



**Wastewater Cost of Service Rate Study**

**For Fiscal Years**

**2024-2028**

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## **BACKGROUND**

The Cucamonga Valley Water District (the “District” or “CVWD”) is an independent special district that operates under the authority of Division 12 of the California Water Code. The District was incorporated on March 25, 1955, and is governed by a five-member, elected Board of Directors. The District provides water, wastewater, and recycled water services to a population of approximately 190,000 within its 46 square mile service area, which is located in the western area of San Bernardino County, California. The District encompasses the majority of the community of Rancho Cucamonga and portions of the cities of Fontana, Ontario, Upland, and some of the unincorporated areas of San Bernardino County.

The District serves 37,523 service connections through a sewer collection system that discharges wastewater into and is treated in the regional treatment plants operated by Inland Empire Utility Agency (IEUA). The District’s collection and trunk sewer system consists of 420 miles of gravity sewers (approximately 9,576 line-segments), 8324 manholes, 0.83 miles of force mains and four pump stations. The sewer lines range in size from 4” to 30” in diameter and the piping system includes twelve siphons with a total length of 0.38 miles of gravity system. The District operates on a fiscal year basis, which starts July 1 and continues through June 30 of the following year.

## **PURPOSE**

The purpose of this report is to summarize findings resulting from the Wastewater Cost of Service Rate Study performed by the Finance Division of CVWD.

The major components of the Study include:

1. Development of a financial plan for the Sewer Fund that meets the utility’s revenue requirements, including operations and maintenance (O&M) costs and the capital improvement plan (CIP) while adequately funding reserves in accordance with industry best practices.
2. Conducting cost of service (COS) analyses that ensures the nexus between the cost to serve customers and the responsibility of the District, per Proposition 218 and industry standards.
3. Review of the current rate structure and evaluate the cost recovery for the wastewater operation to achieve Board of Directors and District objectives.
4. Implementation of a five-year schedule of rate adjustments that are in compliance with Proposition 218 while also ensuring financial sufficiency to fund operating and capital costs over the rate study period.

This report summarizes the results of this cost-of-service rate study and recommends new wastewater transmission rates.

## **OVERVIEW**

CVWD charges most customers within its service area a Sewer Service Charge. This charge is not imposed on customers who have a private septic system or who receive sewer services from the neighboring cities of Fontana, Ontario or Upland.

The current rate structure consists of two components:

1. A CVWD Local Sewer Service Charge to cover cost of capital replacement, operations and maintenance of the existing wastewater collection lines, account billing, customer service and other related costs.
2. A Treatment Charge for wastewater treatment and disposal, to recover charges imposed on CVWD by the Inland Empire Utilities Agency (IEUA). The IEUA treats and disposes of wastewater collected by CVWD. This rate is set up as a pass-through charge. A pass-through charge is utilized to mitigate the risk of future cost uncertainty that is beyond the District's control due to the IEUA's ability to adjust their own rates.

The rate structure of the Sewer Service Charge has two customer classes:

1. Residential customers, including single family residences, apartment units, town houses, condominiums and mobile homes, pay a fixed monthly charge per unit. Each unit is known as an equivalent dwelling unit (EDU) and is used as a baseline for establishing rates for non-residential customers.
2. Non-residential customers, which are further divided as follows:
  - a. Commercial customers, as defined in table of the District Ordinance 5.08.030(A), will be charged based on the assigned EDU factor as provided in the table, multiplied by their monthly water consumption.
  - b. Commercial customers that use one account for both indoor and outdoor landscape purposes will be modified by 55% of their water usage.
  - c. Fees for Schools are calculated based on their student count.
  - d. Fees for Industrial sewer will be calculated using a formula combining their Domestic EDUs and Industrial EDUs discharged (see CVWD Code of Ordinance 5.08.040).

## **LEGAL REQUIREMENTS**

Proposition 218 was enacted by voters in 1996 to ensure, in part, that fees and charges imposed for ongoing delivery of service to a property are proportional to and do not exceed the cost of providing the service. Water and sewer service fees and charges are property-related fees and charges which are subject to the provisions of California Constitution Article XIII D, Section 6 (Proposition 218). The principal requirements, as they relate to public water and sewer service fees and charges are as follows:

1. Revenues derived from the fee or charge shall not exceed the costs required to provide the property-related service.
2. Revenues derived by the fee or charge shall not be used for any purpose other than that for which the fee or charge was imposed.
3. The amount of fee or charge imposed upon any parcel shall not exceed the proportional cost of service attributable to the parcel.
4. No fee or charge may be imposed for a service unless that service is actually used or immediately available to the owner of the property.
5. A written notice of the proposed fee or charge shall be mailed to the record owner of each parcel not less than 45 days prior to a public hearing, when the agency considers all written protests against the charge.

This Rate Study demonstrates that the proposed rates for sewer service meet the requirements of Proposition 218 and do not exceed the proportionate cost of providing sewer services to our customers.

California law allows a public agency (such as CVWD) that provides water, wastewater, or sewer services to authorize automatic adjustments to its rates that pass-through to its customers any increases in the wholesale charges of water, sewage treatment or wastewater treatment that are imposed on it, such as the Treatment Charges imposed on CVWD by IEUA. This can be done for a period of no more than five years, and only the proportionate share of the adopted increases in the wholesale charges may be passed on.

## **COST-BASED RATE SETTING METHODOLOGY**

To develop wastewater rates that comply with the requirements of Proposition 218 and industry standards while meeting other emerging goals and objectives of the District, there are four major steps discussed below.

### **1. Calculate the Revenue Requirement**

The rate making process starts by determining the base year (Test Year) revenue requirement, which for this Study is the Fiscal Year (FY) 2024 which runs from July 1, 2023 through June 30, 2024. The revenue requirement should sufficiently fund the utility's operating and maintenance expenses, capital expenses, and reserve funding.

### **2. Cost of Service (COS) Analysis**

The annual cost of providing wastewater service is distributed among customer classes commensurate with their service requirements. A COS analysis involves the following:

- a) Functionalize costs. Examples are collection of wastewater, treatment charge by IEUA, billing and administrative costs.

- b) Allocate all functional costs to cost components. Cost components include sewer line maintenance, billing, and wastewater treatment charge.
- c) Distribute the cost components. Distribute cost components, using unit costs, to customer classes in proportion to their demands and burdens on the wastewater collection system.

**3. Rate Design and Calculations**

Rates do more than simply recover costs. Within the legal framework and industry standards, properly designed rates should support and optimize a blend of utility objectives, such as affordability for essential needs, and revenue stability, among others. Rates act as a public information tool in communicating these objectives to customers.

**4. Rate Adoption**

Rate adoption is the last step of the rate-making process. The rate study results are documented in this report which reflects the basis upon which the rates were calculated, the rationale and justifications behind the proposed charges, any changes to rate structures, and anticipated financial impacts to ratepayers.

## COST OF SERVICE AND RATE STUDY RESULTS

### Wastewater System Usage and Customer Base

In Fiscal Year (FY) 2023, the District collected approximately 832,336 EDUs worth of wastewater from approximately 37,523 customers. The District charged a rate of \$5.73 per EDU per month for collecting the wastewater and passed through \$21.86 per EDU charged by IEUA for wastewater treatment during FY2023.

The following table shows historical and projected wastewater EDUs billed and the customer base from FY2020 through FY2028:

**Table 1**  
**EDUs Charged and Number of Sewer Customers**  
**Fiscal Years**

EDU's	Historical			Projected					
	2020	2021	2022	2023	2024	2025	2026	2027	2028
Domestic	674,472	675,598	676,467	698,390	705,374	712,428	719,552	726,748	734,015
School	14,853	14,553	13,808	13,919	13,989	14,059	14,129	14,200	14,271
Industrial	148,446	139,936	134,687	120,027	120,027	120,027	120,027	120,027	120,027
<b>Total EDU's</b>	<b>834,931</b>	<b>815,565</b>	<b>823,855</b>	<b>832,336</b>	<b>839,390</b>	<b>846,514</b>	<b>853,708</b>	<b>860,975</b>	<b>868,313</b>
Customers	37,461	37,488	37,506	37,523	37,540	37,557	37,574	37,591	37,608

## Wastewater System Expenses

In order to collect wastewater, the District incurs Operating and Maintenance (O&M) costs as well as charges from IEUA for treating the wastewater. The O&M costs are related to routine pipeline inspection and maintenance, customer service, billing, and administration. The treatment charges are set by IEUA, passed through to customers by CVWD unmodified, and after collection of those charges, funds are remitted to IEUA.

The following table shows wastewater expenses budgeted for FY2023, estimated actual for FY2023, and projected from FY2024 through FY2028:

**Table 2**  
**Wastewater Expenses**  
**Fiscal Years**

	Budgeted	Est. Actual	Projected				
	2023	2023	2024	2025	2026	2027	2028
<b>Operating Expenses</b>							
Wastewater Collection	\$ 2,039,158	\$ 2,047,841	\$ 2,337,348	\$ 2,461,558	\$ 2,573,043	\$ 2,690,143	\$ 2,813,148
IEUA Pass-through for Treatment	18,194,862	17,921,619	19,633,332	20,985,082	TBD	TBD	TBD
Customer Accounts	616,073	620,680	704,251	739,444	769,958	801,898	835,343
General and Administration	3,032,508	3,260,185	3,611,227	3,757,706	3,884,760	4,017,526	4,156,271
<b>Total Operating Expenses</b>	<b>23,882,600</b>	<b>23,850,325</b>	<b>26,286,158</b>	<b>27,943,790</b>	<b>7,227,761</b>	<b>7,509,567</b>	<b>7,804,762</b>
<b>Nonoperating Expenses</b>							
Replenishment of Reserves	-	-	-	102,825	319,838	416,686	588,157
Capital Projects	3,360,250	2,950,000	5,359,250	5,218,200	7,094,000	2,969,000	5,160,000
<b>Total Nonoperating Expenses</b>	<b>3,360,250</b>	<b>2,950,000</b>	<b>5,359,250</b>	<b>5,321,025</b>	<b>7,413,838</b>	<b>3,385,686</b>	<b>5,748,157</b>
<b>Total Expenses</b>	<b>\$27,242,850</b>	<b>\$26,800,325</b>	<b>\$31,645,408</b>	<b>\$33,264,815</b>	<b>\$14,641,599</b>	<b>\$10,895,253</b>	<b>\$13,552,919</b>

The IEUA Pass-Through for Treatment line item in Table 2 represents the total cost of treatment of wastewater by the IEUA for each given fiscal year. IEUA sets their wastewater rates on a fiscal year basis and charges the District based on the EDU determined for each customer type. The cost per EDU used in the calculation for FY2023 has been adopted by the IEUA and became effective July 1, 2022. The proposed rates for FY2024 and FY2025 are scheduled to be adopted by April 19, 2023. The projections for FY2026 through FY2028 are not known at the time of this rate study. This is the most significant operating expense of the wastewater utility and CVWD will not attempt to predict these rates for future fiscal years. Instead, CVWD will notify customers by publishing the rate adopted by the IEUA's Board of Directors after it has been approved. The approved rate will be passed through to CVWD's customers. Notice of an automatic pass-through adjustment will be given not less than 30 days before the effective date of any change. This notice may appear in CVWD's regular billing statement through a direct mail notice to the address which CVWD mails the billing statement. The following table shows the historical and adopted IEUA Treatment charges:

**Cucamonga Valley Water District**  
**Wastewater Cost of Service and Rate Study FY2024-2028**

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**Table 3**  
**Monthly Sewer Rates from IEUA**  
**Fiscal Years**

	Historical			Adopted	Proposed		Future		
	2020	2021	2022	2023	2024	2025	2026	2027	2028
Charge per EDU	\$ 20.00	\$ 20.00	\$ 21.22	\$ 21.86	\$ 23.39	\$ 24.79	TBD	TBD	TBD
Year over year % increase	2%	0%	6%	3%	7%	6%	N/A	N/A	N/A

The Operating Expenses, other than the IEUA Pass-through Treatment charge in Table 2, consist of various costs associated with the maintenance and administration of the system as well as its operations. The wastewater collection line item represents expenses that relate to the inspection and maintenance of the sewer pipelines. All O&M line items utilize historical data escalated with expected inflation factors (see Table 4). These wastewater collection expense projections are based on historical cost data associated with maintaining pipelines and include a General Inflation and Electricity related inflation factor for each fiscal year. The Customer Accounts line item represents expenses related to billing, payment processing and customer service functions. These Customer Account expense projections are based on a prorated share of District costs associated with billing and customer service and include Wages and Benefits related annual inflation factors. The General and Administrative line item is for salaries and benefits of District staff who monitor, inspect, and maintain the operation of the sewer system. These general and administrative account expense projections are based on historical data and include an annual inflation factor associated with Wages and Benefits.

**Table 4**  
**Wastewater Inflationary Assumptions**  
**Fiscal Years**

Escalation factors	2024	2025	2026	2027	2028
General Inflation	5.0%	4.0%	3.0%	3.0%	3.0%
Wages	6.0%	6.0%	5.0%	5.0%	5.0%
Benefits	6.0%	6.0%	5.0%	5.0%	5.0%
Utilities (excl. Electricity)	5.0%	4.0%	3.0%	3.0%	3.0%
Electricity	10.0%	8.0%	6.0%	6.0%	6.0%
Capital	5.0%	4.0%	3.0%	3.0%	3.0%

## Wastewater System Rates Calculation

The District utilizes the cost-of-service approach to setting rates. This cost-of-service approach includes the cost of providing sewer service only to those customers receiving that service. Conservative and prudent management practices require that the wastewater system generate revenues that will cover the cost of service.

The Total Rate is the sum of the Local Service Charge set by CVWD and the Treatment Charge set by the IEUA. Charges are based on Equivalent Dwelling Units (EDU) per month.

**Table 5**  
**Total Monthly Sewer Rates**  
**Fiscal Years**

	Historical			Adopted	Proposed				
	2020	2021	2022	2023	2024	2025	2026	2027	2028
Local Service Charge - CVWD	\$ 5.73	\$ 5.73	\$ 5.73	\$ 5.73	\$ 6.19	\$ 6.69	\$ 7.23	\$ 7.81	\$ 8.43
CVWD Rate Change (\$)		-	-	-	0.46	0.50	0.54	0.58	0.62
Treatment Charge - IEUA	20.00	20.00	21.22	21.86	23.39	24.79	TBD	TBD	TBD
IEUA Rate Change (\$)		-	1.22	0.64	1.53	1.40			
<b>Total Rate per EDU</b>	<b>\$ 25.73</b>	<b>\$ 25.73</b>	<b>\$ 26.95</b>	<b>\$ 27.59</b>	<b>\$ 29.58</b>	<b>\$ 31.48</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>
Year over year % increase	1.6%	0.0%	4.7%	2.4%	7.2%	6.4%	N/A	N/A	N/A

Residential service customers include single family residences, apartment units, town house, condominiums, and mobile homes. All residential customers are charged one EDU per dwelling unit per month.

Commercial customers are identified by the type of commercial use listed in Commercial Use Table (Appendix A). Commercial sewer service fees are based on the assigned EDU factor per category and water use as follows:

- Category I thorough VIII accounts with separate (dedicated) landscape water meters, or without landscape irrigation

$$\text{Sewer Fee} = \text{EDU Factor} \times \text{Domestic Water HCF} \times \text{Sewer Service Rate (per EDU)}$$

- Category I through VIII accounts with a combined domestic/landscape water meter

$$\text{Sewer Fee} = \text{EDU Factor} \times \text{Total Water HCF} \times 55\% \times \text{Sewer Service Rate (per EDU)}$$

- Category IX and X accounts (Schools)

$$\text{Sewer Fee} = \text{EDU Factor} \times \text{Number of Students} \times \text{Sewer Service Rate (per EDU)}$$

Industrial customers are identified as those non-domestic sewer customers not identified prior, and those who purchased Capital Capacity based on the following EDU Formula:

Sewer Fee = Sewer Service Charge Rate (per EDU) x (Domestic EDUs + Industrial EDUs discharged) / number calendar days for the billing period

- Domestic EDU is calculated based on Category I of the Commercial customer group
- Industrial EDU is calculated using the formula below:

$$\text{EDU} = Q/270 \times [0.37 + (0.31 \times \{\text{BOD}/230\}) + (0.32 \times \{\text{TSS}/220\})]$$

Where:

Q = Industrial wastewater flow to sewer for the billing period (measured in gallons)

BOD = Biochemical Oxygen Demand (mg/l)

TSS = Total Suspended Solids (mg/l)

Both Commercial and Industrial local fee calculations follow the IEUA's calculation methodology. This method was designed by the IEUA and is utilized by all of the other IEUA member agencies. The volume of wastewater and the level of contamination of the wastewater not only affect the treatment process, but also the load on the local wastewater pipeline system. This requires more system screening and additional cleaning from CVWD's staff, compared to the volume of work required for maintaining pipelines utilized for residential customers only. Using IEUA's calculation formulas provides a reasonable metric to capture the additional cost of collection and transmission of non-residential wastewater throughout CVWD's sewer system.

## Wastewater System Revenues

The District charges sewer customers two types of fees for service. Both the Local Service Charge (CVWD) and the Treatment Charge (IEUA) are calculated based on a predetermined EDU factor combined with a factor related to water use, if applicable.

Based on the projected EDUs listed in Table 1 and charges in Tables 5, the District is able to calculate projected total revenues for the Sewer System during each fiscal year. The Developer Fees are based on the assumed number of new developments within the District that will connect to the system each year. The following table shows sewer revenues budgeted for FY2023, estimated actual for FY2023, and projected from FY2024 through FY2028:

**Table 6**  
**Wastewater Revenues**  
**Fiscal Years**

Revenue	Budgeted	Est. Actual	Projected				
	2023	2023	2024	2025	2026	2027	2028
<b>CVWD Sewer Revenues:</b>							
Domestic Sewer	\$ 3,899,442	\$ 3,982,678	\$ 4,366,265	\$ 4,766,143	\$ 5,202,361	\$ 5,675,902	\$ 6,187,746
Schools	76,053	78,528	86,592	94,055	102,153	110,902	120,305
Industrial	722,167	682,542	742,967	802,981	867,795	937,411	1,011,828
Plan Checks/Permits	91,000	88,183	89,000	90,000	91,000	92,000	93,000
Misc Revenues	-	2,525	-	-	-	-	-
<b>IEUA Pass-through Charge</b>	<b>17,921,619</b>	<b>18,194,862</b>	<b>19,633,332</b>	<b>20,985,082</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>
Investment Income	280,155	548,500	575,925	604,721	634,957	666,705	700,040
Development Fees	727,698	602,783	628,500	1,721,833	1,143,333	1,143,333	780,000
Reserves spent on CIP	1,700,000	1,700,000	5,100,000	2,200,000	5,100,000	1,069,000	3,860,000
Developer Fees spent on CIP	1,660,250	1,654,514	259,250	2,000,000	1,500,000	1,200,000	800,000
<b>Total Revenues</b>	<b>\$27,078,384</b>	<b>\$27,535,115</b>	<b>\$31,481,831</b>	<b>\$33,264,815</b>	<b>\$14,641,599</b>	<b>\$10,895,253</b>	<b>\$13,552,919</b>

## APPENDIX A – COMMERCIAL SEWER USE TABLE

The following table shows the EDU Factors for each Commercial customer category according to the District’s Ordinance 5.08.030. Commercial sewer service.

**Table A**  
**Commercial Sewer Use Table**

Category	Type of Commercial Use	EDU Factor
I	<ul style="list-style-type: none"> <li>• Office</li> <li>• Daycare center</li> <li>• Market without grinder</li> <li>• Public facility without dining</li> <li>• Bar/Tavern without food</li> <li>• Retail/Service</li> <li>• Recreation/Amusement without dining</li> </ul>	0.0729
II	<ul style="list-style-type: none"> <li>• Mortuary</li> </ul>	0.1052
III	<ul style="list-style-type: none"> <li>• Motel with dining</li> <li>• Bar/Tavern with dining</li> <li>• Public facility with dining</li> <li>• Recreation/Amusement with dining</li> <li>• Hospital - full service</li> <li>• Convalescent facility</li> </ul>	0.1050
IV	<ul style="list-style-type: none"> <li>• Laundromat</li> <li>• Car Wash</li> </ul>	0.0626
V	<ul style="list-style-type: none"> <li>• Laundromat - commercial/industrial</li> <li>• Dry Cleaner</li> </ul>	0.1215
VI	<ul style="list-style-type: none"> <li>• Motel without dining</li> <li>• Health spa</li> <li>• Church/Worship</li> </ul>	0.0670
VII	<ul style="list-style-type: none"> <li>• Outpatient facility</li> <li>• Doctor office</li> <li>• Dental office</li> </ul>	0.0671
VIII	<ul style="list-style-type: none"> <li>• Restaurant - full service</li> <li>• Restaurant - fast food</li> <li>• Market with grinder</li> <li>• Bakery</li> </ul>	0.1042
IX	<ul style="list-style-type: none"> <li>• School - Public/Private: Kindergarten through 12th grade</li> </ul>	0.0185
X	<ul style="list-style-type: none"> <li>• School - Public/Private: College</li> </ul>	0.0370

## APPENDIX B – PROJECTED CASH RESERVE BALANCES

The following table shows projected sewer utility fund cash reserve balances from FY2023 through FY2028:

**Table B**  
**Projected Cash Reserve Balances**  
**Fiscal Years**

	2023	2024	2025	2026	2027	2028
<b>Beginning Cash Reserves</b>						
Development Fees*	\$ 1,884,762	\$ 833,031	\$ 1,202,281	\$ 924,114	\$ 567,447	\$ 510,780
Capital Project Reserve	19,000,000	19,000,000	16,000,000	13,000,000	10,000,000	10,000,000
Capital Emergency Reserve	838,000	838,000	838,000	838,000	838,000	838,000
Administrative Capital Impr	185,000	185,000	185,000	185,000	185,000	185,000
Operating Reserve	5,980,068	5,949,716	5,121,639	5,455,431	4,315,936	4,202,289
Compensated Absences Reserve	438,655	450,000	450,000	450,000	450,000	450,000
<b>Total Beginning Balance</b>	<b>28,326,485</b>	<b>27,255,747</b>	<b>23,796,920</b>	<b>20,852,545</b>	<b>16,356,383</b>	<b>16,186,069</b>
<b>Cash Sources (Uses)</b>						
Operating Revenues	23,029,318	24,918,156	26,738,261	28,485,328	30,346,662	32,333,462
Operating Expenses	(23,882,600)	(26,286,158)	(27,943,790)	(29,449,780)	(31,040,014)	(32,725,345)
Investment Income	548,500	575,925	604,721	634,957	666,705	700,040
Development Fees	602,783	628,500	1,721,833	1,143,333	1,143,333	780,000
Capital Improvements	(3,360,250)	(5,359,250)	(5,218,200)	(7,094,000)	(2,969,000)	(5,160,000)
Operating Reserve	1,991,511	2,064,000	1,152,800	1,784,000	1,682,000	2,024,000
<b>Net Sources (Uses)</b>	<b>(1,070,738)</b>	<b>(3,458,827)</b>	<b>(2,944,375)</b>	<b>(4,496,162)</b>	<b>(170,314)</b>	<b>(2,047,843)</b>
<b>Ending Cash Reserves</b>						
Development Fees*	833,031	1,202,281	924,114	567,447	510,780	490,780
Capital Project Reserve	19,000,000	16,000,000	13,000,000	10,000,000	10,000,000	8,000,000
Capital Emergency Reserve	838,000	838,000	838,000	838,000	838,000	838,000
Administrative Capital Impr	185,000	185,000	185,000	185,000	185,000	185,000
Operating Reserve	5,949,716	5,121,639	5,455,431	4,315,936	4,202,289	4,174,446
Compensated Absences Reserve	450,000	450,000	450,000	450,000	450,000	450,000
<b>Total Ending Cash Balance</b>	<b>\$27,255,747</b>	<b>\$23,796,920</b>	<b>\$20,852,545</b>	<b>\$16,356,383</b>	<b>\$16,186,069</b>	<b>\$14,138,226</b>

\*Development fee Reserves are restricted in accordance with law.