



Napa Sanitation District  
*Cost of Service Rate and Capacity Charge Study*

*Technical Memorandum #2*  
**FINANCIAL PLAN REVIEW AND FORECAST**

*DRAFT*

*March 2018*

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## Abbreviations

2016 SSC Study	FYE 2016 Sewer Service Charge Rate Study
AF	Acre-feet
Carollo	Carollo Engineers, Inc.
City	City of Napa, CA
County	Napa County, CA
EDU	Equivalent Dwelling Unit
MGD	million gallons per day
NapaSan	Napa Sanitation District
SFR	Single Family Residential
SSC	Sewer Service Charge
TM	Technical Memorandum

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# 1 Introduction

## 1.1 Project Background

Napa Sanitation District (NapaSan) retained Carollo Engineers, Inc. (Carollo) to conduct a study regarding its sewer service charge (SSC) and capacity charge methodologies, among other financial analyses. As outlined in the project scope, Carollo will deliver a series of six technical memoranda (TM) outlining the analysis and recommendation for each individual topic covered by the study. Those topics are as follows:

- TM #1 – Residential Customer Data Analysis and Recommendations
- TM #2 – Financial Plan Review and Forecast
- TM #3 – Cost of Service Analysis and Results
- TM #4 – Billing Procedures Review and Recommendations
- TM #5 – Capacity Charge Analysis and Recommendations
- TM #6 – Sewer Service Charge Analysis and Recommendations

The final project deliverable will be presented to NapaSan as a compilation of the six TMs outlining Carollo's methodologies, results, and recommendations.

### 1.1.1 About NapaSan

NapaSan provides wastewater collection and treatment for approximately 82,000 residents, primarily in the City of Napa, California. NapaSan treats 10 million gallons per day (MGD), with a total treatment capacity of 15.4 MGD. NapaSan is able to reclaim a portion of its wastewater flows for recycled water usage, producing approximately 650 million gallons per year.

## 1.2 Financial Review and Forecast

As part of the project deliverables, NapaSan requested that Carollo review NapaSan's current ten-year financial forecast and the proposed revenue requirements, debt coverages, and funding plan.

Carollo compiled information from the following sources to develop a financial model to test the overall financial forecast prepared by NapaSan:

- O&M budgets, with past actuals and proposed budgets for the next fiscal year
- Expense summaries by department
- Debt service schedules
- Capital improvement plans through fiscal year ending (FYE) 2028
- Assumed service area growth and cost escalation rates
- Non-conventional financing, such as grants and SRF loans

### 1.2.1 Analysis and Financial Tests Performed

This analysis conducted three primary financial tests to assess NapaSan's financial plan.

- **Cash Flow Sufficiency Test** – The cash flow test defines the amount of annual revenues that must be generated in order to meet annual expenditure obligations of the utility as well as maintain sufficient reserves.
- **Bond Coverage Sufficiency Test** – Bond coverage refers to the collection in revenues to meet all operating expenses and debt service obligations plus an additional multiple of that debt service. NapaSan has a legally required minimum bond coverage ratio of 1.25 times (1.25x); however, for the purpose of prudent financial planning the bond coverage test was set to meet a 1.50x coverage ratio.
- **Reserves Test** – The reserve test ensures that each cost center has enough money in reserves in order to continue funding operations and CIP during unexpected revenue shortfalls according to the District's reserve targets. This test is not legally binding and reserve targets can be reduced in some cases in order to mitigate rate payer impacts.

## 2 Growth and Inflation Forecast

### 2.1 Growth Assumptions

NapaSan currently projects annual growth of approximately 0.7 percent on average over the next ten years. Annual growth over the next three years is projected between 1 and 1.25 percent, while FYE 2021 and beyond is projected at approximately 0.6 percent on average. The annual escalation rates for FYE 2019 through 2027 are outlined in Table 1.

### 2.2 Inflation Assumptions

Inflation for labor costs was assumed at 3.3 percent on average, while supplies and services were escalated at 2 percent. Capital costs were escalated at 3.2 percent. The annual escalation rates for FYE 2019 through 2027 are outlined in Table 1.

Table 1 Cost Escalation and Growth Rates by Fiscal Year

Category	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027
Customers	1.1	1.2	0.4	0.6	0.6	0.6	0.6	0.6	0.6
Labor	3.4	3.4	3.3	3.3	3.4	3.4	3.4	3.4	3.5
Supplies & Services	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Capital / Construction	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
(1) All figures in percents.									

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## 3 Revenue Requirements Analysis

### 3.1 Financial Plan Basis

NapaSan's current financial plan was developed as part of its FYE 2016 Sewer Service Charge Rate Study (2016 SSC Study) performed by NBS. The 2016 SSC Study recommended a series of revenue increases for NapaSan in order to maintain positive cash flows, meet debt coverage obligations, and satisfy reserve policies.

The customer growth assumption was applied to current revenues and forecasted against projected expenditures for the next several years in order to test the validity of the recommended revenue increases.

### 3.2 Financial Tests

#### 3.2.1 Cash Flow Test

As shown in Table 2, the current revenue is not sufficient to meet operational or capital needs over the next several years. Revenue increases will be needed in order to maintain positive cash flow and fund capital projects and reserves. This revenue projection is based on the FYE 2017 revenue levels, escalated by service area growth factors found in Table 1.

The scheduled revenue increases, along with the adjusted financial forecast, are outlined in Table 3.

Table 2 Financial Forecast Prior to Scheduled Revenue Increases

Category	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
<b>Revenues</b>					
Sewer Service Charge <sup>(2)</sup>	\$22,800	\$23,000	\$23,200	\$23,500	\$23,600
Capacity Charges	3,600	4,200	5,100	1,800	2,700
Recycled Water Sales	900	1,000	1,200	1,300	1,300
Other Operating Revenues	500	500	500	500	500
<b>Total Operating Revenues</b>	<b>\$27,700</b>	<b>\$28,700</b>	<b>\$30,000</b>	<b>\$27,100</b>	<b>\$28,100</b>
Interest	\$200	\$200	\$300	\$400	\$400
Rents and leases	700	700	700	700	700
Grants	4,100	-	-	-	-
Loans	10,100	2,000	-	-	1,000
<b>Total Non-Operating Revenues</b>	<b>\$15,100</b>	<b>\$3,000</b>	<b>\$1,000</b>	<b>\$1,100</b>	<b>\$2,100</b>
<b>Total Revenues</b>	<b>\$42,900</b>	<b>\$31,700</b>	<b>\$31,000</b>	<b>\$28,200</b>	<b>\$30,200</b>
<b>Expenditures</b>					
Salaries and Benefits	9,600	9,900	10,200	10,600	10,900
Services and Supplies	5,800	5,900	6,000	6,200	6,300
Debt	4,800	4,800	5,900	5,900	5,900
S&S - OTO	-	-	200	300	-
<b>Total Operating Expenses</b>	<b>\$20,200</b>	<b>\$20,700</b>	<b>\$22,500</b>	<b>\$23,000</b>	<b>\$23,200</b>
Capital Projects	\$25,000	\$15,200	\$12,600	\$12,500	\$10,800
Additions to Meet Fund Targets	400	3,000	10,000	15,400	24,200
<b>Total Non-Operating Expenses</b>	<b>\$25,500</b>	<b>\$18,100</b>	<b>\$22,500</b>	<b>\$27,900</b>	<b>\$35,000</b>
<b>Total Expenses</b>	<b>\$45,700</b>	<b>\$38,800</b>	<b>\$45,000</b>	<b>\$50,900</b>	<b>\$58,200</b>
GAAP Adjustment	500	-	-	-	-
<b>Surplus/(Deficit) <sup>(2)</sup></b>	<b>\$(2,300)</b>	<b>\$(7,100)</b>	<b>\$(14,000)</b>	<b>\$(22,700)</b>	<b>\$(28,000)</b>
<b>Ending Reserve Balance</b>	<b>\$12,500</b>	<b>\$8,300</b>	<b>\$4,300</b>	<b>\$(3,100)</b>	<b>\$(6,900)</b>
(1) All figures in thousand dollars.					
(2) Revenue and cash flow figures are prior to any scheduled revenue adjustments.					



Table 3 Financial Forecast Following Scheduled Revenue Increases

Category	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Baseline Revenues	\$42,900	\$35,100	\$36,100	\$34,800	\$38,000
Operating Expenses	20,200	20,700	22,500	23,000	23,200
Non-Operating Expenses & Capital	24,600	15,200	12,600	12,600	10,800
<b>Surplus / (Deficit) (pre-increase)</b>	<b>\$(1,900)</b>	<b>\$(800)</b>	<b>\$1,000</b>	<b>\$(800)</b>	<b>\$4,000</b>
Revenue Increase	15%	6%	5%	4%	3%
Additional Revenue	\$3,400	\$1,600	\$1,400	\$1,200	\$900
<b>Surplus / (Deficit) (post-increase)</b>	<b>\$1,500</b>	<b>\$800</b>	<b>\$2,400</b>	<b>\$400</b>	<b>\$4,900</b>
(1) All figures in thousand dollars.					

### 3.2.2 Debt Coverage Test

The debt coverage test is stipulated in the official statement for each bond series that NapaSan issues. NapaSan's stipulated debt coverage is 1.25x, meaning that revenues minus operating expenditures must be 25 percent greater than the debt service due in that fiscal year. While 1.25x is the mandated debt coverage ratio, this analysis assumes a more conservative 1.50x coverage. This allows NapaSan to plan without coming close to the 1.25x threshold.

Not all revenues are allowed in the debt coverage test. For NapaSan, all sewer service charge and capacity charge revenues are allowed in the debt coverage calculation. Some non-operating revenues, such as interest, rents, and leases, are permitted, while grant and loan proceeds are not.

The overview of revenues and expenditures included in this test are outlined in Table 4. The revenues outlined in the analysis are following the revenue increases show in Table 3, under the assumption that needed increases are cash flow driven and not debt driven. Based on this assumption, NapaSan is projected to well exceed its debt coverage ratio requirements.

Table 4 Debt Coverage Test Following Increases

Category	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
<b>Allowable Revenues</b>					
User Charges	\$22,800	\$26,400	\$28,300	\$30,100	\$31,400
Other Operating Revenues	1,400	1,500	1,600	1,800	1,800
Non-Operating Revenues	900	1,000	1,000	1,100	1,100
Capacity Charges	3,600	4,200	5,100	1,800	2,700
<b>Total Allowable Revenues</b>	<b>\$28,600</b>	<b>\$33,100</b>	<b>\$36,100</b>	<b>\$34,800</b>	<b>\$37,000</b>
<b>Expenditures</b>					
Operating Expenses	\$15,400	\$15,800	\$16,300	\$16,800	\$17,200
Debt Service	4,800	4,800	5,900	5,900	5,900
1.50x Coverage	2,400	2,400	3,000	3,000	3,000
<b>Total Expenditures plus Coverage</b>	<b>\$22,600</b>	<b>\$23,100</b>	<b>\$25,200</b>	<b>\$25,700</b>	<b>\$26,100</b>
<b>Debt Coverage Surplus/(Deficit)</b>	<b>\$6,100</b>	<b>\$10,000</b>	<b>\$10,900</b>	<b>\$9,100</b>	<b>\$10,900</b>
<b>Debt Coverage Ratio</b>	<b>2.77x</b>	<b>3.57x</b>	<b>3.33x</b>	<b>3.04x</b>	<b>3.34x</b>

(1) All figures in thousand dollars.

### 3.2.3 Reserve Tests

NapaSan currently maintains three reserves in order to maintain smooth funding of operating expenses.

- The **operating reserve** is designed to assist NapaSan during emergencies. This reserve is maintained at 15% of annual operating expenses, excluding debt service and transfers.
- The **cash flow reserve** is the amount of cash necessary for NapaSan to have on hand on July 1 to cover its anticipated expenses through the summer and fall until NapaSan receives the bulk of its operating revenues (sewer services charges collected as property assessments) in December.
- The **debt reserve** held in trust by a third party. This reserve is a requirement of the 2009B COP bond covenants and is used to ensure that debt service payments will be made in full and on time. The debt reserve requirement was eliminated when the 2009B COPs were refinanced in December 2017.

In addition, NapaSan will begin funding a rehabilitation and repair fund for its recycled water assets beginning in FYE 2020.

The forecast of reserve balances under the scheduled revenue adjustments is outlined in Table 5.

Table 5 Reserve Balance Forecast Following Increases

Category	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
<b>Cash Flow after Expenses</b>	\$1,520	\$870	\$2,460	\$460	\$4,930
<b>Operating Reserve</b>					
<i>Target</i>	\$2,310	\$2,400	\$4,000	\$5,000	\$6,000
Beginning Balance	\$2,240	\$2,310	\$2,400	\$4,000	\$5,000
Transfers In / (Out)	70	90	1,600	1,000	1,000
<b>Ending Balance</b>	<b>\$2,310</b>	<b>\$2,400</b>	<b>\$4,000</b>	<b>\$5,000</b>	<b>\$6,000</b>
<b>Cash Flow Reserve</b>					
<i>Target</i>	\$10,750	\$11,000	\$11,000	\$11,250	\$11,600
Beginning Balance	\$10,120	\$11,570	\$14,340	\$13,990	\$13,320
Transfers In / (Out)	1,450	2,770	(360)	(670)	3,800
<b>Ending Balance</b>	<b>\$11,570</b>	<b>\$14,340</b>	<b>\$13,990</b>	<b>\$13,320</b>	<b>\$17,120</b>
<b>Debt Reserve</b>					
<i>Target</i>	\$1,990	\$-	\$1,100	\$1,100	\$1,100
Beginning Balance	\$1,990	\$1,990	\$-	\$1,100	\$1,100
Transfers In / (Out)	-	(1,990)	1,100	-	-
<b>Ending Balance</b>	<b>\$1,990</b>	<b>\$-</b>	<b>\$1,100</b>	<b>\$1,100</b>	<b>\$1,100</b>
<b>RW R&amp;R Reserve</b>					
<i>Target</i>	\$-	\$-	\$120	\$240	\$380
Beginning Balance	\$-	\$-	\$-	\$120	\$240
Transfers In / (Out)	-	-	120	130	130
<b>Ending Balance</b>	<b>\$-</b>	<b>\$-</b>	<b>\$120</b>	<b>\$240</b>	<b>\$380</b>
<b>Total Reserve Funds Balance</b>	<b>\$15,900</b>	<b>\$16,700</b>	<b>\$19,200</b>	<b>\$19,700</b>	<b>\$24,600</b>
<b>Fund Equity Available for Use <sup>(2)</sup></b>	<b>\$820</b>	<b>\$3,340</b>	<b>\$2,990</b>	<b>\$2,070</b>	<b>\$5,520</b>
<sup>(1)</sup> All figures in thousand dollars. <sup>(2)</sup> Fund equity available for use is equal to the sum of all reserve fund balances, less the sum of reserve fund targets. A negative fund equity level indicates that one or more of the reserve balances are below the policy target.					

## 4 Financial Plan Assessment

Based on this analysis, Carollo anticipates that NapaSan will achieve its financial objectives with the scheduled revenue increases. The scheduled increases are projected to pass the cash flow, debt coverage, and reserve funding tests in each of the next five fiscal years (through FYE 2023). The projected revenues and expenses are shown in Figure 1.

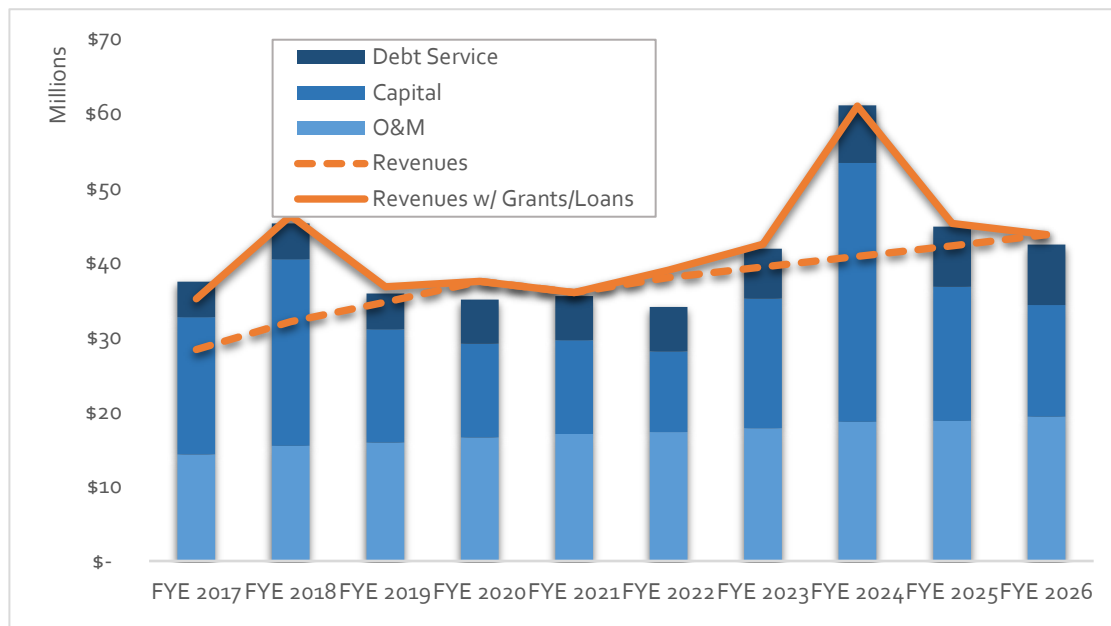


Figure 1 Projected Revenues and Expenses

Beyond FYE 2023, NapaSan is projected to achieve the same benchmarks in all years, except for a slight drop below cash flow needs in FYE 2024. However, this is a small shortfall (approximately \$94,000) and can be covered with fund equity available for use (\$4.27 million).

The forecasted sewer service charge under each fiscal year is shown in Figure 2.

### 4.1 Revenue Requirement

The revenue requirement outlines the total revenue target for the user rates based on the results of the financial tests (cash flow, debt coverage, and reserves). Table 6 outlines the calculation of the revenue requirement based on the scheduled revenue increases discussed in this tech memo.

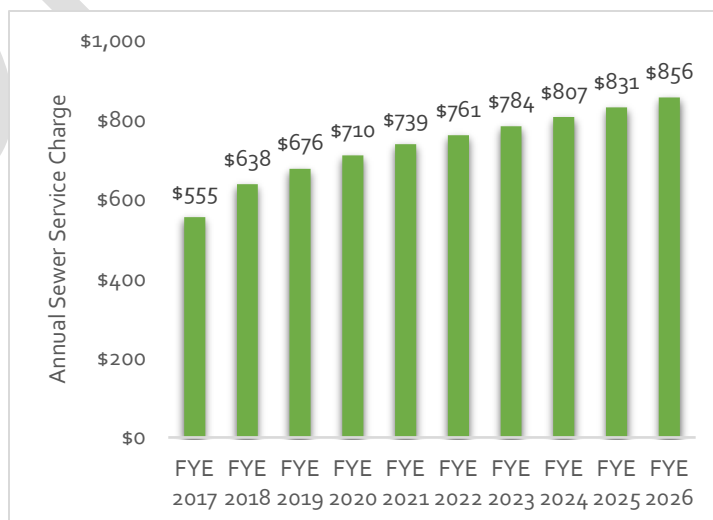


Figure 2 Projected Sewer Service Charge

Table 6 Revenue Requirements

Category	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Baseline Total Revenues	\$42,900	\$35,100	\$36,100	\$34,800	\$38,000
Additional Revenue from Increase	3,400	1,600	1,400	1,200	900
Less:					
Capacity Charges	\$(3,600)	\$(4,200)	\$(5,100)	\$(1,800)	\$(2,700)
Recycled Water Sales	(900)	(1,000)	(1,200)	(1,300)	(1,300)
Other Operating Revenues	(500)	(500)	(500)	(500)	(500)
Interest	(200)	(200)	(300)	(400)	(400)
Rents and Leases	(700)	(700)	(700)	(700)	(700)
Grants	(4,100)	-	-	-	-
Loans	(10,100)	(2,000)	-	-	(1,000)
<b>Revenue Requirement for SSC</b>	<b>\$26,200</b>	<b>\$28,000</b>	<b>\$29,700</b>	<b>\$31,300</b>	<b>\$32,300</b>
(1) All figures in thousand dollars.					