City maintains a total of six municipal groundwater wells within the Santa Rosa Plain Subbasin.

The California Department of Water Resources (DWR) classifies the Santa Rosa Plain Groundwater Subbasin as a medium-priority basin, meaning the State required the local Groundwater Sustainability Agency (GSA) to submit a Groundwater Sustainability Plan (GSP) to DWR by January 31, 2022. The Santa Rosa Plain GSA began work on the GSP in 2018. The GSA Board adopted the GSP on December 2021 and submitted it to DWR in January 2022. DWR formally approved the GSP on January 26, 2023. The Subbasin's medium-priority designation means that it is not considered critically overdrafted. A copy of the GSP can be accessed at <https://santarosaplaingroundwater.org/gsp> and it includes detailed descriptions of:

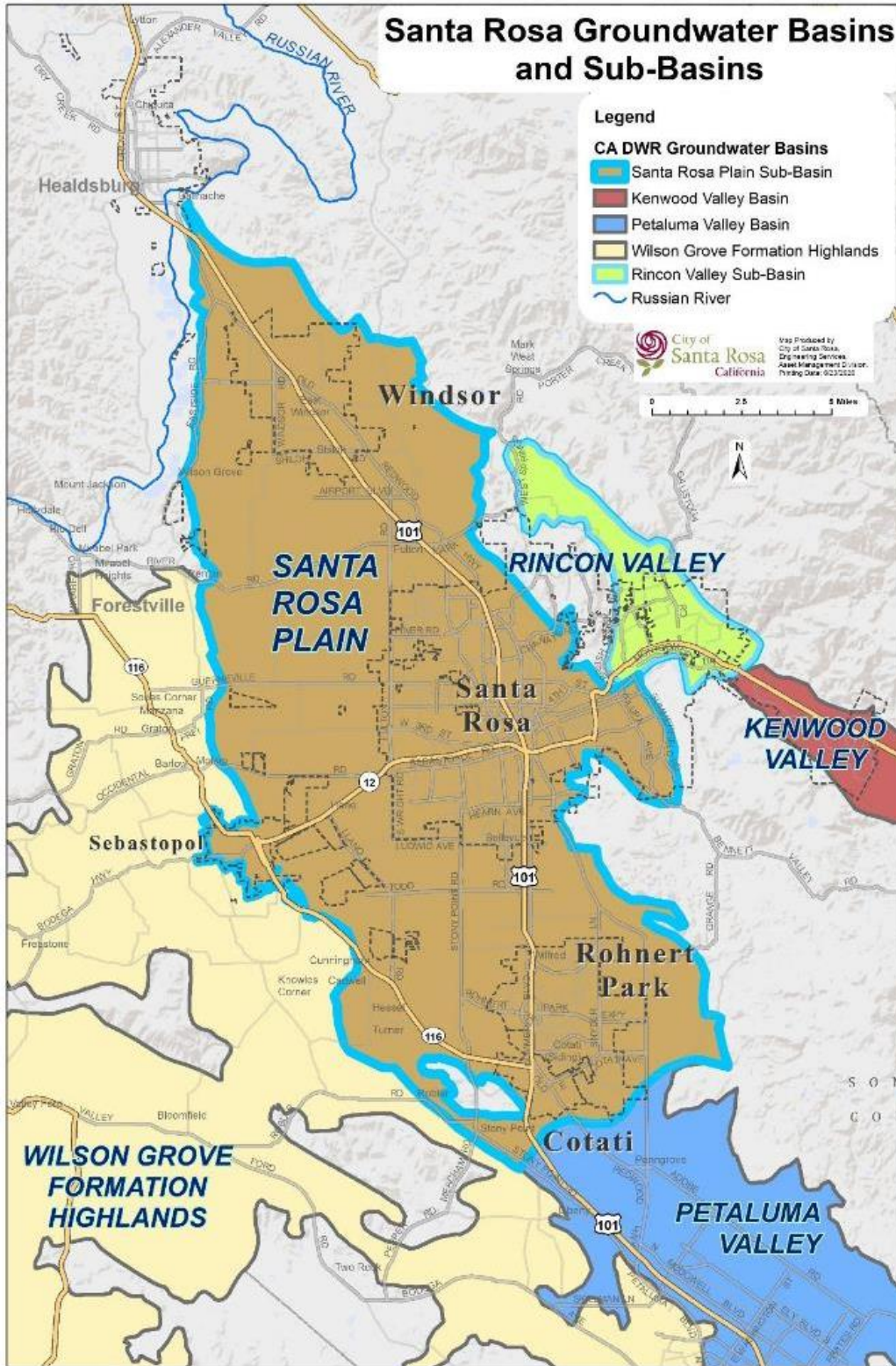
- groundwater quality (see GSP Section 3.2.5 – Groundwater Quality Conditions and Trends)
- groundwater level trends (see GSP Section 3.2.2 – Groundwater Elevations and Trends)
- groundwater storage (see GSP Section 3.2.3 – Estimated Changes in Groundwater Storage)
- geology and other more detailed technical information about the basin beyond the description in the next section (see GSP Section 3.1 – Hydrogeologic Conceptual Model)
- groundwater monitoring network (See GSP Section 5 – Monitoring Networks)

To meet the requirements of CWC 10910 (f), the following WSA sections provide an overview description of the Subbasin (**Section 1.4.4.1**, with more detailed provided in the GSP which can be accessed at <https://santarosaplaingroundwater.org/gsp>), recent (**Section 1.4.4.2**) and projected (**Section 1.4.4.3**) groundwater pumping from the Subbasin, and an analysis of the sufficiency of the groundwater Subbasin to supply the Project (**Section 1.4.4.4**).

1.4.4.1 Groundwater Basin Description

The City's urban growth boundary overlies portions of two groundwater basins: the Santa Rosa Valley Groundwater Basin (specifically two of its subbasins: the Santa Rosa Plain Subbasin and the Rincon Valley Subbasin) and the Kenwood Valley Groundwater Basin. **Figure 2** shows the urban growth boundaries for multiple municipalities in the Santa Rosa Plan Subbasin and underlying groundwater basins. Although the City's urban growth boundary overlies portions of the Rincon Valley Subbasin and the Kenwood Valley Groundwater Basin, the City extracts groundwater supply exclusively from the Santa Rosa Plain Subbasin. The City does not currently derive any groundwater supply from the Rincon Valley Subbasin or the Kenwood Valley Groundwater Basin. Hence, the focus of the following discussion will be on the Santa Rosa Plain Subbasin (referred to hereafter as "Subbasin").

Figure 2 – Location of Major Groundwater Subbasins^a



^a Source: Figure 6-1 (City of Santa Rosa Groundwater Basins and Sub-Basins, City 2020 UWMP).

Table 3 provides an overview of the characteristics of the groundwater basins and subbasins.

Table 3 – Characteristics of Groundwater Basin/Subbasins Underlying the City of Santa Rosa Urban Growth Boundary ^a

Groundwater Basin Name	Subbasin Name	DWR Basin Number	Surface Area
Santa Rosa Valley Groundwater Basin ^b	Santa Rosa Plain Subbasin	1-55.01	80,000 acres (125 square miles)
	Rincon Valley Subbasin	1-55.03	5,600 acres (9 square miles)
Kenwood Valley Groundwater Basin	None	2-19	5,120 acres (8 square miles)

^a Source: Department of Water Resources (DWR) Bulletin 118, Groundwater Basin Descriptions, updated February 27, 2004. DWR approved a proposed basin boundary modification submitted by the City of Sebastopol in February 2019.

^b Other subbasins include the Healdsburg Area and Alexander Valley subbasins, located north of the City of Santa Rosa. However, because the City of Santa Rosa does not overlie any portion of these subbasins, they are not included here.

The Subbasin is approximately 22 miles long and 0.2 miles wide at the northern end; approximately 9 miles wide through the Santa Rosa area; and about 6 miles wide at the south end of the plain near the City of Cotati. The Subbasin is bounded on the northwest by the Russian River plain approximately one mile south of the City of Healdsburg and the Healdsburg Subbasin. Mountains of the Mendocino Range flank the remaining western boundary. The southern end of the Subbasin is marked by a series of low hills, which form a drainage divide that separates the Santa Rosa Valley from the Petaluma Valley basin south of Cotati. The eastern Subbasin boundary is formed by the Sonoma Mountains south of Santa Rosa and the Mayacamas Mountains north of Santa Rosa.

The Subbasin is drained principally by the Santa Rosa and Mark West Creeks that flow westward into the Laguna de Santa Rosa. The Laguna de Santa Rosa flows northward and discharges into the Russian River. Due to the Mediterranean climate in the Subbasin, most rainfall occurs October to May. Precipitation in the Santa Rosa Plain ranges from approximately 50 inches in the Mayacamas and Sonoma Mountains to 29.8 inches in the lower elevations (as measured in downtown Santa Rosa).²⁰

The Subbasin and contributing watershed surface consists of a low uneven topography, developed on alluvial flood plains, terraces, and fans eroded by west-flowing intermittent streams. It has an average ground surface elevation of approximately 145 feet above mean sea level.

The GSP identifies two principal aquifer systems: the shallow and deep aquifer systems. The shallow aquifer system generally extends from the water table to depths ranging from 150 to 200 feet below land surface. The shallow aquifer system is present over the entire lateral extent of the Subbasin and primarily occurs within Quaternary alluvial deposits and Glen Ellen Formation. Aquifer units beneath the shallow aquifer system are characterized collectively as the deep aquifer system and occur under confined or semiconfined conditions within the Wilson Grove Formation, Petaluma Formation. and Sonoma Volcanics.

²⁰ Santa Rosa Plain Groundwater Sustainability Agency, Groundwater Sustainability Plan Santa Rosa Plain Groundwater Subbasin, December 2021.

The deep aquifer is generally present beneath approximately 200 feet below land surface (that is, below the shallow aquifer system), and the thickness of individual permeable aquifer zones within the deep aquifer system is highly variable and can range from several feet to hundreds of feet in thickness.

1.4.4.2 Existing City Municipal Groundwater Pumping

The City has a total of six municipal groundwater wells within the Santa Rosa Plain Subbasin. **Table 4** provides a list of these wells along with their current status. Two of the City’s municipal wells (Carley and Peter Springs Wells) primarily provide landscape irrigation to an adjacent park and school landscaping. These wells are also available and approved by DDW for emergency potable use, on a standby status. Two of the wells (Farmers Lane Wells Nos. W4-1 and W4-2) are in active status. One well (Farmers Lane Well No. 3) provides minor amounts of landscape irrigation water supply only. One well (Leete Well) provides emergency potable purposes only.

Table 4 – City of Santa Rosa Municipal Groundwater Wells ^{a,c}

Well Name/Number	Well Status
Leete (W1)	Standby; used for emergency potable purposes only
Carley (W2-1)	Standby; used for emergency potable purposes and some landscape irrigation
Peter Springs (W2-2)	Standby; used for emergency potable purposes and some landscape irrigation
Farmers Lane (W4-1)	Active status ^b
Farmers Lane (W4-2)	Active status ^b
Farmers Lane (W4-3)	Not connected to City’s potable water distribution system; used strictly for minor landscape irrigation purposes

^a The City has two other municipal wells that are either out of service or inactive: Freeway Well (W3) is out of service due to groundwater contamination caused by others; Sharon Park Well (W6) is inactive due to severe sanding.

^b Change in status approved by DPH (now DDW) on July 20, 2005.

^c Source Table 6-5, City 2020 UWMP.

The City’s Farmers Lane Wells Nos. W4-1 and W4-2 started providing supply to the City’s potable water system in 2007 to supplement supplies obtained from Sonoma Water and to provide supply during high demand periods. Before the City obtained surface water supplies from Sonoma Water, the Farmers Lane wells contributed a significant portion of the groundwater supplies required to meet the City’s demands. Of the City’s roughly 2,870 AFY of historical groundwater demand, it is estimated that the Farmers Lane Wells supplied about 1,720 AFY.²¹

The Farmers Lane wells are located near the mouth of Bennett Valley on the east side of the Santa Rosa Plain Subbasin. The major geologic formations underlying the vicinity of the Farmers Lane wells include the Younger Alluvium, the Older Alluvium, the Glen Ellen Formation, the Sonoma Volcanics, and the Petaluma Formation. The wells are located within a major regional fault zone comprised of the Rodgers Creek and Healdsburg fault zones. The wells are 800 and 1,000 feet deep and draw water from the deep aquifer which is predominantly Sonoma Volcanics. Water levels observed in the Farmers Lane wells have been in an artesian condition for several years. A groundwater treatment system has been constructed at the site of the Farmers Lane wells for iron and manganese removal and disinfection.

²¹ West Yost Associates, Technical Memorandum, Evaluation of Potential Impacts Associated with Increased Groundwater Production from Farmers Lane Wells, W4-1 and W4-2 (July 22, 2004).

Table 5 summarizes the City’s municipal groundwater pumping from 2016-2022.

Table 5 – City of Santa Rosa Municipal Groundwater Pumping (AFY), 2016 - 2022^a

Basin/Subbasin Name	2016	2017	2018	2019	2020	2021	2022
Santa Rosa Valley Groundwater Basin: Santa Rosa Plain Subbasin	1,227 ^b	1,309 ^b	0 ^{b, c}	666 ^{b, c}	1,253 ^d	1,323 ^d	1,126 ^d
Santa Rosa Valley Groundwater Basin: Rincon Valley Subbasin	The City does not have any wells or pump any groundwater from this subbasin						
Kenwood Valley Groundwater Basin	The City does not have any wells or pump any groundwater from this groundwater basin						

^a Includes the City’s two drinking water wells permitted for full time production (Farmers Lane wells); emergency standby wells were not operated for municipal drinking water use.

^b Source Table 6-6, City 2020 UWMP.

^c In 2018, the City’s two Farmers Lane groundwater production wells were offline for pump replacement. In 2019, one of the production wells was still undergoing rehabilitation.

^d Source Table 3-11, Santa Rosa Plain Subbasin Annual Report Water Year 2022.

1.4.4.3 Projected City Municipal Groundwater Pumping

In the future, it is anticipated that the Farmers Lane wells may be operated as much as 40 to 60 percent of the time at a pumping rate of about 2,400 gallons per minute (gpm), which would equate to an annual pumping quantity of approximately 1,550 to 2,300 AFY. This projected pumping quantity is less than the City’s maximum historical groundwater pumping of 2,870 AFY and is also less than the projections for the City’s maximum future pumping included in the 50-Year planning horizon for the GSP of 3,500 AFY. In addition, Santa Rosa Water is currently conducting a study of potential water supply sources to increase water supply reliability and resiliency for drought and catastrophic events. The study is considering a wide range of new sources, including development of new groundwater wells and/or Aquifer Storage and Recovery facilities. If Santa Rosa Water constructs new groundwater facilities in the future, the City will use these groundwater resources sustainably in accordance with the GSP.

Table 6 presents the current amount of groundwater projected to be extracted by the City.

Table 6 – Projected City of Santa Rosa Municipal Groundwater Pumping (AFY) Through 2045^a

Basin/Subbasin Name	2025	2030	2035	2040	2045
Santa Rosa Valley Groundwater Basin: Santa Rosa Plain Subbasin	2,300	2,300	2,300	2,300	2,300
Santa Rosa Valley Groundwater Basin: Rincon Valley Subbasin	The City does not plan to pump groundwater from this subbasin in the future.				
Kenwood Valley Groundwater Basin	The City does not plan to pump groundwater from this basin in the future.				

^a Source: Table 6-7, City 2020 UWMP

The City has a Mitigation and Monitoring Program in place for the Farmers Lane wells that includes monitoring of groundwater levels in the vicinity of the Farmers Lane wells and modified pumping rates if an adverse decline in groundwater levels and/or other adverse effects are detected.

The Santa Rosa Plain Subbasin GSP calculated a sustainable yield of the Subbasin, defined as an estimate of the quantity of groundwater that can be extracted on a long-term average annual basis without causing undesirable results. The sustainable yield was calculated for the modeled period of water years 2021 to 2040 as 23,900 AFY. This value is less than the annual average projected pumping for the 50-year period

for 2021-2070 of 26,100 AFY, indicating that projects and management actions are needed to sustainably manage the Subbasin and avoid potential future undesirable results. The GSP's Chapter 6 (Projects and Management Actions) identifies conceptual projects and management actions that avoid undesirable results, whether by reducing demands (e.g., water conservation tools, onsite rainwater capture, and greywater use) or increasing supplies (e.g., stormwater capture/recharge and aquifer storage/recovery of treated Russian River drinking water). Specifically, "[b]oth Group 2 and Group 3 projects represent managed aquifer recharge projects that aim to maintain or raise groundwater levels and improve summer and fall streamflows. The Group 2 projects represent stormwater capture and recharge projects that could specifically benefit streamflows within the Subbasin and help comply with the SMC [Sustainable Management Criteria] for depletion of interconnected surface water. Group 3 projects represent ASR [aquifer storage and recovery] projects that can reduce municipal pumping of native groundwater, help address many sustainability indicators, primarily the chronic lowering of groundwater levels, and build drought-resiliency."²² The groundwater basin does not appear to have physical constraints for pumping if used as planned to provide supplemental and peaking capacity to the primary supply source provided by Sonoma Water, in addition to utilizing the groundwater basin as an emergency supply source. While the Santa Rosa Plain Subbasin GSP 50-year projections indicate that future pumping may exceed the estimated sustained yield, the proposed projects and management actions (still under development as part of the GSP implementation process) focus on supply augmentation, including groundwater recharge and water use efficiency. The GSA anticipates that the focus on groundwater recharge and water use efficiency will effectively help increase the yield of the basin. Therefore, the City does not anticipate any impacts to its ability to pump 2,300 AFY for the timeline of this WSA without exceeding estimated Subbasin sustainable yield.²³

1.4.4.4 Analysis of Sufficiency of Groundwater to Meet Project Demands

Based on available information, this WSA finds that the City's existing groundwater pumping of 2,300 AFY, in combination with the City's other supplies, is adequate and that no additional groundwater supply is needed to meet the projected demand of the Project. This finding is based on the facts that the Santa Rosa Plain Subbasin has no apparent physical limitations to pumping from the City's groundwater wells and the City anticipates that the implementation of the Santa Rosa Plain Subbasin GSP will allow it to pump 2,300 AFY of groundwater for municipal supply. The GSP accounts for this forecasted demand in terms of long-term sustainability.

1.4.5 Recycled Water

The City is the owner and operator of the Laguna Treatment Plant Regional System (Regional System, formerly known as the Subregional System), which includes the Laguna Wastewater Treatment Facility, a tertiary-level treatment facility that has an average daily dry weather flow of 14.4 mgd²⁴ and is permitted for 21.34 mgd. The recycled water that leaves the treatment plant is high-quality, tertiary treated water approved by the State for many reuse purposes, including irrigation of urban landscapes, playgrounds, golf courses, public parks, agricultural crops, and vineyards.

²² Santa Rosa Plain Groundwater Sustainability Agency, December 2021.

²³ *Ibid.*

²⁴ Based on dry weather flow data for 2013-2022.

Depending upon the amount of rainfall in any given year, between 90 and 100 percent of the Regional System’s recycled water is utilized for urban and agricultural irrigation and the Geysers Recharge Project. The irrigation system is supported by storage reservoirs have an operational capacity of over 1.4 billion gallons of water, which allows the system to meet peak, summer day irrigation requirements.²⁵

The Regional System’s existing urban reuse program irrigates many schools, parks, and businesses in Rohnert Park, including Sonoma State University. Within the City of Santa Rosa, recycled water is used for landscape irrigation of multi-family residential sites, businesses, and parks, including Finley Park and A Place to Play sports complex.

The Regional System also supplies recycled water to approximately 6,000 acres of farmlands and vineyards and to the Geysers Recharge Project. The Geysers Recharge Project came into operation in 2003 and pumps, on average, 13 mgd of recycled water to the Geysers steamfields in the Mayacamas Mountains. This geothermal operation injects the water through wells into the underground steamfield at depths of 4,000 to 11,000 feet, where it is heated to produce a clean, “dry” steam that is used to produce clean electricity for up to 100,000 households in the North Bay Area.

1.4.5.1 Historical and Existing Urban Recycled Water Use

The City’s current and historical use of recycled water for urban customers serves areas within close proximity to the Regional System’s distribution network. In recent years, the City has used approximately 108 AFY of recycled water for urban landscape irrigation within the service area. Since 2001, the City has undertaken numerous studies evaluating expansion of recycled water use.

Due in part to the City’s success in reducing potable water demands and the projected continuation of water conservation practices, the City has determined that it is not currently cost effective to expand the recycled water distribution system through the UWMP planning period (2040).

As shown in **Table 7**, recycled water use is projected to be 140 AFY out to 2045.

Table 7 – Existing and Planned Recycled Water Use in the City of Santa Rosa (AFY) ^a

User Type	2020	2025	2030	2035	2040	2045
Urban Landscape irrigation	110	140	140	140	140	140

^a Source: Table 6-11, 2020 City UWMP

1.4.6 Stormwater Capture

The City of Santa Rosa and most development projects within the City must meet requirements to reduce stormwater pollution, protect water quality of local waterways, and promote groundwater recharge. The City’s stormwater requirements prioritize the use of infiltration-based landscape features for stormwater treatment. Low Impact Development (LID) features utilize the natural cleaning properties of soil, plants, and microbial activity to breakdown pollutants and allow for stormwater to recharge groundwater

²⁵ City of Santa Rosa, Regional Water Reuse System Laguna Treatment Plant National Pollutant Discharge Elimination System (NPDES) Waste Discharge Requirements and Master Reclamation Permit: 2022 Annual Report, February 2023.

aquifers and maintain stream flow. These LID features are required on developments that create 10,000 square feet or more of impervious surface. Any increase in runoff volume off of a developed site (for a storm up to 1 inch in a 24-hour period) must be infiltrated back into the soil or stored and reused on site. Additionally, runoff from all paved areas and rooftops must be filtered through these landscaped features to remove pollutants. These policies help to hydraulically mimic the undeveloped condition which provides aquifer recharge, preserves stream flow, cleans storm water, and reduces demand on potable water for irrigation. The City does not divert stormwater for water supply.

1.4.7 Water Conservation

The City has been and continues to be a leader in implementing innovative water conservation programs. Water conservation and demand management are an integral part of the City's water management strategy.

The City has been implementing water conservation programs since the 1976-1977 drought. In the early 1990s, the City expanded these efforts by hiring a full-time Water Conservation Coordinator. By 1998, the City had established its first rebate and incentive programs and had hired three full time staff dedicated to water conservation program implementation. Additionally, in 1998 the City became a signatory to the California Urban Water Conservation Council (CUWCC)²⁶ Memorandum of Understanding Regarding Urban Water Conservation (MOU) dated September 1997. The City continued to expand its demand management and conservation programs to address the requirements of the Best Management Practices identified by the CUWCC. As a result of these efforts, the City was recognized by the Public Officials for Water and Environmental Reform (P.O.W.E.R) 2007 Water Conservation Scorecard as one of only two water retailers in the State of California to successfully complete all 14 of the CUWCC's Best Management Practices outlined in the 1998 CUWCC MOU, without an exemption.

Since the early 1990s, the City has spent over 21 million on its water conservation programs, including replacement of approximately 56,000 toilets with ultra-low-flow and high-efficiency toilets and conversion of over 4 million square feet of high-water use turf grass to low water use landscaping. Additionally, the City implements innovative programs such as the rainwater harvesting rebate program, graywater reuse rebate program, pool cover and pool removal rebate programs, hot water recirculation pump rebate program, and sustained reduction rebate programs. The City's cumulative water conservation implementation from 1990-2020 has resulted in sustained water use savings. Potable water demand in 2020 was 14 percent less than demand in 1990, despite a 57 percent increase in population over the same time period. This has resulted in a reduction in per capita use of 45 percent compared to 1990. After the recent historic drought, the 2022 per capita use was 53 percent lower than 1990.

Santa Rosa is committed to integrating water conservation into current and future supply and demand solutions for both the water system and the recycled water system. Currently, the City implements the following demand management measures and best management practices:

- Full time water conservation program coordination and staffing;
- Distribution system water loss auditing and water loss controls;
- Enforcement of its Water Waste Prevention ordinance;

²⁶ CUWCC changed its name to California Water Efficiency Partnership (CalWEP) in 2018.

- Advanced Metering Infrastructure with ability to identify leaks and provide customers with hourly water use data and leak alerts via an app;
- Monthly billing of all water customers;
- Conservation pricing and rate structure;
- Public education and outreach; and
- Free services and financial incentives and rebates to help customers use water wisely in all sectors (residential, commercial, industrial, institutional, and large landscape irrigation).

The City’s 2020 UWMP provides additional details regarding the City’s conservation efforts and water efficiency programs.

1.5 Demands

As discussed in **Section 1.3** of this WSA, the City’s 2020 UWMP existing and projected demand and the Project demand projections are the basis for the demand assessment in this WSA. The Project net increase in demand (6,484 AFY) was developed as described below, resulting in an estimated total demand in 2050 of 24,316 AFY.

The PED team responsible for the development of the General Plan 2050 assessed the amount of growth associated with the Project based on the Sonoma County Transportation Authority’s (SCTA’s) Vehicle Miles Traveled (VMT) Model. **Table 8** shows the recategorization of the VMT model output categories to the WSA categories.

Table 8 – Projected Land Use Type Categorization

VMT Model Category	WSA Category
Single-Family Residential	Residential Detached
Multi-Family Residential	Residential Attached
Office	Office
Hotel ^a	Hotel ^a
Commercial (strip and shopping center)	Retail
Light Industrial	Industrial
Heavy Industrial	Industrial
Warehouse	Industrial
Education (education and college) ^a	Education ^a
Institutional (Institutional and Hospital)	Public/Institutional
Recreation ^b	Park/Public Landscape ^a

^a Hotel and Education land use categories were projected in units of rooms and students, respectively, and not by square footage of future developments. Instead of trying to convert these to square feet for use in the existing REF calculation methodology, new REF conversion factors were developed to calculate directly based on number of projected rooms and students, as described further in **Table 9**.

^b The VMT Model category of Recreation typically represents active recreation areas like city parks as well as large public plaza. Large regional parks that are mostly passive open space would not be included (communication with PlaceWorks and W-Trans consultants, March 2023). To conservatively project potential demands from this land use type, the full acreage of “Recreation” was assumed to be irrigated “Park/Public Landscape” for the purpose of this WSA, even though it is likely that some portion of this area may not be irrigated.

The projected water demand for the Project is determined by using Residential Equivalency Factors (REFs) consistent with the land use classifications of the Project and zoning code, and with those set forth in Code Section 10912(a). These classifications are residential (attached and detached), retail (shopping

center/business establishment), office (commercial office buildings), industrial (industrial park/processing plant/ manufacturing), public/institutional, and park or public landscape.

The City's projected residential water use is 65,345 gallons per detached residential unit per year, which is based on the average usage by single-family homes from 2010-2019 calculated for use in the demand projections for the 2020 UWMP.²⁷ The analysis does not rely on water consumption data from 2020-2022 because water use patterns were atypical during those historically dry years. The COVID-19 pandemic resulted in higher residential use in 2020 due to most businesses closing to the public and shelter-in-place orders that kept most people at home. 2021 and 2022 were the second driest two-year period on record for the region. The City began a public outreach campaign in December 2020, and the City Council adopted a water shortage emergency declaration in June 2021, calling for a mandatory communitywide reduction of 20 percent, resulting in residential use well below normal. Due to an abundance of rainfall in the winter of 2022-2023, water supplies returned to normal conditions, and City Council rescinded the drought declaration in March 2023.

One REF is equivalent to the average water use of one detached residential unit per year. As discussed above, the City's average detached residential unit water use for this WSA is 65,345 gallons per year, based on actual water use for 2010-2019. Attached residential water use includes minimal landscape irrigation and averages 70 percent of the detached residential water use. This WSA converts non-residential land use categories into REFs based on land use categories and equivalent water use per CWC 10912(a).

The WSA calculates annual water demand for the Project's developed area by multiplying 65,345 gallons per REF times the net REFs for the Project (for residential and nonresidential growth). As shown in **Table 9**, the Project has a net increase of 29,823 REFs. Therefore, the net annual water demand for the developed Project area is 65,345 gallons per REF x 29,823 REFs, which is 1.95 billion gallons per year, or approximately 5,980 AFY of additional demand compared to 2019. The total annual demand for the Project must also include the system standards for nonrevenue water (historically about 7 percent of total water sales) and a small adjustment (typically 0.8 percent) to account other miscellaneous water sales not captured in regular customer sales. Nonrevenue water includes water used for fire protection and training, water system flushing, sewer cleaning, system leaks, as well as water used by unauthorized connections and meter inaccuracies. Miscellaneous water sales occur through municipal yard meters and temporary water meters (primarily for construction sites). The addition of nonrevenue water (454 AFY) and other sales (50 AFY) increased demand by 504 AFY, bringing the total Project demand to 6,484 AFY.

Table 9 shows the number of REFs in each classification for the Project and the net project demand of 6,484 AFY. **Table 10** shows the total projected demand at 2050 of 24,316 AFY, based on adding the net project demand to the existing 2019 water demand (from the City's 2020 UWMP) of 17,832 AFY.

²⁷ City of Santa Rosa, June 2021 (see Appendix E Water Demand Analysis).

Table 9 – Project Residential Equivalency Factors (REFs) and Net Water Demand

Land Use Category	Net Project Area (square feet)	Project Rooms/Students	Net Residential Units	REF Conversion Factor	REFs
Residential Detached	N/A	N/A	11,810	1 REF/unit	11,810
Residential Attached	N/A	N/A	12,280	0.7 REF/unit	8,575
Retail	945,000	N/A	N/A	1 REF/1,000 SF	945
Office	2,100,000	N/A	N/A	1 REF/500 SF	4,200
Industrial	1,500,000	N/A	N/A	1 REF/1,300 SF	1,154
Public/Institutional	727,000	N/A	N/A	1 REF/500 SF	1,454
Park/Public Landscape	3,092,760	N/A	N/A	1 REF/2,819 SF	1,097
Hotel	N/A	69	N/A	0.75 REF/Room ^a	52
Education	N/A	4,797	N/A	0.11 REF/Student ^b	536
Total	8,364,760	N/A	24,090	N/A	29,823
Net Project Demand (AFY) = (REFs x gallons per REF ÷ 325,851 gallons per acre foot) + other water					6,484 ^c

^a “Hotels” is a new land use category provided by the SCTA VMT model that projects in units of “rooms” and is not easily converted to square footage of future development as is used for other non-residential land use categories. Since a City-specific demand factor was not available, an existing factor from Ventura Water’s 2020 Water Demand Factor Study was utilized to create a new REF conversion factor. Ventura Water’s 2020 Water Demand Factor Study reports 134 gallons per day (gpd)/room for hotels which is assumed to be relatively similar to City of Santa Rosa hotel use. When compared to the 179 gpd for single-family homes reported in the City’s 2020 UWMP, this results in a REF conversion factor of 0.75 REF per hotel room.

^b “Education” is a new land use category provided by the SCTA VMT model that projects in units of “students” and is not easily converted to square footage of future development as is used for other non-residential land use categories. Since a City-specific demand factor was not available, an existing factor from Ventura Water’s 2020 Water Demand Factor Study was utilized to create a new REF conversion factor. Ventura Water’s 2020 Water Demand Factor Study reports 20 gpd/student for schools which is assumed to be relatively similar to City of Santa Rosa education use. When compared to the 179 gpd for single-family homes reported in the City’s 2020 UWMP, this results in a REF conversion factor of 0.11 REF per student (or 1 REF per 9 students).

^c (29,823 REFs x 65,345 gal/REF) ÷ 325,851 gallons per acre foot + 504 AFY of other water (454 AFY of nonrevenue water + 50 AFY construction meters and yard sales). Note that the total volume of 6,484 was summed using individually rounded values.

Table 10 – Total Demands

Category	Water Demand (AFY)
Existing Total Water Demand (2019) ^a	17,832
Project Net Demand Increase	6,484
2050 Total Water Demand	24,316

^a Source: Table 4-1, City’s 2020 UWMP

1.6 Dry Years Analysis

When comparing water demand and water supplies to determine availability of a long-term reliable water supply for the proposed development (see **Section 1.7.1**), the assessment must consider available supply under normal, single-dry year, and multiple-dry water year conditions. The purpose is to evaluate whether there could be shortfalls in supply under various hydrologic conditions, and if so, to provide a basis for planning for those conditions.

The City’s 2020 UWMP analyzed water supplies for single dry year and multiple consecutive dry year scenarios. **Table 11** lists the years on which those analyses are based and also shows the City’s supplies in 5-year increments from 2025-2045.

Table 11 – Summary of Dry Year(s) Analysis ^a

Water Year Type	Base Year	Total Available Water Supply by Year (AFY)				
		2025	2030	2035	2040	2045
Normal Year	2002	31,540	31,540	31,540	31,540	31,540
Single-Dry Year	1977	22,660	20,639	20,937	20,978	21,689
Consecutive Dry Years 1st Year	1987	22,660	24,083	24,652	25,329	26,097
Consecutive Dry Years 2nd Year	1988	22,660	24,083	24,652	25,329	26,097
Consecutive Dry Years 3rd Year	1989	22,660	24,083	24,652	25,329	26,097
Consecutive Dry Years 4th Year	1990	22,660	24,083	24,652	25,329	26,097
Consecutive Dry Years 5th Year	1991	22,660	24,083	24,652	25,329	26,097

^a Source: City’s 2020 UWMP, Tables 7-1, 7-2, 7-3, and 7-4

1.7 Sufficiency Determination

1.7.1 Supply and Demand Comparison

Table 12 (normal year scenario), **Table 13** (single-dry year scenario), and **Table 14** (multiple dry years scenario) show a comparison of projected supplies and demands under a normal year and the two drought scenarios in the interim years between existing conditions (2019) and the 20-year projection of this WSA (2043). Under normal year conditions or any year of the consecutive five dry year sequence, hydrologic modeling shows sufficient water supply (does not anticipate a water shortage). However, under a single-dry year scenario, modeling anticipates a water shortage would likely occur in single dry years beginning in 2031. To address any actual water shortages, the City implements the appropriate stage of the City’s Water Shortage Contingency Plan (WSCP).

Table 12 – Normal Year Supply vs Demand

	2028	2033	2038	2043
Supply ^a	31,540	31,540	31,540	31,540
Demand ^b	20,032	21,369	22,796	24,316
Difference	11,508	10,171	8,744	7,224
Shortage	0%	0%	0%	0%

^a Normal Year supply projections shown in Table 11 were interpolated linearly between the existing 5-year increments (2025, 2030, 2035, 2040, and 2045) to estimate the 5-year projections in this table (2028, 2033, 2038, and 2043).

^b Demand was interpolated using a consistent annual growth factor of approximately 1.36 percent which is calculated based on the growth rate in demands over 24 years from 2019 to 2043. This is consistent with the assumptions being used in the DEIR for a consistent compound annual growth rate for interim year forecasting (PlaceWorks, personal communication, March 29, 2023).

Table 13 – Single-Dry Year Supply vs Demand

	2028	2033	2038	2043
Supply ^a	21,447	20,818	20,962	21,405
Demand ^b	20,032	21,369	22,796	24,316
Difference ^c	1,415	-552	-1,834	-2,911
Shortage	0%	3%	8%	12%

^a Single-Dry Year supply projections shown in **Table 11** were interpolated linearly between the existing 5-year increments (2025, 2030, 2035, 2040, and 2045) to estimate the 5-year projections in this table (2028, 2033, 2038, and 2043).

- ^b Demand was interpolated using a consistent annual growth factor of approximately 1.36 percent which is calculated based on the growth rate in demands over 24 years from 2019 to 2043. This is consistent with the assumptions being used in the DEIR for a consistent compound annual growth rate for interim year forecasting (PlaceWorks, personal communication, March 29, 2023).
- ^c Differences may reflect rounding errors.

Table 14 – Multiple Dry Years Supply vs Demand

	2028	2033	2038	2043
Supply ^a	23,514	24,424	25,058	25,790
Demand ^b	20,032	21,369	22,796	24,316
Difference ^c	3,481	3,055	2,263	1,474
Shortage	0%	0%	0%	0%

- ^a The supply projections for the fifth year of a consecutive 5-year dry sequence shown in Table 11 were interpolated linearly between the existing 5-year increments (2025, 2030, 2035, 2040, and 2045) to estimate the 5-year projections in this table (2028, 2033, 2038, and 2043).
- ^b Demand was interpolated using a consistent annual growth factor of approximately 1.36 percent which is calculated based on the growth rate in demands over 24 years from 2019 to 2043. This is consistent with the assumptions being used in the DEIR for a consistent compound annual growth rate for interim year forecasting (PlaceWorks, personal communication, March 29, 2023).
- ^c Differences may reflect rounding errors.

The City adopted the WSCP as part of the 2020 UWMP process in June 2021 and amended it in November 2021. The WSCP describes a standardized set of demand reduction actions that the City would implement under increasingly greater water shortage situations. Measures include restrictions and prohibitions on end users, increased marketing and outreach to customers, water waste prevention and enforcement, rate structure changes, and aggressive promotion of existing and temporary water conservation programs, incentives, and enhancements to help customers conserve water. These measures have successfully helped the community conserve water during previous droughts, achieving on average 20 to 25 percent reduction in water use. The City also has a plan to implement a water allocation program and companion Excess Use Penalties (EUP) program to penalize usage in excess of individual account water allocations. Together, these actions are anticipated to adequately reduce projected demands in a single-dry year scenario to match available supplies.

1.7.2 Finding of Sufficiency

*California Water Code:
10910 (c)(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.*

The City has adequate existing water supplies to meet existing demands plus the maximum additional demand associated with the Project, with implementation of demand management measures as needed during dry years.

The City’s projected water supplies for the Project include the existing contractual entitlement from Sonoma Water as defined in the Restructured Agreement. The City’s water supplies also include groundwater wells for drinking water and recycled water for nonpotable uses (e.g., landscape irrigation). The City’s demand management measures are more specifically described in **Section 1.7.1**, above.

1.8 Non-Applicable Sections of Water Code 10910 – 10915

The following sections of the CWC do not apply to this WSA because they are contingent on conditions that do not apply in the City's assessment of water supply for the Project.

California Water Code

10910 (e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contractholders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water supply assessments.

10911 (a) If, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. If the city or county, if either is required to comply with this part pursuant to subdivision (b), concludes as a result of its assessment, that water supplies are, or will be, insufficient, the city or county shall include in its water supply assessment its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. Those plans may include, but are not limited to, information concerning all of the following:

(1) The estimated total costs, and the proposed method of financing the costs, associated with acquiring the additional water supplies.

(2) All federal, state, and local permits, approvals, or entitlements that are anticipated to be required in order to acquire and develop the additional water supplies.

(3) Based on the considerations set forth in paragraphs (1) and (2), the estimated timeframes within which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), expects to be able to acquire additional water supplies.

10915 The County of San Diego is deemed to comply with this part if the Office of Planning and Research determines that all of the following conditions have been met:

(a) Proposition C, as approved by the voters of the County of San Diego in November 1988, requires the development of a regional growth management plan and directs the establishment of a regional planning and growth management review board.

(b) The County of San Diego and the cities in the county, by agreement, designate the San Diego Association of Governments as that review board.

(c) A regional growth management strategy that provides for a comprehensive regional strategy and a coordinated economic development and growth management program has been developed pursuant to Proposition C.

(d) The regional growth management strategy includes a water element to coordinate planning for water that is consistent with the requirements of this part.

(e) The San Diego County Water Authority, by agreement with the San Diego Association of Governments in its capacity as the review board, uses the association's most recent regional growth forecasts for planning purposes and to implement the water element of the strategy.

(f) The procedures established by the review board for the development and approval of the regional growth management strategy, including the water element and any certification process established to ensure that a project is consistent with that element, comply with the requirements of this part.

(g) The environmental documents for a project located in the County of San Diego include information that accomplishes the same purposes as a water supply assessment that is prepared pursuant to Section 10910.

1.9 Conclusion

California Water Code:

10911 (b) The city or county shall include the water supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.

(c) The city or county may include in any environmental document an evaluation of any information included in that environmental document provided pursuant to subdivision (b). The city or county shall determine, based on the entire

record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses. If the city or county determines that water supplies will not be sufficient, the city or county shall include that determination in its findings for the project.

The City is the public water supplier under SB 610 for the Project. The water demand for the Project is the increment of increased demand from demand associated with 2019 existing conditions. The City finds that its existing and projected water supplies will be sufficient to meet existing demands and future demand associated with the Project, as that Project demand is projected in **Section 1.5** of this WSA, with implementation of demand management measures in dry years as needed.

This WSA is valid as of the date approved by the City Council. This WSA is applicable only to the project described in this assessment.

2. REFERENCES

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2. City of Santa Rosa, *2020 Urban Water Management Plan* (June 2021)
3. City of Santa Rosa, *Incremental Recycled Water Program EIR* (November 2003)
4. City of Santa Rosa, *Incremental Recycled Water Program Master Plan* (March 2004)
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6. City of Santa Rosa, *Regional Water Reuse System Laguna Treatment Plant National Pollutant Discharge Elimination System (NPDES) Waste Discharge Requirements and Master Reclamation Permit: 2022 Annual Report* (February 2023)
7. City of Santa Rosa, *SB 610 Water Supply Assessment for Santa Rosa General Plan 2035* (November 25, 2008)
8. Entrix, Inc., *Russian River Biological Assessment* (September 2004)
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10. PlaceWorks, personal communication (March 29, 2023)
11. Santa Rosa Plain Groundwater Sustainability Agency, *Groundwater Sustainability Plan Santa Rosa Plain Groundwater Subbasin* (December 2021)
12. Santa Rosa Plain Groundwater Sustainability Agency, *Santa Rosa Plain Subbasin Annual Report Water Year 2022* (March 2023)
13. Sonoma County, Letter, *Water Supply Provided by Sonoma County Water Agency* (April 2006)
14. Sonoma Water, Letter, *Status Update Regarding Russian River Diversions Reported Under Sonoma County Water Agency Diversion/ Rediversion rights (1993-2002) and Limitations on these Rights* (August 11, 2003)
15. Sonoma Water, et al., *Restructured Agreement for Water Supply* (June 2006)
16. Sonoma Water, *Fish Habitat Flows and Water Rights Project Draft Environmental Impact Report* (August 2016)
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