MUNICIPAL SERVICES REVIEW for

CARMICHAEL WATER DISTRICT

APPROVED – FEBRUARY 2024

Sacramento LAFCo

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1.0 INTRODUCTION

1.1 Role and Responsibility of LAFCO

Local Agency Formation Commissions (LAFCOs) are independent regulatory commissions established by the State legislature in 1963 to encourage the orderly growth and development of local governmental agencies including cities and special districts. Today, there is a LAFCO in each of California's 58 counties. Sacramento LAFCO is a seven-member commission comprised of two members of the Sacramento County Board of Supervisors, two City Council members, two Special District representatives, and one Public Member-At-Large. The Commission also includes one alternate member for each represented category.

LAFCO is responsible for implementing the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 ("CKH Act") (California Government Code Section 56000 et seq.) for purposes of facilitating changes in local governmental structure and boundaries that fosters orderly growth and development, promotes the efficient delivery of services, and encourages the preservation of open space and agricultural lands. Some of LAFCO's duties include regulating jurisdictional boundary changes and the extension of municipal services. This includes city and special district annexations, incorporations/formations, consolidations, and other changes of organization. LAFCO seeks to be proactive in raising awareness and building partnerships to accomplish this through its special studies, programs, and actions.

The CKH Act outlines requirements for preparing Municipal Service Reviews (MSRs) for periodic Sphere of Influence (SOI) updates. MSRs and SOIs are tools created to empower LAFCO to satisfy its legislative charge of "discouraging urban sprawl, preserving open space and prime agricultural lands, efficiently providing government services, and encouraging the orderly formation and development of local agencies based upon local conditions and circumstances" (§56301). CKH Act Section 56301 further establishes that "one of the objects of the commission is to make studies and to obtain and furnish information which will contribute to the logical and reasonable development of local agencies in each county and to shape the development of local agencies so as to advantageously provide for the present and future needs of each county and its communities." SOIs therefore guide both the near-term and long-term physical and economic growth and development of local agencies, and MSRs provide the relevant data to inform LAFCO's SOI determinations.

1.2 Purpose of Municipal Service Reviews

As described above, MSRs are designed to equip LAFCO with relevant information and data necessary for the Commission to make informed decisions on SOIs. The CKH Act, however, gives LAFCO broad discretion in deciding how to conduct MSRs, including geographic focus, scope of study, and the identification of alternatives for improving the efficiency, cost-effectiveness, accountability, and reliability of public services. The purpose of a MSR in general is to provide a comprehensive inventory and analysis of the services provided by local municipalities, service areas, and special districts. A MSR evaluates the structure and operation of the local municipalities, service areas, and special districts and discusses possible areas for improvement and coordination. While LAFCOs have no direct regulatory authority over cities and special districts, MSR's provide information concerning the governance structures and efficiencies of service providers – and may also serve as the basis for subsequent LAFCO decisions. The MSR is intended to provide information and analysis to support a sphere of influence update. A written statement of the study's determinations must be made in the following areas:

1. Growth and population projections for the affected area
2. Location and characteristics of any disadvantaged unincorporated communities within or continuous to the sphere of influence

3. Present and planned capacity of public facilities, adequacy of public services, and infrastructure needs or deficiencies.
4. Financial ability of the agency to provide services.
5. Status of and opportunities for shared facilities
6. Accountability for community service needs, including governmental structure and operational efficiencies.
7. Any other matter related to effective or efficient service delivery, as required by Commission policy.

This MSR is organized according to these determinations listed above. Information regarding each of the above issue areas is provided in this document.

1.3 Purpose of Spheres of Influence

In 1972, LAFCOs were given the power to establish SOIs for all local agencies under their jurisdiction. As defined by the CKH Act, "'sphere of influence' means a plan for the probable physical boundaries and service area of a local agency, as determined by the commission" (§56076). All boundary changes, such as annexations, must be consistent with an agency's sphere of influence with limited exceptions. The municipal service review process is intended to inform the Commission as to the availability, capacity, and efficiency of local governmental services prior to making sphere of influence determinations.

LAFCO is required to make five written determinations when establishing, amending, or updating an SOI for any local agency that address the following (§56425(c)):

1. The present and planned land uses in the area, including agricultural and open space lands.
2. The present and probable need for public facilities and services in the area.
3. The present capacity of public facilities and adequacy of public services that the agency provides or is authorized to provide.
4. The existence of any social or economic communities of interest in the area if the commission determines that they are relevant to the agency.
5. For an update of an SOI of a city or special district that provides public facilities or services related to sewers, municipal and industrial water, or structural fire protection, the present and probable need for those public facilities and services of any disadvantaged unincorporated communities within the existing sphere of influence.

Service reviews may also contain recommendations for sphere of influence or government structure changes needed to implement positive service changes. Where more detailed analysis of service options is necessary, service reviews may contain recommendations for special studies where there is the potential to reduce service gaps and improve service levels. This MSR Update will provide the necessary background information to make SOI determinations at a later date.

1.4 Environmental Review

The California Environmental Quality Act (CEQA, Public Resources Code §21000 et seq.) requires public agencies to evaluate the potential environmental effects of their actions. Municipal service reviews are intended to support sphere of influence updates, including the creation and amendment of SOI boundaries, as well as other government reorganization proposals. Such activities could influence future growth patterns, and, as such, are considered discretionary projects under CEQA. LAFCO has the principal responsibility for carrying out and approving this service review and, therefore, the principal responsibility for preparing CEQA documents as lead agency.

This service review and accompanying sphere of influence determinations qualify for a statutory exemption as outlined in Public Resources Code §15061(b)(3). These activities are covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen

with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. The MSR and sphere of influence update have no possibility for causing a significant effect on the environment. Any future projects that make use of this service review and the information contained herein will be subject to separate environmental review under CEQA.

1.5 Environmental Justice

State law defines environmental justice as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies" (Government Code §65040.12(e)). The Governor's Office of Planning and Research (OPR) explains that "as the primary agency with responsibility for approving changes in boundaries, LAFCOs play an important role in coordinating growth and ensuring that proposed changes are consistent with environmental justice obligations." Changes of organization must be consistent with spheres of influence, and the information contained in this service review will guide future updates to agency spheres of influence.

OPR identifies several uses for data obtained in the service review process:

1. Improving the community participation process.
2. Identifying low-income/minority neighborhoods under-served by public facilities and services that enhance the quality of life.
3. Considering the equitable distribution of public facilities and services.
4. Considering infrastructure and housing needs.
5. Identifying low-income/minority neighborhoods where facilities and uses that pose a significant hazard to human health and safety may be overconcentrated.
6. Screening of issues for potential environmental justice implications.

Consideration of the issues listed above will assist LAFCO and other public agencies in identifying, preventing, and reversing historical problems of procedural and geographic inequity. In undertaking this service review and making determinations, LAFCO used an open public participation process to screen for and identify environmental justice issues.

1.6 Methodology and Data Sources

Key tasks and activities in the completion of this MSR include data collection, interviews, district profile development, determination analysis, public review of MSR, and the adoption of the final MSR. The MSR began with a complete and thorough review of available data and documents. In collecting data, adopted budgets, comprehensive financial reports, capital improvement plans, strategic plans, and general plans were assessed to develop a comprehensive overview of the agency. Following data collection and interviews, the agency profile was developed based on the information collected and as required for the completion of the MSR per the CKH Act. This includes key characteristics such as municipal services offered, staffing levels, population and growth, service providers, infrastructure, financial condition, and boundary areas and maps.

2.0 DISTRICT BACKGROUND

2.1 Agency Overview

The Carmichael Water District (CWD) serves the community of Carmichael, located in Sacramento County, California. Geographically positioned to the northeast of downtown Sacramento, Carmichael is defined by the American River to its south, which acts as a natural divider between the suburb and the City of Sacramento. The district's eastern boundary aligns with Fair Oaks, while the Arden-Arcade area defines its western limit. As a suburb of Sacramento, Carmichael is an integral part of the broader Sacramento metropolitan area. This region, with its blend of residential, commercial, and other land uses, sources water predominantly from the American River during winter. However, during peak demand from May to October, the district supplements this with groundwater from wells scattered throughout its jurisdiction.

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2.2 District Principal Act

Irrigation District Law (Water Code §20500, et seq.) serves as the principal act for the District which authorizes irrigation districts to provide water, drainage, hydroelectric power, flood control, sewage (wastewater), and recreation services within their boundaries. CWD is authorized to provide water services only. Other services, facilities, functions, or powers enumerated in the District's principal act but not identified in the formation resolution are considered "latent," meaning they are authorized by the principal act under which the District is formed but are not being exercised. Latent powers and services activation require LAFCO authorization as indicated in Government Code §31001.

2.3 Formation and Development

CWD began operations in 1916 as the Carmichael Irrigation District, following efforts by the Carmichael Colonies Improvement Club to evaluate the feasibility of creating an irrigation district. Establishment of the irrigation district set a precedent for irrigation infrastructure in Sacramento County. In its initial phases, the district predominantly relied on local groundwater wells to meet the community's water demands. As the population grew so did water demand, requiring a diversified and sustainable water source.

In the latter half of the 20th century, the irrigation district began sourcing additional water from the American River. This development enhanced the quality of the water and increased reliability. The district underwent a strategic rebranding in the 1980s to become the Carmichael Water District. However, it is still classified as an irrigation district and is an independent special district as defined by LAFCo law. The rebranding marked its evolution from primarily addressing irrigation needs to serving the comprehensive water demands of an urbanized community. Alongside its infrastructure developments, the district strengthened its governance with the introduction of a five-member elected Board of Directors, ensuring alignment with the community's interests.

2.4 Boundary and Sphere of Influence

CWD serves the unincorporated community of Carmichael, encompassing 5,120 acres or roughly 8 square miles. CWD is located close to several major freeways that facilitate access to and from the district. Interstate 80 (I-80), which runs in an east-west direction, is situated about 5 to 7 miles to the north of the district. Meanwhile, the

Business 80/Capital City Freeway is approximately 4 to 6 miles to the west of CWD. This freeway connects the northeastern part of Sacramento to U.S. Route 50 in the south and primarily follows a north-south route near Carmichael. U.S. Route 50 generally runs east-west along the southern edge of the District. The District's SOI is currently coterminous with the District's boundary. Due to adjacent agency boundaries, it is unlikely that the SOI would be expanded in the future.

Neighboring water districts include the Sacramento Suburban Water District (SSWD) which borders the southernmost point of CWD, extending to its west and northwest portions. The Citrus Heights Water District (CHWD) is situated along CWD's northern boundary. Fair Oaks Water District (FOWD) spans from the northeast to the east of CWD, reaching the American River at the district's easternmost boundary. The Golden State Water Company (GSWC) and California-American Water Company (CAWC) are located across the American River to the southeast and south of CWD respectively.

Figure 1: CWD Regional Communities

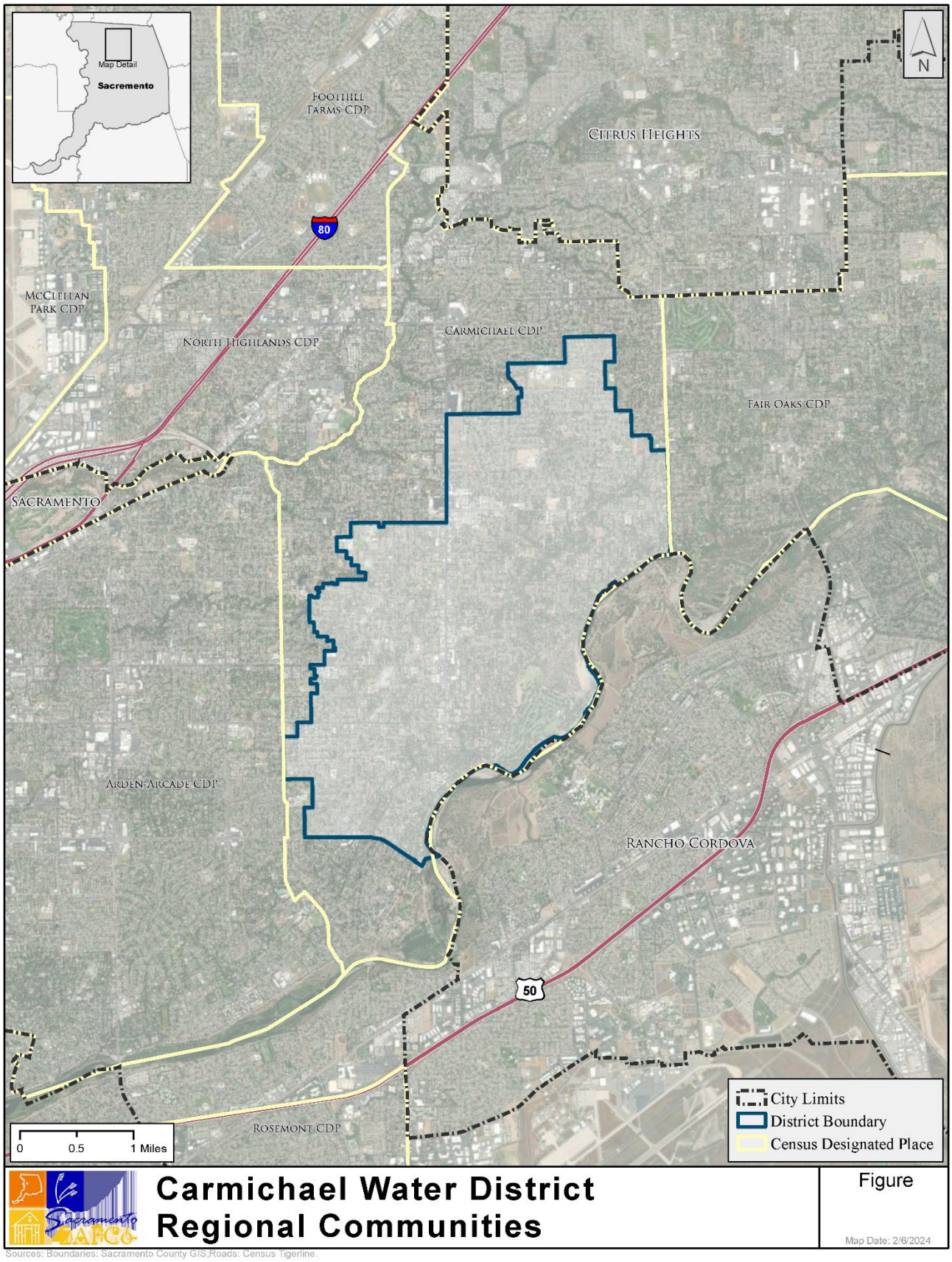
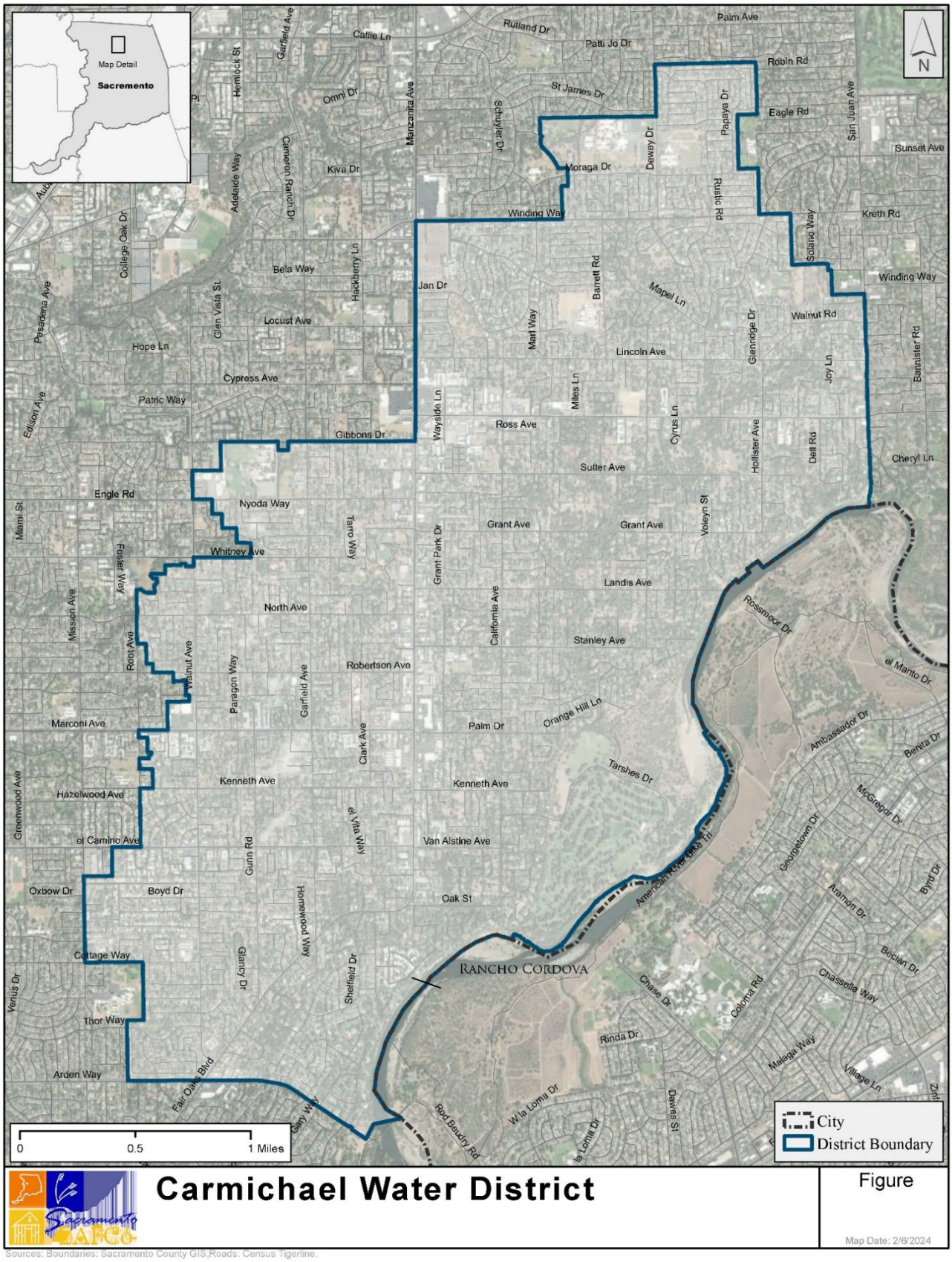


Figure 2: CWD Boundary



2.5 Land Use and Zoning

Land use and zoning within the District is determined by Sacramento County in accordance with the County General Plan and Zoning Ordinance. The majority of land use in the CWD are residential zoning types, with Low Density Residential zones covering 83.5% of the district. High Density Residential zones account for 1.3%, while Medium Density Residential zones make up 7.6% which together accounts for 87.7% of total land use. Within the district, 10.7% has been allocated to Transit-Oriented Development (TOD) which are mixed-use development neighborhoods built around transit stops with a core commercial area (Calthorpe Associates; Mintier & Associates, 2011). Commercial and office spaces make up 0.8% with Natural Preserve and Recreation area representing 0.6% and 0.1% respectively.

Table 1: Land Uses within District Boundary

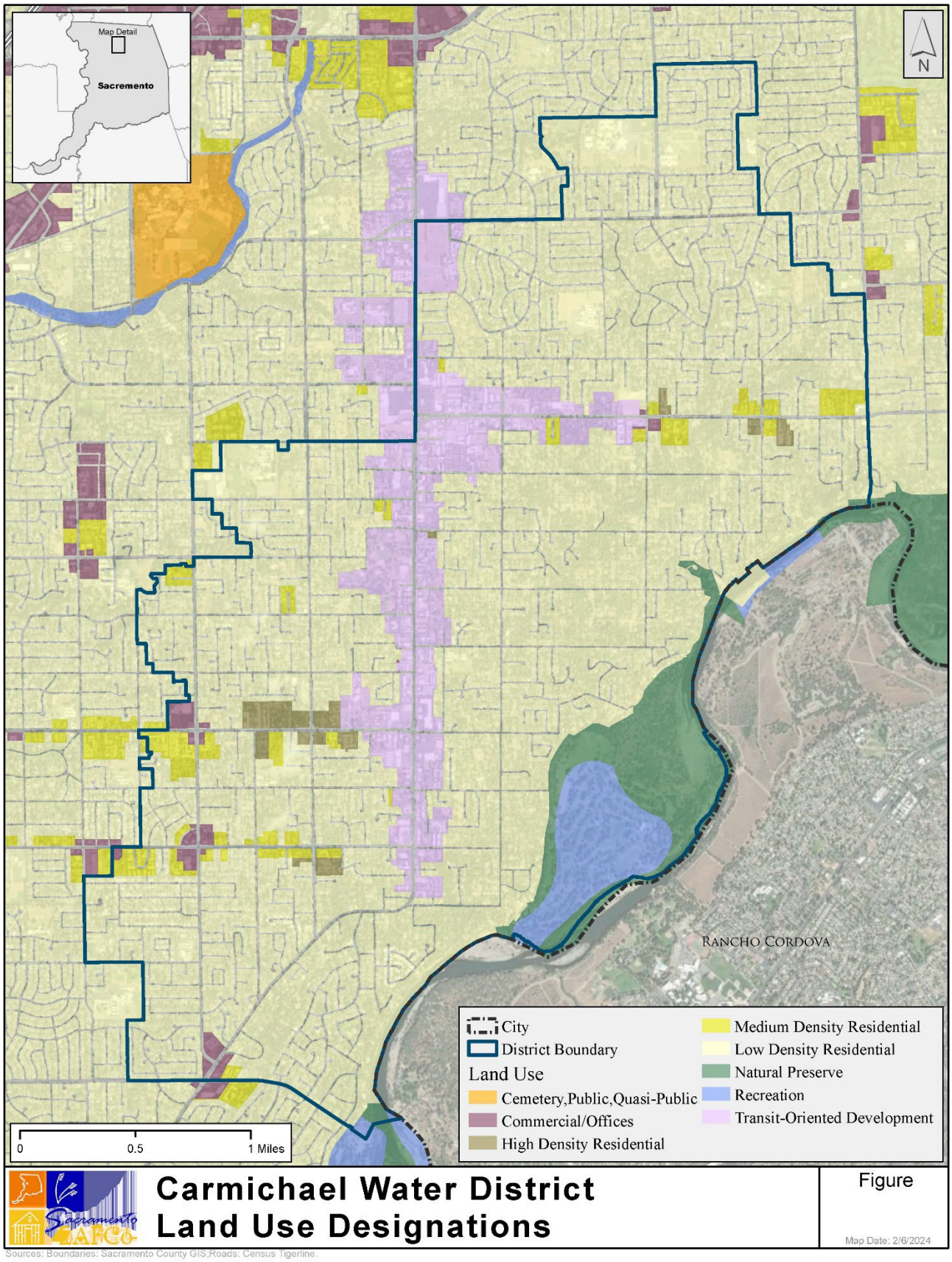
GPLU Code	Land Use Designation	Acres	Percentage
COMM/OFF	Commercial/Offices	35.5	0.8%
HDR	High Density Residential	57.1	1.3%
LDR	Low Density Residential	3,658.5	83.5%
MDR	Medium Density Residential	128.7	2.9%
NAT PRES	Natural Preserve	26.9	0.6%
REC	Recreation	5.9	0.1%
TOD	Transit-Oriented Development	467.0	10.7%

2.6 Growth and Population

As noted above, the CWD serves the unincorporated community of Carmichael. The most recent Sacramento County Housing Element adopted on March 8, 2022 noted that there was a 2.6% increase in population from 2015 to 2019 in unincorporated areas, the City of Sacramento saw a 5.1% increase and the county as a whole saw an average 4.2% increase (Sacramento County, 2022).

The population of CWD is best estimated using GIS analysis based on the District's boundary and available census block data as information on demographic and economic statistics are not reported for unincorporated areas of Sacramento County. According to GIS analysis, CWD grew from 37,500 in 2010 to 41,094 in 2020 which represents a growth rate of approximately 9.6% over the decade (Barnes, 2023). Given the District is near full build-out and infill constraints exist as outlined in the 2020 Urban Water Management Plan (UWMP), a more modest growth rate is anticipated for the next decade (Carmichael Water District, 2021). The projected population for the District in 2030 is estimated to be around 42,249, suggesting a growth rate of approximately 2.8% from 2020 to 2030. In terms of water demand, the anticipated increase in population and the projected new residential and non-residential connections suggest a proportional rise in water usage. The UWMP estimates the addition of 450 new multi-family and 10 new single-family residential units by 2030 which will require planning for water resource allocation.

Figure 3: CWD Land Use



2.7 Disadvantaged Unincorporated Communities

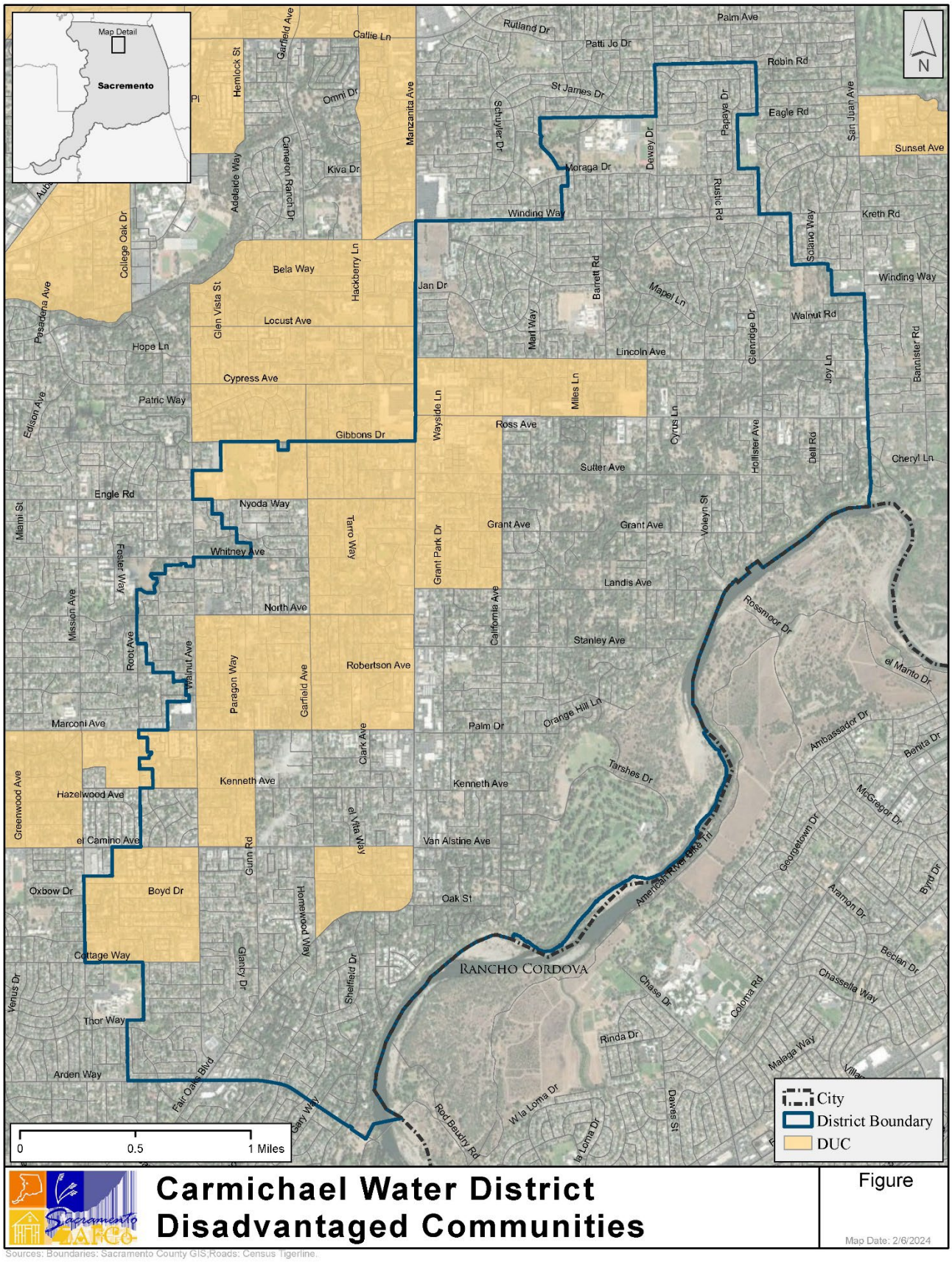
CWD lies entirely within Carmichael CDP and is bordered by Arden-Arcade, Fair Oaks, Foothill Farms, North Highlands, McClellan Park, Rosemont and Rancho Cordova. Table 2 shows the 2021 Median Household Income (MHI) 5-year estimate for each area. Based on the available estimates including the 2021 California MHI of $84,097, unincorporated areas in Arden-Arcade, Foothill Farms, McClellan Park, and North Highlands can be considered DUCs (US Census Bureau, 2023).

Table 2: 2021 Estimated Median Household Incomes per 2021 ACS 5-Year Estimates

Census Designated Place	2021 MHI	% of CA MHI
Arden-Arcade	$56,805	67.5%
Carmichael	$74,184	88.2%
Fair Oaks	$99,629	118.5%
Foothill Farms	$57,810	68.7%
McClellan Park	$27,500	32.7%
North Highlands	$55,616	66.1%
Rancho Cordova	$77,044	91.6%
Rosemont	$77,495	92.1%
Sacramento (City)	$71,074	84.5%

Additional detail can be obtained by looking at the MHI for block groups within and around the District boundary as shown in Figure 3. CWD is not considered to be a DUC based on overall MHI level. However, areas within the District's central, western and southern portions are less than 60% of State MHI. All areas in and around the District currently receive water service from one of several water suppliers in the area. Fire and emergency response services are generally provided by Sacramento Metropolitan Fire Department (Metro Fire) and wastewater services are provided by the Sacramento Area Sewer District (SASD).

Figure 4: Disadvantaged Unincorporated Communities (DUCs)



3.0 MUNICIPAL SERVICES

3.1 Water Services

Water Source

CWD serves approximately 11,700 connections within the Carmichael region (Carmichael Water District, 2021). CWD obtains its water from two primary sources: surface water from the American River via the Ranney collectors and groundwater from the underground aquifer referred to as the North American Subbasin. Surface water from the American River and water from neighboring agencies is treated at the Bajamont Water Treatment Plant. Additionally, the District taps into the North American Subbasin for groundwater and has secured agreements with the Aerojet Corporation for alternative supplies. The District practices conjunctive use which helps decrease reliance on groundwater wells by using surface water when it is available.

Surface Water Supplies

CWD primarily relies on the American River for its surface water supply which is appropriated via the Ranney collectors. The District holds three water rights and is permitted to divert up to 50 cubic feet per second (cfs) with diversion periods varying dependent on the water right. Diversions serve as the main input of water making up 70-80% of the annual total transported into the CWD water distribution system. They may also collaborate with neighboring entities like San Juan Water District, Fair Oaks Water District and Sacramento Suburban Water District for additional supplies. The District has a contractual arrangement to divert, treat and distribute water to Golden State Water Company under its own water resources portfolio.

Table 3: CWD Water Rights

Water Right	Diversion Rate	Volume (AFY)	Diversion Period	Purposes of Use
License 1387	15 cfs	10,859	Jan – Dec	Irrigation and Domestic
License 8731	10 cfs	3,669	May – Oct	Irrigation, Domestic, and Municipal
Permit 7356	25 cfs	18,099	Jan – Dec	Domestic and Municipal

License 1387: Originating with a 1915 priority date, this senior water right allows CWD to divert 15 cfs from the American River from January to December. The license provides for an annual diversion of 10,860 acre-feet. Over the decade from 2010 to 2020, an average of 6,203.9 AF was utilized, representing approximately 57.1% of the total permissible volume. The District continues to prioritize Water Right License 1387 as its main source of surface water supply, emphasizing its fundamental role in assuring water availability amidst varying hydrological conditions.

License 8731: Established in 1925, this license targets municipal uses, enabling the CWD to divert 10 cfs from the American River during the months of May to October. This period allows for an annual diversion of up to 3,669 acre-feet. Between 2010 and 2020, an average diversion of 535.4 AF was observed, utilizing around 14.6% of the designated amount..

Permit 7356: This post-1914 appropriative right from 1948 permits CWD a diversion of 25 cfs from the American River between January to December. This translates to a potential annual diversion of up to 18,100 acre-feet. The district, from 2010 to 2020, harnessed an average of 1,793.3 AF, utilizing about 9.9% of the stipulated volume. Unlike Licenses 1387 and 8731, Permit 7356 remains in the permit stage, yet to be legally finalized. The permit outlines specific prerequisites that the District must fulfill for the right to be legally recognized. The District remains proactive in addressing these prerequisites and continues working towards licensing of this water right.

Water Treatment & Potable Water System

CWD primarily sources its water from the American River, utilizing three Ranney collectors that were constructed in the 1950's and updated in 2000-01. These collectors are uniquely designed with a concrete caisson housing a series of perforated laterals which harness the river's inherent sand and gravel filtration system which aids in procuring water with reduced contaminants before formal treatment begins. Once collected, this water is channeled through a comprehensive network, with a 48-inch pipeline being instrumental in its conveyance to the Bajamont Water Treatment Plant (WTP).

Upon reaching the Bajamont WTP, raw water undergoes a series of treatment procedures. The WTP has an operating capacity nearing 22.4 MGD. A key component of the treatment is the Continuous Microfiltration (CMF) units. There are two dedicated trains within the WTP, and each train is equipped with eight CMF skids. These skids, working in tandem, hold a total of 1,440 individual membrane filters. This intricate system ensures that the water is purified to the smallest particle and achieves a high standard of purity. Following filtration, the water is further treated with chlorine, ensuring disinfection. Simultaneously, caustic soda is introduced to the mix, acting as a preventive measure against corrosion. This dual-action of disinfection and corrosion control ensures that the water is not only safe to drink but also causes minimal wear to the infrastructure it flows through.

After undergoing the treatment process, water is channeled to a 2-million-gallon reservoir, situated beneath the WTP acting as an intermediary, holding the treated water before it's pumped into the distribution system of over 160 miles of pipeline. Delivery to District customers is carried out at a calibrated pressure of approximately 70 psi ensuring efficient water flow while also maintaining the system's integrity. Recognizing the importance of consistent water supply, the WTP has incorporated an emergency backup diesel generator to guarantee water supply during unforeseen power outages ensuring water treatment and distribution remain uninterrupted.

Groundwater Supply

The District also obtains water from the North American Groundwater Subbasin, colloquially known as "The North Basin", as part of its conjunctive water use strategy. Groundwater in the subbasin generally flows northeast towards a groundwater depression located just south of Sacramento-McClellan Airport. The North Basin covers an area of 548 square miles and is located under Sacramento, Placer, and Sutter Counties. It is considered a high-priority subbasin by the Sacramento County Groundwater Authority due to the high population relying on potable water drawn from it (Sacremento County, 2023). This subbasin is subject to the requirements of the State Groundwater Management Act (SGMA) since 2014 and is overseen by the Sacramento Groundwater Authority (SGA) which was established as a joint powers authority to oversee the North Basin of the Sacramento region covering the territories of several water providers, including CWD.

SGA adopted a groundwater sustainability plan (GSP) in December 2021 and the District worked with the SGA to develop the 2021 GSP as well as the 2014 Groundwater Management Plan (GMP). The District participated in both plans' development to incorporate informed sustainability decisions during development of the District's 2020 Urban Water Management Plan (Carmichael Water District, 2021). The plans analyzed the groundwater dynamics of the North Basin. It observed that groundwater levels were declining for about 40-50 years until the mid-1990s which created a cone of depression, with the lowest point approximately 40 feet below sea level, west of the District's reach. Post the mid-1990s, these levels showed signs of stability and increased in certain areas. Introducing new surface water sources to areas in the central North Basin that traditionally depended on groundwater contributed to the stabilization. Reliance on groundwater is expected to be higher during extended drought periods but increases in surface water accessibility will lead to consistent or increased groundwater storage. SGA estimates the basin's safe yield at 131,000 acre-feet annually.

By the start of 2022, SGA, alongside other Groundwater Sustainability Agencies (GSAs), began implementing the GSP aligned with the State Groundwater Management Act (SGMA) guidelines. The most recent annual report for

the subbasin includes a summary of the Cosumnes, South American, and North American Groundwater Subbasins Integrated Water Resources Model for groundwater extraction, which covers Water Year 2022. According to the model an estimated 300,200 acre-feet of water was extracted from the subbasin with a change in water storage of 3,638 acre-feet. 2022 was still classified as a "Critical" water year since 2021 saw a substantial change in storage (-134,200 acre-feet), and the additional water storage reported in 2022 was minimal. Reported groundwater extraction for 2022 was similar at 292,900 acre-feet (GEI, 2023). Reliance on a higher ratio of groundwater extraction was directly related to curtailment orders from the State Water Resources Control Board restricting the use of the American River surface water diversions. The easing of drought conditions in 2023 due to above average precipitation in both rain and snow at higher elevations will likely assist in the recharge of the aquifer as well as provided more available water for surface diversions.

CWD owns seven groundwater production wells. Five are currently active, with one on standby backup and one inactive. . The former Dewey Well was destroyed and is no longer part of CWDs portfolio. During the years from 2010 to 2020, groundwater production fluctuated between 1,200 and 4,700 acre-feet (AF) and averaged 2,667.9 AF (Carmichael Water District, 2015). Looking ahead, the District envisions bolstering its groundwater extraction and storage capabilities, in order to better respond to changing climate patterns which may result in constraints on surface water supplies.

The total well production capacity of the District is approximately 5,790 gallons per minute (gpm) (8.4 MGD) and 25.59 acre-feet per day. Pumps are not operated continuously but rather as needed based on demand. This reduces overall operation costs and extends the lifetime of the equipment. During FY 2021-22, the District secured two grants to build one aquifer storage and recovery (ASR) well with subsequent state and federal funding for two additional wells that will allow for more volume of water storage that can be pumped into the North Basin in the future (Association of California Water Agencies, 2022).

Table 4: CWD Well Inventory

No.	Well Name	Design Capacity (gpm)	Status	Year Constructed	Age	Water Quality
1	Garfield Well	1500	Active	1946	77	Good
2	Willow Park Well	1440	Active	1993	30	Good
3	La Vista Well	1500	Active	1980	43	Good; periodic positive low levels of PCE
4	Winding Way Well	1350	Active	1959	64	Good; well scheduled for replacement
5	Barrett School Well	1300	Active	1992	31	Elevated Iron and Manganese
6	Barrett Road Well	NA	Standby	1989	34	Elevated Iron and Manganese
7	Ladera Well	1500	Inactive	1989	34	odor and taste problems

Source: (Carmichael Water District, 2015)

Current Groundwater Supply Projects

La Sierra Aquifer Storage & Recovery (ASR) Well: The La Sierra ASR Well Project is the District's proactive response to periodic curtailments of surface water supply from the American River due to prolonged and/or extreme drought conditions (Carmichael Water District , 2023). By diversifying its water supply portfolio, the District aims to store surface water during winter and utilize it during the dry summer months, enhancing its drought resiliency and sustainable groundwater management. The project site is strategically positioned near the Engle Road and Garfield Avenue intersection with connections to water mains. Construction commenced in 2023 and is estimated to be completed by 2025. The addition of this ASR well will bolster CWD's portfolio by providing a groundwater production capacity of 1,500 GPM, a recharge capacity of 750 GPM, and access to up to 1,200 acre-feet of banked groundwater. This move is pivotal in realizing the dual goals of building long-term resilience against droughts and minimizing the impacts of emergency response actions on the community.

Ladera Aquifer Storage and Recovery (ASR) Well: The proposed project involves rehabilitating the current well or constructing a new water supply well with ASR capabilities. This Ladera ASR well is designed to produce a maximum of 1,500 gpm and recharge up to 750 gpm. However, actual capacity will not be known until work is completed in mid-2024. The new well and improvements will be located within Schweitzer Elementary School's grass field area, at the existing CWD facility. The introduction of this new ASR well will enable the CWD to store water during normal and wet periods and utilize this stored water during droughts, thereby reducing reliance on the strained American River supply by up to 1,200 acre-feet per year during the peak demand season from May to October. Currently, the CWD operates five groundwater wells, each with both belowground and aboveground infrastructure, and the new well will follow a similar design (Carmichael Water District , 2023).

Winding Way Aquifer Storage & Recovery ASR Well: The Winding Water ASR Well Project is another step taken by the District to bolster its water supply in the wake of drought-induced curtailments. This initiative will enable surplus winter water storage for dry summer use, further aiding the District’s ability to plan for drought and promote sustainable groundwater management.

The project encompasses the construction of a replacement Winding Way well with ASR capacity, capable of producing up to 1,500 gpm and recharging up to 750 gpm (Carmichael Water District , 2023). This project includes various infrastructural developments, including a fenced perimeter, site paving, motor pedestal, pump installation, and the erection of a small structure housing disinfecting solution and associated equipment. This ASR well will help the District achieve conjunctive use objectives, lessening the demand on the American River by up to 1,200 AFY when operated from May through October.

Aerojet GET LA & GET LB Facilities: Located at Ancil Hoffman Park and the Bajamont Treatment Plant respectively, these groundwater extraction and treatment (GET) facilities are owned and managed by Aerojet. Their purpose is to treat water to stringent standards, ensuring it meets all drinking water criteria. Treated water from GET LA was previously used to irrigate Ancil Hoffman Park but this operation ceased in 2021.

Distribution System

Water Storage & Distribution Facilities:

Table 5: CWD Tank Inventory

Tank	Capacity (gallons)	Year Constructed	Last Rehabilitation
La Vista Tank	3,000,000	1971	Rehabilitation underway
Dewey Tank	1,000,000	1967	1997

Source: (Carmichael Water District, 2015)

The Dewey Tank and Booster Pump Station: CWD prioritizes effective management and maintenance of its water tanks and booster pump stations. The Dewey Tank and Booster Pump Station, constructed in 1967 and subsequently rehabilitated in 1997, has a capacity of 1 million gallons (MG). During its rehabilitation, significant structural repairs were undertaken, including a recoating and the addition of a cathodic protection system. Most recent video inspection from 2023indicated excellent interior condition, showing the tank may yet provide decades of service. The associated booster pump station, having undergone a complete reconstruction, is equipped with a modern backup power generation system. Although the booster pumps draw water directly from the tank, there is a limited bypass capacity and expanding the upper pressure zone service area has been suggested but may not be realized due to potential energy cost concerns.

La Vista Tank and Booster Pump: Constructed in 1971, this 3 MG capacity tank and its accompanying booster pump station are instrumental parts of the District's water distribution system. However, age has led to wear and tear, observed corrosion on the inner and outer portion of the tank combined with the pump station's operational challenges and maintenance cost necessitate the need for replacement and upgrades (Carmichael Water District, 2015). The District began the replacement work for this facility in 2021. The pump station's current configuration includes two electric pumps and a third, non-operational natural gas engine-driven pump that is inactive due to lack of replacement parts. Due to this the pumping capacity currently available is significantly less than the recommended level to optimally use the tank but peak demands can still be met through use of wells. CWD's Master Plan, prioritizes replacement of the old infrastructure with construction of a new 3 MG storage tank and booster pump station. The District plans not only for new water line piping and electrical conduits but also comprehensive exterior improvements. Phased demolition of the existing structures began in October 2021 with project completion anticipated by December 2024.

Piping System

CWD employs a diverse piping system, comprised of materials that span from steel pipes used before the 1950s to modern ductile iron pipes, which have become the District's standard (Carmichael Water District, 2015). The system's operational intent varies with the pipe size. Notably, the District's most substantial pipelines are dual 24-inch transmission mains connected directly to the Bajamont WTP. While these large mains are tasked with the bulk water transmission, smaller distribution mains are responsible for channeling water to service laterals, which in turn have finer diameter lines that extend from the mainline to individual service valves. The strategy for pipeline replacement zeroes in on both distribution and transmission elements. Concurrently, service laterals are encompassed within the Planned System Maintenance (PSM) initiative. A more comprehensive evaluation is underway concerning the strategy for their replacement, aligning with future meter retrofit plans. As per the operational guidelines, water transmission mains, designed to convey vast water volumes from the primary source to various District areas, are constructed to prevent potential service interruptions. They often run parallel to smaller distribution mains catering to localized service.

The District completed the Glenbrook Water Line Project in early 2023. Stemming from the District's Master Plan and Capital Improvement Plan, this initiative focused on parts of Glenbrook Lane, Mauer Ave, and several other key avenues and streets (Carmichael Water District , 2023). The project involved laying down new water lines and replacing or relocating specific water service connections.

The District maintains emergency connections with three water agencies: Fair Oaks Water District (FOWD), Citrus Heights Water District (CHWD), and Sacramento Suburban Water District (SSWD). These connections are primarily designed for emergencies and require manual valve operation for activation. Specifically, there's an 8-inch intertie with FOWD, a 6-inch intertie with CHWD, and three interties with SSWD - two 6-inch connections, and an 18-inch connection. If the SSWD connections are activated, customers would need notification about receiving fluoridated water.

Water Demand

According to data from the UWMP, CWD had a total water use of 9,191 acre-feet in 2020 including 990 AF of system loss (Carmichael Water District, 2021). The predominant use type for the District is single-family residential, which accounted for 5,400 acre-feet or approximately 62% of the total demand as illustrated in Table 6. When combined, residential water use, encompassing both single-family and multi-family, contributes to nearly 78% of the overall demand. The CWD 2023-2024 Shortage Assessment showed the highest use in summer months, especially July and August, which can be attributed to increased landscape irrigation and household use (Carmichael Water District, 2023).

Water demand data for the CWD between 2020 and 2023 shows that the District's total water consumption has remained stable, with a demand of 8,840 acre-feet in recent years. The District anticipates a “minor continued increase in water use over the planning horizon” with new developments in the Carmichael Area mainly consisting of multi-family residential units and Commercial/ Institutional mixed-use infill development (Carmichael Water District, 2021). The District projects net customer water use with distribution system water loss factored in to increase to 8,860 acre-feet by 2025. By 2030, this number slightly increases to 8,950 acre-feet. By 2035, the total water use is expected to reach 9,070 acre-feet, indicating a projected net increase of 2.4% per the UWMP underscoring a gradual rise in water consumption over the decade. However, with the recent adoption of water efficiency regulations, the projection is not likely to occur even with planned future developments.

Table 6: Water Demand for 2020

Use Type	Volume (acre-feet)	% of Total
Single Family	5,727	62%
Multi-Family	1,444	16%
Commercial/ Institutional	761	8%
Landscape Irrigation	269	3%
System Loss (Non-Revenue Water)	990	11%
Total	9,191	100%

Source: (Carmichael Water District, 2021)

Analysis of State Mandated Shortage Reports pursuant to Section 10632 of California Water Code (CWC) show CWD as possessing a total aggregate surplus water inventory of 205% in 2022 (California Department of Water Resources, Division of Regional Assistance Water Use Efficiency Branch, 2022) and 189% in 2023 (Carmichael Water District, 2023) underscoring the ability to meet projected demand based on development patterns, success of its conservation programs, resistance to prolonged drought and climate change, ability to increase groundwater storage, ability to accommodate future growth and shows its status as a net-exporter of water resources.

Water Quality

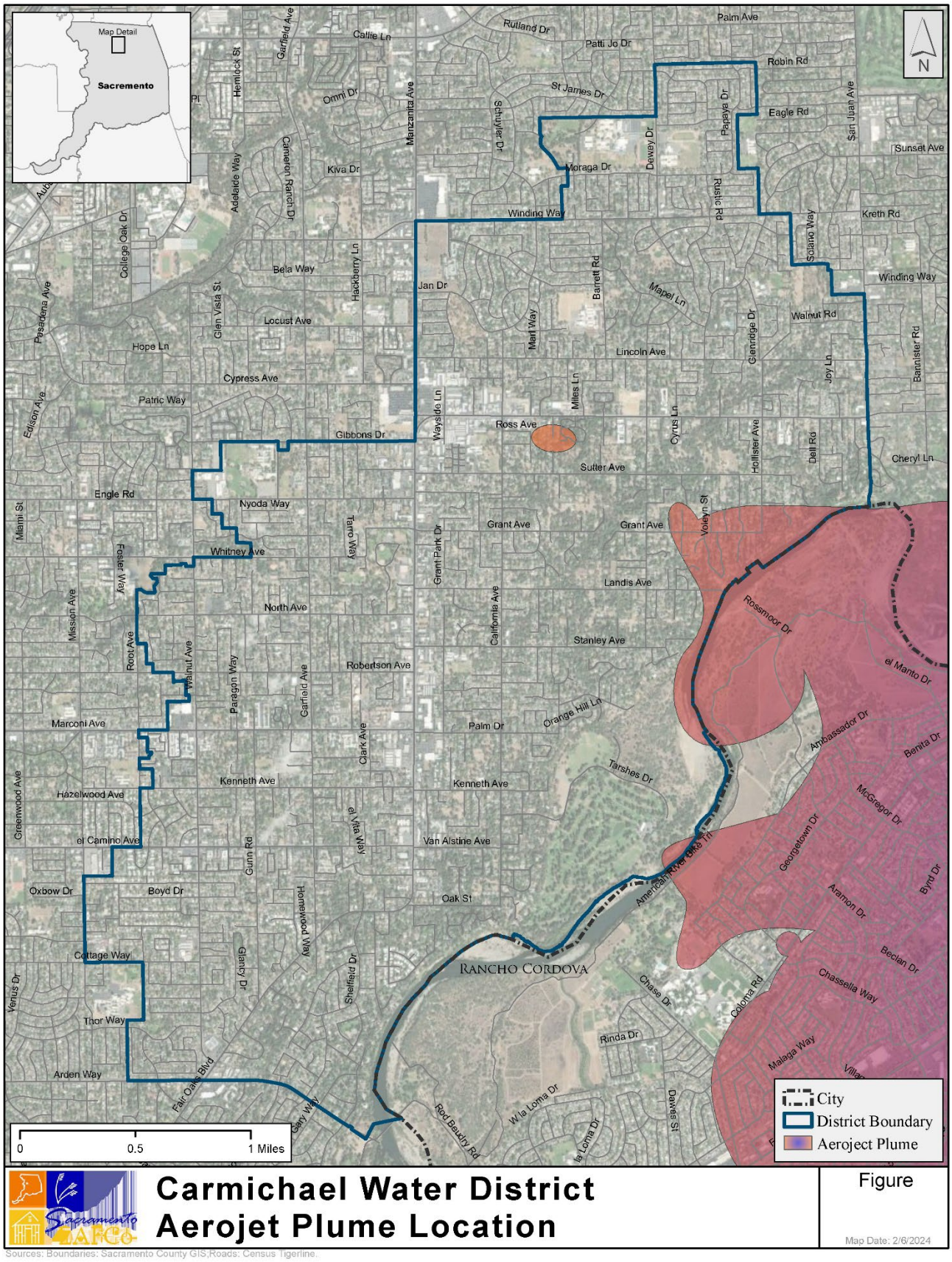
The Carmichael area faces significant environmental challenges due to the Aerojet groundwater contaminant plume. The plume was discovered in 2004 near Grant and Hollister avenues in Carmichael. Its origins stem from historical activities at the Rancho Cordova Aerojet and Cordova Chemical Company sites in Rancho Cordova, which led to N-Nitrosodimethylamine (NDMA), a potential carcinogen and byproduct of solid rocket fuel combustion, entering soil, groundwater and the air (Carmichael Water District, 2021). As a part of its ongoing water remediation program, Aerojet discharged treated water from its GET facilities into the river. According to the 2020 UWMP, the contaminant unexpectedly migrated northward from the Aerojet properties, compromising the surrounding area's groundwater in Rancho Cordova, Fair Oaks, and Carmichael. Addressing this complex and ongoing issue requires multifaceted cleanup plans for both groundwater and soil.

To prevent this contamination from reaching the District's water supplies, CWD signed a Memorandum of Understanding (MOU) in July 2005 to support Aerojet's groundwater remediation project to contain and remediate the plume. Since 2007, Aerojet has treated and discharged remediated water within the District in an effort to contain the plume. Approximately 1,680 af/yr of water was treated within the district during the 2020 UWMP reporting period. In 2020, one of Aerojet's groundwater treatment facilities, GET LA, met its clean-up goals and was taken out of operation.

During the 2014 and 2015 droughts, CWD purchased 2,501 acre-feet in 2014 and 2,169 acre-feet in 2015 of remediated groundwater from Aerojet to counterbalance its supply deficit in order to offset the curtailment order on CWD's appropriative surface water rights on the American River (Carmichael Water District, 2021). CWD diverted this water to its Bajamont WTP for customer distribution. The ongoing efforts showcase a commitment to ensuring safe and reliable water for the community amidst challenging environmental circumstances. The District, under Water Code Section 1010, counts the use of remediated water within its service area towards its water right licenses, ensuring protection of other water sources. This accounting safeguards the District's water assets, emphasizing the importance of considering remediated and reclaimed water in the place of traditional water sources for future demands.

A new contamination of regional concern is per- and polyfluoroalkyl substances (PFAS). This family of chemicals resist grease, oil, water, and heat and are used in hundreds of products including stain- and water-resistant fabrics, cleaning products, paints, and fire-fighting foams which are commonly used at airports (FDA, 2023). The long-term health effects of PFAS are still unknown and research is ongoing. Once PFAS enters the ecosystem it can migrate large distances and contaminate groundwater aquifers. Conventional water treatment that includes coagulation, filtration, and chlorination appears to be ineffective at removing PFAS. However, activated carbon treatment and other methods such as high-pressure membranes and ion exchange resin have had promising results (SWRCB, 2020). The District has sampled and monitored for PFAS with no detectable concentrations in both its surface water and groundwater sources.

Figure 5: Aerojet Groundwater Contamination Plume



Rates

CWD approved a new water rate schedule in January 2021, which took effect on January 2021 billing cycle and is be applicable until December 2025 (Carmichael Water District, 2021). This updated rate structure outlines a series of tiered increases for various meter sizes and customer types. For example, the monthly service charge for a 3/4" meter starts at $35.05 as of January 1, 2023, and will rise to $42.03 by January 1, 2025. The water usage rates start at $2.06 per 100 cubic feet (CCF) in 2023 to $2.47 per CCF in 2025. Monthly fire service charges per inch of diameter will increase from $27.54 in 2022 to $32.91 in 2025. This new fee schedule was instituted to address the operational and capital investment needs of the district, including asset maintenance, energy expenses, and personnel costs.

The District is predominantly metered but some flat rate accounts, less than 1%, do exist. Commercial flat rate accounts are charged at $1,972 + $319 per lot with a tiered increase depending on square footage starting at $1,774 for lots 0-5,000 sq ft. Residential connections are charged based on connection size (Carmichael Water District, 2022). Metered accounts are charged a monthly base rate depending on size of the meter which starts at $35.05 for a small residential connection (3/4”) and then a flat rate of $1.54 charge per 100 cubic feet (ccf) or 748 gallons. The full list of CWD rates for 2021 to 2025 is provided in Appendix A.

3.2 Other Service Providers

Water

Fair Oaks Water District

The Fair Oaks Water District (FOWD) serves as the primary water utility for the Fair Oaks community in California, covering an area of 6,053 acres and catering to approximately 37,000 residents. Governance for FOWD comes under a board of five directors, elected by those residing within the FOWD jurisdiction. Its water supply is a blend of treated surface water and groundwater. Notably, 90% of this supply is sourced from the San Juan Water District, drawing from the American River. The remaining 10% is derived from wells under FOWD's ownership. As noted previously, CWD has the capability to access emergency water supplies via its emergency interties with FOWD.

Citrus Heights Water District

The Citrus Heights Water District (CHWD) has provided water services to the community of Citrus Heights since 1920 covering regions of Citrus Heights, Fair Oaks, Orangevale, Carmichael, and Roseville. Geographically, CHWD manages a service line spanning 12.8 square miles, maintaining about 19,590 service connections within this expanse. A significant portion of CHWD's water supply is treated surface water, sourced from Folsom Lake. This procurement occurs under an agreement with the San Juan Water District. To complement this, CHWD also pumps water from its proprietary groundwater wells, ensuring a well-rounded supply. CHWD has emergency connections with the CWD. Strategic linkage allows CWD to tap into emergency water supplies when required, fortifying regional preparedness during crises.

Sacramento Suburban Water District

The Sacramento Suburban Water District (SSWD) serves the northeastern Sacramento region, encompassing areas on both sides of Highway 80 and north of Highway 50. This urbanized district encompasses diverse zones, including residential neighborhoods, commercial districts, industrial areas, and significant highway corridors. SSWD primarily draws its water from groundwater sources. SSWD is a public utility, overseen by the State of California Division of Drinking Water and subject to State Water Code regulations. Governance is vested in a five-member Board of Directors, each of whom is elected by the constituents of their respective division. The primary aim of SSWD is to supply high-quality water consistently while ensuring excellent customer service at the most reasonable water rate.

To fulfill its mandate, SSWD utilizes 71 operational groundwater production wells. They also hold contractual rights to 26,064 acre-feet from the City of Sacramento's water entitlement and an agreement allowing the purchase of

up to 29,000 acre-feet of surface water annually from the Placer County Water Agency. SSWD is responsible for approximately 625 miles of water mains, with many installed between the 1940s and 1950s. Their service area spans Arden/Arcade, Foothill Farms, and sections of Citrus Heights, Carmichael, Fair Oaks, North Highlands, Sacramento, Antelope, and the McClellan Business Park.

Golden State Water Company

The Golden State Water Company is a private utility regulated by the Public Utilities Commission and serves water to communities across California, including Artesia, Barstow, Bay Point, Bell-Bell Gardens, Claremont, Cordova, Culver City, Florence Graham, Norwalk, Orcutt, Placentia, San Dimas, Simi Valley, South Arcadia, South San Gabriel, Southwest, and West Orange. The area of Cordova covers a portion of the City of Rancho Cordova and the unincorporated community of Gold River, as well as the Nimbus Aquatic Center and the commercial area between Highway 50 and Nimbus Dam. The area has eight active groundwater wells, a connection to surface water supplies from the Folsom South Canal, an intertie to CWD to receive "replacement water," two treatment plants, storage facilities, and a distribution network of 187 miles of pipelines divided into two pressure zones.

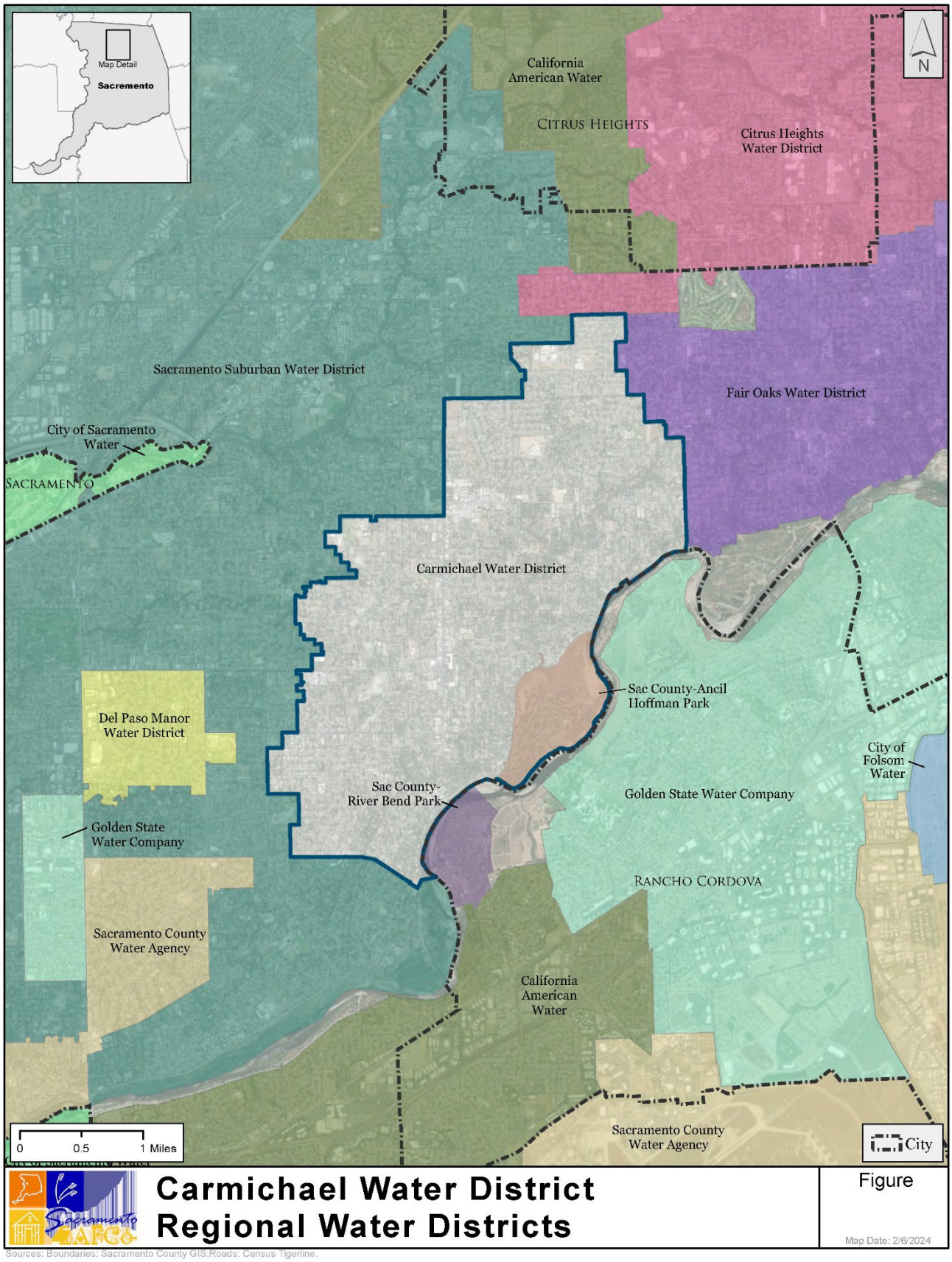
Sacramento County Water Agency

The Sacramento County Water Agency (SCWA) provides planning, development, facilities design, operations and management, and groundwater management services to Laguna Vineyard, Mather-Sunrise, Arden Park-Sierra Oaks, Hood, Northgate, and Southwest Tract. The planning services are responsible for identifying and developing long-term water supplies based on growth in the area. Development services include the review of civil and landscape improvement plans for negotiations with developers in relation to constructing water transmission mains. The staff is responsible for securing sites for wells, treatment plants, and storage facilities in line with the water supply master plan, improvement standards, and entitlement conditions, and to provide cost effective and efficient facilities. The Water Supply Design section oversees design and construction of surface and groundwater production, treatment, storage, and delivery systems for SCWA and other County-owned systems. The Water Supply Engineering and Regulatory section is responsible for regulatory compliance of the groundwater system and some components of the surface water system, engineering support to provide safe and reliable water delivery to customers of SCWA and County-owned water systems, and asset management determining long-term maintenance and financial health of its public water systems. SCWA participates with other local entities in groundwater management efforts in the four groundwater sub-basins in Sacramento County.

Del Paso Manor Water District

The Del Paso Manor Water District (DPMWD) provides water services to the community of Arden/Arcade located in the area generally bounded by Marconi Avenue, Cottage Way, Eastern Avenue, and Watt Avenue. Del Paso Manor is largely a residential area but also includes Country Club Plaza and other shopping centers on its western edge in addition to AT&T corporate offices located on Kings Way. The majority of homes in the area were constructed in the early 1950s, which led to the establishment of DPMWD in 1956. They utilize several wells to provide water to customers and have been monitoring groundwater contamination issues in the area.

Figure 6: Regional Water Purveyors



California American Water

California American Water, a private utility, serves many small communities across California. The communities nearest CWD are Antelope, Arden, Dunnigan, Fruitridge, Lincoln Oaks, Parkway, Security Park, Rosemont, and West Placer. California American Water provides water and wastewater services to their customers.

City of Sacramento

The City of Sacramento offers water, wastewater collection, and drainage services. Most of the City's water supply comes from surface water including the Sacramento and American Rivers. A small portion comes from a system of 28 groundwater wells. The City serves approximately 130,000 customers, providing 46 billion gallons of water each year (SSWD, 2021).

Fire Protection and Emergency Response

Sacramento Metropolitan Fire Department

The Sacramento Metropolitan Fire District (Metro Fire) provides fire suppression, emergency medical, and other public safety and hazard mitigation services to Citrus Heights, Rancho Cordova, most of the unincorporated area of Sacramento County, and a part of Placer County. Metro Fire employs a Fire Chief, three Deputy Chiefs, and has 717 authorized positions. Those positions include safety, prevention, and support personnel that provide all-hazard fire suppression and emergency medical services from 41 fire stations with 51 front line apparatus. They responded to 96,059 calls in 2019, with 68 percent being for medical aid. Metro Fire will routinely be deployed to local, state, and federal emergencies.

Wastewater

Sacramento Area Sewer District

Residential and commercial properties within CWD receive wastewater services from the Sacramento Area Sewer District (SASD) which provides wastewater services to urbanized, unincorporated areas of Sacramento County, the cities of Citrus Heights, Elk Grove and Rancho Cordova, parts of the cities of Sacramento and Folsom, and the delta communities of Freeport, Courtland, and Walnut Grove. SASD's main collection system includes over 3,100 miles of sewer pipelines ranging from 1.25 to 75 inches in diameter. Generally, sewer collectors get flow directly from individual homes and businesses. They are designed to carry less than one million gallons per day (gpd) of peak wet-weather flow (PWWF). The trunk sewers can carry 1 to 10 mgd of PWWF to the SASD Interceptor system. However, some SASD's current pipes can carry more than 10 mgd.

Wastewater is treated at the EchoWater Resource Recovery Facility (or EchoWater Facility) which can treat up to 181 million gallons per day. The plant produces a disinfected tertiary effluent that is discharged to the Sacramento River downstream from the community of Freeport. The principal treatment processes are primary sedimentation, pure-oxygen activated sludge, secondary sedimentation, tertiary filtration, and chlorination/dechlorination (SSWD, 2021).

Solid Waste Disposal

Solid waste disposal is currently provided to residential and commercial customers by multiple agencies including Sacramento Utilities and Waste Management.

4.0 GOVERNANCE & FINANCE

4.1 Governance

The District is an independent district served by a five-member Board of Directors that is elected to four-year staggered terms. Board meetings are held every third Tuesday of the month at 6:00pm. Meetings are held at the District Office located at 7837 Fair Oaks Boulevard in Carmichael. Remote participation is also available via Zoom video conference.

Table 7: Board of Directors

Board Member	Title	Term
Paul Selsky	President	2022-2026
Ron Greenwood	Vice President	2022-2024
Mark Emmerson	Director	2021-2024
Ronald Davis	Director	2020-2024
Jeff Nelson	Director	2022-2026

The CWD Board maintains several committees including two standing committees for Finance, and Drought and Water Use Efficiency, and two ad hoc Committees, the California Oregon Transmission Pipeline (COTP) and Sister Agency. The Carmichael Water District/Sacramento Suburban Water District 2x2 Committee Meetings are also held regularly though the day varies. Special Joint Board meetings involving full board attendance began in 2023 (Carmichael Water District & Sacramento Suburban Water District, 2023). Special Board Meetings occur less frequently and meet on an as needed basis and do not have standing meeting dates and times.

Staffing

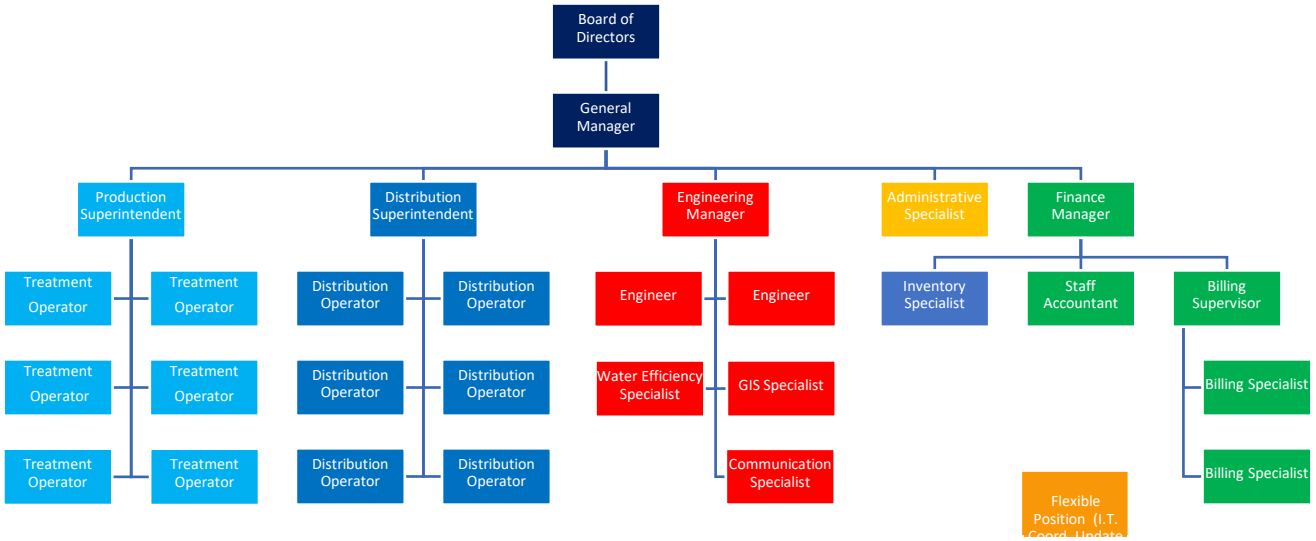
Table 8: District Staffing by Department

Position Category	Positions
Board of Directors	5
Admin Services	15
Production	7
Distribution	6
Total	**33**

The District currently employs 26 full-time employees and 1 part-time/special assignment employee. These positions are generally divided into three major departments including Administrative Services, Production and Distribution as shown in Figure 7 and Table 8.

Full-time employees are offered a full benefits package including medical, dental, vision and life insurances. The District also participates in the California Public Employee's Retirement System (CalPERS) 2% at 62 plan for new employees which takes effect immediately upon employment. Additional benefits include optional supplemental insurance plans, education reimbursement, employee assistance programs and medical insurance options upon retirement (CWD, 2023).

Figure 7: CWD Organizational Chart



Accountability and Transparency

The District maintains a website in accordance with SB929 regulations (carmichaelwd.org). Board agendas and notices are posted at the District office and online at least 72 hours in advance of scheduled Board meetings. Past meeting agendas dating back to 2019 are also available online along with information about the District's budgets, audits, rate studies and more. Ample information is made available to the public regarding District business and operations indicating a high level of District transparency.

District Awards

CWD has taken pride in establishing a safe workspace and promoting transparency throughout all aspects of operations and administration. The following is a list of awards the District has received over the past several years.

- The Government Finance Officers Association's (GFOA's)
    - Certificate of Achievement for Excellence in Financial Reporting Fiscal Year 2017/2018 through 2020/2021 and awaiting announcement for 2022/2023: CWD has consistently earned this esteemed award each time a Comprehensive Annual Financial Report (CAFR) was prepared. This accolade celebrates the pinnacle of government accounting and financial reporting.
    - Distinguished Budget Presentation Awards Program: CWD has earned this award since its first submittal beginning 2021/2022 fiscal year.
- Safety Center Incorporated's Excellence in Safety Award (2018): The CWD Safety Committee garnered recognition for devising and rolling out health and safety awareness programs.
- Integrated Water Resources Management Award (2017): The American River Pipeline Conveyance Project by CWD was nationally lauded for its exemplary display of Integrated Water Resources Management (IWRM).

Alternative Governance Structures

In 2020, the Carmichael Water District (CWD) and the Sacramento Suburban Water District (SSWD) participated in the Sacramento Regional Water Utility Collaboration Study, collaborating with five other regional water providers. Public 2x2 discussions between the Board of Directors for each District have taken place since July 2021 with the aim of increasing collaboration and further review of combination studies and reviewing public input. A business case analysis study between the districts concluded February 2023, recommending additional collaborations to optimize efficiency, reduce costs, increase water supply reliability and improve customer service (Carmichael Water District, 2023). The study delved into water industry and community trends, such as shifts in water demand, the necessity for rate affordability, regulatory adaptations and regional expansion needs. Additional topics covered included organizational structures, management, customer services, billing processes, staffing, water treatment operations, capital projects and finances of both districts. Following the study's completion, both CWD and SSWD's Boards of Directors deemed the report conclusive and assigned their respective teams to further analyze financial, technical, and operational aspects highlighted during the study's preliminary review.

In August 2023 CWD and the SSWD 2x2 committee meetings examined the viability of combining their districts based on prior discussions (Carmichael Water District & Sacramento Suburban Water District, 2023). These discussions were guided by various stakeholders, including legal counsel and representatives from the Sacramento LAFCo. A central focus was determining the most beneficial form that a combined district could take—either a new consolidated entity or a reorganization under one existing district.

During the October 11th 2x2 meeting governance considerations were put forth, such as the possibility of starting with an 11-member board, later phasing down to 5 or 7 members. Financial aspects, like potential election costs, estimated at around $600,000, and the risks associated with voter approval, were closely evaluated. Operational matters, including division mapping and implementation costs, were also subject to rigorous discussion. The boards have committed to public and stakeholder engagement efforts (Carmichael Water District & Sacramento Suburban Water District, 2023). Public information workshops were conducted in June 2023 and January 2024. A comprehensive list of stakeholders for outreach was approved, and multiple fact sheets and documents for public education were distributed.

A Joint Board Meeting occurred on October 24, 2023 discussing combining Powers of Authority for a potential consolidated district and the recommendation of forming a County Water Agency for administrative flexibility. During this meeting, a “Draft Further Analysis of Combining Carmichael Water District and Sacramento Suburban Water District” was presented for review along with a draft resolution to consolidate both districts under the CKH Act of 2000 (Carmichael Water District & Sacramento Suburban Water District, 2023). Although the specific timeline for the LAFCo application process has not been formalized, there are several key steps to anticipate. After the boards agree on the resolution, the districts would proceed to submit an application to Sacramento LAFCo.

4.2 Financial Overview

CWD is primarily funded by customer fees for water service with additional funding coming from investments, grants, and other small sources. CWD does not receive any property taxes. The District annually adopts a budget for the fiscal year running from July 1 to June 30 in accordance with generally accepted accounting practices. As can be seen in Table 3, the District has increased expenditures for capital funding projects in order to update aging infrastructure and plan for overall system resiliency. However, this has resulted in a funding deficiency for three of the five years under review.

Table 9: Five Year Budget Summary

Category	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Revenues					
Water Sales	12,117,735	12,723,622	14,285,000	13,871,000	14,530,000
Water service fees and charges	20,000	-	-	-	95,500
Other service fees	35,154	-	-	-	100,000
Grant revenue	-	-	-	3,075,000	3,430,000
Interest income	20,000	-	-	-	404,365
Miscellaneous	30,000	277,388	263,600	239,062	709,064
Facility fees	25,000	-	-	-	50,000
Outside boundary sales	2,397,681	2,743,536	2,565,000	3,604,125	1,324,022
Total Revenues	*14,645,570*	*15,744,546*	*17,113,600*	*20,789,187*	*20,642,651*
Expenses					
O&M	9,094,089	8,926,275	8,258,670	9,890,574	10,449,007
Capital	4,942,816	2,817,006	6,269,055	8,663,444	9,641,899
Debt Service	2,850,250	3,389,828	3,347,695	3,035,000	2,015,000
Reserve funding (uses)	-	-	-	-	(92,920)
Total Expense	*16,887,155*	*15,133,109*	*17,875,420*	*21,589,018*	*22,412,986*
Surplus/ (Deficiency)	(2,241,585)	611,437	(761,820)	(799,831)	(1,770,035)
Undesignated surplus funding source	-	-	-	-	1,770,035
Budget Balance	*$ (2,241,585)*	*$ 611,437*	*$ (761,820)*	*$ (799,831)*	*$ 0*

The District also provides for regular audits of annual revenues, expenditures, debts, and other financial obligations. As seen in Table 9, the District's largest source of revenue (92-93%) comes from its water sales. The second largest source of revenue (29%) comes from treatment and water delivery. The largest single expense category for the District, is Administration and General which ranges from 24-37% and typically includes employee salaries and benefits. Pumping and treatment makes up 23-24% of the District's total expenses. The District regularly invests in capital improvement projects to ensure the pumping and distribution system is well maintained and functions efficiently.

Table 10: Five Year Summary of Net Position

Category	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22
Total Assets	76,351,858	77,175,739	96,066,060	98,250,659	100,882,893
Total Liabilities	27,426,563	25,567,814	42,453,262	40,222,383	38,163,701
Net Deferred Inflows/Outflows	2,133,202	1,788,831	1,452,970	930,545	499,629
Total Net Position	**$51,058,497**	**$53,396,756**	**$55,065,768**	**$58,958,821**	**$63,218,821**
Change from Previous Year	-	+2,338,259	+1,669,012	+3,893,053	+4,260,000

Over five fiscal years, from FY 17-18 to FY 21-22, the District demonstrated steady financial growth and stability. Total assets increased from $76.35 million to $100.88 million. Total liabilities increased in FY19-20, but decreased steadily the following two fiscal years. Positive net deferred inflows/outflows in each year indicated a focus on long-term financial sustainability. The total net position, reflecting equity, consistently rose and reached $63.22 million in FY 21-22, with a notable $4.26 million increase from the previous year. This is largely due to scheduled rate increases that help support the District's Capital Improvement Program.

The vast majority of CWD assets consists of water pumping and distribution infrastructure, including $35,392,519 in pumping plant assets, and $66,800,007 in transmission and distribution infrastructure as of 2022. These assets underline CWD's commitment to maintaining a resilient and efficient water distribution system, to ensure

continued operation and service delivery. In addition, CWD's capital assets also include $53,566,247 in net capital assets being depreciated, after accounting for accumulated depreciation of $57,491,218, resulting in total net capital assets of $59,523,688 as of 2022. This comprehensive portfolio reflects CWD's appropriate management and investment in essential infrastructure.

Table 11: Audit Summary

Category	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Operating Revenue					
Water Sales	10,859,913	11,392,509	12,279,163	13,331,681	13,846,204
Connection, Tap, and Other Fees	53,627	78,714	112,147	109,466	112,830
Water treatment and delivery charges	817,991	853,543	835,734	919,389	974,050
Total Operating Revenue	*11,731,531*	*12,324,766*	*13,227,044*	*14,360,536*	*14,933,084*
Operating Expenses					
General and Administrative	3,185,882	2,424,011	2,621,140	2,814,357	2,940,707
Transmission and Distribution	1,649,564	1,729,627	2,119,602	1,539,061	1,952,453
Pumping and Treatment	2,306,629	2,082,719	2,534,363	2,327,072	2,457,654
Depreciation and Amortization	2,337,538	2,344,652	2,285,472	2,250,686	2,121,368
Pension Expense Adjustment	-	514,216	718,394	683,775	56,963
Other Post-Employment Benefits	-	260,703	203,511	186,969	246,770
Water Treatment Membranes	-	90,300	291,130	163,018	359,788
Total Operating Expenses	*9,479,613*	*9,446,228*	*10,773,612*	*9,964,938*	*10,135,703*
Nonoperating Revenue (Expenses)					
Investment Income Earned	33,558	124,212	142,410	33,496	4,797,381
Other Revenue	21,857	59,585	35,650	144,599	18,373
Grant Revenue	-	-	-	-	159,992
Investment in Electrical Power Income	14,161	13,800	13,338	14,962	12,446
Reimbursements	13,723	43,234	48,895	41,707	29,653
Gain (Loss) on Disposal of Capital Assets	(25,406)	4,689	15,473	13,615	(11,328)
Interest expense	(905,671)	(850,121)	(1,237,820)	(869,994)	(842,833)
Total Nonoperating Revenues (Expenses)	*(847,778)*	*(604,601)*	*(982,054)*	*(621,615)*	*(592,001)*
Capital Contributions	39,229	64,322	197,634	119,070	54,620
Net Gain/(Loss)	1,443,369	2,338,259	1,669,012	3,893,053	4,260,000

Over the five fiscal years from FY 2017-18 to FY 2021-22, CWD exhibited notable financial trends. The District experienced consistent growth in its operating revenue due to water use proportional to population growth as discussed in Section 2.6. Water sales, the primary revenue source for the District, steadily increased from $10.86 million to $13.85 million consistent with rate adjustments. Connection, tap, and other fees also saw growth, rising from $53,627 to $112,830, potentially reflecting new development. Concurrently, water treatment and delivery charges exhibited a gradual increase, reflecting higher operational costs.

The District's total operating revenue for FY 2021-22 reached $14.93 million, indicating financial stability and sufficient revenue-generating capacity. However, in terms of operating expenses, certain trends emerged. General and administrative expenses increased over the years, suggesting potential administrative growth or rising costs. While transmission and distribution expenses fluctuated, a significant increase in FY 2019-20 likely indicates investments in infrastructure or maintenance.

Total operating expenses amounted to $10.14 million for FY 2021-22. Pumping and treatment costs remained relatively stable along with depreciation and amortization expenses. Pension and other post-employment benefits costs notably increased in FY 2018-19 due to net asset value market adjustments in the pension plans administered by CalPERS, alongside the District's increased financial obligations towards unfunded actuarial liability.

Total nonoperating revenues and expenses showed fluctuations but improved notably in FY 2021-22, due to investment gains and lower interest expenses. Additionally, capital contributions increased over the years, reflecting investments or grants into the District's infrastructure. Investment income earnings fluctuated, with a significant increase in FY 2021-22. Conversely, interest expenses fluctuated but remained substantial which impacts overall net income. These financial trends culminated in consistently positive net gains, with substantial increases in FY 2020-21 and FY 2021-22. This indicates sound financial performance, building financial reserves for future projects or contingencies.

Long Term Liabilities

Liabilities are financial obligations of the District that will become due at a future point in time. This includes capital improvement loans, pensions, accrued vacation time, bonds, and other such obligations. Long-term liabilities are financial obligations and/or debt that are ongoing and will not be due in full for periods longer than one year, or one operating cycle, such as pensions or capital improvement loans for water main repairs/replacements and well upgrades.

CWD has several long-term financial obligations that are typical of most agencies as of the latest Annual Comprehensive Financial Report. The 2019 Series A Certificates of Participation (COPs) were issued to finance the acquisition and construction of certain water storage, pumping, treatment, transmission and appurtenant facilities for the water supply, treatment, and distribution system of the District (Carmichael Water District, 2022). The 2019 Series B COPs were issued to refund and decease the 2010 Water Revenue Refunding COPs. The Series A and Series B COPs have balances of $16,510,000 and $12,840,000 respectively, as of June 30, 2022, with the latter seeing a reduction of $1,460,000 for debt service from the previous year. The unamortized premium associated with these COPs amounted to $3,158,528 as of June 30, 2022. Other noncurrent liabilities include compensated absences, unearned lease revenue, net pension liability, and net OPEB liability, totaling $3,361,100 (with an additional $32,121 due within one year), a decrease from the previous year due to various adjustments. The debt service for the coming years is outlined with a total of $29,350,000 in principal and $10,464,746 in interest due through 2038. Additionally, CWD has entered into several lease agreements, one of which generated a lease revenue of $1,414 for the years ended June 30, 2022, and 2021.

CWD is also a participant in the California-Oregon Transmission Project, a Joint Powers Authority (JPA) initiative of the Department of Energy, Western Area Power Administration, with a 0.069% equity interest. This involvement entitles CWD to an allocation of 1 MW (megawatt) of power and corresponds to certain financial obligations and benefits concerning the project's operations and results. The project's financial summary for the fiscal year ended June 30, 2022, illustrates a net position of $223,040,940 with operating revenues and expenses resulting in an operating loss of $6,557,453. CWD's share of the net position in the project is reported as $143,934.

Capital Improvement Funding

CWD regularly plans for capital improvements. Their Capital Improvement Plan (CIP) outlines asset replacement recommendations for the next 50 years, from 2015 to 2065, based on the lifecycle of the District's standard ductile iron (DI) pipe, which has an assumed lifespan of 100 years (Carmichael Water District, 2015). Recognizing that long-term projections inherently carry uncertainties, the CIP is organized into three distinct periods:

1. A 10-year plan with specific projects, schedules, and quantifiable attributes.
2. A 25-year plan with general project suggestions and programmatic schedules, allowing for alternative project components.
3. A 50-year plan highlighting overarching impacts of major initiatives, with elements and schedules being conceptual.

The CIP encompasses elements such as production facilities, underground infrastructure, operation and maintenance, and programmatic components including storage funds and metering. This broadened perspective assists the Financial Business Plan in modeling rate effects and formulating fund and reserve policies. The CIP aligns with the business planning process, presenting multiple implementation options detailed in the Financial Business Plan.

The estimated cost of all projects included in the plan totaled $238.7 million including $10.8 million in existing bond debt. While not a financial obligation, having a CIP in place allows the District to prioritize projects and plan for adequate funding over the course of the plan. This helps keep the system in good working order so the District can provide high quality water to customers.

5.0 CWD MSR DETERMINATIONS

As set forth in Section 56430(a) of the CKH Act- In order to prepare and to update the SOI in accordance with Section 56425, the commission shall conduct a service review of the municipal services provided in the county or other appropriate area designated by the commission. The commission shall include in the area designated for a service review the county, the region, the sub-region, or any other geographic area as is appropriate for an analysis of the service or services to be reviewed, and shall prepare a written statement of its determinations with respect to each of the following:

(1) Growth and population projections for the affected area

a) The estimated 2020 population for CWD is 41,094. This is an increase of 9.6% from the 2010 estimated population of 37,500. Since the District is near full build-out and infill constraints exist, a more moderate growth rate of approximately 2.8% is anticipated from 2020 to 2030. This could result in a population of 42,249 by 2030 and a moderate increase in demand for services throughout the current CWD boundary.

(2) The location and characteristics of any disadvantaged unincorporated communities within or contiguous to the sphere of influence

a) Several Census Designated Places in and around the District can be considered DUCs based on 2021 MHI estimates. This includes Arden-Arcade (MHI $56,805), Foothill Farms (MHI $57,810), McClellan Park (MHI $27,500), and North Highlands ($55,616).

b) The DUCs identified in and around CWD are largely in developed areas with high densities of residential and commercial development. All of the DUCs currently receive water from either CWD or other area water providers, wastewater services from Sacramento Area Sewer District, and fire/emergency response services from Sacramento Metropolitan Fire Department.

(3) Present and planned capacity of public facilities and adequacy of public services, including infrastructure needs or deficiencies

a) CWD is a retail water provider with 11,700 connections. In 2020, the District reported a total demand of 9,191 AF. Approximately 78% of the total demand is attributed to residential uses.

b) CWD has seven active groundwater wells with a combined pumping capacity of 8,590 gallons per minute. The District also has two surface water licenses and one permit for a total diversion rate of 50 cfs with a maximum annual diversion of 32,627 AF.

c) Based on the District's current water supply from active wells and surface water diversions, and the 2020 annual demand of 9,191 AF, CWD has ample supply to meet current and future demands for water service.

(4) Financing ability of agencies to provide services

a) The District currently adopts an annual budget and conducts annual audits in accordance with generally accepted best accounting practices and irrigation district law.

b) Over the last five fiscal years reviewed, the District has seen an overall increase in their net position from $51.1 million in FY 2017-18 to $63.2 million in FY 2021-22.

c) While the District adopts conservative budgets that at times show expenditures exceeding revenues, their annual financial statements have been positive over the last five fiscal years reviewed. According to the FY 2021-22 Annual Comprehensive Financial Report, CWD saw a net gain of $4.2 million.

(5) Status of and, opportunities for, shared facilities

a) CWD continues to coordinate with Sacramento Suburban WD on potential reorganization efforts. This may result in the establishment of a new water provider or annexation of one of the districts into the other.

b) CWD previously worked with Aerojet to obtain water from their groundwater extraction and treatment (GET) facilities. This remediated water was used to irrigate Ancil Hoffman Park. However, this operation ceased in 2021.

c) The District continues to participate in regional groundwater management efforts with other water suppliers in the area to help ensure sustainable groundwater use practices.

(6) Accountability for community service needs, including governmental structure and operational efficiencies

a) CWD is governed by a five-member Board of Directors that meets regularly in accordance with Brown Act regulations. Board meetings a held in-person on the third Tuesday of the month at 6:00pm.

b) There are two standing committees that focus on different aspects of district business including Finance, and Drought and Water Use Efficiency. These standing committees report to the full Board of Directors and provide recommendations as appropriate. There are also two ad hoc committees including the California Oregon Transmission Pipeline and Sister Agency committees.

c) CWD maintains an active website that provides information on District business, Board meetings, and water services. Board and committee meeting agendas are posted at least 72 hours in advance of meetings in accordance with the Brown Act. The District also provides current financial information such as adopted budgets and Annual Comprehensive Financial Reports.

(7) Any other matter related to effective or efficient service delivery

a) There are no other matters related to effective or efficient service delivery at this time.

6.0 CWD SOI DETERMINATIONS

In order to carry out its purposes and responsibilities for planning and shaping the logical and orderly development of local governmental agencies to advantageously provide for the present and future needs of the county and its communities, the commission shall develop and determine the sphere of influence of each local agency, as defined by G.C. Section 56036, and enact policies designed to promote the logical and orderly development of areas within the sphere. In determining the sphere of influence of each local agency, the commission shall consider and prepare a written statement of its determinations with respect to the following:

(1) Present and planned land uses in the area, including agricultural and open-space lands.

a) The area in and around CWD is highly urbanized. The predominant land use type is Low Density Residential (83.5%) followed by Transit-Oriented Development (10.7%). As the area is largely built-out and there are limitations on infill potential, it is unlikely there will be a substantial increase in demand over the next five to ten years. However, the potential for increased density through development of ADUs or other housing types could lead to a moderate increase in demand for water service.

(2) Present and probable need for public facilities and services in the area.

a) The region is densely populated and continues to experience growth. As such, there is an existing and continued need for water services.

(3) Present capacity of public facilities and adequacy of public services that the agency provides or is authorized to provide.

a) CWD maintains seven active wells and has several surface water rights in place which allows the District to operate a conjunctive use program. This allows the District to rely on surface water in normal to high precipitation years and reduce well production so that the groundwater basin may recharge overtime.

b) CWD faces challenges from groundwater contamination including the larger Aerojet plume that has migrated into the District's boundary. However, due to active monitoring and remediation programs, in addition to the District's primary use of surface water, CWD's water quality remains good and there are no pressing contamination concerns.

(4) Existence of any social or economic communities of interest in the area if the commission determines that they are relevant to the agency.

a) Three cities are located within or in close proximity to CWD including Sacramento, Citrus Heights, and Rancho Cordova. These cities and the surrounding unincorporated areas provide numerous employment and housing opportunities. The City of Sacramento is also the state capital and is the headquarters for numerous state agencies which employee thousands of people who likely seek residences in the greater Sacramento region.

(5) For an update of a sphere of influence of a city or special district that provides public facilities or services related to sewers, municipal and industrial water, or structural fire protection, the present and probable need for those public facilities and services of any disadvantaged unincorporated communities within the existing sphere.

a) The CWD SOI is coterminous with its jurisdictional boundary. There are currently no proposed changes to the CWD SOI. However, any potential future annexations and/or reorganizations will require a SOI amendment.

APPENDIX A

CARMICHAEL WATER DISTRICT CURRENT RATES AND FEES

Water Rates

Water Rate Schedule
Current water rate schedule approved on December 14, 2021 – Effective January 1, 2022

Water Rates Structure for January 1, 2022 – December 31, 2025

Effective Dates	Jan. 1, 2022	Jan. 1, 2023	Jan. 1, 2024	Jan. 1, 2025
Water Usage Rates (In CCF)				
All Customer Type Water Use	$ 1.88	$ 2.06	$ 2.26	$ 2.47
Monthly Service Charge				
3/4" meter	$ 32.01	$ 35.05	$ 38.38	$ 42.03
1" meter	$ 50.14	$ 54.90	$ 60.12	$ 65.83
1 1/2" meter	$ 95.46	$ 104.53	$ 114.45	$ 125.33
2" meter	$ 149.84	$ 164.07	$ 179.66	$ 196.73
3" meter	$ 276.73	$ 303.02	$ 331.80	$ 363.33
4" meter	$ 458.00	$ 501.51	$ 549.15	$ 601.32
6" meter	$ 911.18	$ 997.74	$ 1,092.53	$ 1,196.32
8" meter	$ 1,455.00	$ 1,593.22	$ 1,744.58	$ 1,910.31
Condominium Living Units	$ 32.01	$ 35.05	$ 38.38	$ 42.03
MF Living Units w/Separate Meter	$ 32.01	$ 35.05	$ 38.38	$ 42.03
Monthly Fire Service Charges				
Per Inch of Diameter	$ 25.06	$ 27.54	$ 30.05	$ 32.91

Notes:
(1) Water Usage = CCF = 100 cubic feet = 748 gallons
(2) Multi-Family includes duplexes, triplexes, fourplexes, and apartment complexes

Water Shortage Surcharge Rate Structure
The following water shortage rate surcharges are applied as a percentage increase to the water usage rates in effect if and when a water shortage is declared by the District's Board of Directors. The fixed monthly service charges would be unaffected by the rate surcharges. Any implementation of a water shortage surcharge would be temporary, lasting only during the period of water shortage. Under the water shortage surcharges, customers achieving required water use reduction goals may have lower water bills than they would have with normal water rates and normal water usage. Customers that don't meet water use reduction goals may see higher water bills. The table below presents the proposed water shortage rate surcharge percentages and illustrates how they would apply to the proposed water usage rate for January 2021. The same surcharge percentages would apply to any water usage rates as they may be adopted in subsequent years for normal supply conditions.

Water Shortage Surcharge	Normal Supply Conditions	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
Use Reduction Goals	None	0% - 10%	10% - 20%	20% - 30%	30% - 40%	40% - 50%	50% - 60%
Water Shortage Usage Rate Surcharge	n/a	n/a	5%	15%	20%	25%	30%

APPENDIX B

ANNOTAED REFERENCES

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