



# **NIPOMO COMMUNITY SERVICES DISTRICT**

## **Blacklake Sewer Rate Study**

**Draft Report**  
**October 16, 2018**



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## **SECTION 1: INTRODUCTION AND EXECUTIVE SUMMARY**

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### **1.1 Background**

The Nipomo Community Services District (NCSD) is located in southern San Luis Obispo County near Highway 101. NCSD consists of two separately operated wastewater collection, treatment, and disposal systems – the Town system and the Blacklake system. The Town system utilizes the Southland Wastewater Treatment Facility (WTF) and serves about 3,100 accounts. The Blacklake system serves 559 customers and utilizes the Blacklake Water Reclamation Facility (WRF). The Blacklake WRF was constructed in 1984 to treat and dispose of wastewater generated throughout the Blacklake development. The WRF uses designated areas of the nearby golf course as a permitted spray field to dispose of treated reclaimed effluent. The Blacklake system has seven miles of gravity pipeline ranging from 6 to 12 inches and three lift stations (Misty Glen, The Oaks, and Woodgreen).

As described in Blacklake Sewer Master Plan (October 2017) by MKN Associates, Nipomo CSD is investigating the feasibility of regionalization of the Blacklake system with the Southland WWTP. Regionalization would involve de-commissioning the Blacklake WRF and routing flows to the Southland WTF for treatment. This rate study does not take into consideration the costs associated with the regionalization plan other than to schedule Blacklake WRF plant repairs and replacement projects in the later years of the rate study where possible.

The Master Plan identifies capital improvements needed to maintain service in the near-term, projects needed for continued local operation of the Blacklake WRF, or improvements needed for regionalization at the Southland WTF. However, as stated above, the community has not made a final decision regarding local operation vs. regionalization, therefore, this report estimates costs based on continued local operation. Moreover, regionalization will take four to five years to physically connect the two systems and conduct improvements to the Town system to accept Blacklake flows. These more intensive projects are beyond the five-year scope of this rate study. Even if regionalization is pursued, near-term improvements to Blacklake are needed to provide uninterrupted service.

NCSD last conducted an in-depth wastewater rate study in 2007. The study provided a schedule of rate adjustments through 2013. NCSD has maintained the same rates for the past five years despite inflationary cost increases. Fiscal year (FY) 2018 operating cash flows resulted in positive net revenues of a few thousand dollars. However, rate increases are needed to fund future capital improvements which total \$3.5 million over the next five years.

### **1.2 Requirements of Proposition 218**

Proposition 218, the “Right to Vote on Taxes Act”, was approved by California voters in November 1996 and is codified as Articles XIII C and XIII D of the California Constitution. Proposition 218 establishes requirements for imposing any new or increasing any existing property-related fees and charges. For many years, there was no legal consensus on whether water and sewer service fees met the definition

of “property-related fees.” In July 2007, the California Supreme Court essentially confirmed that Proposition 218 applies to water and wastewater service fees. NCSD must follow the procedural requirements of Proposition 218 for all utility rate increases. These requirements include:

1. **Noticing Requirement** – NCSD must mail a notice of the proposed rate increases to all affected property owners or ratepayers. The notice must specify the amount of the fee, the basis upon which it was calculated, the reason for the fee, and the date/time/location of a public rate hearing at which the proposed rates will be considered/adopted.
2. **Public Hearing** – NCSD must hold a public hearing prior to adopting the proposed rate increases. The public hearing must be held not less than 45 days after the required notices are mailed.
3. **Rate Increases Subject to Majority Protest** - At the public hearing, the proposed rate increases are subject to majority protest. If more than 50% of affected property owners or ratepayers submit written protests against the proposed rate increases, the increases cannot be adopted.

Proposition 218 also established substantive requirements that apply to sewer rates and charges, including:

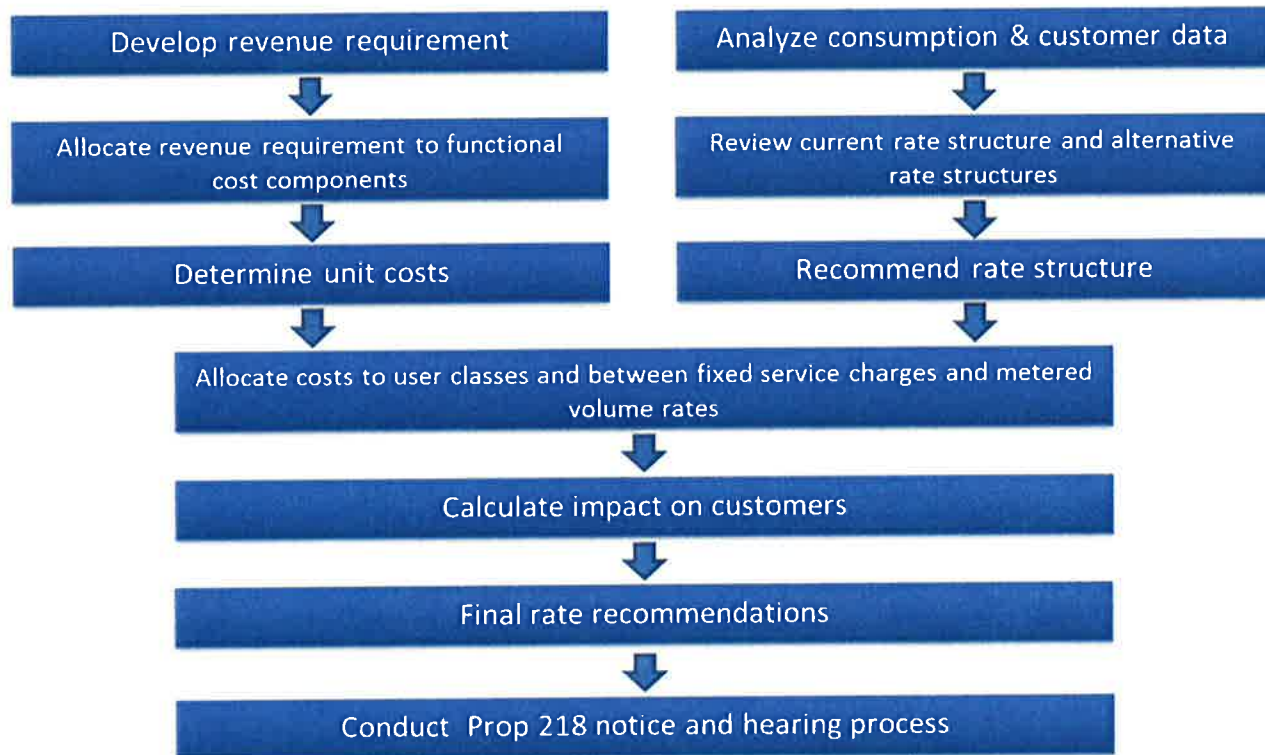
1. **Cost of Service** - Revenues derived from the fee or charge cannot exceed the funds required to provide the service. In essence, fees cannot exceed the “cost of service”.
2. **Intended Purpose** - Revenues derived from the fee or charge can only be used for the purpose for which the fee was imposed.
3. **Proportional Cost Recovery** - The amount of the fee or charge levied on any customer shall not exceed the proportional cost of service attributable to that customer.
4. **Availability of Service** - No fee or charge may be imposed for a service unless that service is used by, or immediately available to, the owner of the property.
5. **General Government Services** - No fee or charge may be imposed for general governmental services where the service is available to the public at large.

Charges for water, sewer, and refuse collection are exempt from additional voting requirements of Proposition 218, provided the charges do not exceed the cost of providing service and are adopted pursuant to procedural requirements of Proposition 218.

### 1.3 Rate Study Process

This section details the development of Blacklake’s sewer rates via the Proposition 218 process as shown in the following figure.

**Figure 1: Comprehensive Cost of Service Study Process**



The following is a brief description of the rate study process:

- **Revenue Requirements** – The revenue requirement is analyzed via a financial plan developed from the Blacklake Sewer Fund budget. Based on the best information currently available, the financial plan incorporates projected operation and maintenance costs, capital expenditures, debt service, and accumulation of prudent reserves. The plan serves as a roadmap for funding Blacklake’s future operating and capital programs while maintaining long-term fiscal stability.
- **Cost of Service Allocation** - The cost of service process builds on the financial plan analysis and assigns wastewater system costs to functional cost components: customer service, capacity, flow, biochemical oxygen demand (BOD) and total suspended solids (TSS).

- **Rate Design** - Rate design involves developing a rate structure that proportionately recovers costs from customers. Final rate recommendations are designed to (a) fund the utility' short- and long-term costs of providing service; (b) proportionately allocate costs to all customers and customer classes; and (c) comply with the substantive requirements of Proposition 218.

## 1.4 Proposed Rates

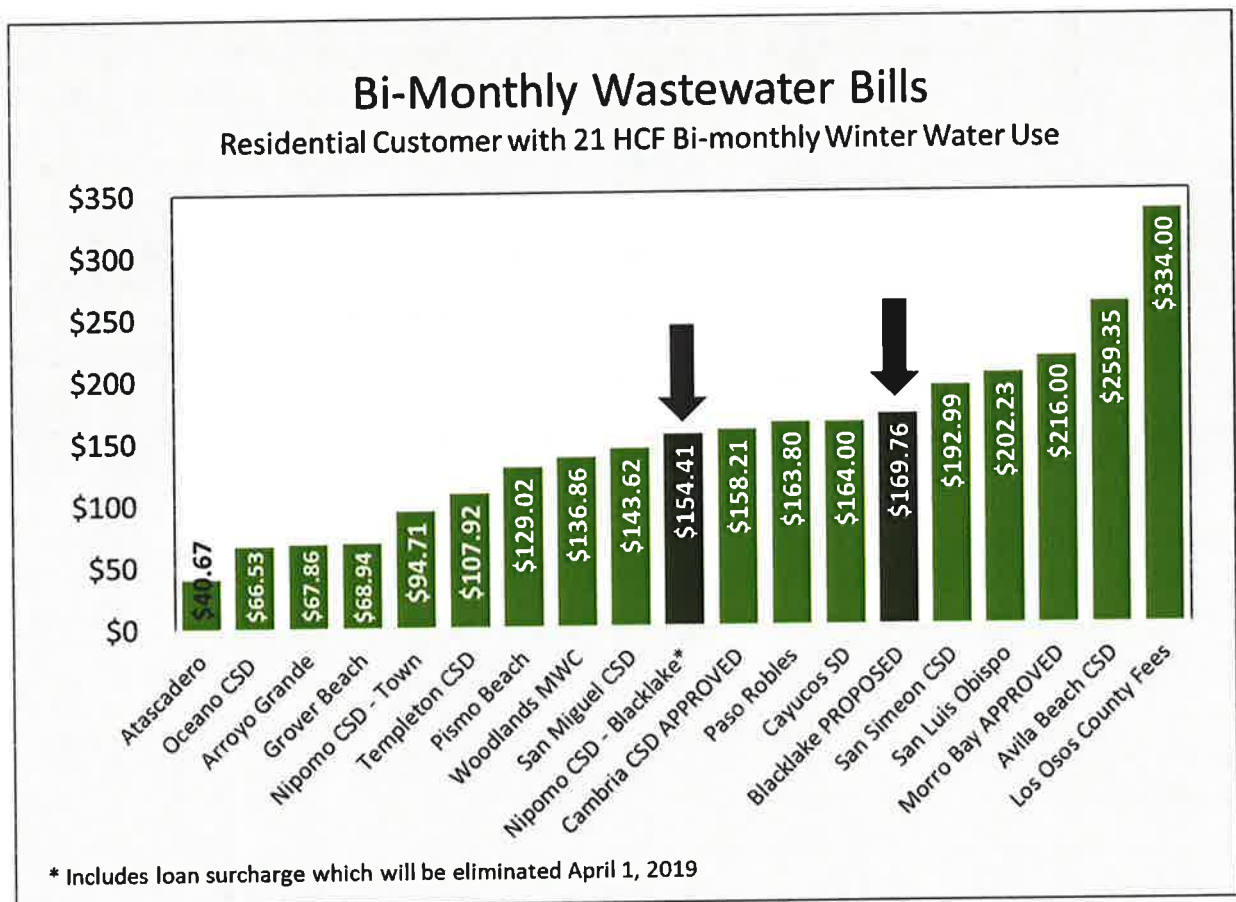
The findings and recommendations presented in this report were developed with substantial input from District staff and the Board of Directors. The proposed Blacklake wastewater rates are provided in Table 1. The current total single family residential bill is \$145.51, which consists of the base service charge plus a loan surcharge. The loan surcharge was implemented to repay an interfund loan for the construction of a wastewater treatment pond liner. The single family bill is proposed to increase to \$169.76 on April 1, 2019, an increase of 16.7%.

**Table 1: Current and Proposed Bi-Monthly Sewer Rates  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

Customer Class	Current	April 1, 2019	April 1, 2020	April 1, 2021	April 1, 2022	April 1, 2023
<b>Bi-Monthly Residential Service Charges [1]</b>						
Single Family	\$145.51	\$169.76 16.7%	\$197.77 16.5%	\$230.40 16.5%	\$268.42 16.5%	\$295.26 10.0%
Multi-Family	\$95.08	\$109.08 14.7%	\$127.07 16.5%	\$148.04 16.5%	\$172.47 16.5%	\$189.72 10.0%
<b>Non-Residential Service Charges [1]</b>						
Fixed Meter Charges		34.8%	16.5%	16.5%	16.5%	10.0%
Up to 1"	\$65.52	\$88.35	\$102.93	\$119.91	\$139.70	\$153.67
1.5"	\$186.50	\$233.45	\$271.97	\$316.85	\$369.13	\$406.04
2"	\$295.38	\$364.04	\$424.11	\$494.09	\$575.61	\$633.17
3"	\$549.43	\$668.75	\$779.09	\$907.64	\$1,057.40	\$1,163.14
4"	\$912.36	\$1,104.05	\$1,286.22	\$1,498.45	\$1,745.69	\$1,920.26
6"	\$1,819.68	\$2,192.30	\$2,554.03	\$2,975.44	\$3,466.39	\$3,813.03
8"	\$2,908.48	\$3,498.20	\$4,075.40	\$4,747.84	\$5,531.23	\$6,084.35
<b>Non-Residential Usage Rates (\$/HCF)</b>						
Low Strength	\$3.56	\$3.97	\$4.63	\$5.39	\$6.28	\$6.91
Medium Strength	\$4.80	\$5.28	\$6.15	\$7.16	\$8.34	\$9.17
High Strength	\$7.59	\$8.22	\$9.58	\$11.16	\$13.00	\$14.30
Loan Surcharge	\$8.90	NA	NA	NA	NA	NA

1 – Does not include the loan surcharge of \$8.90 which will no longer be billed after April 1, 2019

Provided below is a chart comparing Blacklake’s current and proposed typical residential sewer bill with the bills of other local agencies. Some agencies, like NCSO, charge residential customers a fixed sewer charge, while others charge volume rates based on estimated sewer flow. The bills for agencies with volume rates were based on assumed sewer flow of 21 hundred cubic feet (HCF)<sup>1</sup> per bi-monthly period. 21 HCF is the average bi-monthly residential flow in the Blacklake service area.



<sup>1</sup> One HCF = 748 gallons

## **SECTION 2: CURRENT RATES AND CUSTOMER BASE**

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This section provides an overview of Blacklake's current wastewater rates, customer base, sewer flows, and current rate revenues.

### **2.1 Historical and Current Wastewater Rates**

NCSD bills its customers on a bi-monthly basis meaning that each bill represents a two-month period. There is a separate schedule of charges for residential and commercial customers. Single family and multi-family residential customers are billed a fixed bi-monthly fee and are not billed volume rates for sewer flow. Instead, the fixed residential fees are intended to recover the average cost of providing sewer service across the entire residential class. Multi-family customers are billed a lower fixed fee reflecting lower average sewer flow.

Commercial customers are charged a fixed fee based on the size of the water meter plus volume rates. Bi-monthly metered water consumption is used as a proxy for sewer flow. Most outdoor commercial water use is separately metered under an irrigation account and is not billed for sewer service. The commercial volume rate schedule consists of a low, medium, and high wastewater pollutant rate billed on a \$/HCF basis.

NCSD last increased its sewer rates for the Blacklake Enterprise in 2013. A schedule of historical and current rates is provided in Table 2



**Table 2: Historical and Current Bi-Monthly Sewer Rates  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

Customer Class	Apr 2009	Jan 2010	Jan 2011	Jan 2012	Jan 2013 /Current
<b>Bi-Monthly Residential Service Charges [1]</b>					
Single Family	\$107.12	\$118.90	\$131.98	\$138.58	\$145.51
Multi-Family	\$69.99	\$77.69	\$86.24	\$90.55	\$95.08
<b>Non-Residential Service Charges [1]</b>					
<b>Fixed Meter Charges</b>					
Up to 1"	\$48.23	\$53.54	\$59.43	\$62.40	\$65.52
1.5"	\$137.29	\$152.39	\$169.16	\$177.62	\$186.50
2"	\$217.45	\$241.36	\$267.91	\$281.31	\$295.38
3"	\$404.47	\$448.96	\$498.35	\$523.26	\$549.43
4"	\$671.65	\$745.53	\$827.54	\$868.91	\$912.36
6"	\$1,339.59	\$1,486.94	\$1,650.51	\$1,733.03	\$1,819.68
8"	\$2,141.12	\$2,376.64	\$2,638.07	\$2,769.98	\$2,908.48
<b>Non-Residential Usage Rates (\$/HCF)</b>					
Low Strength	\$2.62	\$2.91	\$3.23	\$3.39	\$3.56
Medium Strength	\$3.53	\$3.92	\$4.35	\$4.57	\$4.80
High Strength	\$5.59	\$6.20	\$6.89	\$7.23	\$7.59

1 – Does not include the loan surcharge of \$8.90

**Table 3: Single Family Residential Rates Compared to Inflation  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

Date	Bi-Monthly Charge (Actual) [1]	% Increase	2009 Rate Adjusted by Inflation	Inflation % Increase
Apr 2009	\$107.12			
Jan 2010	\$118.90	11%	\$108.83	1.6%
Jan 2011	\$131.98	11%	\$122.70	3.2%
Jan 2012	\$138.58	5%	\$134.75	2.1%
Jan 2013	\$145.51	5%	\$140.66	1.5%
Jan 2014	\$145.51	0%	\$147.84	1.6%
Jan 2015	\$145.51	0%	\$145.66	0.1%
Jan 2016	\$145.51	0%	\$147.40	1.3%
Jan 2017	\$145.51	0%	\$148.57	2.1%
Jan 2018	\$145.51	0%	\$148.71	2.2%

1 – Does not include the loan surcharge of \$8.90

## 2.2 Current Revenues

Table 4 provides Blacklake’s current customer count and FY2018 revenues. The Blacklake system serves 559 customers, of which four are commercial. End of year FY2018 unaudited operating results indicate that rate revenues totaled approximately \$475,500.

**Table 4: Current Customer Count and Rate Revenue  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

Customer Class	Current Rates	FY2018 Customer Count	% of Total	FY2018 Est. Rev	% of Total
<b>Bi-Monthly Residential Service Charges</b>					
Single Family	\$145.51	487	87.1%	\$425,180	89.5%
Multi-Family	\$95.08	<u>68</u>	<u>12.2%</u>	<u>\$38,793</u>	<u>8.2%</u>
		555	99.3%	\$463,973	97.7%
<b>Non-Residential Service Charges</b>					
<b>Fixed Meter Charges</b>					
Up to 1"	\$65.52	3	0.5%	\$1,179	0.2%
1.5"	\$186.50	0	0.0%	\$0	0.0%
2"	\$295.38	1	0.2%	\$1,772	0.4%
3"	\$549.43	0	0.0%	\$0	0.0%
4"	\$912.36	0	0.0%	\$0	0.0%
6"	\$1,819.68	0	0.0%	\$0	0.0%
8"	\$2,908.48	<u>0</u>	<u>0.0%</u>	<u>\$0</u>	<u>0.0%</u>
		4	0.7%	\$2,952	0.6%
<b>Non-Residential Usage Rates (\$/HCF)</b>					
Low Strength	\$3.56	533		\$1,897	0.4%
Medium Strength	\$4.80	0		\$0	0.0%
High Strength	\$7.59	<u>833</u>		<u>\$6,322</u>	<u>1.3%</u>
		1,366		\$8,220	1.7%
		Total	100.0%	\$475,144	100.0%
				FY2018 Year End	\$475,508

Note: table does not include the \$8.90 loan surcharge

## 2.3 Wastewater Flow Statistics

NCSD does not individually measure the wastewater flow of each customer. As described above, bi-monthly water use is used as a proxy for commercial sewer effluent. For the residential customer class, winter water consumption serves as the basis for sewer flow. Unlike commercial customers, most residential customers do not have dedicated irrigation meters. Therefore, its necessary to use winter water consumption to control for outdoor water use during the summer that is not discharged into the sewer.

Table 5 provides an analysis of single family residential winter water use. The average bi-monthly winter consumption is 21 HCF based on FY2018 data. This closely aligns with 22 HCF per bi-monthly usage estimated in the 2007 rate study.

**Table 5: Single Family Residential Winter Water Use  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

Month	FY2018 HCF
July	15,924
September	15,776
November	14,619
January	11,352
March	8,622
May	13,241
Average Winter Use (shaded)	9,987
Number of Single Family Residential Dwelling Units	487
Average Use Per Unit	21
Prior Rate Study (HCF/billing period)	22

Table 6 provides the estimated multi-family water use and sewer flow. As shown below, the multi-family customer class does not have a distinctive low usage period during the winter. It is likely that multi-family customers have limited outdoor water use. For rate design purposes, the two lowest water usage periods were used to estimate multi-family sewer flow. The average use is 5.2 HCF per bi-monthly period which is slightly higher than the use estimated in the prior rate study.

**Table 6: Multi-Family Residential Winter Water Use  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

Month	FY2018 HCF
July	453
September	440
November	355
January	387
March	381
May	355
Average Winter Use (shaded)	355
Number of Multi-Family Residential Dwelling Units	68
Average Use Per Unit	5.2
Prior Rate Study (HCF/billing period)	4

## **SECTION 3: REVENUE REQUIREMENT**

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Proposition 218 requires that utility rates be based on the reasonable cost of providing service to customers. The cost of service includes annual operating expenses, debt service payments, capital projects, and the accumulation of appropriate reserves. The Blacklake cost of service was developed based on the FY2019 adopted budget, capital project lists from the 2017 Master Plan, and reserve recommendations based on NCSD's Cash Reserve Policy (Resolution No. 2017-1435). The Blacklake Sewer Enterprise is made up of three funds: Operations (Fund #150), Capital (Asset) Replacement (Fund #830), and the Rate Stabilization Fund (Fund #155).

### **3.1 Operations Fund**

#### **3.1.1 Revenues**

The vast majority of wastewater operating revenues are provided via bi-monthly service rates, about \$475,000 annually. In FY2018, about \$4,000 in non-rate revenues was generated from interest earnings on reserves, and \$25,000 was generated through the loan surcharge. The surcharge will remain in place through April 1, 2019 to repay an inter-fund loan. The loan was issued to fund pond liner improvements at the Blacklake WRF. The Blacklake system is built-out and the customer base is stable. NCSD does not anticipate additional new revenues from customer growth.

#### **3.1.2 Operations and Maintenance (O&M)**

In FY2018, operating expenses totaled about \$287,000. Major cost categories include administration, staffing, electricity, chemicals, and repairs and maintenance. Most expenses are projected to increase by 3% annually. Every three years, the Blacklake system incurs additional costs for legal and professional services. This line-item includes engineering studies, master planning, additional legal support, rate studies, and financial planning. In FY2019, legal and professional services are budgeted at \$99,000.

There is a proposed staffing adjustment recommended for FY2020 which will add \$62,000 in new O&M expenses. Section 10 of the Blacklake Sewer Master plan provides a staffing analysis of the Blacklake WRF. MKN Associates recommends additional staffing of 0.6 to 0.7 full time equivalents (FTEs) for a wastewater treatment operator. This increase reflects the high level of maintenance required to keep the Blacklake WRF operating. Staffing costs were estimated based on the average wages and benefits of current NCSD operators. The proposed staffing expense is projected to increase by 3% annually.

#### **3.1.3 Debt**

In addition to operating expenses, Fund #150 includes Blacklake sewer debt. In FY2019 the pond liner loan will be paid off and the debt will be retired. To fund future capital improvements (discussed below), it is anticipated that the Blacklake system will issue new debt. The payment is projected to be \$144,000 annually beginning in FY2021. Debt covenants typically require that the borrower maintain a debt

coverage ratio of 1.25 times, meaning that net operating revenues<sup>2</sup> are equal to or exceed 1.25 times the annual payment. The financial plan provided in this report is intended to develop revenues to exceed the minimum debt coverage requirement.

### **3.1.4 Capital Replacement Set-aside**

In 2007, NCS D completed a Water and Sewer Replacement Study. The study determined capital reserve targets for the Town and Blacklake water and sewer systems. The 2007 report also recommends annual funding set-asides to accumulate reserves over time. For the Blacklake sewer system, the replacement study recommends annual funding of \$168,000, which was adopted by the Board (see Resolution No. 2017-1435). To keep up with inflationary construction cost increases, it is recommended that the set-aside increase by 3% annually beginning in FY2020.

### **3.1.5 Operating Reserve and Rate Stabilization Reserve**

The wastewater cost of service includes funding to maintain prudent cash reserves. For the Operations Fund, reserves could be used to fund unanticipated or emergency expenses. Blacklake's current reserve target is six months of operating expenses which is recommended to be continued. It should be noted that due to the "lumpiness" of legal and professional service costs, the reserve target may increase or decrease in any given year. In FY2018, the operating reserve was \$243,000 which exceeded the target of \$143,000.

Fund #155 is the Blacklake Sewer Rate Stabilization Fund. The rate stabilization target is \$50,000 which is currently met. Fund #155 was established by the Board to improve the utility's credit rating and financial standing. Rate stabilization funds are more commonly used by water utilities than sewer utilities. Water utilities typically collect a large portion of their revenues from volume rates. Water rate stabilization reserves help agencies maintain cash flow during drought conditions. In contrast, most sewer utilities collect a large portion of revenues from fixed charges which are highly stable. As shown in Table 4, Blacklake collects only 1.7% of its revenues from volume rates. Nevertheless, it is recommended that Blacklake maintain the rate stabilization reserve target of \$50,000. However, the cash flow analysis developed in this report assumes that Blacklake will use the reserve as needed to overcome short-term financial constraints and minimize rate volatility. At the end of the five-year rate plan in FY2023, total operating reserves are projected to be lower than the targeted amount. However, in FY2024, Blacklake rate revenues will be adequate to rebuilt reserves with only minor inflationary increases.

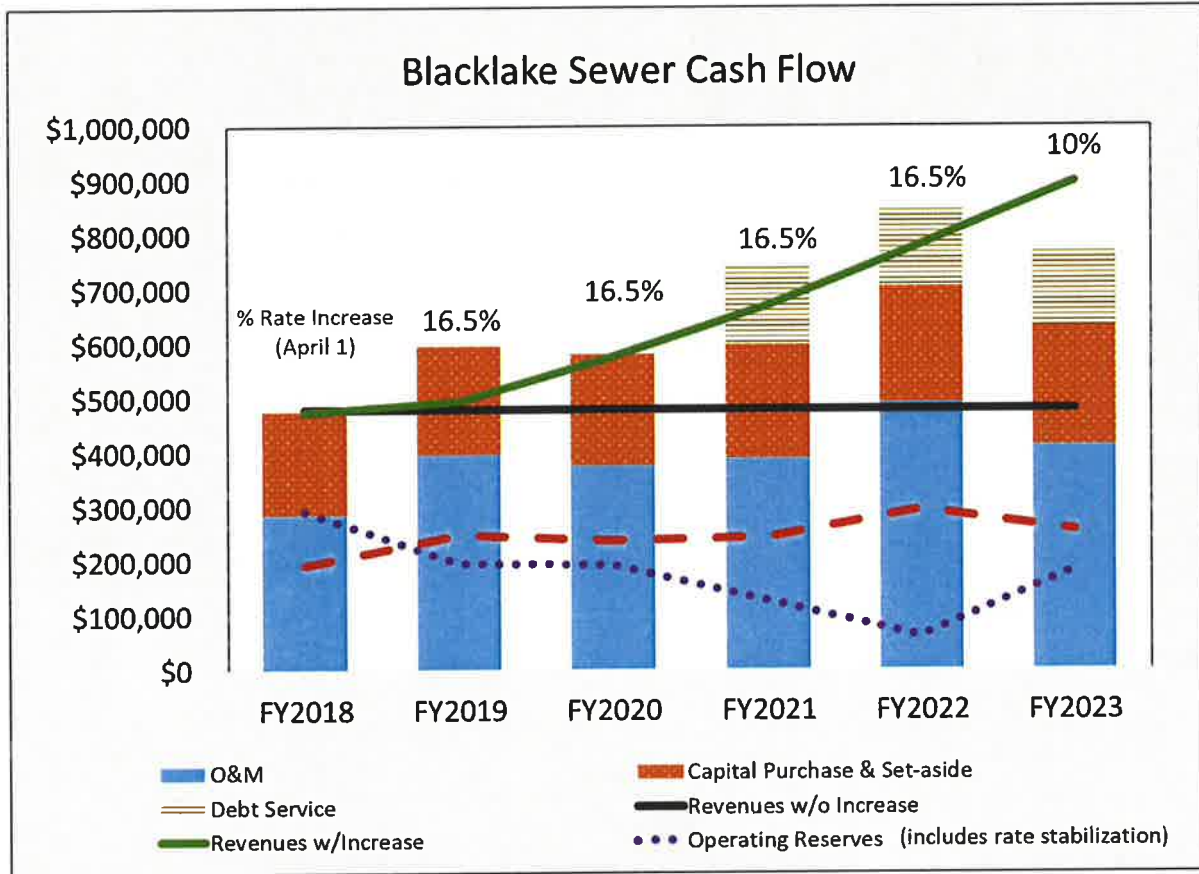
## **3.2 Operations Cash Flow**

At current rates, revenues are adequate to meet O&M, debt, and capital replacement funding. Current operating and rate stabilization reserves meet their targets. However, rate increases are needed over the next five years to fund inflationary cost increases and new debt service expenses. Rate increases are proposed to be implemented April 1 each year for the next five years through April 1, 2023. The total

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<sup>2</sup> Gross operating revenues less operating expenses. Operating expenses do not include capital projects or replacement funding.

rate revenue collected each fiscal year will reflect 9 months (July to March) at the prior year's rates plus 3 months (April to June) at the new rates. The operations cash flow is provided in the chart below and in Table 7.



**Table 7: Operations Cash Flow Analysis  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

Line	FY2018 Year-End	Prop 218					
		FY2019 Budget	FY2020 Projected	FY2021 Projected	FY2022 Projected	FY2023 Projected	
1	Rate Increase (Effective Apr 1)	Current	16.5%	16.5%	16.5%	16.5%	10.0%
2	Operations Balance (#150)	\$239,900	\$243,000	\$145,000	\$142,000	\$73,600	\$8,100
	REVENUES						
3	Rate Revenues	475,000	495,000	576,000	671,000	782,000	897,000
4	Loan Surcharge	25,000	20,000	0	0	0	0
5	Interest Income	<u>4,000</u>	<u>3,000</u>	<u>2,000</u>	<u>2,000</u>	<u>1,000</u>	<u>0</u>
6	Total Revenues	504,000	518,000	578,000	673,000	783,000	897,000
	OPERATIONS [1]						
7	Gen & Admin Staffing	8,600	10,000	10,300	10,600	10,900	11,200
8	Legal & Prof Services [2]	8,700	99,000	9,000	9,300	100,000	9,900
9	Office Expenses & Misc	9,000	17,000	17,500	18,000	18,500	19,100
10	Admin Transfer Out	16,200	18,000	18,500	19,100	19,700	20,300
11	Operations Staffing	121,000	116,000	119,500	123,100	126,800	130,600
12	Staffing Adjustment (0.7 FTE) [3]	0	0	62,000	63,900	65,800	67,800
13	Electricity	37,500	43,500	44,800	46,100	47,500	48,900
14	Chemicals	16,000	19,000	19,600	20,200	20,800	21,400
15	Lab Tests & Sampling	25,900	27,500	28,300	29,100	30,000	30,900
16	Repairs & Maintenance	19,900	13,000	13,400	13,800	14,200	14,600
17	Permits and Operating Fees	8,400	9,000	9,300	9,600	9,900	10,200
18	Other O&M Supplies and Services	<u>15,700</u>	<u>25,000</u>	<u>25,800</u>	<u>26,600</u>	<u>27,400</u>	<u>28,200</u>
19	Total Operating Expenses	286,900	397,000	378,000	389,400	491,500	413,100
20	Net Operating Revenues	217,100	121,000	200,000	283,600	291,500	483,900
	DEBT SERVICE						
21	Existing Debt Service	24,000	20,000	0	0	0	0
22	New Debt [4]	<u>0</u>	<u>0</u>	<u>0</u>	<u>144,000</u>	<u>144,000</u>	<u>144,000</u>
23	Total Annual Debt Service	24,000	20,000	0	144,000	144,000	144,000
24	Debt Coverage Ratio	9.05	6.05	NA	1.97	2.02	3.36
25	Transfer to Capital (set-aside)	168,000	168,000	173,000	178,000	183,000	188,000
26	Fixed Asset Purchase	22,000	31,000	30,000	30,000	30,000	30,000
27	Total Expenses	500,900	616,000	581,000	741,400	848,500	775,100
28	Net Revenue	3,100	(98,000)	(3,000)	(68,400)	(65,500)	121,900
29	Ending Fund Balance	243,000	145,000	142,000	73,600	8,100	130,000
30	Rate Stabilization (#155) [5]	<u>50,000</u>	<u>51,000</u>	<u>52,000</u>	<u>53,000</u>	<u>54,000</u>	<u>55,000</u>
31	Beginning Fund Balance	293,000	196,000	194,000	126,600	62,100	185,000
32	Target [6]	\$193,500	\$248,500	\$239,000	\$244,700	\$295,800	\$256,600

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- 1 - Most budgeted line items are projected to increase by 3% annually
  - 2 - Reflects additional costs for rate studies, master plans, and specialized legal services needed approximately every 3 years
  - 3 - Staffing recommended in the MKN October 2017 Blacklake Sewer Master Plan, Section 10
  - 4 - Based on \$1.8 million borrowed in FY2020 over 20 years at 5% interest.
  - 5 - Assumed to collect \$1,000 per year in interest earnings
  - 6 - 6 months of operating expenses not including funded replacements plus \$50,000 in rate stabilization reserves

### 3.3 Capital Fund

Capital project costs are the main driver of the proposed rate increases. The 2017 Blacklake Sewer Master Plan describes three categories of capital improvements: 1) near-term repairs to keep the Blacklake system operating, 2) longer-term projects to improve efficiency and retrofit the Blacklake WRF, and 3) an option to join the Blacklake system with the Town system via regionalization. Projects in category 1 are needed regardless of Blacklake’s decision to regionalize or continue local operations. The financial plan and rate recommendations included in this report reflect funding of only near-term repairs of the Blacklake system. A summary of capital improvement expenses is provided in Table 8.

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**Table 8: Capital Improvement Project Summary  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

Capital Cost Category	Costs Through FY2023 [1]
<b>Lift Stations</b>	
Woodgreen Rehabilitation	683,400
The Oaks Rehabilitation	102,500
Misty Glen Rehabilitation	<u>97,800</u>
Lift Station Subtotal	883,700
<b>Sewer Mains</b>	
Golf Course Trunk Main	560,700
Tourney Hill Sewer Main	319,700
Oakmont Sewer Main	<u>196,200</u>
Sewer Main Subtotal	1,076,600
Sludge Removal	468,600
<b>Blacklake WRF</b>	
Pond 1 Rehabilitation	384,600
Chlorine Contact Chamber Rehab	392,400
Site Improvements	<u>258,100</u>
Blacklake WRF Subtotal	1,035,100
<b>TOTAL</b>	<b>\$3,464,000</b>

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1 - Capital projects described on pages 9-10 of the Master Plan. Costs escalated from December 2013 to the year of construction.



The capital cash flow is provided in Table 9. The current fund balance is \$819,000. The target balance is \$1.2 million and is based on a 20-Year Savings Program (Model 1) provided in the 2007 Water and Sewer Replacement Study. To minimize impacts on ratepayers, the financial plan assumes that Blacklake will use its existing reserves to fund projects and will not achieve the fund target over the next five years. In addition to reserves, projects will be funded via the annual capital set-aside from the Operations Fund and a new debt issuance of \$1.8 million projected for FY2020. At the end of the five-year rate study period, it is projected that the Blacklake capital fund will have \$56,000 in remaining reserves. Beyond FY2023, NCSD should conduct an engineering analysis to review the need for additional capital projects, permitting and regulatory compliance, and emerging wastewater constituents.

**Table 9: Capital Cash Flow Analysis  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

	Prop 218				
	FY2019 Budget	FY2020 Projected	FY2021 Projected	FY2022 Projected	FY2023 Projected
Replacement (Fund #830)					
Beginning Fund Balance	\$819,000	\$25,000	\$938,600	\$732,000	\$223,900
REVENUES					
Interest Income [1]	11,000	0	0	0	0
Transfer from Operations	168,000	173,000	178,000	183,000	188,000
Debt Proceeds	<u>0</u>	<u>1,800,000</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Revenues	179,000	1,973,000	178,000	183,000	188,000
CAPITAL PROJECTS					
Lift Station Rehab - Woodgreen	683,400	0	0	0	0
Blacklake Sludge Removal	289,600	179,000	0	0	0
Golf Course Trunk Main	0	560,700	0	0	0
Tourney Hill Sewer Main	0	319,700	0	0	0
WRF Pond 1 Rehab	0	0	384,600	0	0
Lift Station Rehab - The Oaks	0	0	0	102,500	0
WRF Chlorine Contact Chamber Rehab	0	0	0	392,400	0
Oakmont Sewer Main	0	0	0	196,200	0
WRF Site Improvements	0	0	0	0	258,100
Lift Station Rehab - Misty Glen	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>97,800</u>
Total Expenses	973,000	1,059,400	384,600	691,100	355,900
Net Revenues	(794,000)	913,600	(206,600)	(508,100)	(167,900)
Ending Fund Balance	25,000	938,600	732,000	223,900	56,000
Target	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000

1 - FY2021 and beyond, the fund balance is primarily made up of debt proceeds. It is assumed that NCSD would generate negligible interest earnings to avoid negative arbitrage.

## **SECTION 4: COST ALLOCATION**

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FY2019 was used as the test year for cost allocation purposes. Budgeted expenses were assigned to customer service, capacity, collection system, and treatment categories see Table 10.

### **4.1 Fixed Costs**

Customer service costs are fixed and include administration, billing, accounts management, and office supplies. Customer services costs make up about 10% of total costs. Capacity costs are also fixed and consist of expenses needed to maintain the Blacklake sewer infrastructure including both the collection system and treatment plant. Line-items include debt service, permits and operating fees, most fixed asset purchase and capital replacement costs, and 50% of operations staffing. Capacity-related operating costs do not vary with the level of wastewater discharge and make up about 44% of system costs. In total, about 54% of Blacklake sewer costs are fixed.

### **4.2 Variable Costs**

Variable or flow related costs were allocated to the collection system and treatment plant. These costs are dependent on the amount of wastewater effluent discharged by customers. Treatment plant costs are further subdivided into flow, biochemical oxygen demand (BOD), and total suspended solids (TSS). BOD and TSS are wastewater pollutant constituents that are costly for Blacklake to treat.

Collection system flow costs include small portions of operations staffing, professional services, and capital costs and 40% of repair and maintenance costs. When customers use the system more heavily, NCSD incurs greater repair and replacement costs. The collection system is allocated 7% of electricity costs based on lift station electric bills from prior years. The collection system flow cost category represents 11% of the total cost of service.

Similar to the other categories, the treatment plant is allocated a portion of operations staffing, professional services, and repairs and maintenance. 93% of electric costs, and 100% of chemicals and laboratory costs are allocated to the treatment plant. Variable costs of operating the treatment plant represent 35% of the total cost of service.

**Table 10: Cost Allocation  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

	FY2019 Budget	Customer		Capacity		Collection System		Treatment		Cust. Service		Capacity		Collection System		Treatment		
		Fixed	Service	Fixed	Capacity	Flow	System	Flow	BOD	TSS	Fixed	Service	Fixed	Capacity	Flow	System	Flow	BOD
<b>OPERATIONS</b>																		
Gen & Admin Staffing	10,000	10,000	0	0	0	0	0	0	0	0	100%	0%	0%	0%	0%	0%	0%	0%
Legal & Prof Services	99,000	9,900	49,500	19,800	19,800	0	0	0	0	0	10%	50%	20%	20%	20%	20%	0%	0%
Office Expenses & Misc	17,000	17,000	0	0	0	0	0	0	0	0	100%	0%	0%	0%	0%	0%	0%	0%
Admin Transfer Out	18,000	18,000	0	0	0	0	0	0	0	0	100%	0%	0%	0%	0%	0%	0%	0%
Operations Staffing	116,000	0	58,000	17,400	17,400	11,600	11,600	0	0	0	0%	50%	15%	15%	15%	10%	10%	
Electricity	43,500	0	0	3,248	40,252	0	0	0	0	0	0%	0%	7%	93%	0%	0%	0%	
Chemicals	19,000	0	0	0	3,800	7,600	7,600	0	0	0	0%	0%	0%	20%	40%	40%	0%	
Lab Tests & Sampling	27,500	0	0	0	13,750	6,875	6,875	0	0	0	0%	0%	0%	50%	25%	25%	0%	
Repairs & Maintenance	13,000	0	2,600	5,200	2,600	1,300	1,300	0	0	0	0%	20%	40%	20%	10%	10%	0%	
Permits & Operating Fees	9,000	0	9,000	0	0	0	0	0	0	0	0%	100%	0%	0%	0%	0%	0%	
Other O&M	25,000	0	12,500	5,000	2,500	2,500	2,500	0	0	0	0%	50%	20%	10%	10%	10%	0%	
Total Operating	397,000	54,900	131,600	50,648	100,102	29,875	29,875	0	0	0	0%	100%	20%	10%	10%	10%	0%	
Existing Debt Service	20,000	0	20,000	0	0	0	0	0	0	0	0%	100%	0%	0%	0%	0%	0%	
Transfer to Capital Fund	168,000	0	100,800	16,800	16,800	16,800	16,800	0	0	0	0%	60%	10%	10%	10%	10%	0%	
Fixed Asset Purchase	31,000	4,650	20,150	1,550	1,550	1,550	1,550	0	0	0	15%	65%	5%	5%	5%	5%	0%	
Total Expenses [1]	616,000	59,550	272,550	68,998	118,452	48,225	48,225	0	0	0	10%	44%	11%	19%	8%	8%	0%	

1 – FY2019 expenses of \$616,000 are greater than projected revenues of \$518,000. \$98,000 is projected to be drawn from reserves to cover costs.

## SECTION 5: RATE DESIGN

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This section provides the rate calculations to meet the revenue requirements described in prior sections. Blacklake’s current rate structure is consistent with industry standard practices. No rate structure changes are proposed. Instead, the amount of each rate or charge is recommended to increase each year for the next five years.

### 5.1 Billing Units

Proposition 218 requires that rates and charges be billed to customers proportionally based on how they take service from the utility. To establish proportionality, a customer analysis was conducted to review flow and pollutant loading patterns of residential and commercial customers. Total annual flow is estimated in Table 11.

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**Table 11: Flow Estimates  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

Customer Class	# of Customers	Winter Water Use (HCF/bi-mo) [1]	Annual Sewer Flow (HCF)
Single Family	487	21.0	59,922
Multi-Family	68	5.2	2,130
Commercial [2]			
Low Strength			242
Medium Strength			0
High Strength			<u>738</u>
			63,032

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1 - Developed in Table 5 and Table 6

2 - Estimated based on FY2018 water use data adjusted downward for outlier data

Table 12 estimates wastewater pollutant concentrations of each customer class. The BOD and TSS loading estimates were developed in Blacklake’s prior rate study and are consistent with recommendations from the State Water Resources Control Board. The pollutant strength of each customer class is multiplied by the flow of that class to estimate pounds of BOD and TSS.

**Table 12: Pollutant Loading Estimates  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

Customer Class	Flow (HCF)	% of Total	BOD (mg/l)	TSS (mg/l)	BOD (Lbs)	% of Total	TSS (Lbs)	% of Total
Single Family	59,922	95.1%	200	200	74,811	90.8%	74,811	92.4%
Multi-Family	2,130	3.4%	200	200	2,659	3.2%	2,659	3.3%
Commercial								
Low Strength	242	0.4%	200	200	302	0.4%	302	0.4%
Medium Strength	0	0.0%	400	400	0	0.0%	0	0.0%
High Strength	<u>738</u>	<u>1.2%</u>	1000	700	<u>4,607</u>	<u>5.6%</u>	<u>3,225</u>	<u>4.0%</u>
Total	63,032	100.0%			82,379	100.0%	80,997	100.0%

Table 13 develops the count of customer equivalents. Customer equivalents are used to recover capacity costs. Capacity cost are assigned based on the hydraulic capacity of each customer's connection to the sewer system. Larger connections occupy more capacity in the system than smaller connections and thus have a larger cost burden. Each single family and multi-family residential dwelling units is counted as one meter or customer equivalent. Commercial customer equivalents are based on meter size.

**Table 13: Customer Equivalents  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

Meter Size	# of Meters	Meter Ratio [1]	# of Meter Equivalents [2]
Residential	555	1.0	555.0
Commercial			
1"	3	1.0	3.0
1.5"	0	3.0	0.0
2"	1	4.8	4.8
3"	0	9.0	0.0
4"	0	15.0	0.0
6"	0	30.0	0.0
8"	<u>0</u>	48.0	<u>0.0</u>
Total	559		562.8

[1] Hydraulic capacity factors developed in the 2007 Blacklake Sewer System Financial Plan and User Rates Report

[2] Meter ratio times number of meters

## 5.2 Unit Cost Calculation

The Blacklake unit cost calculation is provided in Table 14. The FY2019 revenue requirement from Table 7 is divided by the billing units for each cost category. The allocation to each cost category is based on the percentages from Table 10. The FY2019 revenue requirement of \$553,000 represents 12 months of rate revenues. However, the FY2019 proposed rate adjustment will take place April 1, 2019. Over the entire fiscal year, Blacklake is projected to collect \$495,000 which is nine months of revenues at the current rates plus three months of revenues based on the unit costs shown below.

Customer service costs are proposed to be recovered as a fixed charge billed based on the number of accounts. Capacity costs are recovered as a fixed charge based on customer equivalents. Collection system and treatment plant flow unit costs are developed based on the estimated wastewater discharge from Table 11. BOD and TSS unit costs are developed from the pollutant loadings shown in Table 12.

**Table 14: FY2019 Unit Cost Calculation  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

	Customer Service	Capacity	Collection System	Treatment			Total
				Flow	BOD	TSS	
Cost Allocation	10%	44%	11%	19%	8%	8%	100%
Revenue Requirement	\$53,000	\$245,000	\$62,000	\$106,000	\$43,000	\$43,000	\$553,375
Billing Units	559	563	63,032	63,032	82,379	80,997	
	# of Accounts	# of Equivalents	Annual Flow (HCF)	HCF	lbs	lbs	
Units Costs	\$15.80	\$72.55	\$0.98	\$1.68	\$0.52	\$0.53	
	\$/bi-month	\$/bi-month	\$/HCF	\$/HCF	\$/lb	\$/lb	

## 5.3 Rate Calculation

The fixed meter fee calculation is provided in Table 15. These fees recover capacity and customer service costs. The capacity unit cost developed above is multiplied by the meter equivalent for each meter size to calculate the total capacity cost. The customer service fee is added to the capacity cost to calculate the total fixed meter fee. Customer service fees do not vary based on the size of the meter and all customers are billed the same amount. Table 16 develops the volume rates for all customer classes based on the unit costs above and the loadings shown in Table 12. The total volume rate consists of a collection system flow charge, a treatment plant flow charge, a BOD treatment charge, and a TSS treatment charge.

**Table 15: FY2019 Fixed Meter Fee Calculation  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

Meter Size	Capacity Charge		Meter Equivalent [1]	Subtotal Capacity	Customer Service Fee	Total Bi-monthly Fee (Capacity + Cust. Serv.)
Residential			1.00	\$72.55	\$15.80	\$88.35
Commercial						
1"	\$72.55	X	1.00	\$72.55	\$15.80	\$88.35
1.5"	\$72.55	X	3.00	\$217.65	\$15.80	\$233.45
2"	\$72.55	X	4.80	\$348.24	\$15.80	\$364.04
3"	\$72.55	X	9.00	\$652.95	\$15.80	\$668.75
4"	\$72.55	X	15.00	\$1,088.25	\$15.80	\$1,104.05
6"	\$72.55	X	30.00	\$2,176.50	\$15.80	\$2,192.30
8"	\$72.55	X	48.00	\$3,482.40	\$15.80	\$3,498.20

1 - Hydraulic capacity factors developed in the 2007 Blacklake Sewer System Financial Plan and User Rates Report

**Table 16: FY2019 Flow Rate Calculation  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

Component	Low &		
	Residential	Medium	High
Flow			
Collection	\$0.98	\$0.98	\$0.98
Treatment	\$1.68	\$1.68	\$1.68
BOD	\$0.65	\$1.30	\$3.25
TSS	<u>\$0.66</u>	<u>\$1.32</u>	<u>\$2.32</u>
Total (\$/HCF)	\$3.97	\$5.28	\$8.22

FY2019 residential charge calculations are provided in Table 17. The total residential rate is the sum of the customer service, capacity, and flow charges. Although residential customers are billed a fixed charge each bi-monthly period, the charge includes a fee proportional to the flow and strength of the average residential customer. As described in prior sections, the average single family flow is 21 HCF per billing period and the average multi-family flow is 5.2 HCF. This flow is multiplied by the low strength volume rate and added to the total residential bill.

**Table 17: FY2019 Residential Rate Calculation  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

Components	Unit Cost		Count	Units	Cost (\$/bi-mo)
<b>SINGLE FAMILY RESIDENTIAL</b>					
Customer Service	\$15.80	X	1	account	\$15.80
Capacity	\$72.55	X	1	equivalent	\$72.55
Flow (low strength)	\$3.97	X	21	HCF/bi-mo	<u>\$81.41</u>
					\$169.76
<b>MULTI-FAMILY RESIDENTIAL</b>					
Customer Service	\$15.80	X	1	account	\$15.80
Capacity	\$72.55	X	1	equivalent	\$72.55
Flow (low strength)	\$3.97	X	5.2	HCF/bi-mo	<u>\$20.73</u>
					\$109.08

## 5.4 Proposed Wastewater Rates

The proposed rates through FY2023 are shown in Table 18. The proposed 2019 rates reflect the cost allocation adjustments described in this report. For example, the systemwide 2019 rate increase is 16.5% as shown in Table 7. Not all customers are proposed to receive an increase of exactly 16.5%. The single family rate is proposed to increase by 16.7% (slightly above the system average) due to wastewater flow and pollutant loading characteristics of that customer class. The rates for FY2020 through FY2023 are calculated as the 2019 rates multiplied by the increase in the revenue requirement each year.

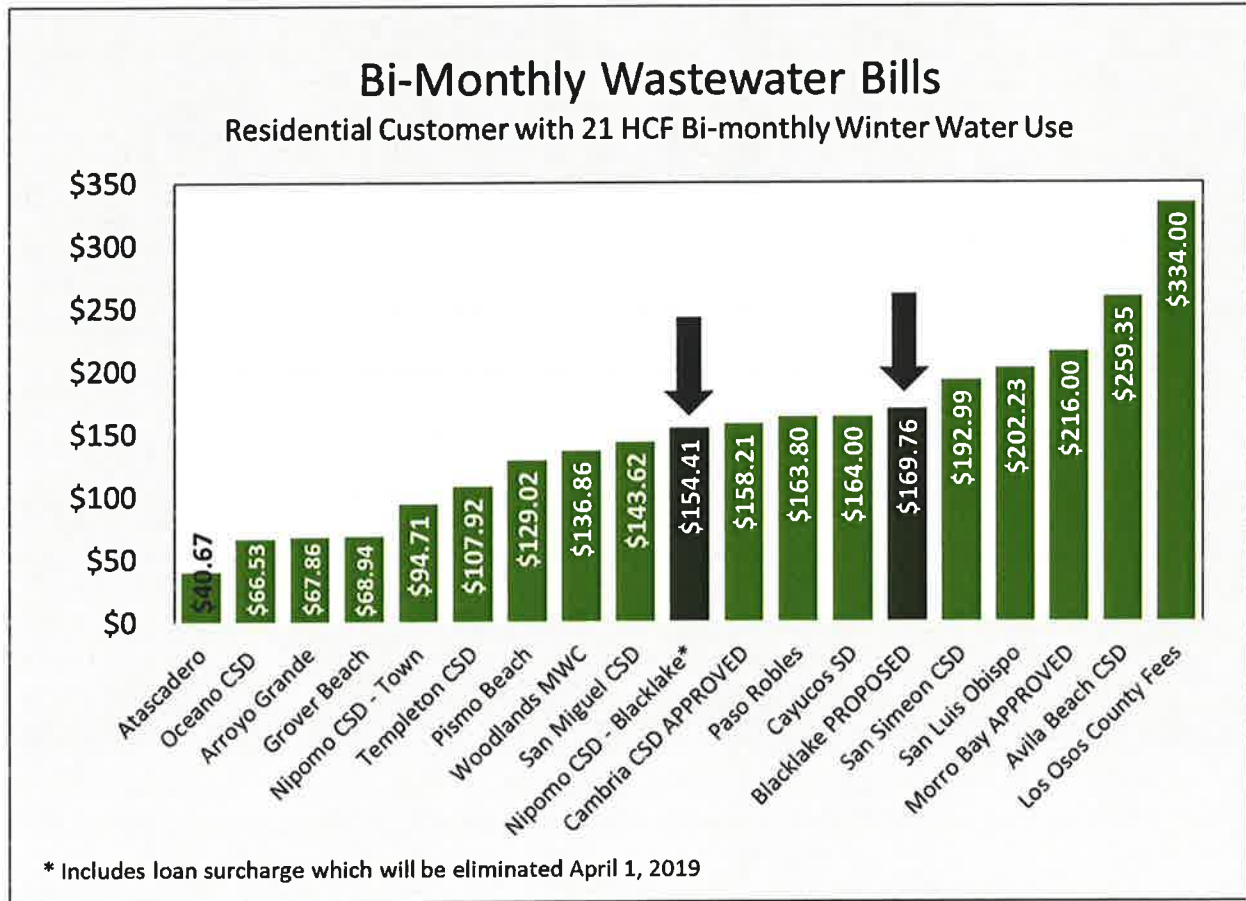
Also provided below is a chart comparing the current and proposed Blacklake single family residential sewer bill with the sewer bills of other local agencies. For agencies that charge volume rates, an estimated flow of 21 HCF per two-month period was used for comparison purposes. It should be noted that the total current single family residential bill is \$154.41 (base charge plus the loan surcharge). The April 1, 2019 proposed bill is \$169.76 which is a 10% increase.



**Table 18: Current and Proposed Bi-Monthly Sewer Rates  
Nipomo Community Services District  
Blacklake Sewer Rate Study 2018**

Customer Class	Current	April 1, 2019	April 1, 2020	April 1, 2021	April 1, 2022	April 1, 2023
<b>Bi-Monthly Residential Service Charges [1]</b>						
Single Family	\$145.51	\$169.76 16.7%	\$197.77 16.5%	\$230.40 16.5%	\$268.42 16.5%	\$295.26 10.0%
Multi-Family	\$95.08	\$109.08 14.7%	\$127.07 16.5%	\$148.04 16.5%	\$172.47 16.5%	\$189.72 10.0%
<b>Non-Residential Service Charges [1]</b>						
Fixed Meter Charges		34.8%	16.5%	16.5%	16.5%	10.0%
Up to 1"	\$65.52	\$88.35	\$102.93	\$119.91	\$139.70	\$153.67
1.5"	\$186.50	\$233.45	\$271.97	\$316.85	\$369.13	\$406.04
2"	\$295.38	\$364.04	\$424.11	\$494.09	\$575.61	\$633.17
3"	\$549.43	\$668.75	\$779.09	\$907.64	\$1,057.40	\$1,163.14
4"	\$912.36	\$1,104.05	\$1,286.22	\$1,498.45	\$1,745.69	\$1,920.26
6"	\$1,819.68	\$2,192.30	\$2,554.03	\$2,975.44	\$3,466.39	\$3,813.03
8"	\$2,908.48	\$3,498.20	\$4,075.40	\$4,747.84	\$5,531.23	\$6,084.35
<b>Non-Residential Usage Rates (\$/HCF)</b>						
Low Strength	\$3.56	\$3.97	\$4.63	\$5.39	\$6.28	\$6.91
Medium Strength	\$4.80	\$5.28	\$6.15	\$7.16	\$8.34	\$9.17
High Strength	\$7.59	\$8.22	\$9.58	\$11.16	\$13.00	\$14.30
Loan Surcharge (All customers)	\$8.90	NA	NA	NA	NA	NA

1 – Does not include the loan surcharge of \$8.90 which will no longer be billed as of April 1, 2019



## 5.5 Future Recommendations

It is recommended that NCSO update the Blacklake cost of service and rates every five years to account for cost increases and operational changes. It is anticipated that any future rate studies will reflect either regionalization of Blacklake with the Town system or continued local operation of the Blacklake WRF. Any future rate studies should also review permitting and regulatory issues related to emerging wastewater constituents.