

North of River Sanitary District No. 1

Sewer Service Charge Study



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North of River Sanitary District No. 1

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SECTION I

PURPOSE OF SEWER RATE STUDY

The purpose of this study is to recommend adjustments to the current sewer service charge for the North of River Sanitary District No. 1 (District) in order to raise the funds needed to meet anticipated operating expenses for:

- Sewers;
- Sewage treatment;
- Treated effluent disposal;
- Maintenance, repairs, and/or replacement of existing capital improvements; and,
- Administration.

The District's current charges were adopted pursuant to its 2013 Sewer Service Charge Study completed by AECOM in March 2013.

Capital improvements needed to serve future sewer connections are not included in the sewer service charge. Costs for improvements to meet the needs of future sewer connections are covered by sewer capacity fees levied on new connections.

SECTION II

HISTORIC OPERATING EXPENSES AND REVENUES

This section summarizes the District's operating expenses and revenues for Fiscal Years (FY) 2012/13 through 2016/17.

EXPENSES

Table 1 shows summaries of the operating expenses for FY 2012/13 through 2016/17 based on information from the District's annual audit reports for those years.

The District's operating expenses are allocated into the following categories:

1. District administration;
2. Operation and maintenance of the sewage collection system;
3. Operation and maintenance of the sewage treatment and effluent disposal facilities;
4. Debt service; and
5. Depreciation.

Information on the District's debt service obligations is provided in Section III. The District included depreciation as a funded expense for its sewer service charge in its 2013 Sewer Service Charge Study.

REVENUES

Table 2 summarizes the District's annual revenues for FY 2012/13 through FY 2016/17. Non-operating revenues are from the annual audit reports. Operating revenue from sewer service charges were taken from the District's annual Profit and Loss summaries since the operating revenue amounts in the annual audit reports are for "service charges and connection fees." Connection fees, or sewer capacity fees, are used to fund capital improvements needed to serve future sewer connections and are not included as a part of the sewer service charge analysis.

The sewer service charge revenue for each year was reduced to reflect repayment of the District's Capital Outlay fund. The District borrowed \$8.9 million (\$11.5 million with interest) from the Capital Outlay Reserve to pay operating expenses for which no other funds were available for FY 2000/01 through FY 2006/07. Sewer service rates were increased to repay the \$11.5 million over a 20 year period at an interest rate of 3% per year. A repayment fee of \$38 per SFRE has been collected beginning in 2013 as a part of the annual sewer service charge. The repayment amounts for each year are taken from the District's 2013 Sewer Service Charge Study.

It should be noted that the District adopted a sewer service charge rate increase in 2013 which is reflected starting with the FY 2013/14 revenues. With this rate increase, the District began fully funding depreciation expenses. The increase in sewer service charge revenues in FY 2016-17 was due to a number of factors:

- The District made a concerted effort to get all properties that it serves on its special assessment roll (collected through Kern County property tax bills),
- There was a significant temporary industrial discharger,
- The District began invoicing annual payees in the spring resulting in two years' payments being received for many accounts, and
- The District ramped up collection efforts on annual payees and received payments on past due invoices.

SURPLUS (DEFICIT)

Table 3 shows the District operating surpluses or deficits for FY 2012/13 through FY 2016/17, calculated as the difference in expenses from **Table 1** and revenues from **Table 2**.

**TABLE 1
HISTORIC OPERATING EXPENSE SUMMARY**

Expense Category	Fiscal Year				
	2012/13	2013/14	2014/15	2015/16	2016/17
General and Administrative	\$690,942	\$677,347	\$726,170	\$660,694	\$798,789
Sewage Collection	\$876,579	\$905,056	\$948,368	\$952,071	\$835,958
Sewage Treatment and Disposal	\$1,364,948	\$1,293,977	\$1,395,226	\$1,464,677	\$1,643,358
Debt Service					
Outfall Sewer Bonds ¹	\$770,769	\$874,150	\$876,050	\$872,650	\$877,250
WWTP SRF Loan ²	\$837,999	\$837,999	\$837,999	\$837,999	\$837,999
Depreciation	\$1,076,515	\$1,360,347	\$1,065,366	\$959,082	\$1,009,270
TOTAL EXPENSES	\$5,617,752	\$5,948,876	\$5,849,179	\$5,747,173	\$6,002,624

Notes:

- 1) The Outfall Sewer Bonds will be repaid in FY 2022/23.
- 2) The WWTP SRF Loan will be repaid in FY 2019/20.

**TABLE 2
HISTORIC REVENUES**

Revenue Category	Fiscal Year				
	2012/13	2013/14	2014/15	2015/16	2016/17
Sewer Service Charges ¹	\$4,302,765	\$4,961,596	\$5,230,791	\$5,269,122	\$6,772,821
Interest Income	\$114,196	\$56,528	\$110,985	\$214,220	\$386,557
Property Taxes	\$169,393	\$175,965	\$176,773	\$195,769	\$202,545
Shafter Cost Sharing ²	\$692,145	\$835,895	\$766,485	\$853,562	\$865,130
Other	\$55,344	\$53,127	\$50,560	\$50,560	\$50,556
TOTAL REVENUES	\$5,333,843	\$6,083,111	\$6,335,594	\$6,583,233	\$8,277,609

Notes:

- 1) Sewer service charge revenue amounts from the District's annual Profit and Loss summaries less the Capital Outlay repayment amounts per the 2013 Sewer Service Charge Study.
- 2) *Shafter Cost Sharing* revenues cover Shafter's share of the WWTP operating costs, including a share of the WWTP SRF Loan (see **Table 1**) and purchases of additional capacity in the existing Outfall Sewer and WWTP.

**TABLE 3
SURPLUS (DEFICIT)**

Category Description	Fiscal Year				
	2012/13	2013/14	2014/15	2015/16	2016/17
Revenues from Table 2	5,333,843	6,083,111	6,335,594	6,583,233	8,277,609
Expenses from Table 1	5,617,752	5,948,876	5,849,179	5,747,173	6,002,624
Surplus (Deficit)	(283,909)	134,235	486,415	836,060	2,274,985

SECTION III

DEBT SERVICE

The District currently has two outstanding bond issues:

- State Revolving Fund Loan (WWTP SRF Loan); and,
- 2013 Wastewater Revenue Refunding Bonds (Outfall Sewer Bonds).

The State Revolving Fund (SRF) loan was used to fund construction of the WWTP. The loan was repayable over a 20 year period. The first payment was made in August 2000 (FY 2000/01). The final, 20th payment will be made in FY 2019/20.

Table 4 shows the repayment schedule for the WWTP SRF Loan.

The Outfall Sewer was constructed in FY 1991/92. The remaining principal amount of the Outfall Sewer bonds was refinanced in 2003 and again in 2013 to take advantage of lower interest rates. **Table 5** shows the repayment schedule for the 2013 Wastewater Revenue Refunding Bonds. The final bond payment will be made in FY 2022/23.

**TABLE 4
WWTP SRF LOAN PAYMENT SCHEDULE**

FISCAL YEAR ENDING	REMAINING PRINCIPAL	INTEREST PAYMENT	PRINCIPAL PAYMENT	ANNUAL PAYMENT
6/30/2017	\$2,388,721			
		\$62,107	\$775,892	\$837,999
6/30/2018	\$1,612,829			
		\$41,934	\$796,065	\$837,999
6/30/2019	\$816,763			
		\$21,236	\$816,763	\$837,999
6/30/2020	\$0			

**TABLE 5
OUTFALL SEWER BONDS REPAYMENT SCHEDULE**

FISCAL YEAR ENDING	REMAINING PRINCIPAL	INTEREST PAYMENT	PRINCIPAL PAYMENT	TOTAL PAYMENT
6/30/2017	\$4,685,000			
		\$158,150	\$715,000	\$873,150
6/30/2018	\$3,970,000			
		\$143,850	\$735,000	\$878,850
6/30/2019	\$3,235,000			
		\$121,800	\$760,000	\$881,800
6/30/2020	\$2,475,000			
		\$99,000	\$795,000	\$894,000
6/30/2021	\$1,680,000			
		\$67,200	\$825,000	\$892,200
6/30/2022	\$855,000			
		\$34,200	\$855,000	\$889,200
6/30/2023	\$0			

SECTION IV

FUNDED RESERVES

The District maintains four reserve accounts which are identified in the FY 2016/17 audit by the following names:

1. Capital outlay;
2. Capital improvement;
3. Operations and maintenance; and
4. Rate stabilization.

RESERVE FOR CAPITAL OUTLAY

Sewer capacity fees (connection fees) from new connections to the sewerage system are deposited into this account. Money in this reserve account is restricted to funding new sewers, wastewater treatment plant upgrades or replacements, and effluent disposal improvements to enable the District to serve additional customers. The current balance in this fund is \$25,156,719 per the District's FY 2016/17 audit.

The District borrowed \$8.9 million (\$11.5 million with interest) from the Reserve to pay operating expenses for which no other funds were available for FY 2000/01 through FY 2006/07. Sewer service rates were increased to repay the \$11.5 million over a 20 year period at an interest rate of 3% per year. A repayment fee of \$38 per SFRE has been collected beginning in 2013 as a part of the annual sewer service charge. This repayment fee will continue to be collected until the reserve fund repayment is completed (approximately FY 2032/33).

RESERVE FOR CAPITAL IMPROVEMENTS

The Reserve for Capital Improvements was established to provide a \$4 million reserve fund for construction of sewerage projects needed to upgrade or replace existing facilities. Subsequent to the 2013 Sewer Service Charge Study, interest accrued by this fund was proposed to remain in the fund so that the balance would increase over time.

Table 6 shows a list of capital improvements for the maintenance or replacement of existing facilities as proposed by the District beginning in FY 2018/19. The total cost of the improvements is estimated to be \$9,470,000.

RESERVE FOR OPERATIONS AND MAINTENANCE

The Reserve for Operations and Maintenance is similar to the Reserve for Capital Improvements except that this fund is used for unexpected, extraordinary expenses that were not included in the annual budget. The target amount in this reserve account was set by the Board of Directors at \$1,000,000.

RESERVE FOR RATE STABILIZATION

The District collects the majority of its sewer service charges as special assessments through Kern County property tax bills. Some property owners fail to make their property tax payments in a timely manner. The Reserve for Rate Stabilization was established to provide funds to make up for potential revenue shortfalls due to unpaid property taxes. Kern County enforces payment of property taxes, which includes the District's outstanding fees. The target amount in this reserve account was set by the Board of Directors at \$75,000.

RESERVE FUND SUMMARY

Table 7 summarizes the District's unrestricted reserve funds and their balances as of July 30, 2017 per the District's FY 2016/17 Audit.

PROPOSED CHANGES TO CAPITAL IMPROVEMENTS RESERVE

Beginning with the District's 2013 Sewer Service Charge Study, the District began fully funding depreciation expenses. The depreciation funds are to be used to offset future expenses for replacing major capital improvements such as the wastewater treatment plant (WWTP). The existing WWTP is about 17 years old and will eventually need major repairs or replacement. The District is developing a Master Sewer Plan Update that identifies the need for the District to undertake an expansion of the WWTP that will include replacement of existing WWTP components with upgrades to meet current standards. The estimated cost to upgrade the plant to meet the needs of its current rate payers is on the order of \$25 Million in 2018 dollars. It is proposed to increase the amount of the Capital Improvements Reserve to reflect the depreciation funds as they are collected. The depreciation amounts from the audits for FY 2013/14 through FY 2016/17 total \$4,394,065. Adding this to the existing Capital Improvements Reserve would bring the total to \$8,506,472.

**TABLE 6
FIVE YEAR CAPITAL IMPROVEMENT PROGRAM**

Project	Fiscal Year				
	2018/19	2019/20	2020/21	2021/22	2022/23
Existing sewer pipeline rehab/replacement	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
Outfall sewer manhole repair	\$750,000	\$500,000	\$500,000	\$500,000	\$500,000
Lift Station No. 1 - spare pump		\$150,000			
WWTP loader replacement			\$300,000		
Collections flushing vehicle/vacuum truck	\$500,000				
WWTP shop		\$800,000			
Trickling Filter Hydrodoc installation	\$300,000				
CCTV van replacement				\$200,000	
Forklift replacement		\$80,000			
Backup generator (mobile) replacement			\$200,000		
SCADA improvements (collections)					\$500,000
Security and camera improvements (WWTP)	\$50,000				
Security and camera improvements (Collections)			\$50,000		
Headworks canopy replacement			\$50,000		
Boiler replacement / boiler heating project			\$350,000		
Return flow flume replacement				\$150,000	
SCADA update/replacement (WWTP)				\$200,000	
Pretreatment program lab / shop facilities				\$60,000	
Dewatering - second screw press (with chemical feed)					\$600,000
Truck replacement	\$30,000		\$80,000		\$30,000
Truck for new staff person			\$40,000		
Total	\$2,030,000	\$1,930,000	\$1,970,000	\$1,510,000	\$2,030,000

Note: All values in 2018 dollars.

**TABLE 7
RESERVE FUND SUMMARY**

Balances as of June 30, 2017

RESERVE	BALANCE	PURPOSE
Capital Outlay	\$25,156,719	Repository for sewer capacity fee revenue. Restricted to funding improvements to serve future sewer connections.
Capital Improvement	\$4,112,407	Reserve for funding capital improvements to existing sewer facilities.
Operations and Maintenance (O&M)	\$1,000,000	Reserve for meeting unexpected (unbudgeted) O&M costs.
Rate Stabilization	\$75,000	Provides revenue to offset delinquent property taxes until payment is received.
TOTAL	\$30,344,126	

SECTION V

PROPOSED SEWER SERVICE CHARGES

Table 8 shows how the proposed service charges for FY 2018/19 through FY 2022/23 were calculated. The table is divided into three sections:

1. Summary;
2. Revenues; and,
3. Expenses.

The top of the table lists the assumptions that were used to calculate the proposed sewer service charges. The sections of **Table 8** are described below.

SUMMARY

Annual Surplus (Deficit) is the difference between **Total Revenues** and **Total Expenses**.

A “balanced budget” would show “0” in this line. However, deficits (in parentheses) are shown for FYs 2018/19 and 2019/20. Surpluses are shown for the remaining fiscal years. Money will be borrowed from the Reserve for Capital Improvements and repaid from revenues in later years. In this case, the borrowed funds will have been repaid by the end of FY 2022/23.

Equivalent SFRE shows the estimated number of SFRE (Single Family Residential Equivalents) which are provided sewer service by the District. The majority of the District’s sewer service charges are collected through Kern County property tax bills. The current tax roll shows 18,836 SFRE’s paying a sewer service charge to the District. Government, utility, and several industrial users are billed by the District separately. Government and utility companies are exempt from property taxes, and several industrial users have agreements with the District to pay additional fees based on the characteristics of the wastewater generated by their facilities. These users represent an additional 1,821 SFRE’s, bringing the total estimated SFRE’s to 20,657 for the 2017/18 fiscal year.

The number of SFRE’s is estimated to increase by an average of 2.0% per year. This is consistent with the increase in SFRE’s over the past 5 fiscal years.

Calculated Sewer Service Charge (\$/SFRE) reflects a proposed annual increase of 1.25% in the Sewer Service Charge for each of the five fiscal years covered by this report from the current sewer service charge of 312.06 \$/SFRE per year. The calculated Sewer Service Charge is the annual charge for a single family home and was calculated to provide the revenue needed to meet projected expenses during the next five fiscal years.

REVENUES

Total Service Charge Revenue is the product of the estimated number equivalent SFRE's for each year and the calculated sewer service charge (\$/SFRE).

Interest Income for FY 2017/18 fiscal year is assumed to be the same as for FY 2016/17 (from Table 2). Interest income for future years is estimated as the average of the last 5 fiscal years from the District's annual audit reports.

Property Taxes and **Other** revenues are estimated to increase at a rate of 2% annually.

Shafter Cost Sharing revenues cover the City of Shafter's share of the WWTP operating costs, including a share of the WWTP SRF Loan and purchases of additional capacity in the existing Outfall Sewer and WWTP. It is estimated to increase at 2% annually, at the same rate of estimated growth in equivalent SFRE's.

EXPENSES

General and Administration, Sewage Collection, and Sewage Treatment and Disposal expenses are estimated to increase at 2.9% annually based on the average annual increase in these expenses over the past 5 fiscal years.

WWTP SRF Loan Debt Service expenses are as shown in **Table 4**.

2013 Refunding Bond Debt Service (Outfall Sewer) expenses are as shown in **Table 5**.

Repay Capital Outlay Reserve is calculated based on \$38 per SFRE as discussed in Section IV under Reserve for Capital Outlay.

Calculated Depreciation Expense is estimated to increase by 0.9% per year based on the depreciation expenses in the District's audits for the last 12 fiscal years. This figure was used to project the calculated depreciation expense in future years.

Capital Improvement Program (CIP) as proposed by the District for the next five fiscal years is taken from **Table 6**. The capital improvement projects will be paid for by borrowing from the Reserve for Capital Improvements as noted above.

Inflation on Capital Improvements Expenses is calculated based on an estimated annual CPI increase of 3.5%. This item is proposed to replace the expense item "Capital Improvements Retained Interest" from the 2013 Sewer Service Charge Study to better reflect the intent of the expense item.

PROPOSED SEWER SERVICE CHARGES

As shown on **Table 8** and summarized below, it is proposed to increase the annual sewer service charge at a rate of 1.25% per year for the next five years. It is recommended that the rates shown be adopted with the provision that the rates can be adjusted annually based on the Consumer Price Index for the Los Angeles Area¹, but not less than the 1.25% shown in **Table 8** and not to exceed 5% per year.

PROPOSED SEWER SERVICE CHARGE (\$/SFRE/YEAR)	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
	\$315.96	\$319.91	\$323.91	\$327.96	\$332.06

¹ https://www.bls.gov/regions/west/news-release/consumerpriceindex_losanjeles.htm

**TABLE 8
NORTH OF RIVER SANITARY DISTRICT NO. 1
SEWER SERVICE CHARGE STUDY 2017**

ANNUAL SFRE INCREASE (NEW CONNECTIONS)	2.0%	ANNUAL SHAFTER COST SHARING INCREASE	2.0%
ANNUAL GENERAL & ADMINISTRATION EXPENSE INCREASE	2.9%	ANNUAL OTHER REVENUE INCREASE	2.0%
ANNUAL SEWAGE COLLECTION EXPENSE INCREASE	2.9%	ANNUAL PROPERTY TAX REVENUE INCREASE	2.0%
ANNUAL SEWAGE TREATMENT EXPENSE INCREASE	2.9%		
ANNUAL DEPRECIATION EXPENSE INCREASE	0.9%	REPAY CAPITAL OUTLAY RESERVE	\$38 /SFRE/YEAR
ESTIMATED ANNUAL CPI INCREASE	3.5%	ANNUAL DEPRECIATION EXPENSE FUNDED	100.0%

SUMMARY	FISCAL YEARS					
	2017/18 ¹	2018/19	2019/20	2020/21	2021/22	2022/23
TOTAL REVENUES	7,966,489	7,990,220	8,231,376	8,480,134	8,736,739	9,001,440
TOTAL EXPENSES	7,958,664	8,683,350	8,769,252	8,274,636	7,961,107	8,741,105
ANNUAL SURPLUS (DEFICIT)	7,825	(693,129)	(537,876)	205,498	775,632	260,335
FROM(TO) RESERVE FOR CAPITAL IMPROVEMENTS	(7,825)	693,129	537,876	(205,498)	(775,632)	(260,335)
EQUIVALENT SFRE	20,657	21,070	21,492	21,921	22,360	22,807
CALCULATED SEWER SERVICE CHARGE (\$/SFRE/YEAR)	312.06	315.96	319.91	323.91	327.96	332.06
ANNUAL % CHANGE		1.25%	1.25%	1.25%	1.25%	1.25%

REVENUES	FISCAL YEARS					
	2017/18 ¹	2018/19	2019/20	2020/21	2021/22	2022/23
TOTAL SERVICE CHARGE REVENUE ²	6,446,223	6,657,337	6,875,365	7,100,533	7,333,076	7,573,234
INTEREST INCOME ³	386,557	176,500	176,500	176,500	176,500	176,500
PROPERTY TAXES ⁴	205,253	209,358	213,545	217,816	222,172	226,616
SHAFTER COST SHARING	875,096	892,598	910,450	928,659	947,232	966,177
OTHER (Revenue from Lease Agreements)	53,360	54,427	55,516	56,626	57,759	58,914
TOTAL REVENUES	7,966,489	7,990,220	8,231,376	8,480,134	8,736,739	9,001,440

EXPENSES	FISCAL YEARS					
	2017/18 ¹	2018/19	2019/20	2020/21	2021/22	2022/23
GENERAL AND ADMINISTRATION	795,234	818,296	842,026	866,445	891,572	917,428
SEWAGE COLLECTION ⁵	816,425	840,101	864,464	989,534	1,018,230	1,047,759
SEWAGE TREATMENT AND DISPOSAL	1,409,057	1,449,920	1,491,967	1,535,234	1,579,756	1,625,569
WWTP SRF LOAN DEBT SERVICE	837,999	837,999	837,999	0	0	0
2013 REFUNDING BOND DEBT SERVICE (OUTFALL SEWER)	873,150	878,850	881,800	894,000	892,200	889,200
REPAY CAPITAL OUTLAY RESERVE	784,966	800,665	816,679	833,012	849,672	866,666
INFLATION ON CAPITAL IMPROVEMENTS EXPENSES			67,550	140,313	164,164	299,472
CALCULATED DEPRECIATION EXPENSE	1,018,353	1,027,519	1,036,766	1,046,097	1,055,512	1,065,012
CAPITAL IMPROVEMENT PROGRAM (CIP) ⁶						
Existing sewer pipeline rehab/replacement		400,000	400,000	400,000	400,000	400,000
Outfall sewer manhole repair		750,000	500,000	500,000	500,000	500,000
Lift Station No. 1 - spare pump		0	150,000	0	0	0
WWTP loader replacement		0	0	300,000	0	0
Collections flushing vehicle/vacuum truck		500,000	0	0	0	0
WWTP Shop		0	800,000	0	0	0
Trickling Filter Hydrodoc installation		300,000	0	0	0	0
CCTV van replacement		0	0	0	200,000	0
Forklift replacement		0	80,000	0	0	0
Backup generator (mobile) replacement		0	0	200,000	0	0
SCADA improvements (collections)		0	0	0	0	500,000
Security and camera improvements (WWTP)		50,000	0	0	0	0
Security and camera improvements (Collections)		0	0	50,000	0	0
Headworks canopy replacement		0	0	50,000	0	0
Boiler replacement / boiler heating project		0	0	350,000	0	0
Return flow flume replacement		0	0	0	150,000	0
SCADA update/replacement (WWTP)		0	0	0	200,000	0
Pretreatment Program lab / shop facilities		0	0	0	60,000	0
Dewatering - second screw press (with chemical feed)		0	0	0	0	600,000
Truck replacement		30,000	0	80,000	0	30,000
Truck for new staff person		0	0	40,000	0	0
TOTAL CIP⁶	1,423,480	2,030,000	1,930,000	1,970,000	1,510,000	2,030,000
TOTAL EXPENSES	7,958,664	8,683,350	8,769,252	8,274,636	7,961,107	8,741,105

¹ Data obtained from FY 2017/18 District Budget unless otherwise noted.

² Calculated using the estimated number of SFRE's.

³ Interest income for FY 2017/18 is assumed to be the same as for FY 2016/17. Interest income for future fiscal years is estimated as the average of the last 5 years from the District's annual audit reports.

⁴ Property tax revenue for FY 2017/18 is from the Kern County Auditor-Controller County Clerk website.

⁵ Assumes 1 additional collections/pretreatment staff person starting in FY 2020/21.

⁶ Capital Improvement Projects will be funded using existing reserve funds which will be repaid as funds become available.