Agenda Item #14.1
For Council Meeting of: July 25, 2023

CITY OF SANTA ROSA
CITY COUNCIL

TO: MAYOR AND CITY COUNCIL
FROM: JENNIFER BURKE, DIRECTOR, SANTA ROSA WATER
SUBJECT: WATER SUPPLY ASSESSMENT FOR THE SANTA ROSA GENERAL PLAN 2050

AGENDA ACTION: RESOLUTION

RECOMMENDATION

It is recommended by Santa Rosa Water that the Council, by resolution, approve the Water Supply Assessment for the Santa Rosa General Plan 2050.

EXECUTIVE SUMMARY

California Water Code (CWC) Section 10910 *et seq.* requires water suppliers to provide a Water Supply Assessment (WSA) to land use planning agencies for any proposed projects which are subject to the California Environmental Quality Act (CEQA) under Section 21080 of the Public Resources Code and fit the definition of a "project" under CWC Section 10912. The proposed Santa Rosa General Plan 2050 (Project) prepared by the City of Santa Rosa (City) Planning & Economic Development Department (PED) is subject to CEQA and fits the definition of a "project" under CWC Section 10912(a)(7) because it would demand an amount of water equivalent to or greater than the amount of water required by 500 dwelling units. As requested by PED, Santa Rosa Water prepared a WSA for the Project. The WSA concludes that the City's existing and projected water supplies are sufficient to meet the projected new water demand associated with the Project in addition to current and future uses for a 20-year horizon through 2043, with implementation of demand management measures in dry years as needed. After approval, the WSA will be included as an attachment to the Environmental Impact Report for the Project.

BACKGROUND

State Senate Bill 610 (SB 610), chaptered in 2001 and codified as California Water Code (CWC) Section 10910 *et seq*., requires that water suppliers provide a Water Supply Assessment (WSA) to land use planning agencies for any proposed projects which are subject to the California Environmental Quality Act (CEQA) under Section 21080 of the Public Resources Code and fit the definition of a "project" under CWC Section 10912. A WSA addresses the current and planned future water demand of the water supplier, the

projected water demand of the proposed project, the projected water supply of the water supplier, and then makes a determination on the sufficiency of water supplies for the project, in addition to existing and planned future uses.

In accordance with CWC Section 10910(g), the governing body of the public water system shall submit the WSA to the land use planning agency no later than 90 days from the date on which the request was received. The public water system can request an extension of time, not to exceed 30 days, to prepare the WSA and have it adopted by the governing body.

The proposed General Plan prepared by the City's Planning & Economic Development Department (PED) is subject to CEQA and fits the definition of a "project" under California Water Code (CWC) 10912(a)(7) because it would demand an amount of water equivalent to or greater than the amount of water required by 500 dwelling units. The City of Santa Rosa (City) is both the public water system (Santa Rosa Water) and land use planning agency (PED) for the Project, and Santa Rosa City Council (City Council) is the governing body.

On March 28, 2023, pursuant to CWC Section 10910, PED requested that Santa Rosa Water prepare a WSA for the Project. Santa Rosa Water requested under CWC Section 10910(g)(2), and PED granted, a 30-day extension, which expires on July 26, 2023. After adoption by the City Council, the WSA will be circulated with the Environmental Impact Report for the Project.

PRIOR CITY COUNCIL REVIEW

Not applicable.

ANALYSIS

As required by CWC Section 10910 *et seq*., a WSA must assess the sufficiency of water supply to meet demands of a project, plus existing and planned water uses, for the upcoming 20 years. This WSA assesses the water demand for the net increase in new development anticipated in the Project, as compared to existing development (defined by the Project as the year 2019), and the total water demand for Santa Rosa by 2050.

The WSA makes the conservative assumption that all development anticipated in the Project and the associated increase in water demand would occur within the WSA's 20-year horizon (by 2043). The WSA considers available water supply under normal year, single-dry year, and multiple-dry water year hydrologic conditions and compares projected supply and demand in five-year increments through 2043 for each scenario.

Based on this analysis, the WSA finds that Santa Rosa has adequate water supplies to meet existing and planned development, including new development anticipated in the Project, with the implementation of demand management measures in dry years as needed. A brief summary of the methodology and findings are provided below.

Projected Water Demand

In accordance with CWC Section 10910 *et seq*., a WSA must determine the water supply sufficiency for the Project and existing and planned uses over a 20-year horizon, which for this WSA extends through 2043. The Project anticipates the City will be built out by 2050 and identifies the amount of new development as compared to existing conditions (defined by the Project as the year 2019). PED provided development projections out to 2050, based on data from Sonoma County Transportation Authority's Vehicle Miles Traveled Model. Table 1 shows baseline (2019) versus anticipated growth in development by 2050.

Table 1: Baseline versus Anticipated Growth in Development

Land Use Category (Units)	Baseline (2019)	Growth Increment	Buildout (2050)
Residential Detached (dwelling units)	46,435	11,810	58,245
Residential Attached (dwelling units)	29,418	12,280	41,698
Retail (square feet [sf])	10,434,662	945,000	11,379,662
Office (sf)	6,704,000	2,100,000	8,804,000
Industrial (sf)	11,429,000	1,500,000	12,929,000
Public/Institutional (sf)	3,793,000	727,000	4,520,000
Park/Public Landscape (sf)	81,363,600	3,092,760	84,288,600
Hotels (rooms)	2,086	69	2,155
Education (students)	53,131	4,797	57,928

Residential Equivalency Factors (REFs) assess water demands using a standard methodology across various land use classifications. One REF is the average amount of water used by one single-family home per year in Santa Rosa, which is 65,345 gallons based on the ten-year average for 2010-2019. For example, the anticipated water demand of 1,000 square feet of retail development is equivalent to one REF. Table 2 converts anticipated net growth by 2050 into REFs.

Table 2: Converting Growth to Residential Equivalency Factors (REFs)

Land Use Category	Net Project Area (square feet)	Net Project Rooms or Students	Net Residential Units	REF Conversion Factor	REFs
Residential Detached	-	-	11,810	1 REF/unit	11,810
Residential Attached	-	-	12,280	0.7 REF/unit	8,575
Retail	945,000	-	-	1 REF/1,000 SF	945
Office	2,100,000	-	-	1 REF/500 SF	4,200
Industrial	1,500,000	-	-	1 REF/1,300 SF	1,154
Public/Institutional	727,000	-	-	1 REF/500 SF	1,454
Park/Public Landscape	3,092,760	-	-	1 REF/2,819 SF	1,097
Hotel	-	69	-	0.75 REF/Room	52
Education	-	4,797	-	0.11 REF/Student	536
Total	8,364,760	N/A	24,090	N/A	29,823

Table 3 converts anticipated growth as REFs into water demand in gallons and acre-feet and then adds other planned uses, including miscellaneous water sales (such as temporary meters for construction) and non-revenue water uses (such as flushing mains and fighting fires) to project new water demand by 2050 in acre-feet per year (AFY).

Table 3: Projected Water Demand for New Development

Net REFs	29,823
Gallons per REF	65,345
Subtotal (gallons per year)	1,948,783,935
Subtotal (converted to AFY)	5,981
Other water* (AFY)	504
Total New Demand (AFY)	6,484

* Other Water includes miscellaneous sales (e.g., construction) and non-revenue water uses (e.g., firefighting, flushing mains, testing hydrants).

Table 4 shows the current water demand (2019), the projected demand for new development by 2050, and the total water demand for Santa Rosa for buildout by 2050.

Table 4: Projected Water Demand for Buildout

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

Projected Water Supply

The City has three sources of water supply, including an entitlement from Sonoma Water for potable water, groundwater from the City's wells, and recycled water (non-potable) from the Santa Rosa Regional Water Reuse System for urban landscape irrigation. The WSA projects have these same supplies through the 20-horizon of the WSA (2043) and beyond. Table 5 shows projected water supplies under normal year (average rainfall) conditions.

Table 5: Projected Normal Year Water Supplies

Water Supply Sources	2020 actual use	2025	2030	2035	2040	2045
Sonoma Water	18,024	29,100	29,100	29,100	29,100	29,100
City groundwater	1,253	2,300	2,300	2,300	2,300	2,300
Recycled water	110	140	140	140	140	140
Total	19,387	31,540	31,540	31,540	31,540	31,540

Projected Water Supply versus Demand

The WSA makes the conservative assumption that all new development anticipated in the Project and the associated increase in water demand would occur within the WSA's

20-year horizon (by 2043). The WSA considers available water supply under normal year, single-dry year, and multiple-dry water year hydrologic conditions and compares projected supply to demand in five-year increments through 2043 for each scenario.

Table 6 shows water supply versus demand under normal year conditions (average rainfall years). The five-year increments (2025-2045) for water supply used in the City's 2020 Urban Water Management Plan have been interpolated linearly to align with WSA five-year projections through 2043. The WSA finds that water supply is sufficient for demand under normal hydrologic conditions.

Table 6: Water Supply and Demand (AFY) for Normal Year Conditions

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

* Supply 5-year increments (2025-2045) interpolated linearly to align with WSA 5-year projections

Table 7 shows water supply versus demand under single-dry year conditions (based on the driest year on record, 1977). During a single-dry year, the WSA anticipates the City would experience water shortage conditions ranging from 3 percent (in 2033) to 12 percent (in 2043).

If a water shortage of 10 percent or more occurs, the City would implement its Water Shortage Contingency Plan. Subsequent actions include restrictions and prohibitions on end users, increased marketing and outreach to customers, water waste prevention and enforcement, aggressive promotion of existing and temporary water conservation programs, incentives and enhancements to help customers conserve water, and water rate structure changes. These measures have successfully helped the community conserve water during previous droughts, achieving an average reduction of over 20 percent in three droughts that have occurred since 2000.

The City's water conservation actions are anticipated to adequately reduce projected demands in a single-dry year scenario to match available supplies.

Table 7: Water Supply and Demand (AFY) for Single-Dry Year Conditions

Normal Year	2028	2033	2038	2043
Supply *	21,447	20,818	20,962	21,405
Demand	20,032	21,369	22,796	24,316
Difference	1,412	-552	-1,834	-2,911
Shortage	0%	3%	8%	12%

* Supply 5-year increments (2025-2045) interpolated linearly to align with WSA 5-year projections

Table 8 shows water supply versus demand under the fifth year of a multiple dry year period (based on the driest consecutive five-year period on record, 1987-1991). The WSA finds that water supply is sufficient for demand under multiple dry year conditions.

Table 8: Water Supply and Demand (AFY) for Multiple Dry Year Conditions

Normal Year	2028	2033	2038	2043
Supply *	23,514	24,424	25,058	25,790
Demand	20,032	21,369	22,796	24,316
Difference	3,481	3,055	2,263	1.474
Shortage	0%	0%	0%	0%

* Supply 5-year increments (2025-2045) interpolated linearly to align with WSA 5-year projections

Sufficiency Determination

Based on the analysis, the WSA concludes that the City's existing and projected water supplies are sufficient to meet the projected new water demand associated with the Project in addition to current and planned future uses for the 20-year horizon, with implementation of demand management measures in dry years as needed.

FISCAL IMPACT

Approval of this action does not have a fiscal impact on the General Fund.

ENVIRONMENTAL IMPACT

This action has been found exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15306 in that the project (the WSA) consists of basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource.

BOARD/COMMISSION/COMMITTEE REVIEW AND RECOMMENDATIONS

Not applicable

NOTIFICATION

Not applicable

ATTACHMENTS

- Resolution
- Exhibit A – Water Supply Assessment for the Santa Rosa General Plan 2050

PRESENTER

Colin Close, Senior Water Resources Planner