



WESTERN MUNICIPAL
WATER DISTRICT
COST OF SERVICE REPORT
WWRF Wastewater Service Area

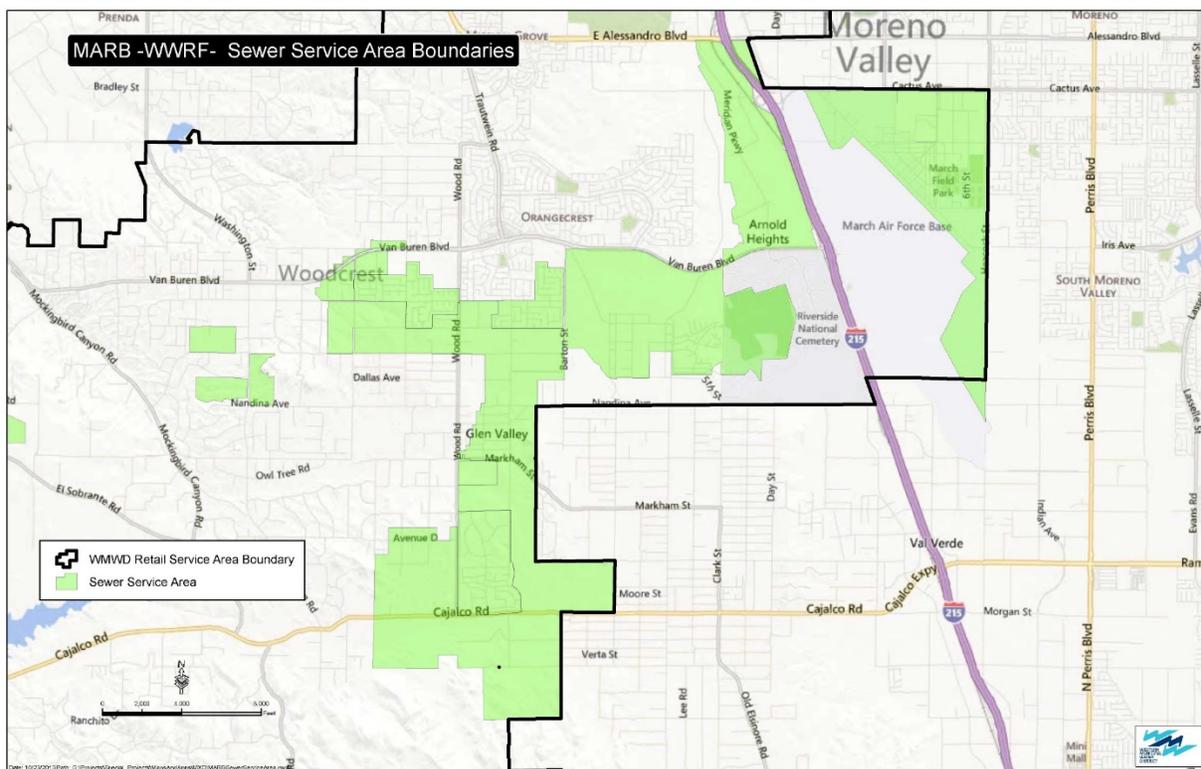
For rates effective October 1, 2019
Version 1

WWRF Wastewater Service Area

Service Area Description

Western Municipal Water District (Western or District) owns and operates the Western Water Recycling Facility (WWRF), providing wastewater (sewer) collection and treatment for the March Air Reserve Base and customers in the communities of Mission Ranch, Boulder Springs, Cajalco/Woodcrest, and portions of the cities of Riverside and Perris. The District provides wastewater treatment and conveyance to about 1,700 accounts in its WWRF Service Area. All treated wastewater from the WWRF facility is fully utilized in Western’s recycled water system. Supplemented with non-potable local groundwater from the Riverside Canal and surface water from the Colorado River Aqueduct, the tertiary treated recycled water from the WWRF plant is used by about 50 customers to irrigate landscaping and agriculture.

Service Area Map



Inputs into the District’s Wastewater Rate Model

Operating Budget. An input into the rate model is the Board-adopted operating budget for Fiscal Year (FY) 2019-20. The operating budget includes all expenses associated with operating and maintaining the treatment and conveyance facilities such as energy, solids disposal, chemicals, labor, system maintenance, debt service obligations, as well as asset replacement reserve funding and operating reserve funding. The operating budget is summarized and presented in Table 1 below, and reflects the revenue required from rates to cover the cost of providing wastewater service.

Table 1 – Summarized Operating Budget for FY 2019-20

Expense Category	Treatment	Conveyance
Labor and Benefits	\$ 509,126	\$ 699,482
Maintenance and Supplies	321,335	170,066
Treatment	554,491	
Energy		103,582
Administrative	932,724	660,490
Other Operating Expenses	102,700	44,334
Asset Replacement Reserve Funding	75,976	38,000
Debt Service Obligation		9,157
Sub-Total	\$ 2,496,352	\$ 1,725,111
Less General Fund Subsidy		- 202,500
Less Third Party Revenue*	- 343,112	
Less Sale of Recycled Water to the Nonpotable Fund	- 544,500	- 119,500
Less Draw from Operating Reserves	- 10,524	- 12,033
Total Revenue Requirement from Rates	\$ 1,598,216	\$ 1,391,078

*Third Party Revenue is the projected amount to be received from an agreement with the city of Riverside to treat 0.5 million gallons per day (MGD) of their Orangecrest area wastewater flows.

Number of EDUs. The other input into the rate model is the number of EDUs assigned to residential and commercial customers within the service area. “EDU” stands for “equivalent dwelling unit” and is equivalent to the quantity of wastewater an average single-family residential customer contributes to the wastewater system. Each single-family residential parcel is assigned one EDU, whereas commercial customers are assigned multiple EDUs depending on industry-determined standards for various types of businesses. Factors considered in the assignment of EDUs for commercial customers include, for example, facility square footage, number of restrooms, kitchen facilities, seating capacity, among others. EDU billing reflects the capacity and peak demand that a customer places on the wastewater system.

There are 3,611.15 EDUs that use the WWRF treatment plant, and 3,448.16 EDUs that use the WWRF conveyance (collection) system. The conveyance system EDU amount is lower than the treatment plant EDU amount because Altavita Village, a retirement community, owns and maintains their own conveyance system and, therefore, are not billed by the District for conveyance service. Altavita Village is one of two customers in the Dedication Lift Station customer class. Customers in this class have a dedicated District lift station that collects the customer’s wastewater flows and then pumps the flows to the treatment plant. The lift station meter is used for billing purposes to calculate the amount of wastewater discharged in a thousand-gallon unit of measurement (“kgallon”). For the purpose of this Cost of Service Study, the projected annual gallons of flow from Altavita has been converted to a fixed number of EDUs.

Table 2 – Equivalent Dwelling Units for Treatment & Conveyance

Customer Type	Treatment EDUs	Conveyance EDUs
Residential and Commercial	3,348.38	3,348.38
Altavita Village	162.99	n/a
Sub-total	3,511.37	3,348.38
Schools	49.78	49.78
Mead Valley Elementary (special rate)	50.00	50.00
Total	3,611.15	3,448.16

Revenue Shortfall Determination

To determine the proposed rates for wastewater service, the amount of revenue anticipated from existing rate payers based on current rates is deducted from the Revenue Requirement in Table 1. The resulting unfunded revenue requirement (shortfall) is the amount that is needed to be received from a rate increase. This calculation is presented in Table 3 below.

Table 3 – Revenue Shortfall Determination

	Treatment	Conveyance
Revenue Requirement (from Table 1)	\$ 1,598,216	\$ 1,391,078
Less Revenue from Current Rates (EDUs from Table 2)		
3,511.37 EDUs x \$36.23 x 12 months	-1,526,603	
3,348.38 EDUs x \$33.08 x 12 months		-1,329,173
49.78 EDUs from schools x \$31.59 x 12 months	-18,871	
49.78 EDUs from schools x \$28.85 x 12 months		-17,234
49.78 EDUs x \$5.53 phased-in school rate x 9 months *	-2,478	
49.78 EDUs x \$5.06 phased-in school rate x 9 months *		-2,267
50 EDUs from Mead Vly Elem x \$36.23 x 12 months **	-21,738	
50 EDUs from Mead Vly Elem x \$28.45 x 12 months **		-17,070
Revenue Shortfall (amount needed from rate increase)	\$ 28,526	\$ 25,334

* See “School Customer Class” section below for this calculation.

** Western has an agreement with Eastern Municipal Water District for the provision of wastewater service to the Mead Valley Elementary school. The treatment rate is the same as for other Western customers; the conveyance rate for the school is reduced by 14% since Eastern provides 14% of the conveyance pipeline service.

Proposed EDU Rates

The proposed EDU rates needed to meet the Revenue Shortfall as presented in Table 3 above is shown in Table 4 below.

Table 4 – Rate Increases Needed to Meet Remaining Revenue Requirement

Rate Component Increase:	Monthly	
	EDU Rate	Kgallon Rate
Treatment: \$28,526 (from Table 3) ÷ 3,561.37 EDUs ÷ 9 months *	\$ 0.89	\$ 0.145
Conveyance: \$25,334 (from Table 3) ÷ 3,398.38 EDUs ÷ 9 months *	\$ 0.83	\$ 0.135
Total	\$ 1.72	\$ 0.280

* Since the proposed rates would be effective on all bills for wastewater service issued on or after October 1, 2019, only 9 months remain in the fiscal year. Therefore, 9 months of revenue is used in Table 4 above. Also, since the full year of revenue from both the current rates and the phase-in rates for Schools was accounted for in Table 3, the number of EDUs used in Table 4 is derived by taking the Total EDUs in Table 2 and removing the School EDU total of 49.78.

The treatment kgallon rate is calculated as follows: \$0.89 per EDU per month ÷ 30.417 days per month (365 days ÷ 12 months) = EDU rate increase per day, ÷ 202.9 gallons per EDU per day = rate increase per gallon, x 1,000 gallons to arrive at kgallon rate increase of \$0.145 (rounded).

The conveyance kgallon rate is calculated as follows: \$0.83 per EDU per month ÷ 30.417 days per month (365 days ÷ 12 months) = EDU rate increase per day, ÷ 202.9 gallons per EDU per day = rate increase per gallon, x 1,000 gallons to arrive at kgallon rate increase of \$0.135 (rounded).

Current and Proposed Rates

Tables 5, 6 and 7 below summarize current rates and proposed rates needed to meet the revenue requirement for providing wastewater service.

Table 5 – Current Rates for Treatment and Conveyance

Customer	Treatment	Conveyance	Total
Residential and Commercial (per EDU/month)	\$ 36.23	\$ 33.08	\$ 69.31
School Customer Class (per EDU/month)	\$ 31.59	\$ 28.85	\$ 60.44
Mead Valley Elementary (per EDU/month)	\$ 36.23	\$ 28.45	\$ 64.68
Altavita Village (per kgallon – treatment only)	\$ 5.870		\$ 5.870
Ben Clark Training Center (per kgallon)	\$ 5.870	\$ 5.360	\$ 11.230

Table 6 – Current and Proposed EDU Rates per Month

Customer Class	Current Rate	Proposed Rate	Change	Change as a Percent
Residential and Commercial	\$ 69.31	\$ 71.03	\$ 1.72	2.5%
School Customer Class	\$ 60.44	\$ 71.03	\$ 10.59	17.5%
Mead Valley Elementary	\$ 64.68	\$ 66.28	\$ 1.60	2.5%

Table 7 – Current and Proposed Kgallon Rates

Dedicated Lift Station Customer Class	Current Rate	Proposed Rate	Change	Change as a Percent
Altavita Village (treatment only)	\$ 5.870	\$ 6.015	\$ 0.145	2.5%
Ben Clark Training Center	\$ 11.230	\$ 11.510	\$ 0.280	2.5%

If adopted, the rates proposed above would be effective on all bills for wastewater service issued on or after October 1, 2019.

School Customer Class

Customers in this class are annually assigned a fixed number of EDUs based on the annual student count reported to the State of California, and with each student assumed to be discharging an average of two gallons of wastewater for every day of the year. The calculation of the number of EDUs assigned to a school is determined by using the following formula: Number of students x two gallons results in the average daily volume of wastewater. This result is then divided by 170 gallons to arrive at the number of EDUs (“170 gallons” is explained below).

The average daily volume of wastewater per student was calculated by reviewing domestic (indoor) water meter deliveries over a 12-month period for the schools in Western’s WWRF and La Sierra service areas. The annual domestic water deliveries for the schools divided by 365 days in a year and then divided by the number of students resulted in two gallons per student per day.

School Rate Phase-in. Just prior to the July 2017 Wastewater Rate Public Hearing, the Riverside Unified School District expressed concern over the significant financial impact of moving from a “flow-based” wastewater charge to a “fixed EDU-based” charge (“billing basis change”). As a result, Western’s Board of Directors approved a reduced EDU rate for customers in the School Customer Class in order to phase in the financial impact over a couple of years. To ensure that no rate payer funds would be used to pay for the Schools reduced rate, property tax revenue from the General District fund was approved to be used to offset the reduced revenue from the school customer class rate. This action serves the public purpose of furthering public education by allowing the school district to adjust its budget in future years rather than bearing the billing basis change all in one year.

The incremental revenue from the increase in the School rate for Fiscal Year 2019-20 is calculated as follows:

FY 2019-20 treatment rate of \$37.12 per EDU per month (\$36.23 rate in Table 3 plus \$0.89 rate increase in Table 4) minus the prior rate of \$31.59 (from Table 5) = \$5.53 per EDU. \$5.53 x 49.78 EDUs x 9 months remaining in the fiscal year from the effective date of October 1, 2019 through June 30, 2020 = \$2,478.

FY 2019-20 conveyance rate of \$33.91 per EDU per month (\$33.08 rate in Table 3 plus \$0.83 rate increase in Table 4) minus the prior rate of \$28.85 (from Table 5) = \$5.06 per EDU. \$5.06 x 49.78 EDUs x 9 months remaining in the fiscal year from the effective date of October 1, 2019 through June 30, 2020 = \$2,267.

170 Gallons per EDU

The calculation of the number of EDUs assigned to a schools uses 170 gallons per day as the amount associated with one EDU. One EDU is the amount of wastewater an average single-family residential customer discharges to the wastewater system. 170 gallons per day was derived by summing the calendar year 2016 wastewater collected from the District's La Sierra Service Area, which has most of the District's residential customers and only has two commercial customers. The calendar year flows were reduced by the domestic water deliveries to the two commercial customers and then divided by 365 days to arrive at an average daily volume from the residential customers. The result was then divided by the number of residential customers to derive the average daily volume per residential customer, or 170 gallons.

Following is the calculation: 288,881,800 gallons during 2016, less 773,432 gallons from the two commercial customers, equals 288,108,368 gallons. This amount divided by 365 days equals 789,338 gallons per day. This amount divided by the 4,652 residential EDUs at the time equals 170 gallons.

For more information regarding this Cost of Service Report, please contact Daisy Banuelos, Financial Analyst at dbanuelos@wmwd.com or 951-571-7113.