

Rate and Fee Estimates for Implementing Permit Required Improvements at SRWTP



Overview

On September 3, 2010, the Central Valley Regional Water Quality Control Board issued a draft National Pollutant Discharge Elimination System (NPDES) permit to the Sacramento Regional County Sanitation District (District) for the Sacramento Regional Wastewater Treatment Plant (SRWTP). The permit imposes significant new requirements, which can only be met through the addition of new treatment processes. In addition, the permit requires many new studies, development of pollution prevention plans, and significantly expanded monitoring program. This memo provides a summary of rate and fee increases needed to support the new permit requirements.

The rate and fee estimates contained herein have not been approved by the SRCSD Board of Directors and are only intended to provide a possible scenario of future rates and fees.

New Treatment Process Requirements

A number of treatment process combinations have been evaluated for meeting the new permit requirements. The selected treatment train includes nitrifying trickling filters, fluidized bed reactors, microfiltration, and ultraviolet disinfection, following the existing high purity activated sludge process.

Cost Estimates

The new permit requires eleven new studies and plans, many of which have broad scope. Further discussions with the Regional Board staff will be necessary to clearly define the scope and develop cost estimates for these studies and plans. However, based on past experience, the District estimates that this effort may cost \$5 to \$10 million over the next five years. Pilot studies for the new treatment processes may cost an additional \$10 million over the next few years. Expanded monitoring requirements are estimated to cost \$1 million a year. Estimates for the construction and operation and maintenance costs for the selected treatment train are included in the table below.

Treatment Process	Capital Cost (in millions)	Annual O&M Cost (in millions)
Nitrification	\$551	\$14
De-nitrification	\$169	\$14
Pump Stations	\$93	\$3
Microfiltration	\$1,136	\$43
UV Disinfection	\$116	\$2
Total	\$2,066	\$77

All costs in January 2009 dollars.

Rate and Fee Calculation

The District has traditionally funded capital construction through the issuance of debt, and it is assumed that same practice will be used to fund the new capital projects. Following are the assumptions used in calculating rates and fees:

1. In order to delay bond issuance and resultant interest expenses, the District will use up to \$125 million of its existing cash to fund planning, pilot studies and some design services. It is assumed that this money will be returned to cash upon the issuance of bonds.
2. To minimize interest costs and the cost of bond issuance, the District will issue bonds in two offerings.
3. Bonds will carry an interest of 5.25% and will be repaid in 30 years.

4. Principal and Interest payment for each offering will begin in the fiscal year following the year of issuance.
5. The District is required to maintain minimum coverage of 1.2 to for senior debt and 1.1 for all debt.
6. Existing rate payers will pay for 100% of the O&M costs and debt payments for 70% of the capital costs. New sewer impact fees will cover debt payments for the remaining 30% of the capital costs over 30-year period.
7. New connections will grow at an average of 2000 per year through 2014-15 and increasing to 2500 per year beyond. This is below the historical average but is on par with the current trend. It is assumed that the low connection growth will be a new norm for the region due to the lingering economic downturn and the impacts of fee increases on new housing construction.
8. The District will increase rates and fees gradually, starting a year prior to the issuance of debt, to avoid rate and fee increase spikes and maintain healthy financial ratings for the District, which will help minimize interest costs.
9. Industrial contribution of ammonia and pathogens, which are the focus of the new treatment requirements, are expected to be minimal and an industrial waste characteristics review will be needed to confirm this assumption. For the purpose of rate increase estimates, new treatment will not affect industrial rates.
10. The new connection growth will continue to stay within the current pattern of 40% infill and 60% expansion.
11. The current percentage (266%) cost difference between infill and expansion area will be maintained.

Rate and fee increases were calculated for the next 10 years. For new treatment, rates are estimated to increase to approximately \$61.50 and the new connection fees will increase to approximately \$13000 for infill and \$35,000 for expansion area during the same period. For planning purpose, revenue targets are set to maintain an approximate coverage (not exact) of 1.25 for senior debt and 1.15 for total debt for new treatment process. With this as coverage target, rate and fee increases were smoothed to minimize year to year spikes. This approach resulted in higher than target coverages in some years.

Rate and Fee Projection Sensitivity

It should be noted that the projections are based on many estimates and assumptions that could change leading to a different set of rates and fees. Capital costs used in the projections are Class 5 estimates as categorized by the Association for the Advancement of Cost Engineering International. Accuracy of these estimates can range from -50% to +100%. Labor, electricity, chemicals, and rehabilitation and replacement costs make up the bulk of the O&M expenses. Over the past decade the District has experienced cost increases for many of the O&M components well above of the annual inflation rate of 4% used in the projections. If the past trend continues, the O&M costs may be higher than estimated.

Debt financing is dependent on the District's credit worthiness and bond market conditions at the time of debt issuance. While the recent interest rates have been lower than the 5.25% used in calculations, it is believed that the current bond market conditions do not represent the long-term norm.

The rate and fee projections can vary significantly based on cost allocations to different classes of sewer service users. The current cost allocations, developed in early 1990s, are based on biochemical oxygen demand, total suspended solids, and flow contribution. Additional cost allocation parameters such as ammonia and pathogens may be considered in setting rate and fees for the new treatment process.

SRCSD Example Pro Forma Summary - New Permit ¹

(\$000s unless noted otherwise)

	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Operating Revenues											
Service charges											
Residential/commercial service charges											
No. ESDs (adjusted)	594,000	596,000	598,000	600,000	602,000	604,000	606,500	609,000	611,500	614,000	616,500
Rate per ESD (\$/ESD)	\$ 20.00	\$ 21.50	\$ 22.25	\$ 23.25	\$ 28.00	\$ 35.00	\$ 40.00	\$ 46.00	\$ 50.00	\$ 55.00	\$ 61.50
Resid./com. revenue	\$ 142,560	\$ 153,768	\$ 159,666	\$ 167,400	\$ 202,272	\$ 253,680	\$ 291,120	\$ 336,168	\$ 366,900	\$ 405,240	\$ 454,977
Industrial revenue	\$ 5,400	\$ 5,500	\$ 5,600	\$ 5,700	\$ 5,700	\$ 5,700	\$ 5,700	\$ 5,700	\$ 5,700	\$ 5,700	\$ 5,700
Total rev. from service charges	\$ 147,960	\$ 159,268	\$ 165,266	\$ 173,100	\$ 207,972	\$ 259,380	\$ 296,820	\$ 341,868	\$ 372,600	\$ 410,940	\$ 460,677
Impact fee revenue	2,000	2,000	2,000	2,000	2,000	2,500	2,500	2,500	2,500	2,500	2,500
Quantities											
Infill ESDs (each)	800	800	800	800	800	1,000	1,000	1,000	1,000	1,000	1,000
New ESDs (each)	1,200	1,200	1,200	1,200	1,200	1,500	1,500	1,500	1,500	1,500	1,500
Impact fees											
Infill ESDs (\$/ESD)	\$ 2,800	\$ 2,800	\$ 2,800	\$ 2,800	\$ 2,800	\$ 8,000	\$ 8,000	\$ 13,000	\$ 13,000	\$ 13,000	\$ 13,000
New ESDs (\$/ESD)	7,450	7,450	7,450	7,450	7,450	21,500	21,500	35,000	35,000	35,000	35,000
Impact fee revenue	\$ 11,180	\$ 11,180	\$ 11,180	\$ 11,180	\$ 11,180	\$ 40,250	\$ 40,250	\$ 65,500	\$ 65,500	\$ 65,500	\$ 65,500
Subtotal operating revenue	\$ 159,140	\$ 170,448	\$ 176,446	\$ 184,280	\$ 219,152	\$ 299,630	\$ 337,070	\$ 407,368	\$ 438,100	\$ 476,440	\$ 526,177
Non-operating revenue (inc interest, misc rev)	\$ 17,400	\$ 17,400	\$ 17,400	\$ 14,500	\$ 14,500	\$ 14,500	\$ 14,500	\$ 14,500	\$ 14,500	\$ 14,500	\$ 14,500
Total revenue	\$ 176,540	\$ 187,848	\$ 193,846	\$ 198,780	\$ 233,652	\$ 314,130	\$ 351,570	\$ 421,868	\$ 452,600	\$ 490,940	\$ 540,677
Expenses											
Operating expense (ex. contingency & depreciation)	\$ 96,516	\$ 100,376	\$ 104,391	\$ 108,567	\$ 112,910	\$ 117,426	\$ 122,123	\$ 127,008	\$ 132,088	\$ 137,372	\$ 142,867
Studies and plans related to new permit	\$ 2,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 3,000						
Increased operating expenses for monitoring and new treatment	1,000	1,040	1,082	1,125	1,170	1,217	1,265	1,316	1,369	55,423	119,980
Net expense	\$ 99,516	\$ 106,416	\$ 110,473	\$ 114,692	\$ 117,080	\$ 118,643	\$ 123,389	\$ 128,324	\$ 133,457	\$ 192,795	\$ 262,847
Non-operating expense	(8,320)	(8,653)	(8,999)	(9,359)	(9,733)	(10,123)	(10,527)	(10,949)	(11,386)	(11,842)	(12,316)
Total expense	\$ 91,196	\$ 97,764	\$ 101,474	\$ 105,333	\$ 107,346	\$ 108,520	\$ 112,861	\$ 117,376	\$ 122,071	\$ 180,953	\$ 250,532
Net revenue	\$ 85,344	\$ 90,084	\$ 92,372	\$ 93,447	\$ 126,306	\$ 205,610	\$ 238,709	\$ 304,492	\$ 330,529	\$ 309,987	\$ 290,145
Addition/Deduction for Rate Stabiliz. Reserve (existing treatment)	3,500	(1,000)	(3,500)	(3,000)	(2,500)	7,000	10,000	9,500	0	0	0
Net revenue for coverage test	\$ 88,844	\$ 89,084	\$ 88,872	\$ 90,447	\$ 123,806	\$ 212,610	\$ 248,709	\$ 313,992	\$ 330,529	\$ 309,987	\$ 290,145
Senior Debt Service (existing treatment)	72,915	72,915	72,915	72,915	72,915	72,915	72,915	72,915	72,915	72,915	72,915
Total Debt Service (existing treatment)	86,071	86,071	86,071	86,071	86,071	86,071	86,071	86,071	86,071	86,071	86,071
Debt payment for new treatment facilities						97,000	97,000	184,000	184,000	184,000	184,000
Senior Debt Service (including new treatment)	72,915	72,915	72,915	72,915	72,915	169,915	169,915	256,915	256,915	256,915	256,915
Total Debt Service (including new treatment)	86,071	86,071	86,071	86,071	86,071	183,071	183,071	270,071	270,071	270,071	270,071
Legal Defeasance for Existing Treatment	5,000	5,000	5,000	5,000	5,000	0	0	1,500	16,500	20,500	24,500
Coverage with Legal Defeasance											
Senior Debt Service	67,915	67,915	67,915	67,915	67,915	169,915	169,915	255,415	240,415	236,415	232,415
Total Debt Service	81,071	81,071	81,071	81,071	81,071	183,071	183,071	268,571	253,571	249,571	245,571
Senior revenue coverage (must be equal to or greater than 120%)	1.31 x	1.31 x	1.31 x	1.33 x	1.82 x	1.25 x	1.46 x	1.23 x	1.37 x	1.31 x	1.25 x
Total revenue coverage (must be equal to or greater than 110%)	1.10 x	1.10 x	1.10 x	1.12 x	1.53 x	1.16 x	1.36 x	1.17 x	1.30 x	1.24 x	1.18 x

¹ Intended to illustrate possible scenario for future rates and fees. Not yet adopted by SRCSD Board of Directors.