KIRKWOOD MEADOWS
PUBLIC UTILITY DISTRICT

Kirkwood Meadows

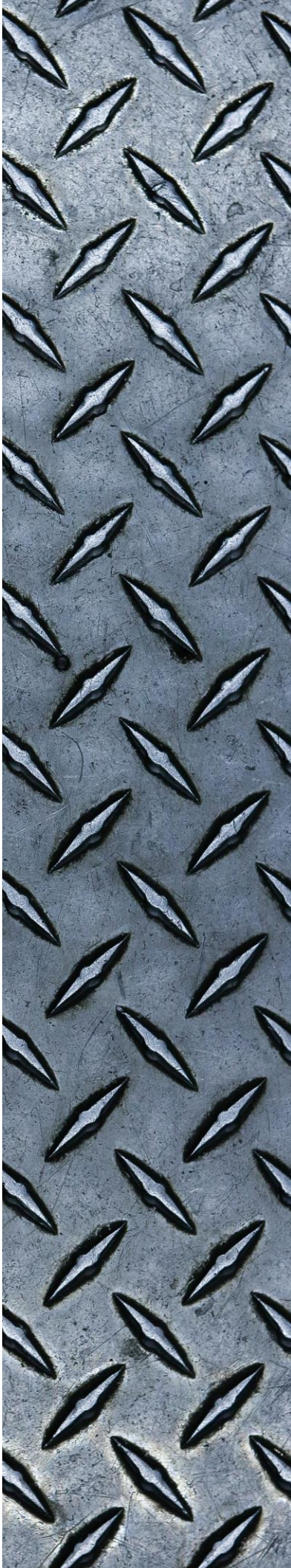
Public Utilities District

Water and Wastewater Rate Study

Report

April 1, 2020

HILDEBRAND
CONSULTING



April 1, 2020

Mr. Erik Christeson
General Manager
Kirkwood Meadow Public Utility District
33540 Loop Road
Kirkwood, CA 95646

Re: 2020 Water and Wastewater Rate Study

Dear Mr. Christeson,

Hildebrand Consulting is pleased to present this 2020 Water and Wastewater Rate Study (Study) performed for the Kirkwood Meadows Public Utility District. We appreciate the fine assistance provided by you and all of the members of the District staff who participated in the Study.

If you or others at the District have any questions, please do not hesitate to contact me at:

mhildebrand@hildco.com
(510) 316-0621

We appreciate the opportunity to be of service to the District and look forward to the possibility of doing so again in the near future.

Sincerely,

Mark Hildebrand
Hildebrand Consulting, LLC

Enclosure

Executive Summary

Hildebrand Consulting, LLC ("Consultant") was retained by the Kirkwood Meadows Public Utility District ("KMPUD or "District") to conduct a 2020 Water and Wastewater Rate Study (Study). KMPUD is a public municipal corporation located within Alpine, Amador, and El Dorado Counties. The District services 864 active water connections and receives its water supply entirely from groundwater wells.

Revenue for the water and wastewater utilities comes primarily from rate revenue. The enterprises also receive some property tax revenue and miscellaneous fee revenue. Both the water utility and wastewater utility charge a fixed monthly rate (or "Base Rate") in addition to a flat volumetric rate. The last rate study for both enterprises was conducted by the District in 2017.

Scope and Approach

The scope of the Study was to prepare multi-year financial plans, develop a consistent cost-of-service analyses, review the existing rate structures, and propose 5-year rate schedules for both the water and wastewater utilities. The primary objectives of the Study were to develop multi-year financial management plans for both the water and wastewater enterprises; identify future annual rate adjustments to water and wastewater rates to help ensure adequate revenues to meet the respective utilities' ongoing service requirements, District policies, and financial obligations; determine the cost of providing water and wastewater service to customers using industry-accepted methodologies' and recommend specific modifications to the existing rate structures in order to ensure that the proposed rates equitably recover the cost of providing service and comporting with industry standards and California's legal requirements.

The Study applied methodologies that are aligned with industry standard practices for rate setting as promulgated by the AWAA and the WEF and all applicable law, including California Constitution Article XIII D, Section 6(b), commonly known as Proposition 218.

Financial Plans

The Study produced robust financial plans that will help enable both utilities to meet revenue requirements and financial performance objectives throughout the planning period while striving to minimize rate increases. Financial performance objectives include covering all anticipated operating, maintenance, debt service, and capital program costs; maintaining financial reserves in accordance with District policy; and meeting debt service coverage ratio obligations.

Based upon the financial data, assumptions, and reserve targets, the Study proposes a 5-year schedule of rate adjustments for the water utility as detailed in Table ES-1 below. In addition to these rate revenue increases, rate structure changes are proposed for the new rates to be effective July 1, 2020.

Table ES-1: Recommended Water Rate Revenue Increases

Rate Adjustment Date	Proposed Rate Increase
July 1, 2020	9.0%
July 1, 2021	9.0%
July 1, 2022	9.0%
July 1, 2023	9.0%
July 1, 2024	2.0%

The 5-year schedule of rate adjustments for wastewater are summarized in Table ES-2. In addition to these rate increases and rate structural changes, the wastewater financial assumes that most of the WWTP capital projects will be funded with debt (as a 30-year bank note at 3% interest). The total proposed debt over the five-year period is $4.3 million.

Table ES-2: Recommended Wastewater Rate Revenue Increases

Rate Adjustment Date	Proposed Rate Increase
July 1, 2020	9.0%
July 1, 2021	9.0%
July 1, 2022	9.0%
July 1, 2023	9.0%
July 1, 2024	9.0%

Cost of Service and Rate Design

Once the respective rate revenue requirements for both utilities have been determined, the next step in the rate setting process is to evaluate the cost of providing these services to individual customer classes. A cost-of-service analysis evaluates the cost of providing service and proportionately allocates those costs to customer classes and rate structure components to ensure the proposed rate structure is aligned with the costs of providing water and wastewater service. This is required in order to be equitable among all ratepayers and to comply with Proposition 218. The Study employed well-established industry practices as recognized by the WEF, AWWA, and other accepted industry standards. The cost-of-service analysis and rate structure proposed by the Study is designed to:

- Fairly and equitably recover costs through rates
- Conform to accepted industry practice and legal requirements
- Provide financial stability and recovery of system fixed costs

Water Rates

The structure for the District's current potable water rates include a three-part structure that is comprised of a fixed Base Rate (charged per dwelling unit or equivalent dwelling unit), a fixed Meter Charge (charged per meter), and a consumption-based Usage Rate. Irrigation meters currently do not pay a Base Rate and pay half of the standard Usage Rate. As noted above for compliance with Proposition 218 and equitability requirements, the Study recommends charging irrigation meters a Base Rate (pro-rated

over 12 months to recognize that irrigation meters are only active for 4 months of the year) and charging Irrigation accounts the same Usage Rate as domestic water.

The full schedule of water rates are shown in Table ES-3. All rates are effective the first day of the fiscal year (July 1).

Table ES-3: Proposed Water Rates (FY2020/21 through FY 2024/25)

	Current Rates	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25
Monthly Meter Charge (per meter)	$3.30	$3.35	$3.65	$3.98	$4.34	$4.43
Monthly Indoor Base Rate [(a)]	$28.02	$29.29	$31.93	$34.80	$37.93	$38.69
Monthly Irrigation Base Rate [(b)]	$0.00	$9.76	$10.64	$11.60	$12.64	$12.89
Usage Rate (per hcf)	$10.36	$10.40	$11.34	$12.36	$13.47	$13.74

[(a)] Charge per dwelling unit for residential and per EDU for commercial
[(b)] Charged per dwelling unit for residential Irrigation and per EDU for commercial Irrigation

Wastewater Rates

The District's current wastewater rates includes a two-part structure that is comprised of a fixed Base Rate and a consumption-based Usage Rate. The Base Rate is charged per dwelling unit for residential accounts and per EDU for commercial accounts. In addition, the EDU value for restaurants (i.e. "high strength" users) is multiplied by 1.57 to account for the additional costs associated with treating higher strength sewage. The Usage Rate is charged per unit of usage (in hcf) and is the same rate for all customers. The Study recommends that the high strength factor be applied to the Usage Rate as opposed to the Base Rate, which is more consistent with standard practices. The proposed rate schedules for the next 5 years are summarized in Table ES-4.

Table ES-4: Wastewater Rates - 5-Year Schedule

	Current Rates*	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25
Monthly Base Rate (per DU or EDU)	$39.80	$53.05	$57.82	$63.02	$68.69	$74.87
Usage Rate (per hcf)						
Residential and Commercial	$39.75	$30.07	$32.78	$35.73	$38.95	$42.46
High Strength Commercial	$39.75	$93.84	102.29	111.5	121.54	132.48

* Comparing current rates to proposed rates is complicated by the fact that the strength factor has been moved from the Base Rate to the Usage Rate.

The Study used methodologies that are aligned with industry standard practices for rate setting as promulgated by WEF, AWWA, and all applicable laws, including California's Proposition 218. The proposed annual adjustments to the rates proportionately assign costs to each customer class and customer based on service demands and will allow the District to continue to provide safe, reliable water and wastewater service to customers.

The water and wastewater rates will need to be adopted in accordance with Proposition 218, which will require a detailed notice describing the proposed rates to be mailed to each affected property owner or customer at least 45 days prior to conducting a public hearing to adopt the rates.

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Schedule 1 – Water Enterprise Cash Flow Pro Forma

Schedule 2 – Wastewater Enterprise Cash Flow Pro Forma

List of Acronyms

AWWA	American Water Works Association
CIP	capital improvement program
cf	cubic foot (7.48 gallons)
COP	certificate of participation (a form of debt)
DCR	debt service coverage ratio
DU	dwelling unit
District	Kirkwood Meadows Public Utility District
ENR	*Engineering News Record* (periodical)
EDU	equivalent dwelling unit, a measure of sewer utility service based on the estimated volume and strength of wastewater from an average residential dwelling
FY	fiscal year (which ends on June 30)
hcf	hundred cubic feet (i.e. 748 gallons)
HOA	homeowner association
KMPUD	Kirkwood Meadows Public Utility District
lbs	pounds
MG	million gallons
mg/l	milligrams per liter
RUS	United States Department of Agriculture's Rural Utilities Service
WEF	Water Environment Federation
WWTP	Wastewater treatment plant

Section 1. INTRODUCTION

Hildebrand Consulting, LLC ("Consultant") was retained by the Kirkwood Meadows Public Utility District ("KMPUD or "District") to conduct a 2020 Water and Wastewater Rate Study (Study). This report describes in detail the assumptions, procedures, and results of the Study, including conclusions and recommendations.

1.1 UTILITY BACKGROUND

KMPUD is a public municipal corporation located within Alpine, Amador, and El Dorado Counties. KMPUD's service area encompasses an area of approximately 1.875 square miles. The community size and operation of the Kirkwood Ski Resort creates unique seasonal demands on the water and wastewater utilities, with peak activity and population occurring during snow season. There are approximately 150 full-time residents living within the District's service area, but seasonal daily population maximums may reach 8,000 – 9,000 persons during the winter months. The village core includes a combination of residential, lodging, and commercial uses serving residents and guests. The District services 864 active water connections, of which 635 are residential, 51 are commercial, and 177 are irrigation. The residential accounts include 23 homeowner associations (HOAs). KMPUD receives its water supply entirely from groundwater wells.

Revenue for the water and wastewater utilities comes primarily from rate revenue. The enterprises also receive some property tax revenue and miscellaneous fee revenue. Both the water utility and wastewater utility charge a fixed monthly rate (or "Base Rate") in addition to a flat volumetric rate. The last rate study for both enterprises was conducted by the District in 2017.

1.2 SCOPE & OBJECTIVES OF STUDY

The scope of this Study was to prepare multi-year financial plans, develop a consistent cost-of-service analyses, review the existing rate structures, and propose 5-year rate schedules for both the water and wastewater utilities. The primary objectives of this Study were to:

i. Develop multi-year financial management plans for both the water and wastewater enterprises that integrate operational and capital project funding needs and meet established District Reserve Policy goals

ii. Identify future annual rate adjustments to water and wastewater rates to help ensure adequate revenues to meet the respective utilities' ongoing service and financial obligations

iii. Determine the cost of providing water and wastewater service to customers using industry-accepted methodologies

iv. Recommend specific modifications to the existing rate structures in order to ensure that the proposed rates equitably recover the cost of providing service and comporting with industry standards and California's legal requirements

1.3 STUDY METHODOLOGY

This Study applied methodologies that are aligned with industry standard practices for rate setting as promulgated by the AWAA and the WEF and all applicable law, including California Constitution Article XIII D, Section 6(b), commonly known as Proposition 218.

The first step was to develop multi-year financial management plans (for both the water and wastewater enterprises) that determined the level of annual rate revenue required to cover estimated annual operating expenses, debt service (including coverage targets), and capital cost requirements while maintaining adequate reserves. The financial planning models were customized to reflect the financial dynamics of both utilities.

The respective revenue requirements calculated in the financial plans for fiscal year ending June 30, 2021 (FY 2020/21) were then used to perform detailed cost-of-service analyses. The cost-of-service analyses and rate structure designs were conducted based upon principles outlined by the AWWA, the WEF, legal requirements (Proposition 218 and relevant court decisions) and other generally accepted industry practices to develop rates that reflect the cost of providing service.

Recommendations for the financial plans and updated rate structures will be presented to the District Board and a Public Hearing to adopt the rates has been scheduled for June 13, 2020.

Section 2. FINANCIAL PLANS

This section presents the financial plans developed for both utilities, including a description of the source data and financial assumptions. This section concludes with 5-year plans for water and wastewater rate revenue adjustments**.** Schedules 1 and 2 (attached at the end of this report) include detailed data supporting the financial plans discussed herein.

This Study's 10-year financial plans were developed through interactive work sessions with District staff and the Finance Committee. As a result of this process, the Study has produced robust financial plans that will help enable both utilities to meet revenue requirements, and financial performance objectives throughout the planning period while striving to minimize rate increases. Financial performance objectives include covering all anticipated operating, maintenance, debt service, and capital program costs; maintaining financial reserves in accordance with District policy; and meeting debt service coverage ratio obligations. The driving factor behind the recommended annual rate adjustments may vary over the 10-year financial planning period.

The District provided budgeted operating costs for the current fiscal year, a multi-year capital improvement program (CIP), and outstanding debt service obligations. District staff also assisted in confirming other assumptions and policies, such as operating and capital reserve targets, debt service coverage targets, escalation rates for operating costs, and plans for refinancing existing debt (all of which are described in the following subsections).

2.1 WATER ENTERPRISE FINANCIAL PLAN

The following sections describe the financial plan for the District's Water Enterprise.

2.1.1 BEGINNING FUND BALANCES - WATER ENTERPRISE

The FY 2019/20 beginning fund balances for the Fund 10 is summarized in **Table 1**.

Table 1: Fund 10 (Water) Beginning Cash Balance (FY 2019/20)

Operating Fund	$100,400
Capital Reserve Fund	$119,200
COP Reserve Fund	$35,700
Total Unrestricted:	$255,300

2.1.2 RESERVE TARGETS - WATER ENTERPRISE

Reserves for utilities are cash balances that are maintained in order to (a) comply with contractual obligations (e.g. bond covenants), (b) protect the utility from unexpected financial events, and (c) accommodate operational and capital program cash flow needs. Often multiple reserves are maintained, each with a specific function. In addition to the direct benefits of financial stability, reserves can help utilities obtain higher credit rankings, which can then help qualify the utility for cheaper debt. Credit rating agencies evaluate utilities on their financial stability, which includes adherence to formally adopted District Reserve Policy targets.

KMPUD has adopted the following financial management policies (Policy Statement 695) which include guidance with respect to reserve levels.

Operating Reserves – The operating reserve target for KMPUD's General Fund is 25% of annual expenses. This study assumes that this target also applies to the Water and

Wastewater Enterprises individually. The Water Enterprise's annual operating expenses are just over $600 thousand, establishing an operating reserve target of $150 thousand. Because of the highly seasonal nature of utility use in Kirkwood, and variable monthly cash in-flows, the target describes the lowest desirable level of operating cash available at the end of any single month during the year (usually December).

Capital Reserve Fund – This policy establishes a target a capital reserve equal to 25% of the five years of cash needed for expenditures listed in the approved 5-year capital plan. The 5-year Capital Plan is developed and approved annually as part of the District's annual budget and includes itemized budgets for capital expenditures by each Department. The Water Enterprise's 5-year capital plan amounts to $566 thousand, therefore the Capital Reserve Fund target is approximately $141 thousand.

COP Fund – The COP Fund (Certificate of Participation) is a restricted fund of approximately $36 thousand that was established as a requirement for the Water Enterprises current outstanding debt. It will be released once the debt has been repaid.

The above policies are generally consistent with Consultant's industry experience for similar systems. In order to further strengthen the current reserve policies, this Study recommends that the District's formal policies be modified to establish these reserve targets for the individual enterprise fund (rather than for the District as a whole). Adhering to the District's existing reserve policies is consistent with best practices as reported by reserve studies conducted by the AWWA and is viewed favorably by rating agencies (e.g. Fitch, Moody's, and Standard & Poor's).

2.1.3 CUSTOMER GROWTH - WATER ENTERPRISE

Future customer growth can affect a rate study in terms of (1) anticipated capacity charge revenue and (2) increases in rate revenue due to a larger customer base. This Study assumes that the District will not grow over the next five years.

2.1.4 RATE REVENUES - WATER ENTERPRISE

Rate revenue is the revenue generated from customers for water service. Rate revenue is collected through a fixed "Base Rate", a fixed "Meter Charge", and a variable "Usage Rate". This Study's financial plan propose annual rate revenue adjustments that will meet the District's revenue requirements. Budgeted and projected rate revenues are listed in **Schedule 1**[1].

2.1.5 NON-RATE REVENUES - WATER ENTERPRISE

In addition to rate revenue, the Water Enterprise receives other revenue, including miscellaneous fees, interest earnings on investments, and property tax revenue. Property tax revenue collected by the District is first allocated as needed to the District's Electricity Utility (per an agreement with RUS for the electric transmission loans) and then allocated to other District departments as available. This Study assumed that future property tax allocations to the Water Enterprise would be equal to the average allocation from the past four (4) years ($93 thousand). Estimates of future interest income were calculated annually based upon estimated average fund balances and historic effective return on cash and invested funds (1.0%). Projections of all other non-rate revenues were based on FY 2019/20 budgeted revenue.

All revenues for the Water Enterprise are depicted below in Figure 1, and detailed in **Schedule 1**.

[1] The rate revenues in Schedule 1 includes the proposed rate adjustment recommended by this Study, as described in Section 2.1.13.

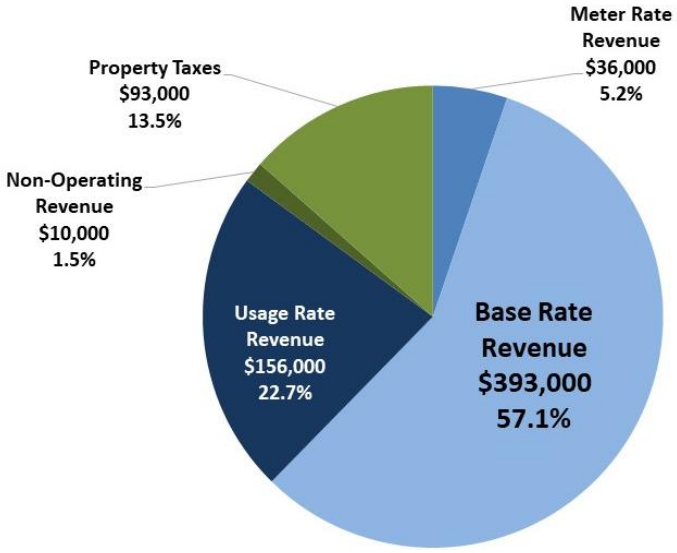

Figure 1: Water Enterprise Revenue Categories (FY 2019/20)

2.1.6 OPERATION AND MAINTENANCE EXPENSES - WATER ENTERPRISE

The combined operating and maintenance expenses include all ongoing pumping, treatment, distribution, and administrative expenses. The annual operating and maintenance costs for this Study are based on the Water Enterprise's FY 2019/20 budget and are adjusted for future years based on inflation (see Section 2.1.7).

2.1.7 COST ESCALATION - WATER ENTERPRISE

Annual cost escalation factors for the various types of expenses were developed based upon a review of historical inflation trends, published inflation forecasts, industry experience, and discussions with District staff. During the projection period, all operations and capital expenses are projected to increase at 3.0% per year.

2.1.8 EXISTING DEBT SERVICE – WATER ENTERPRISE

The Water Enterprise currently has a single outstanding debt (2018 COP) which has annual debt service of approximately $79 thousand and will be paid off in FY 2023/24.

2.1.9 DEBT SERVICE COVERAGE - WATER ENTERPRISE

Debt service coverage is a measurement of the cash flow available to pay current debt obligations. The formula is net operating income (i.e., gross income minus operating expenses) divided by annual debt service. A debt service coverage ratio of 1.0 means that a utility has exactly enough money to pays its debt service after paying its operating expenses. Loans typically include covenants that require the utility to maintain a minimum debt service coverage ratio of 1.20 or 1.25. Maintaining a higher debt service coverage ratio is recommended in order to access more favorable borrowing terms in the future. Based on recently published guidance from Fitch Ratings[2], utility systems with *midrange* financial profiles should maintain a DCR greater than 1.50 times annual debt service. For purposes of this Study, we are proposing a financial plan that target a minimum debt service coverage ratio of 1.50.

2.1.10 CAPITAL IMPROVEMENT PROGRAM - WATER ENTERPRISE

Table 2 and Figure 2 provide a summary of all capital projects planned through FY 2024/25. Capital spending in FY 2025/26 and beyond is assumed to be equal to the average spending from FY 2022/23 to FY 2024/25 ($215 thousand).

[2] As published on July 31, 2013.

Table 2: Water Capital Improvement Schedule (FY 2019/20 through FY 2024/25)

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Water Model	$40,000	$0	$0	$0	$0	$0
Well 6	$25,000	$0	$0	$275,000	$0	$0
Pressure Reducing Stations (2)	$0	$0	$0	$0	$90,000	$0
Well Pumps	$12,000	$0	$0	$0	$0	$12,000
Wells Telemetry & Controls	$20,000	$0	$0	$0	$0	$0
Distribution System Valve Replacement	$0	$25,000	$0	$0	$25,000	$0
Fire Hydrant Replacements	$0	$6,000	$6,000	$6,000	$6,000	$6,000
Tank (Dangburg) Recoating	$0	$0	$0	$0	$0	$120,000
Vehicle Purchase (Split with Wastewater)	$0	$0	$30,000	$0	$0	$0
Well 4/5 Building Replacement	$0	$0	$0	$0	$0	$107,000
Total Capital Expenses	**$97,000**	**$31,000**	**$36,000**	**$281,000**	**$121,000**	**$245,000**

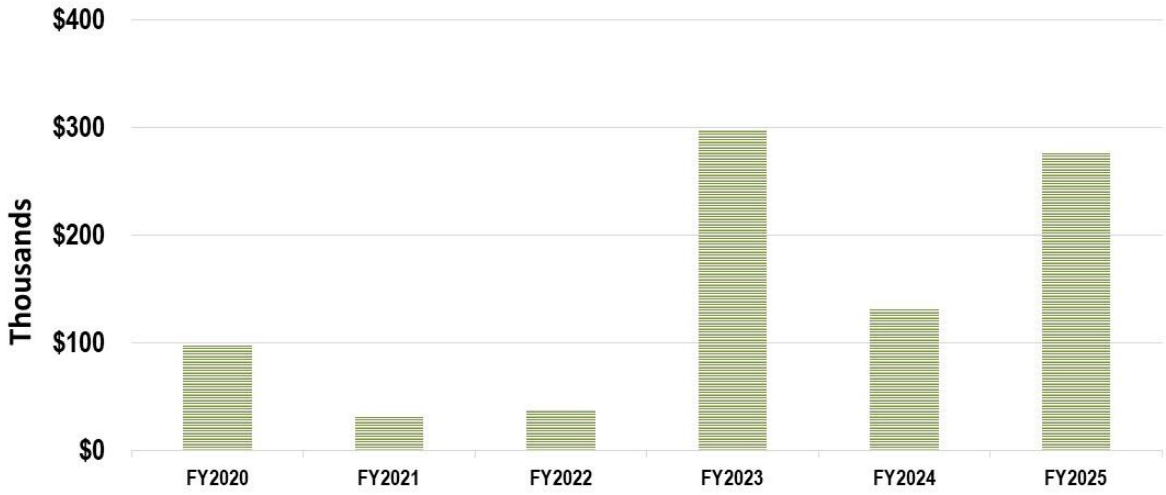

Figure 2: Water Capital Improvement Spending (FY 2019/20 through FY 2024/25)

2.1.11 FUTURE BORROWING ASSUMPTIONS - WATER ENTERPRISE

This Study does not propose any new debt for the Water Enterprise to finance the costs of future capital projects. Debt financing is not utilized because none of the capital projects during the planning period are expected to materially impact cash reserves and it is more cost effective to fund ongoing rehabilitation and replacement projects on a pay-as-you-go basis.

2.1.12 EXPENDITURE SUMMARY - WATER ENTERPRISE

The Water Enterprise's FY 2019/20 budgeted operating and debt expenses are depicted in **Figure 3** and detailed in **Schedule 1**.

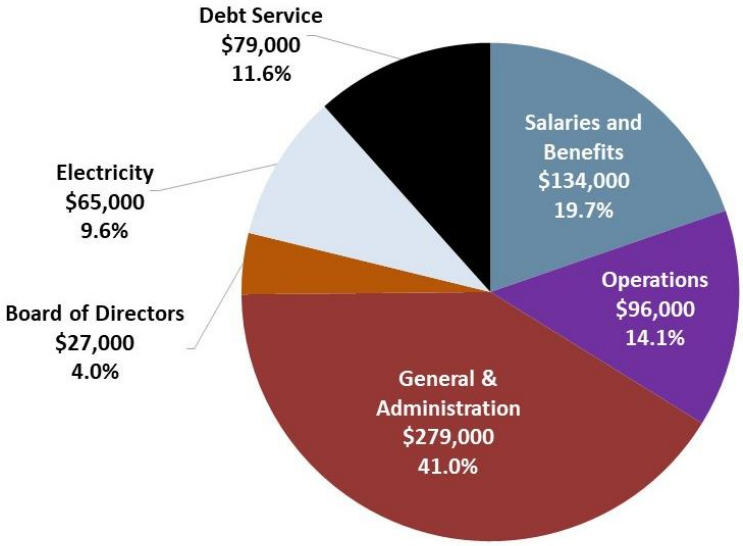

Figure 3: Water Enterprise Budgeted Expense Categories (FY 2019/20)

2.1.13 PROPOSED RATE REVENUE INCREASES - WATER ENTERPRISE

All of the above information was entered into a financial planning model to produce 10-year financial plans that evaluated the sufficiency of current revenues to meet current and estimated future financial obligations and determined the level of rate revenue increases necessary in each year of the planning period.

Based upon the previously discussed financial data, assumptions, and reserve targets, this Study proposes a 5-year schedule of rate adjustments as detailed in **Table 3**. As will be described in the sections that follow, rate structure changes are proposed for the new rates to be effective July 1, 2020. The cash flow numbers provided in **Schedule 1** for the District are summarized graphically in **Figure 4**, which shows that the proposed

rate revenue increases are driven by the need to maintain the reserve levels at targeted levels.

Table 3: Recommended Water Rate Revenue Increases

Rate Adjustment Date	Proposed Rate Increase
July 1, 2020	9.0%
July 1, 2021	9.0%
July 1, 2022	9.0%
July 1, 2023	9.0%
July 1, 2024	2.0%

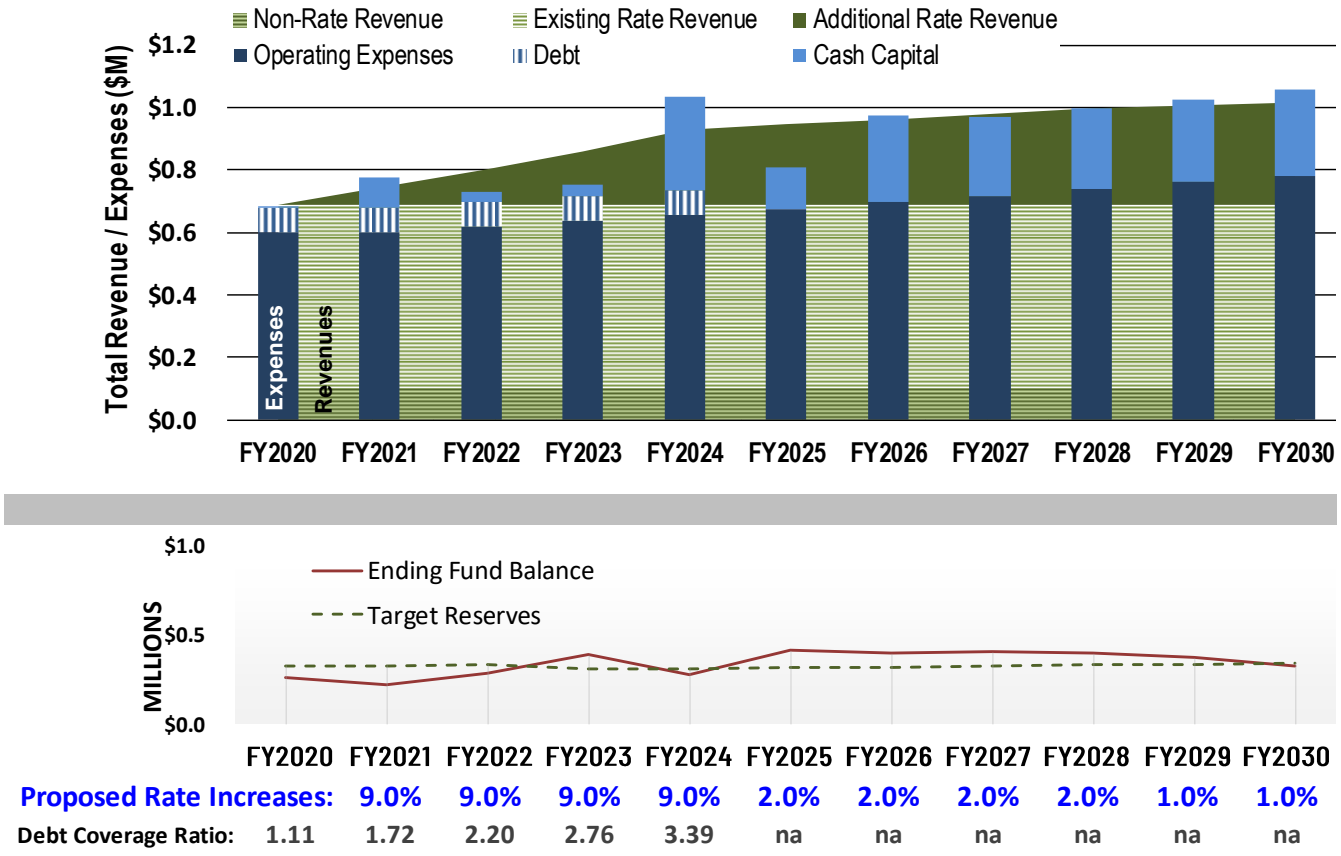

Figure 4: Water Enterprise Financial Forecast with Recommended Rate Increases

2.2 WASTEWATER ENTERPRISE FINANCIAL PLAN

The following describes the financial plan for the District's Wastewater Enterprise.

2.2.1 BEGINNING FUND BALANCES - WASTEWATER ENTERPRISE

The FY 2019/20 beginning fund balances for the Fund 20 is summarized in **Table 4**.

Table 4: Fund 20 (Wastewater) Beginning Cash Balance (FY 2019/20)

Operating Fund	$320,300
Capital Reserve Fund	$44,400
COP Reserve Fund	$52,300
Total Unrestricted:	$417,000

2.2.2 RESERVE TARGETS - WASTEWATER ENTERPRISE

The reserve targets for the Wastewater Enterprise follow the same KMPUD financial management policies as described in detail in Section 2.1.2. The follow describes the targeted amount in each reserve.

Operating Reserves –The Wastewater Enterprise's annual operating expenses are just over $1.16 million; therefore the 25% reserve target is approximately $290 thousand.

Capital Reserve Fund – The Wastewater Enterprise's 5-year capital plan amounts to $4.6 million, therefore the Capital Reserve Fund target is approximately $1.15 million.

COP Fund – The COP Fund (Certificate of Participation) is a restricted fund of approximately $53 thousand that was established as a requirement for the Wastewater Enterprises current outstanding debt. It will be released once the debt has been repaid.

2.2.3 CUSTOMER GROWTH - WASTEWATER ENTERPRISE

As explained in Section 2.1.3, this Study assumes that the District will not grow over the next five years.

2.2.4 RATE REVENUES - WASTEWATER ENTERPRISE

Rate revenue is the revenue generated from customers for wastewater service. Rate revenue for wastewater services is collected through a fixed "Base Rate" and a variable "Usage Rate". This Study's financial plan propose annual rate revenue adjustments that will meet the District's revenue requirements. Budgeted and projected rate revenues are listed in **Schedule 2**[3].

2.2.5 NON-RATE REVENUES - WASTEWATER ENTERPRISE

In addition to rate revenue, the Wastewater Enterprise receives other revenue, including miscellaneous fees, interest earnings on investments, and property tax revenue. Property tax revenue collected by the District is first allocated as needed to the District's Electricity Utility (per an agreement with RUS for electric transmission loans) and then allocated to other District departments as available. This Study assumed that future property tax allocations to the Wastewater Enterprise would be equal to the average allocation from the past four (4) years ($325 thousand). Estimates of future interest income were calculated annually based upon estimated average fund balances and historic effective return on cash and invested funds (1.0%). Projections of all other non-rate revenues were based on FY 2019/20 budgeted revenue.

All revenues for the Wastewater Enterprise are depicted below in **Figure 5**, and detailed in **Schedule 2**.

[3] The rate revenues in Schedule 2 includes the proposed rate adjustment recommended by this Study, as described in Section 2.1.13.

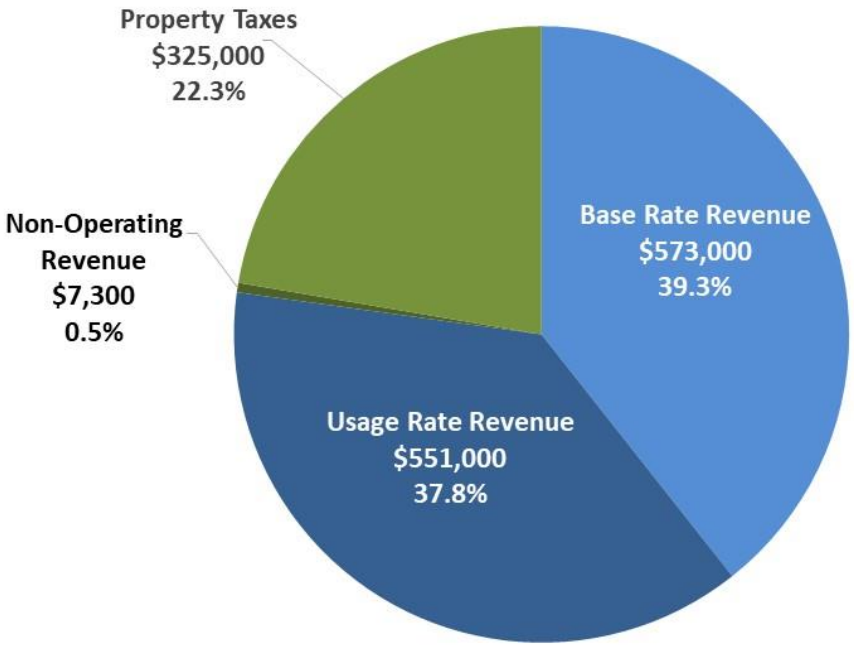

Figure 5: Wastewater Enterprise Revenue Categories (FY 2019/20)

2.2.6 OPERATION AND MAINTENANCE EXPENSES - WASTEWATER ENTERPRISE

The combined operating and maintenance expenses include all ongoing collection, treatment, disposal, and administrative expenses. The annual operating and maintenance costs for this Study are based on the Wastewater Enterprise's FY 2019/20 budget and are adjusted for future years based on inflation (see Section 2.2.7).

2.2.7 COST ESCALATION - WASTEWATER ENTERPRISE

Annual cost escalation factors for the various types of expenses were developed based upon a review of historical inflation trends, published inflation forecasts, industry experience, and discussions with District staff. During the projection period, all operations and capital expenses are projected to increase at 3.0% per year.

2.2.8 EXISTING DEBT SERVICE – WASTEWATER ENTERPRISE

The Wastewater Enterprise currently has a single outstanding debt (2018 COP) which has annual debt service of approximately $114 thousand and will be paid off in FY 2023/24.

2.2.9 DEBT SERVICE COVERAGE - WASTEWATER ENTERPRISE

As explained in detail in Section 2.1.9, this Study proposes a financial plan that target a minimum debt service coverage ratio of 1.50.

2.2.10 CAPITAL IMPROVEMENT PROGRAM - WASTEWATER ENTERPRISE

Table 5 and **Figure 6** provide a summary of all capital projects planned through FY 2024/25. The wastewater treatment plant (WWTP) will require significant rehabilitation over the next 5 years. Capital spending for FY 2025/26 and beyond is assumed to be $400 thousand per year.

Section 2.2.14 briefly discusses an alternative scenario whereby the District would replace the existing WWTP with a new WWTP.

Table 5: Wastewater Capital Improvement Schedule (FY 2019/20 through FY 2024/25)

		Debt	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
	Capacity Component							
	Collection							
1	Lower Lift Upgrade/Replacement (50%)		$0	$0	$0	$0	$0	$75,000
	Treatment							
2	EQ Tank Replacement (50%)	X	$0	$0	$245,000	$0	$0	$0
3	Centrifuge Upgrade/Replacement (50%)	X	$0	$0	$325,000	$0	$0	$0
4	Membranes Upgrade Koch (Option 4)	X	$0	$0	$0	$750,000	$0	$0
5	Headworks/Hycore Upgrade/Replacement (50%)	X	$0	$0	$0	$215,000	$0	$0
	Replacement Component							
	Collection							
6	Collection System Infiltration/Inflow Repairs		$40,000	$40,000	$40,000	$40,000	$40,000	$20,000
7	Jetter Camera		$25,000	$0	$0	$0	$0	$0
8	Lower Lift Upgrade/Replacement (50% Repl)		$0	$0	$0	$0	$0	$75,000
9	Smoke Testing Equipment		$5,000	$0	$0	$0	$0	$0
10	East Lift Equipment/Controls Moved from Vault		$0	$120,000	$0	$0	$0	$0
	Treatment							
11	WWTP Refurbish Conditioned Space	X	$0	$200,000	$0	$0	$0	$0
12	WWTP Process Basin Area Exhaust Fans	X	$0	$70,000	$0	$0	$0	$0
13	WWTP Roof/Wall Repair		$310,000	$0	$0	$0	$0	$0
14	Membrane Review		$10,000	$0	$0	$0	$0	$0
15	New Sludge Bins (2)		$5,000	$0	$0	$0	$0	$0
16	Aluma Valve		$0	$10,500	$0	$0	$0	$0
17	Hycore Brush Replacement		$0	$1,500	$0	$0	$0	$0
18	Centrifuge Upgrade/Replacement (50%)	X	$0	$0	$325,000	$0	$0	$0
19	Electrical Upgrades	X	$0	$0	$110,000	$0	$0	$0
20	EQ Tank Replacement (50% Replacement)	X	$0	$0	$245,000	$0	$0	$0
21	MBR Pneumatic Valve Replacement	X	$0	$0	$0	$120,000	$0	$0
22	Headworks/Hycore Upgrade/Replacement (50%)	X	$0	$0	$0	$215,000	$0	$0
23	SCADA/PLC/Controls System Replacement	X	$0	$0	$0	$375,000	$0	$0
24	Instrumentation Upgrades	X	$0	$0	$0	$0	$25,000	$0
25	Replace Anoxic / MBR Recirc / Filtrate Pumps	X	$0	$0	$0	$0	$460,000	$0
26	Replace Chemical Feed Pumps	X	$0	$0	$0	$0	$75,000	$0
27	CIP Tank Canopy	X	$0	$0	$0	$0	$0	$95,000
28	Demolish A-Frame	X	$0	$0	$0	$0	$0	$245,000
29	WWTP UPS		$0	$0	$0	$0	$0	$15,000
	Disposal							
30	Leachfield Cleanouts		$15,000	$15,000	$15,000	$15,000	$15,000	$0
31	VFD Replacement		$0	$10,000	$0	$10,000	$0	$10,000
32	Vehicle Purchase (Split with Water)		$0	$0	$30,000	$0	$0	$0
33	**Total Capital Expenses**		**$410,000**	**$467,000**	**$1,335,000**	**$1,740,000**	**$615,000**	**$535,000**

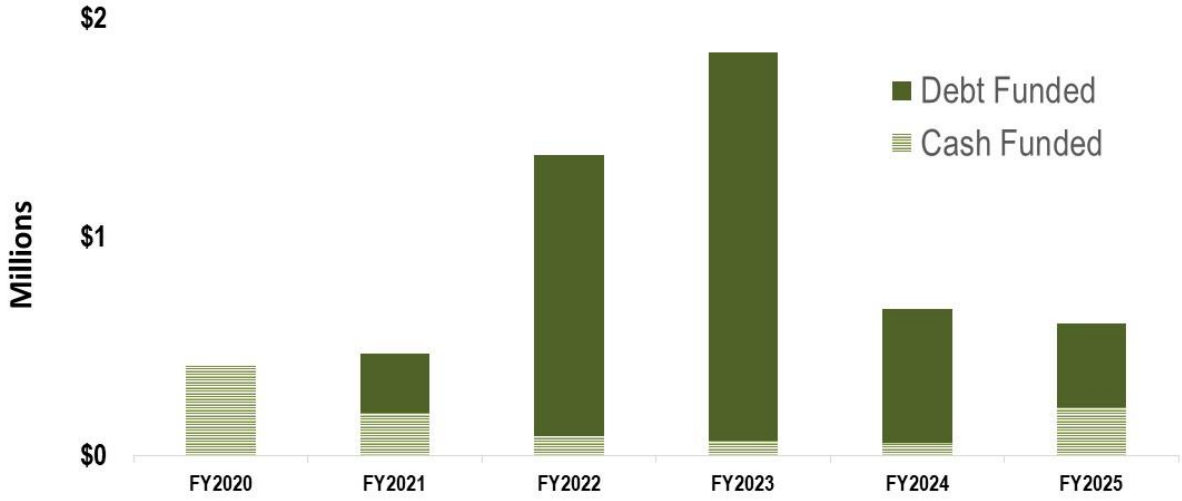

Figure 6: Wastewater Capital Improvement Spending (FY 2019/20 through FY 2024/25)

2.2.11 FUTURE BORROWING ASSUMPTIONS - WASTEWATER ENTERPRISE

This Study assumes that most of the WWTP capital projects will be funded with debt (as a 30-year bank note at 3% interest). The projects assumed to be debt financed are indicated with an "X" in Table 5. The total proposed debt over the five-year period is $4.3 million. The debt proceeds shown in Schedule 2 are only estimates. The District will need to decide how to bundle the debt issues over the coming 5 years.

2.2.12 EXPENDITURE SUMMARY - WASTEWATER ENTERPRISE

The Wastewater Enterprise's FY 2019/20 budgeted operating and debt expenses are depicted in **Figure 7** and detailed in **Schedule 2**.

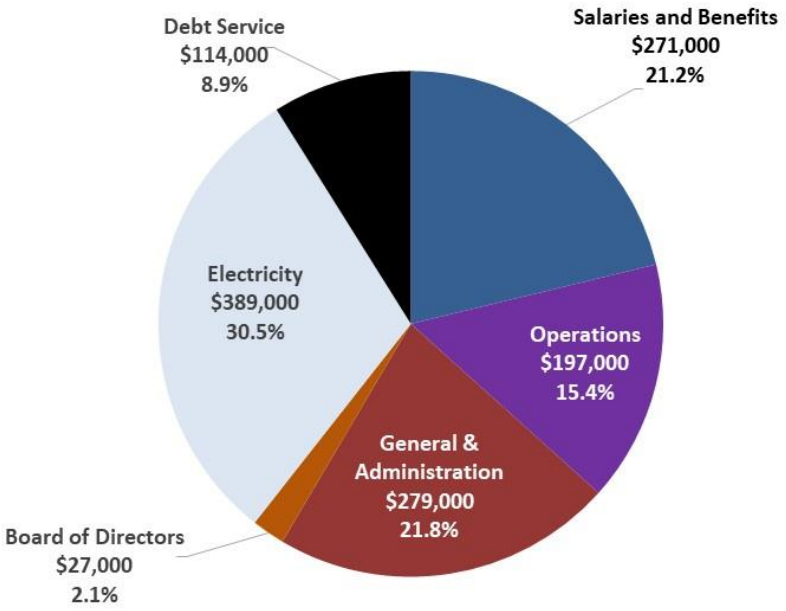

Figure 7: Wastewater Enterprise Budgeted Expense Categories (FY 2019/20)

2.2.13 PROPOSED RATE REVENUE INCREASES - WASTEWATER ENTERPRISE

All of the above information was entered into a financial planning model to produce 10-year financial plans that evaluated the sufficiency of current revenues to meet current and estimated future financial obligations and determined the level of rate revenue increases necessary in each year of the planning period.

Based upon the previously discussed financial data, assumptions, and reserve targets, this Study proposes a 5-year schedule of rate adjustments as detailed in **Table 6**.

The cash flow numbers provided in **Schedule 2** for the District are summarized graphically in **Figure** 8, which shows that the proposed rate revenue increases are driven by the need to maintain the reserve levels at targeted levels while completing significant, necessary rehabilitation required to the WWTP of the next 5 years.

Table 6: Recommended Wastewater Rate Revenue Increases

Rate Adjustment Date	Proposed Rate Increase
July 1, 2020	9.0%
July 1, 2021	9.0%
July 1, 2022	9.0%
July 1, 2023	9.0%
July 1, 2024	9.0%

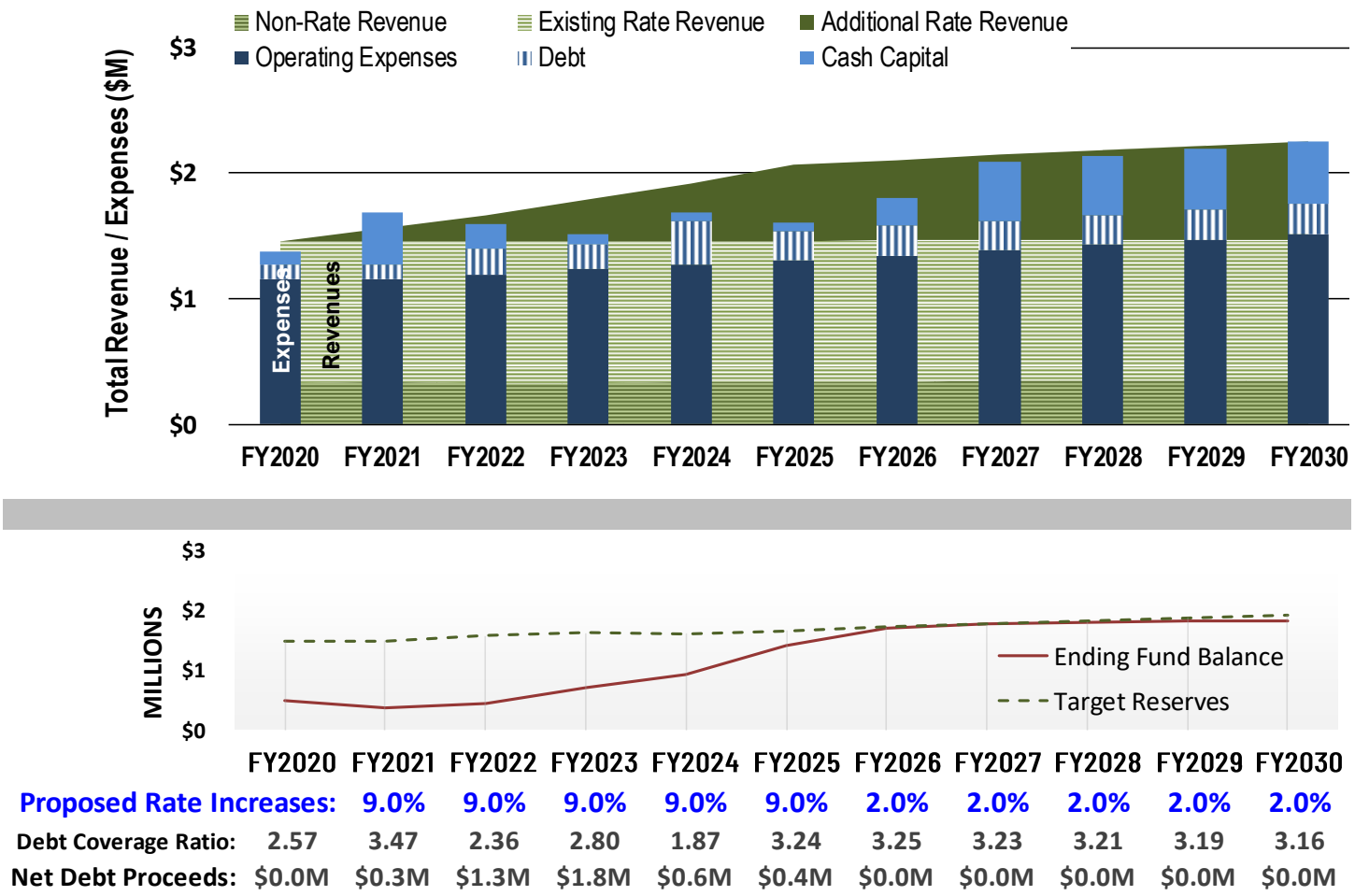

Figure 8: Wastewater Enterprise Financial Forecast with Recommended Rate Increases and Debt Issuance

2.2.14 ALTERNATE WASTEWATER CAPITAL SCENARIO

As an alternative to reinvesting in the existing WWTP with rehabilitation projects, the District has the option of replacing the existing WWTP with a new WWTP. The preliminary estimate for designing and building the new WWTP is approximately $15 million (which would eliminate the need for approximately $4.8 million in rehabilitation projects over the next 10 years). The estimated rate increases that would be needed to debt finance a new WWTP are summarized below in **Table 7**.

Table 7: Rate Revenue Increases for Alternate Wastewater Scenario (new WWTP)

Rate Adjustment Date	Alternative Rate Increases
July 1, 2020	22.0%
July 1, 2021	22.0%
July 1, 2022	22.0%
July 1, 2023	8.0%
July 1, 2024	2.0%

Section 3. COST OF SERVICE & RATE DESIGN

Once the respective rate revenue requirements for both utilities have been determined, the next step in the rate setting process is to evaluate the cost of providing these services to individual customer classes. A cost-of-service analysis evaluates the cost of providing service and proportionately allocates those costs to customer classes and rate structure components to ensure the proposed rate structure is aligned with the costs of providing water and wastewater service. This is required in order to be equitable among all ratepayers and to comply with Proposition 218. This Study employed well-established industry practices as recognized by the WEF, AWWA, and other accepted industry standards. The cost-of-service analysis and rate structure proposed by this Study is designed to:

- Fairly and equitably recover costs through rates
- Conform to accepted industry practice and legal requirements
- Provide financial stability and recovery of system fixed costs

The following sections present detailed descriptions of the cost-of-service and rate structure methodology used for water, and then wastewater, and the corresponding proposed rate schedules for both.

3.1 WATER COST OF SERVICE AND RATE DESIGN

The following details the methodology in calculating the proposed water rates and concludes with the recommended water rate schedule for the next five (5) years.

3.1.1 CURRENT WATER RATES

The structure for the District's current potable water rates include a three-part structure that is comprised of a fixed Base Rate, a fixed Meter Charge, and a consumption-based Usage Rate. The Base Rate is charged per DU for residential accounts and per EDU for commercial accounts. Irrigation customers do not currently pay a Base Rate. One (1)

EDU is equal to average residential water usage and EDUs are assigned based on the average usage of commercial accounts over the past three (3) years. The Base Rate revenue accounts for 68% of the water rate revenue.

The Meter Charge is assessed per meter. In addition to (standard) indoor meters and irrigation meters, some customers have hot water meters. The District does not provide hot water service, but rather the meter is provided as a service to homeowner associations (HOAs) that do provide water heating services. The Meter Charge revenue accounts for 6% of the water rate revenue.

The Usage Rate is charged per unit of usage (1 hcf or 748 gallons). The irrigation water Usage Rate is currently half of the domestic water usage rate. The Usage Rate revenue accounts for 26% of the water rate revenue.

3.1.2 PROPOSED WATER RATE STRUCTURE CHANGES

This Study has found that the District's current rate structures are somewhat consistent with common industry practices, excepting treatment of irrigation customers, thus recommends the following modifications.

1. Irrigation meters will pay the Base Rate in a similar manner as Commercial accounts but at a pro-rated charge that recognizes that irrigation meters are only allowed to be active for approximately 4 months annually; and
2. Irrigation water will pay the same Usage Rate as domestic water since the cost of treatment, storage, and delivery is identical to residential or commercial accounts.

The above proposed changes are explained in more detail in the following subsections.

3.1.3 WATER RATE STRUCTURE DEVELOPMENT

The following section presents a detailed description of the process for developing the water rate structure using cost of service principles.

3.1.3.1 Water Cost Functions

First, all costs for the Water Enterprise's FY 2020/21 ("Test Year") are allocated to the three rate components: Meter Charge, Base Rate, and Water Usage. This is done by allocating operational line-item expenses and capital expenses to one or more revenue recovery category. The following explains the percent allocations that are detailed in **Table 8**:

- Direct allocations - Some costs can be allocated directly to a functional component. For example, operating supplies and electricity (Rows 5 & 9) are allocated 100% to the Usage Rate because those costs tend to be increase with higher water volumes. On the other hand, debt and capital expenses (Rows 10 & 11) are allocated to the Base Rate since its appropriate to recover those fixed costs with a stable source of revenue.
- Employee-related Expenses – All labor costs were spread between the three categories, with 70% of costs being recovered through the Base Rate (since labor is a relatively fixed cost), 20% being recovered through the Usage Rate (since some overtime costs are driven by higher volumetric demands), and 10% being recovered through the Meter Charge (due to the labor associated with maintaining the meters).
- Administrative Costs – Administrative costs are fixed and therefore recovered through the two fixed revenue categories (Base Rate and Meter Charge).
- Use of Reserves – Accounting for the use of cash reserves during the Test Year is required in order to balance the rate revenue requirements. In this case the use of reserves results in a credit, which is allocated 100% to the Base Rate category.
- Non-Rate Revenue Credits - In order to complete the allocation of costs to each system function, a final step requires non-rate revenue to be used to offset costs that would otherwise need to be recovered through rates. Non-rate revenue includes interest income, property taxes, and other operating revenue such as miscellaneous fees. These revenues are credited to each system function using the indirect cost allocation method (the proportionate allocation of all costs that were previously allocated to the respective system functions).

Table 8 below summarizes the allocation of all expenses and non-rate revenues to each system function, which establishes the rate revenue requirement for each revenue recovery means (see Row 15).

Table 8: Water Cost Allocations

	Budget Expense	Test Year Budget	Revenue Recovery Means					
			Meter Charge	Base Rate	Usage Rate	Meter Charge	Base Rate	Usage Rate
	Employee Related Expenses:							
1	Salaries and Wages	$82,400	10%	70%	20%	$8,240	$57,680	$16,480
2	Employee Benefits	$45,700	10%	70%	20%	$4,570	$31,990	$9,140
3	Payroll Taxes	$6,400	10%	70%	20%	$640	$4,480	$1,280
	Operating Expenses:							
4	Outside Services	$38,800			100%			$38,800
5	Supplies & Operating Materials	$51,000			100%			$51,000
6	Training	$1,800		100%			$1,800	
	Allocation Into Fund:							
7	General & Administration	$279,100	10%	90%		$27,910	$251,190	
8	Board of Directors	$26,500		100%			$26,500	
9	Electricity	$64,800			100%			$64,800
10	Snow Removal	$4,500		100%			$4,500	
	Capital							
11	Existing Debt	$79,000		100%			$79,000	
12	Capital Spending	$97,000		100%			$97,000	
	Credits							
13	Use of Reserves	($40,000)		100%			($40,000)	
14	Non Rate Revenue	($104,000)	5.3%	71.3%	23.4%	($5,536)	($74,171)	($24,293)
15	**Total:**	**$633,000**				**$35,824**	**$439,969**	**$157,207**

3.1.3.2 *Water Units of Service and Calculation of Rates*

The water rates are calculated by dividing the rate revenue requirement for each revenue recovery means by the appropriate metric. For example, the Meter Charge revenue requirement is divided by the number of meters to calculate a cost per meter. The following describes the units of service for the water utility.

Meters – The District has 890 domestic meters, irrigation meters and hot water meters.

EDUs – The total number of EDUs (1,412) is the sum of all residential dwelling units (675) plus residential irrigation EDUs (154, assigned as one EDU per account) plus the

calculated indoor commercial EDUs (497) and calculated commercial irrigation EDUs (86). The commercial EDUs (both indoor and irrigation) were calculated based on each individual commercial/irrigation account's annual water usage divided by the average residential water usage (12.00 hcf per year or 100.0 HCF per month). A minimum of one (1) EDU was assigned to each non-residential account.

As previously mentioned in Section 3.1.2, the Irrigation Base Rate will be pro-rated account for the fact that irrigation meters are generally locked for 8 months of the year. As such, the irrigation customers are charged one third of the charge of the Base Rate. This means that 93.4% of the Base Rate revenue (or $411,806) will be recovered from "indoor" customers (see row 2 of Table 9). The remaining Base Rate costs ($28,163) are recovered from Irrigation EDUs.

Water Usage – This Study used actual water usage data from FY2018/19 (15,114 hcf).

Table 9 presents a summary of the units of service used for the purpose of calculating the proposed rates. Proposed rates for each revenue recovery category are shown on Row 5 of Table 9. These are the proposed water rates for the first year of the proposed Study period.

Table 9: Rate Calculation (Test Year)

	Revenue Recovery Means:	Meter Charge	Base Rates		Usage Rate
1	**Total Units of Service:**	890 meters	1,172 Indoor EDUs	240 Irrigation EDUs	1,511,367 water usage (CF)
2	**Revenue Requirement:**	**$35,824**	**$411,806**	**$28,163**	**$157,207**
3		5.7%	65.1%	4.4%	24.8%
4	**Unit Costs:**	**$40.25** per meter per year	**$351.45** per Indoor EDU per year	**$117.15** per Irrigation EDU per year	**$0.10** per CF
5	**Rates:**	**$3.35** per meter per month	**$29.29** per Indoor EDU per month	**$9.76** per Irrigation EDU per month	**$10.40** per HCF

3.1.3.3 Proposed Water Rate Schedule

The full schedule of water rates is shown in **Table 10**. All rates are effective the first day of the fiscal year (July 1).

Table 10: Proposed Water Rates (FY2020/21 through FY 2024/25)

	Current Rates	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25
Monthly Meter Charge (per meter)	$3.30	$3.35	$3.65	$3.98	$4.34	$4.43
Monthly Indoor Base Rate [(a)]	$28.02	$29.29	$31.93	$34.80	$37.93	$38.69
Monthly Irrigation Base Rate [(b)]	$0.00	$9.76	$10.64	$11.60	$12.64	$12.89
Usage Rate (per hcf)	$10.36	$10.40	$11.34	$12.36	$13.47	$13.74

[(a)] Charge per dwelling unit for residential and per EDU for commercial

[(b)] Charged per dwelling unit for residential Irrigation and per EDU for commercial Irrigation

3.2 WASTEWATER COST OF SERVICE AND RATE DESIGN

The following details the methodology in calculating the proposed wastewater rates and concludes with the recommended wastewater rate schedule for the next five (5) years.

3.2.1 CURRENT WASTEWATER RATES

The District's current wastewater rates includes a two-part structure that is comprised of a fixed Base Rate and a consumption-based Usage Rate. The Base Rate is charged per dwelling unit for residential accounts and per EDU for commercial accounts. One (1) EDU is equal to average annual residential water usage and EDUs are assigned based on the average usage of commercial accounts over the past three (3) years. In addition, the EDU value for restaurants (i.e. "high strength" users) is multiplied by 1.57 to account for the additional costs associated with treating higher strength sewage. The wastewater Base Rate revenue accounts for 52% of the wastewater rate revenue.

The Usage Rate is charged per unit of usage (in hcf) and is the same rate for all customers. The wastewater Usage Rate revenue accounts for 48% of the wastewater rate revenue.

3.2.2 PROPOSED WASTEWATER RATE STRUCTURE CHANGES

This Study has found that the District's current rate structures are fairly consistent with common industry practices but recommends the following modifications.

The Base Rate is a relatively stable source of revenue and is therefore the best source of revenue to pay for fixed costs. Conversely, the Usage Rate is a more variable source of revenue and is therefore appropriate to recover variable costs. The costs associated with high strength sewage (the treatment of biochemical oxygen demand (BOD) and removal/disposal of suspended solids (SS)) are largely variable costs (namely energy and chemicals). As such, the proposed rates will apply the high strength factor to the Usage Rate as opposed to the Base Rate, which is more consistent with standard practices.

3.2.3 WASTEWATER RATE STRUCTURE DEVELOPMENT

The following section presents a detailed description of the process for developing the wastewater rate structure using cost of service principles. The following steps are similar to the steps followed for the development of the water rates (see Section 3.1) but includes additional steps to account for the high-strength component.

3.2.3.1 Wastewater Cost Functions

All costs for the Wastewater Enterprise's Test Year are allocated to be recovered either from the Base Rate or the Usage Charge. These allocations follow the same logic as explained in Section 3.1.3.1. **Table 11** summarizes the allocation of all expenses and non-rate revenues to each system function, which establishes the rate revenue requirement for each revenue recovery means (see Row 17).

Table 11: Wastewater Cost Allocations

	Budget Expense	Test Year Budget	Revenue Recovery Means			
			Base Rate	Usage Rate	Base Rate	Usage Rate
	Employee Related Expenses:					
1	Salaries and Wages	$162,400	70%	30%	$113,680	$48,720
2	Employee Benefits	$96,000	70%	30%	$67,200	$28,800
3	Payroll Taxes	$12,500	70%	30%	$8,750	$3,750
	Operating Expenses:					
4	Outside Services	$35,000		100%		$35,000
5	Supplies & Chemicals	$14,400		100%		$14,400
6	Supplies & Operating Materials	$141,500		100%		$141,500
7	Training	$1,800	100%		$1,800	
	Allocation Into Fund:					
9	General & Administration	$279,100	100%		$279,100	
10	Board of Directors	$26,500	100%		$26,500	
11	Electricity	$388,900		100%		$388,900
12	Snow Removal	$4,500	100%		$4,500	
	Capital					
13	Existing Debt	$114,000	100%		$114,000	
14	Capital Spending	$410,000	100%		$410,000	
	Credits					
15	Use of Reserves	($129,000)	60.8%	39.2%	($78,438)	($50,562)
16	Non Rate Revenue	($333,000)	60.8%	39.2%	($202,479)	($130,521)
17	**Total:**	**$1,224,600**			**$744,613**	**$479,987**

3.2.3.2 *Wastewater Units of Service*

Similar to water customers, wastewater customers are billed based on their number of EDUs and water usage. In addition, the strength component for the Usage Rate requires a measurement of both BOD and SS, both of which are measured as concentrations. The BOD and SS for both residential and "regular" commercial accounts are assumed to be 175 milligrams per liter (mg/l). The BOD for high strength users is assumed to be 1000 mg/l and the SS is assumed to be 600 mg/l. These strength assumptions are taken from guidelines provided by the California State Resources Control Board (SWRCB)[4].

Table 12 provides a summary of the units of service provided to each wastewater customers class. The total pounds (lbs) of loadings is calculated by multiplying the concentrations by the water usage (which is assumed to be returned as wastewater flow).

Table 12: Wastewater Units of Service

Customer Class	No. of EDUs (1)	Annual Water Usage (1) HCF	Estimated Annual Wastewater Flow MG	BOD Strength (2) mg/l	Annual BOD Loading lbs	SS Strength (2) mg/l	Annual SS Loading lbs
Residential	673	8,194	6.13	175	8,946	175	8,946
Commercial	413	4,588	3.43	175	5,009	175	5,009
Commercial High Strength	84	1,019	0.76	1000	6,356	600	3,813
Totals:	**1,170**	**13,801**	**10.32**		**20,311**		**17,768**

Footnotes:
(1) From the utility billing system for FY 18-19.
(2) Based on State Water Resources Control Board (SWRCB) guidelines.

[4] SWRCB Revenue Program Guidelines, Appendix G, March 1998.

3.2.3.3 *Unit Cost Calculations for Wastewater*

Table 13 shows how the cost allocations from **Table 11** are converted to unit costs. Similar to water, the Base Rate costs are simply divided by the number of EDUs (1,170). The Usage Rate costs are further divided between flow, BOD and SS. Based on common practice in the wastewater utility rate setting community and best practices promulgated by associations such as WEF, it is reasonable to allocate variable operating costs evenly between flow, BOD and SS (see Table 13). The unit costs are then calculated by dividing the total cost for each component by the number of units identified in **Table 12**. For example, the District has approximately 20.3 thousand pounds of SS and an annual cost of $158 thousand for solids removal, treatment and disposal, therefore the unit cost for SS is $7.80 / lb. These unit costs become the basis for then assigning costs to customer classes (see next section).

Table 13: Wastewater Unit Cost Calculation

Cost Category	Component Allocation Percentages (1)	Cost Allocated to Each Component	Units of Service		Unit Cost	
Base Rate	100%	**$744,613**	1,170	EDUs	$636.56	per EDU
Usage Rate		**$479,987**				
Flow	34%	$163,196	10.32	MG	$11.82	per HCF
BOD	33%	$158,396	20,311	lbs	$7.80	per lbs
SS	33%	$158,396	17,768	lbs	$8.91	per lbs
Revenue Requirement:		**$1,224,600**				

Footnotes:
(1) Allocating costs evenly between flow, BOD and SS is consistent with common and accepted rate setting practices

3.2.3.4 *Allocation of Costs to Wastewater Customer Classes*

Unit costs are applied to the EDUs, annual wastewater flows, BOD loadings and SS loadings associated with each customer class to arrive at the allocation of total costs to each customer class. Table 14 presents the allocation of costs to each user class.

Table 14: Allocation of Costs to Wastewater Customer Classes

Customer Class	No. of EDUs	Water Usage (HCF)	BOD Loading (lbs)	SS Loading (lbs)	Base Rate (1)	Usage Rate (1) Flow	BOD	SS	Allocation of Total Costs
Unit Costs:					$636.56/ EDU	$11.82/ HCF	$7.80/ lbs	$8.91/ lbs	
Residential	673	8,194	8,946	8,946	$428,402	$96,894	$69,765	$79,747	$674,809
Commercial	413	4,588	5,009	5,009	$262,828	$54,255	$39,065	$44,654	$400,802
Commercial High Strength	84	1,019	6,356	3,813	$53,382	$12,047	$49,566	$33,995	$148,990
Totals:	**1,170**	**13,801**	**20,311**	**17,768**	**$744,613**	**$163,196**	**$158,396**	**$158,396**	**$1,224,600**

Footnotes:
(1) Unit costs at the top of each column are multiplied by the wastewater flow, the BOD loading, or the SS loading for each customer class

3.2.3.5 *Proposed Wastewater Rates*

As a final step, based on the allocation of costs from **Table 14** and the units of service from Table 12, the wastewater rates are calculated for each customer class as summarized in **Table 15**.

Table 15: Proposed Wastewater Rates

	BASE RATE			USAGE RATE			
Customer Class	EDUs	Revenue ($)	Base Rate $/EDU	Annual Water Use hcf	Revenue ($)	Usage Rates $/hcf	Total Revenue
Residential	673	$428,402	$53.05	8,194	$246,407	$30.07	$674,809
Commercial	413	$262,828	$53.05	4,588	$137,973	$30.07	$400,802
Commercial High Strength	84	$53,382	$53.05	1,019	$95,607	$93.84	$148,990
Totals:	**1,170**	**$744,613**		**13,801**	**$479,987**		**$1,224,600**

The above rates are proposed to be implemented on July 1, 2020. Subsequently wastewater rates will be increased by the rate adjustments proposed in Table 6. The proposed rate schedules for the next 5 years are summarized in Table 16.

Table 16: Wastewater Rates - 5-Year Schedule

	Current Rates*	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25
Monthly Base Rate (per DU or EDU)	$39.80	$53.05	$57.82	$63.02	$68.69	$74.87
Usage Rate (per hcf)						
Residential and Commercial	$39.75	$30.07	$32.78	$35.73	$38.95	$42.46
High Strength Commercial	$39.75	$93.84	102.29	111.5	121.54	132.48

* Comparing current rates to proposed rates is complicated by the fact that the strength factor has been moved from the Base Rate to the Usage Rate.

Section 4. CONCLUSION

This Study used methodologies that are aligned with industry standard practices for rate setting as promulgated by WEF, AWWA, and all applicable laws, including California's Proposition 218. The proposed annual adjustments to the rates proportionately assign costs to each customer class and customer based on service demands and will allow the District to continue to provide safe, reliable water and wastewater service to customers.

The water and wastewater rates will need to be adopted in accordance with Proposition 218, which will require a detailed notice describing the proposed rates to be mailed to each affected property owner or customer at least 45 days prior to conducting a public hearing to adopt the rates.

SCHEDULES

Schedule 1 – Water Enterprise Cash Flow Pro Forma

Schedule 2 – Wastewater Enterprise Cash Flow Pro Forma

SCHEDULE 1 – Water Enterprise Cash Flow Proforma

		Budget FY 2020	Forecast FY 2021	Forecast FY2022	Forecast FY2023	Forecast FY2024	Forecast FY2025	Forecast FY2026	Forecast FY2027	Forecast FY2028	Forecast FY2029	Forecast FY2030	Forecast FY2031
1	**Rate Revenue Increases**		**9.0%**	**9.0%**	**9.0%**	**9.0%**	**2.0%**	**2.0%**	**2.0%**	**2.0%**	**1.0%**	**1.0%**	**1.0%**
2	**Rate Revenue**	$585,371	$580,000	$633,000	$690,000	$752,000	$820,000	$836,000	$853,000	$870,000	$887,000	$896,000	$905,000
3	Increase due to rate adjustments		$53,000	$57,000	$62,000	$68,000	$16,000	$17,000	$17,000	$17,000	$9,000	$9,000	$9,000
	Non-Rate Revenues												
4	Other Revenue	$7,448	$8,000	$8,000	$8,000	$8,000	$8,000	$8,000	$8,000	$8,000	$8,000	$8,000	$8,000
5	Interest Earnings	$2,552	$3,000	$2,000	$3,000	$4,000	$3,000	$4,000	$4,000	$4,000	$4,000	$4,000	$3,000
6	Property Tax	$93,072	$93,000	$93,000	$93,000	$93,000	$93,000	$93,000	$93,000	$93,000	$93,000	$93,000	$93,000
7	**Total Revenue**	**$688,443**	**$737,000**	**$793,000**	**$856,000**	**$925,000**	**$940,000**	**$958,000**	**$975,000**	**$992,000**	**$1,001,000**	**$1,010,000**	**$1,018,000**
	O&M Costs												
8	Salaries and Benefits	$134,471	$134,000	$139,000	$143,000	$147,000	$151,000	$156,000	$161,000	$165,000	$170,000	$175,000	$181,000
9	Operations	$96,073	$96,000	$99,000	$102,000	$105,000	$108,000	$111,000	$115,000	$118,000	$122,000	$125,000	$129,000
10	General Administration	$305,610	$306,000	$315,000	$324,000	$334,000	$344,000	$354,000	$365,000	$376,000	$387,000	$399,000	$411,000
11	Electricity	$64,816	$65,000	$67,000	$69,000	$71,000	$73,000	$75,000	$77,000	$80,000	$82,000	$85,000	$87,000
12	***Total Operating Expenses***	**$600,970**	**$601,000**	**$620,000**	**$638,000**	**$657,000**	**$676,000**	**$696,000**	**$718,000**	**$739,000**	**$761,000**	**$784,000**	**$808,000**
	Capital Costs												
13	**Total Capital Spending**	**$97,000**	**$31,000**	**$37,000**	**$298,000**	**$132,000**	**$276,000**	**$250,000**	**$258,000**	**$265,000**	**$273,000**	**$281,000**	**$290,000**
14	Existing Debt Service	$79,047	$79,000	$79,000	$79,000	$79,000	$0	$0	$0	$0	$0	$0	$0
15	Cash Funded Capital Projects	$1,503	$97,000	$31,000	$37,000	$298,000	$132,000	$276,000	$250,000	$258,000	$265,000	$273,000	$281,000
16	***Total Capital Expenses***	**$80,550**	**$176,000**	**$110,000**	**$116,000**	**$377,000**	**$132,000**	**$276,000**	**$250,000**	**$258,000**	**$265,000**	**$273,000**	**$281,000**
17	**Total Revenue Requirement**	**$681,520**	**$777,000**	**$730,000**	**$754,000**	**$1,034,000**	**$808,000**	**$972,000**	**$968,000**	**$997,000**	**$1,026,000**	**$1,057,000**	**$1,089,000**
18	**Beginning Year Balance**	**$255,247**	**$262,000**	**$222,000**	**$285,000**	**$387,000**	**$278,000**	**$410,000**	**$396,000**	**$403,000**	**$398,000**	**$373,000**	**$326,000**
19	**Surplus/(Shortfall)**	**$6,923**	**($40,000)**	**$63,000**	**$102,000**	**($109,000)**	**$132,000**	**($14,000)**	**$7,000**	**($5,000)**	**($25,000)**	**($47,000)**	**($71,000)**
20	**End of Year Balance**	**$262,170**	**$222,000**	**$285,000**	**$387,000**	**$278,000**	**$410,000**	**$396,000**	**$403,000**	**$398,000**	**$373,000**	**$326,000**	**$255,000**
21	*Reserve Target*	$327,444	$332,000	$337,000	$306,000	$311,000	$316,000	$321,000	$326,000	$332,000	$338,000	$344,000	$142,000
22	*Available Cash*	($65,274)	($110,000)	($52,000)	$81,000	($33,000)	$94,000	$75,000	$77,000	$66,000	$35,000	($18,000)	$113,000
	Debt Coverage Calculations												
23	*Revenue Available for Debt Service*	$87,473	$136,000	$173,000	$218,000	$268,000	$264,000	$262,000	$257,000	$253,000	$240,000	$226,000	$210,000
24	*Total Yearly Parity Debt Payment*	*$79,047*	*$79,000*	*$79,000*	*$79,000*	*$79,000*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
25	**Debt Coverage Ratio**	**1.11**	**1.72**	**2.19**	**2.76**	**3.39**	**na**	**na**	**na**	**na**	**na**	**na**	**na**

SCHEDULE 2 – Wastewater Enterprise Cash Flow Proforma

		Budget FY 2020	Forecast FY 2021	Forecast FY2022	Forecast FY2023	Forecast FY2024	Forecast FY2025	Forecast FY2026	Forecast FY2027	Forecast FY2028	Forecast FY2029	Forecast FY2030	Forecast FY2031
1	**Rate Revenue Increases**	**0.00%**	**9.0%**	**9.0%**	**9.0%**	**9.0%**	**9.0%**	**2.0%**	**2.0%**	**2.0%**	**2.0%**	**2.0%**	**2.0%**
2	**Rate Revenue**	$1,124,107	$1,124,000	$1,225,000	$1,335,000	$1,455,000	$1,586,000	$1,729,000	$1,764,000	$1,799,000	$1,835,000	$1,872,000	$1,909,000
3	Increase due to rate adjustments		$101,000	$110,000	$120,000	$131,000	$143,000	$35,000	$35,000	$36,000	$37,000	$37,000	$38,000
	Non-Rate Revenues												
4	Other Revenue	$3,330	$3,000	$3,000	$3,000	$3,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000
5	Interest Earnings	$4,170	$5,000	$4,000	$4,000	$7,000	$9,000	$14,000	$17,000	$18,000	$18,000	$18,000	$18,000
6	Property Tax	$325,018	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000
7	**Total Revenue**	**$1,456,625**	**$1,558,000**	**$1,667,000**	**$1,787,000**	**$1,921,000**	**$2,067,000**	**$2,107,000**	**$2,145,000**	**$2,182,000**	**$2,219,000**	**$2,256,000**	**$2,294,000**
	O&M Costs												
8	Salaries and Benefits	$270,953	$271,000	$279,000	$287,000	$296,000	$305,000	$314,000	$324,000	$333,000	$343,000	$354,000	$364,000
9	Operations	$197,223	$197,000	$203,000	$209,000	$216,000	$222,000	$229,000	$235,000	$243,000	$250,000	$257,000	$265,000
10	General Administration	$305,610	$306,000	$315,000	$324,000	$334,000	$344,000	$354,000	$365,000	$376,000	$387,000	$399,000	$411,000
11	Electricity	$388,897	$389,000	$401,000	$413,000	$425,000	$438,000	$451,000	$464,000	$478,000	$493,000	$507,000	$523,000
12	***Total Operating Expenses***	**$1,162,683**	**$1,163,000**	**$1,198,000**	**$1,233,000**	**$1,271,000**	**$1,309,000**	**$1,348,000**	**$1,388,000**	**$1,430,000**	**$1,473,000**	**$1,517,000**	**$1,563,000**
	Capital Costs												
13	**Total Capital Spending**	**$410,000**	**$467,000**	**$1,375,000**	**$1,846,000**	**$672,000**	**$602,000**	**$464,000**	**$478,000**	**$492,000**	**$507,000**	**$522,000**	**$538,000**
14	**Debt Proceeds**	**$0**	**$270,000**	**$1,287,500**	**$1,777,008**	**$611,927**	**$382,673**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
15	Existing Debt Service	$114,389	$114,000	$115,000	$114,000	$114,000	$0	$0	$0	$0	$0	$0	$0
16	Cash Funded Capital Projects	$104,386	$410,000	$197,000	$88,000	$69,000	$60,000	$219,000	$464,000	$478,000	$492,000	$507,000	$522,000
17	New Debt Service	$0	$0	$84,000	$84,000	$234,000	$234,000	$234,000	$234,000	$234,000	$234,000	$234,000	$234,000
18	***Total Capital Expenses***	**$218,775**	**$524,000**	**$396,000**	**$286,000**	**$417,000**	**$294,000**	**$453,000**	**$698,000**	**$712,000**	**$726,000**	**$741,000**	**$756,000**
19	**Total Revenue Requirement**	**$1,381,458**	**$1,687,000**	**$1,594,000**	**$1,519,000**	**$1,688,000**	**$1,603,000**	**$1,801,000**	**$2,086,000**	**$2,142,000**	**$2,199,000**	**$2,258,000**	**$2,319,000**
20	**Beginning Year Balance**	**$416,955**	**$492,000**	**$363,000**	**$436,000**	**$704,000**	**$937,000**	**$1,401,000**	**$1,707,000**	**$1,766,000**	**$1,806,000**	**$1,826,000**	**$1,824,000**
21	**Surplus/(Shortfall)**	**$75,167**	**($129,000)**	**$73,000**	**$268,000**	**$233,000**	**$464,000**	**$306,000**	**$59,000**	**$40,000**	**$20,000**	**($2,000)**	**($25,000)**
22	**End of Year Balance**	**$492,122**	**$363,000**	**$436,000**	**$704,000**	**$937,000**	**$1,401,000**	**$1,707,000**	**$1,766,000**	**$1,806,000**	**$1,826,000**	**$1,824,000**	**$1,799,000**
23	*Reserve Target*	$1,489,783	$1,533,000	$1,577,000	$1,623,000	$1,618,000	$1,666,000	$1,716,000	$1,768,000	$1,821,000	$1,875,000	$1,932,000	$1,587,000
24	*Available Cash*	($997,661)	($1,170,000)	($1,141,000)	($919,000)	($681,000)	($265,000)	($9,000)	($2,000)	($15,000)	($49,000)	($108,000)	$212,000
	Debt Coverage Calculations												
25	*Revenue Available for Debt Service*	$293,942	$395,000	$469,000	$554,000	$650,000	$758,000	$759,000	$757,000	$752,000	$746,000	$739,000	$731,000
26	*Total Yearly Parity Debt Payment*	*$114,389*	*$114,000*	*$199,000*	*$198,000*	*$348,000*	*$234,000*	*$234,000*	*$234,000*	*$234,000*	*$234,000*	*$234,000*	*$234,000*
27	**Debt Coverage Ratio**	**2.57**	**3.46**	**2.36**	**2.80**	**1.87**	**3.24**	**3.24**	**3.24**	**3.21**	**3.19**	**3.16**	**3.12**