

California American Water

Water Supply Assessment for
West Jackson Highway Master Plan

February 2024

I. Introduction

On August 14, 2023, the County of Sacramento submitted a letter to California American Water requesting a Water Supply Assessment (WSA) for the proposed West Jackson Highway Project (Project). This WSA was prepared pursuant to the **California Water Code [Section 10910]**. California American Water’s 2020 Urban Water Management Plan (2020 UWMP) for the Suburban-Rosemont service area did not include water demands for the Project; therefore, this assessment addresses the ability of California American Water to serve water to this Project.

II. Project Overview

The Project encompasses approximately 5,913 acres and is in the central part of Sacramento County. The Project area is located southeast of the South Watt Avenue/Jackson Highway intersection east to Bradshaw Road, and northeast of South Watt Avenue/Elder Creek Road east to Bradshaw Road. East of Bradshaw Road, the Project area extends north to Goethe Road, then easterly south of the Mather Airport to Excelsior Road, which is the easterly boundary of the Project area. The Project area extends south along Excelsior Road to Florin Road, which is the southern boundary of the Project. The Project boundary follows Florin Road westerly to Excelsior Road for approximately 8,000 feet, then north to Elder Creek Road, which becomes the southerly boundary west to Hedge Avenue. The Project is partially located within California American Water’s Suburban-Rosemont service area. This includes 1,892 acres in the northwest portion of the Project area bound roughly by Fruitridge Road to the south and Happy Lane to the east. The remaining portion of the Project area will be served by Sacramento County Water Agency.

Wood Rogers, Inc. submitted a Level 1 Domestic Water Study in 2018. In 2022, a revision to this study was submitted that updated projected demands. Changes to the demands generally included an increase in Low Density Residential, Mixed Use, and Park zoning and a decrease in High Density Residential, Commercial, and School zoning. The total acreage of the Project site remains the same, but the annual water demand increased from 973 million gallons (MG) to 996 MG, for a difference of 23 MG. The original and revised demands attached at the end of this document.

III. Water Demands [Section 10910(c)]

California American Water’s 2020 UWMP for Suburban-Rosemont did not include the proposed demands for the Project. There have been no significant changes or updates to demand projections for California American Water’s Suburban-Rosemont service area since the 2020 UWMP. Historical demands from the past five years are presented in **Table 1**.

Table 1: Historical Demands

Year	2018	2019	2020	2021	2022
Demand (MG)	2,691	2,629	2,872	2,622	2,699

Future demands were estimated by applying historical growth rates as well as the projected demands for the Project. While it is probable that Project will take longer than 20 years to complete, for the purpose of this WSA the Project was conservatively projected to be built-out and in service by 2045. The Project is assumed to begin in 2025, with 25% of the Project completed by 2030, 50% completed by 2035, 75% completed by 2040, and 100% completed by 2045. Projected demands are shown in **Table 2**.

Table 2: Projected Demands

Year	2023	2024	2025	2030	2035	2040	2045
Demand (MG)	2,709	2,718	2,727	3,024	3,322	3,620	3,920

IV. Water Supply [Section 10910(d)]**A. Identification of Water Supply Entitlements [Section 10910(d)(1)]**

California American Water’s Suburban-Rosemont service area is served primarily by groundwater wells. These wells draw water from the South American Subbasin (SASb). This basin is not adjudicated, therefore rights to the groundwater are based on the water rights of the property owner. As is the case with most municipal water providers, California American Water delivers water to parcels that it does not own. This is considered an appropriative use of groundwater. There is no permitting required for the use of groundwater in this case; however, the use of groundwater is limited to what is used by the overlying property owners.

California American Water has an agreement with the City of Sacramento to purchase water. In 2010, CAW revised an existing wholesale supply agreement with the City to receive a maximum of 3.46 million gallons per day (MGD) of non-firm supply during off-peak periods (October 15th through May 14th), plus an additional 2.3 MGD of firm capacity, for a total of 5.76 MGD. Because the non-firm capacity of 3.46 MGD can only be used during seven months of the year, the total yearly amount available is calculated to be 1,576 MG. However, in a dry year or multiple dry years, it is assumed that only the firm supply would be available. Additionally, this agreement includes three of California American Water’s service areas, so it is assumed that this firm supply would be available to each of these service areas proportional to their respective demands. For the Suburban-Rosemont service area, this equates to 403 MG.

Total firm supply availability is summarized in **Table 3** for a normal year, a dry year, and multiple dry years.

Table 3: Supply by Year Type

Year Type	Source	Capacity (MG)
Normal Years	Groundwater Wells	9,279
	Purchased Water	1,576
	Total	10,855
Single Dry Year	Groundwater Wells	9,279
	Purchased Water	403
	Total	9,682
Multiple Dry Years	Groundwater Wells	9,279
	Purchased Water	403
	Total	9,682

B. Demonstration of Water Supply [Section 10910(d)(2)]

Section 10910(d)(2)(A), contracts or proof of entitlements: The agreement between California American Water and the City of Sacramento for purchased water is documented in both California American Water’s and City of Sacramento’s 2020 UWMPs, which can be found on the Department of Water Resources website at wuedata.water.ca.gov.

California American Water has appropriate rights to the groundwater extracted from groundwater wells.

Section 10910(d)(2)(B), capital outlay program: California American Water’s Capital Improvement Program (CIP) must be approved by the California Public Utilities Commission (CPUC). The current approved CIP from the 2019 General Rate Case (GRC) can be found on the CPUC website at cpuc.ca.gov, Decision D.21-11-018, Appendix B, Attachment C-4. California American Water is currently awaiting a CPUC decision for its latest GRC filed in 2022, which contains an updated CIP.

Section 10910(d)(2)(C), permits for construction of infrastructure: The Project will connect to existing California American Water infrastructure. The Project owners will be responsible for providing the infrastructure to convey water to the development, including obtaining any permits for construction.

Section 10910(d)(2)(D), regulatory approvals: The Project is located within California American Water’s existing service area, therefore no regulatory approvals are required in order to convey water to the Project.

V. Supply and Demand Assessment [Section 10910(c)(3)]

California American Water has sufficient supply to meet projected demands in normal, dry, and multiple dry years through 2045, as shown in **Table 4**. However, it should be noted that the groundwater wells are aging, and as they age, they tend to lose production capacity and are at risk of failure. California American Water has a well replacement plan in place that prioritizes replacement of wells that are at high risk of failure, whether it be due to age or other factors. This analysis assumes that these wells are replaced when needed to replace diminished capacity or avoid failure and that replacement wells are of similar production capacity.

Table 4: Supply and Demand

Year Type	Source	2022	2025	2030	2035	2040	2045
Normal Years	Supply (MG)	10,855	10,855	10,855	10,855	10,855	10,855
	Demand (MG)	2,699	2,727	3,024	3,322	3,620	3,920
	Surplus/Deficit (MG)	8,156	8,128	7,831	7,533	7,234	6,935
Single Dry Year	Supply (MG)	9,682	9,682	9,682	9,682	9,682	9,682
	Demand (MG)	2,699	2,727	3,024	3,322	3,620	3,920
	Surplus/Deficit (MG)	6,983	6,955	6,658	6,360	6,061	5,762
Multiple Dry Years	Supply (MG)	9,682	9,682	9,682	9,682	9,682	9,682
	Demand (MG)	2,699	2,727	3,024	3,322	3,620	3,920
	Surplus/Deficit (MG)	6,983	6,955	6,658	6,360	6,061	5,762

VI. Maximum Day Demand Analysis

According to California Code of Regulations, Title 22 Section 64554, a public water system's water source(s) shall have the capacity to meet the system's maximum day demand. **Table 5** presents a comparison of maximum day demand versus supply.

Table 5: Maximum Day Demand and Supply

Year	2023	2024	2025	2030	2035	2040	2045
Supply (MGD)	27.7	27.7	27.7	27.7	27.7	27.7	27.7
Maximum Day Demand (MGD)	14.1	14.2	14.2	15.9	17.5	19.1	20.7
Surplus/Deficit (MGD)	13.6	13.5	13.5	11.9	10.3	8.6	7.0

VII. Groundwater Withdrawals [Section 10910(f)]

Section 10910(f)(1), groundwater information in the UWMP: California American Water's 2020 UWMP identified the SASb as the source of groundwater for its Suburban-Rosemont service area. The Suburban-Rosemont service area currently has 25 operational groundwater wells with a total capacity of approximately 19,319 gallons per minute (gpm), which equates to 10,154 MG per year. The firm capacity of these wells, or the capacity with the largest well out of service, is 17,654 gpm, or 9,279 MG. These well capacities were updated from the 2020 UWMP with current well pump efficiency tests.

Section 10910(f)(2)(A), description of groundwater basin: The SASb is a high priority subbasin surrounded by the American, Cosumnes, Mokelumne, and Sacramento Rivers to the north, south and west, and the foothills of the Sierra Nevada to the east. The SASb is comprised of two aquifers; the upper and lower aquifers are described as follows in the SCGA Alternative Submittal:

"The upper fresh-water aquifer is wedge-shaped along the eastern side of the basin (dipping and thickening westward) but is relatively flat-lying on the western side. The thickness can vary up to approximately 300 feet, but is typically 200 feet, and the bottom can extend to an elevation of approximately 200 feet below mean sea level. The upper aquifer is generally correlative to the Laguna Formation and other similar/younger sediments.

The lower fresh-water aquifer is similar in shape to the upper aquifer, but considerably larger. The wedge portion of the lower aquifer, on the eastern side of the basin, rests on bedrock (relatively impermeable) and can extend to depths between 800 and 1,200 feet below mean sea level. Within the center and western portions of the basin, the base of the lower aquifer extends to depths between 1,200 and 2,000 feet below mean sea level, to the top of the unusable water. This unusable water may occur at depths of 800 feet below mean sea level beneath the Delta area of the South American Subbasin. The lower aquifer is generally correlative to the Mehrten Formation and pre-Mehrten sediments.

The Laguna and Mehrten Formations were deposited during the Pliocene and Miocene Epochs, respectively, (Gutierrez, 2011) of the Tertiary or Neogene Period (2.6 to 23.0 million years ago) in a fluvial environment (DWR, 1974). These formations are comprised of interbedded layers of gravel, sand, silt, and clay with numerous channel deposits within the South American Subbasin. The deposits are wedge-shaped and dip gently and thicken in a westerly direction. The Laguna Formation is derived from granitic and

metamorphic rocks while the Mehrten Formation is derived from andesitic rock. The Mehrten Formation also includes dense, hard layers of tuff-breccia.”

“The cones-of-depressions...were developed during the middle of the last century as groundwater was pumped extensively for agricultural land uses, and were known to not be in a state of equilibrium (i.e., groundwater levels still falling) in the mid 1980’s. The majority of the subbasin’s recharge occurs from the percolation of rainfall and irrigation water and from the rivers that bound three sides of the subbasin, including the Delta.”

Section 10910(f)(2)(C), Groundwater Sustainability Plan (GSP): California enacted the Sustainable Groundwater Management Act in 2014 and this requires that the state’s high and medium priority groundwater basins develop a GSP to balance pumping and recharge to the basin. To accomplish this, six Groundwater Sustainability Agencies (GSAs) were formed to develop one GSP for the SASb. The GSP was finalized in 2022 and can be found on the SASb website at sasbgroundwater.org. The key finding of the GSP is that the basin will be sustainable over the next twenty years as long as planned recycled water, recharge, and other projects are implemented.

Section 10910(f)(3), description and analysis of the amount of groundwater pumped: Actual groundwater withdrawals for the past five years are shown in **Table 6**.

Table 6: Historical Groundwater Withdrawals

Year	2018	2019	2020	2021	2022
Groundwater Withdrawals (MG)	2,570	2,466	2,531	2,622	2,590

VIII. Infrastructure Requirements

The Project owners will be responsible for providing the necessary infrastructure to convey water to the development. This will include water mains and peaking facilities, including a tank (or tanks) and booster pump station, capable of meeting peak hour demand requirements pursuant to Title 22 Section 64554. Preliminary hydraulic modeling results show that the existing Suburban-Rosemont system has adequate pressures and flow to serve the development. Further modeling will be performed as the development plans progress.

IX. Conclusion of Sufficiency

In conclusion California American Water has sufficient supply for future demands, including the West Jackson Highway Project, through 2045. This includes normal years, dry years, and multiple dry years.

Proposed Project Demands, Original (2018) and Revised (2022)

Land Use	Area (acres)		Average Annual Demand (MG)		Average Day Demand (gpm)		Maximum Day Demand (gpm)		Peak Hour Demand (gpm)	
	2018	2022	2018	2022	2018	2022	2018	2022	2018	2022
Very Low Density Residential	20	20	10	10	18	18	37	37	74	74
Low Density Residential	391	444	292	331	556	631	1111	1,261	2,223	2,522
Medium Density Residential	18	18	15	15	29	29	57	57	115	115
High Density Residential	42	35	49	41	93	79	186	157	372	314
Mixed Use	28	50	32	58	61	111	122	222	245	443
Commercial	282	210	199	149	379	282	758	565	1516	1,130
Employment	326	321	231	227	439	433	877	865	1755	1,731
Industrial	75	75	53	53	101	101	201	202	403	404
School	22	13	21	13	41	25	81	50	162	99
Park	30	60	29	59	55	111	110	223	220	446
Open Space (Irrigated)	29	27	29	27	55	51	110	102	220	204
Open Space (Non-irrigated)	367	358	0	0	0	0	0	0	0	0
Open Space / Urban Farm	140	140	0	0	0	0	0	0	0	0
Institutional	23	23	7	7	13	13	25	25	51	51
Arterial / Collector Roads	100	99	6	6	12	12	24	24	48	47
Total	1,892	1,892	973	996	1,851	1,896	3,701	3,790	7,403	7,580