CITY OF SACRAMENTO

Office of the City Auditor – Research and Analysis Division

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Water and Wastewater Fund Review

Wastewater Fund Report

FINAL REPORT / December 18, 2024

RAFTELIS

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Department of Utilities Response to the Water and Wastewater Funds Review

Abbreviations

AACE	Association for the Advancement of Cost Engineering
AWWA	American Water Works Association
BRE	Business Risk Exposure
CAAP	Climate Action and Adaptation Plan
CAGR	Compound Annual Growth Rate
CCF	Hundred Cubic Feet
CIP	Capital Improvement Program
City	City of Sacramento
CMMS	Computerized Maintenance Management System
COF	Consequence of Failure
CPI	Consumer Price Index
CSO	Combined System Overflows
CSS	Combined Sewer System
CWTP	Combined Wastewater Treatment Plant
DIF	Development Impact Fee
DOU	Department of Utilities
FTE	Full-Time Equivalent
FY	Fiscal Year
GAAS	Generally Accepted Auditing Standards
LQI	Lowest Quintile Income
LOF	Likelihood of Failure
LTCP	Long-Term Control Plan
MGD	Million Gallons per Day
MYOP	Multi-Year Operating Projects
NMC	Nine Minimum Controls
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
RCM	Reliability Centered Maintenance
Report	Wastewater Fund Review
R/R	Renewal/Replacement
SacSewer	Sacramento Area Sewer District
SRWTP	Sacramento River Water Treatment Plant
SSS	Separate Sewer System
USEPA	United States Environmental Protection Agency
ZEV	Zero-Emission Vehicles

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1. Executive Summary

1.1. Study Objectives

Raftelis is pleased to provide the Wastewater Fund Report (Report) for the City of Sacramento (City) to assess the fiscal stability of the Wastewater Fund. The Wastewater Fund accounts for the operation and maintenance of the City's wastewater system, which is run by the Department of Utilities (DOU).

The primary objectives of the study include a detailed review and analysis of:

- Fiscal policies and procedures;
- Expense, revenue, and funding history;
- Service level and system capacity of the wastewater system;
- Relationship and impact of deferred maintenance and capital investments on the value of wastewater infrastructure; and
- Fiscal forecasting by the development of financial plans for the Wastewater Fund to ensure financial sufficiency and funds to meet operation and maintenance (O&M) costs, the capital improvement program (CIP), multi-year operating projects (MYOP), capital replacement and refurbishment recommendations, and operating and capital gaps identified by DOU staff across several Divisions while improving the financial health of the Wastewater Fund and mitigating the burden that substantial rate increases could have on the City's most vulnerable Wastewater customers.

This report summarizes the key findings and recommendations related to the DOU Wastewater Fund review and the development of financial plans for the Wastewater Fund in the following sections:

- Benchmarking – Section 3
- Expense, Revenue, and Funding History – Section 4
- Service Level and System Capacity – Section 5
- Valuation – Section 6
- Fiscal Forecasting – Section 7

This analysis and report are primarily based on data provided from FY 2024 instead of the approved budget for FY 2025 due to timing. There are often differences between actual and projected data. Some of the assumptions used in this report may not be realized, and unanticipated events and circumstances may occur. Therefore, there are likely to be differences between the data or results projected in the report and the actual results achieved. Nevertheless, this report provides valuable information and analysis for the City to consider in its strategic and financial planning for the Wastewater Fund.

1.2. Conclusion

The objectives of this review were achieved by combining current operating and capital revenue requirements with different levels of revenue requirements identified by City personnel and recommended revenue requirements aligned with utility best practices to address additional and necessary renewal/replacement (R/R) for deferred and high-risk assets capital investments. An analysis of the current conditions of the fund (status quo) shows that if the wastewater utility does not implement rate increases, it will not meet its capital reserve target beginning in FY 2028. It will also not be able to meet its absolute floor debt service coverage ratio and minimum operating reserve targets and requirements beginning in FY 2029. Thus, a cash flow

analysis for three scenarios was completed to determine the projected rate increases necessary for the Wastewater Fund to have sufficient funds to meet the utility's operating and capital revenue requirements, achieve operating and capital reserve targets, and achieve the absolute floor debt service coverage ratio[1] required per debt covenants for a fiscally stable Wastewater Fund. These needed investments will require additional capital dollars than currently included in the Wastewater Fund and future rate increases are necessary. The following tables are summaries comparing the descriptions and proposed rate increases for each scenario. Financial Plan 3 has the highest total of proposed rate increases as it is the most holistic representation of the wastewater utility's operational and capital needs.

Table 1-1: Wastewater Financial Plan Descriptions

Scenario	Description	30-year CIP	MYOP	Additional & Necessary O&M	Additional & Necessary MYOP	Additional & Necessary Capital	Additional & Necessary R/R
1	Financial Plan 1	Yes	Yes	No	No	No	No
2	Financial Plan 2	Yes	Yes	Yes	Yes	Yes	No
3	Financial Plan 3	Yes	Yes	Yes	Yes	Yes	Yes

Table 1-2: Comparison of Projected Wastewater Rate Increases

Fiscal Year	Financial Plan 1	Financial Plan 2	Financial Plan 3
FY 2025	0%	0%	0%
FY 2026	0%	0%	0%
FY 2027	0%	0%	0%
FY 2028	32%	50%	65%
FY 2029	30%	50%	65%
FY 2030	7%	5%	50%
FY 2031	7%	5%	3%
FY 2032	7%	5%	3%
FY 2033	7%	5%	0%
FY 2034	4%	3%	0%
FY 2035 – FY 2039	3%	3% (35 – 37), 5% (38,39)	0%
FY 2040 – FY 2042	7%	5%	0%
FY 2043 – FY 2046	7% (43, 44), 3% (45)	5% (43 – 45)	5%
Total	**147%**	**172%**	**206%**

[1] DOU must strive for a coverage ratio that is consistent with the applicable credit rating category for the water and wastewater systems.

While the wastewater utility requires rate increases to meet its fiscal requirements to keep the status quo, the results of the three financial planning scenarios demonstrate that additional wastewater rate increases will also be needed to implement the 30-year CIP, MYOP, as well as additional and necessary O&M, MYOP, capital, and R/R. However, we recognize that it may not be feasible to implement the full projected wastewater rate increases in Table 1-2. Therefore, it is likely that the DOU will need to prioritize the most critical, highest-risk, and regulatory projects as full funding for the wastewater utility's comprehensive needs may not be available.

2. Introduction

In accordance with the City Auditor's 2023/2024 Audit Plan, we have completed the *Department of Utilities' Water and Wastewater Funds Review*. We believe this report meets our objective of reviewing the fiscal sustainability of the Wastewater Fund. We did not seek to test internal controls, such as those related to the department's evaluation of the wastewater infrastructure or the fund's revenue and expenses.

We would like to thank the Department of Utilities staff for their time, effort, and transparency to enable our completion of a thorough and independent review of the Wastewater Fund.

2.1. Objective, Scope, and Methodology

Raftelis is pleased to provide the Wastewater Fund Report (Report) for the City of Sacramento (City) to assess the fiscal stability of the Wastewater Fund. The Wastewater Fund accounts for the operation and maintenance of the City's wastewater system, which is run by the Department of Utilities (DOU).

The major objectives of the study include a detailed review and analysis of:

- Fiscal policies and procedures;
- Expense, revenue, and funding history;
- Service level and system capacity of the wastewater system;
- Relationship and impact of deferred maintenance and capital investments on the value of wastewater infrastructure; and
- Fiscal forecasting by the development of financial plans for the Wastewater Fund to ensure financial sufficiency and funds to meet operation and maintenance (O&M) costs, the capital improvement program (CIP), multi-year operating projects (MYOP), capital repair and replacement recommendations, and operating and capital gaps identified by DOU staff across several Funds while improving the financial health of the Wastewater Fund and mitigating the burden that substantial rate increases could have on the City's most vulnerable wastewater customers.

This report summarizes the key findings and recommendations related to the DOU Wastewater Fund review and the development of financial plans for the Wastewater Fund. It is primarily based on data provided from the end of calendar year 2023. There are often differences between actual and projected data. Some of the assumptions used in this report may not be realized, and unanticipated events and circumstances may occur. Therefore, there are likely to be differences between the data or results projected in the report and the actual results achieved. Nevertheless, this report provides valuable information and analysis for the City to consider in its strategic and financial planning for the Wastewater Fund.

2.2. Background

The City of Sacramento, founded in 1849, is located at the confluence of the Sacramento and American Rivers. Today, the City has a population of roughly 525,000 and provides wastewater collection and conveyance to approximately 79,114 accounts

2.2.1. Wastewater System

It is important to note that the wastewater collection in Sacramento is provided by both the City and Sacramento Area Sewer District (SacSewer), with SacSewer maintaining about 40% of the system. Additionally, SacSewer operates the publicly operated treatment works (POTW) for wastewater in the Sacramento Region while the City of Sacramento does not. The City's wastewater system has a combined sewer system (CSS)[2], a separated sewer system (SSS), wet weather detention and primary treatment facilities, and pumping facilities.

The CSS receives wastewater and stormwater flows from approximately 7,545 acres in the central City area with about 275 miles of pipeline. In addition to this, the CSS also receives wastewater flows from the eastern parts of the City of approximately 3,700 acres. The CSS has two primary pump stations (Pump Station 1/1A and Pump Station 2/2A) where wastewater and stormwater flows are collected. Flows are then pumped to select locations depending on weather conditions. Pump station 2A is divided into two separate operating functions, a wet weather pumping side of the facility and a dry weather pumping side of the facility. The dry weather pumping side of the station is owned by SacSewer, however, it is operated and maintained by the City. The remaining pump stations in the CSS are owned and operated by the City. The dry weather side of Pump Station 2A is operated continuously throughout the year, and the wet weather side of 2A along with Pump Stations 1/1a and 2 are only used during wet periods or when system diversions are needed for maintenance purposes. With this, DOU maintains an agreement with SacSewer which permits DOU to send up to 60 MGD of wastewater and stormwater runoff from the CSS to the SacSewer POTW.

The SSS serves an area of roughly 20,750 acres with about 570 miles of pipeline and conveys wastewater into interceptor sewer lines that are owned and operated by SacSewer. The City maintains the pump stations in the SSS. In total, the City has 40 sewer pump stations being fed by 40 of 55 sewer basins. The remaining basins flow into SacSewer interceptor pipes.

The City also has two combined wastewater treatment facilities, a Combined Wastewater Treatment Plant (CWTP) and Pioneer Treatment Reservoir Facility (Pioneer). Though the CWTP was originally constructed in 1954 as a treatment plant, today it is operated as a wet weather facility. Pioneer was originally constructed as a temporary storage facility but was converted to add disinfection as well. CWTP and Pioneer are needed when flows from the CSS exceed the established 60 MGD to SacSewer POTW. CWTP and Pioneer can be operated to provide temporary storage during wet weather or provide primary treatment to overflows to the Sacramento River during larger storm events.

[2] Of note, Sacramento has one of two combined sewer systems (CSS) in the state of California; the other CSS is located in San Francisco. Based on the EPA, there are approximately 700 combined sewer systems in the United States.

3. Benchmarking

3.1. Benchmarking of Peer Communities

Benchmarking can be a useful tool to assess a utility's operations in relation to similar organizations. Comparing operations to other organizations can help the City understand if it is in line with peer communities or if there is an area that needs more attention or investment. Although this comparison is helpful, benchmarking does not include an evaluation of how well organizations are providing services; this is where knowledge of best practices is useful. Understanding best practices allows the City to better provide context to the comparisons made with peer utilities.

As part of the review of the structure and staffing of the DOU, Raftelis conducted benchmarking research regarding staffing, organization, and functions. Apples-to-apples comparisons are often difficult given the geographic, operational, political, economic, and other differences between communities and regions. With the collaboration of City staff, fourteen peer organizations, including ten from California, were identified. Peers were selected based on the number of accounts, services provided, similar regulatory environments, and similar operating functions, including if the peer operated a combined sewer system. Regional data from the American Water Works Association's (AWWA) most recent utility benchmarking survey is also included for comparison when available and applicable.[3]

The project team collected data from publicly available sources such as budget documents, annual financial reports, and organization websites. Nine of the peer organizations are municipalities, and eight of the organizations provide both water and wastewater services. Five peer organizations operate as independent authorities, and three also provide stormwater services[4]. Table 3-1 presents information about each benchmark organization including retail customers, FY 2024 operating budget, and number of full-time equivalent (FTE) employees.[5] Although this report focuses on wastewater, information about all utility services (water, wastewater, and storm) offered by each organization is included.

[3] AWWA survey data are not acquired from a random sample and may not represent the industry. Regional data contains data from AWWA's Region V, which includes survey responses from utilities in California, Oregon, Washington, Alaska, Montana, Nevada, Hawaii, Guam, American Samoa, and the seven westernmost Canadian provinces.

[4] The City of Sacramento also provides stormwater services. Stormwater services are only included in Table 3-1 where the data was combined with another service and could not be separated.

[5] When possible, information is obtained from the current (FY24) budget. However, some data (such as the number of accounts) is obtained from the peers' most recent Annual Comprehensive Financial Report.

Table 3-1: Benchmark Organization Information[1]

Utility	Utility Type	Wastewater C or CT[4]	Total FTEs	Water Accounts	Wastewater Accounts	Total Operating Budget ($ millions)
Boston Water and Sewer Commission	Combined Wastewater, Water, Wastewater	C	502	88,215	88,172	$369.9
City of Bakersfield	Wastewater	CT	51	N/A	1,054,072[2]	$14.4
City of Folsom	Water, Wastewater	C	105	23,770	25,498	$35.8
City of Modesto	Water, Wastewater	CT	283	74,527	62,162	$93.3
City of Roseville	Water, Wastewater, Stormwater	CT	178	47,000	51,000	$105.6
City of Sacramento	Water, Wastewater	CT	416	147,150	79,114	$123.8
City of Santa Rosa	Water, Wastewater, Stormwater	C	478	53,000	49,000	$111
City of Seattle	Water, Combined Wastewater, Wastewater	C	1,132.10	Not found	Not found	$272.7
City of Stockton	Water, Wastewater, Stormwater	CT	398.01[3]	50,000	116,000	$116.2
Portland Water Bureau	Water, Combined Wastewater, Wastewater	CT	1,337.70	194,938	194,938	$532.4
Sacramento Area Sewer District	Wastewater	CT	294	N/A	427,616	$146.6
Sacramento County Water Agency	Water	N/A	147	63,803	N/A	$135.1
Sacramento Suburban Water District	Water	N/A	73	47,680	N/A	$24.8
San Juan Water District	Water	N/A	49	11,896	N/A	$22.8
Truckee Meadows	Water	N/A	254	138,412	N/A	$125

[1] **When possible, information is obtained from the current (FY24) budget. However, some data (such as the number of accounts) is obtained from the peers' most recent Annual Comprehensive Financial Report.**
[2] **Parcels served, rather than the number of accounts.**
[3] **Total FTEs for Municipal Utilities Department, including Stormwater.**
[4] **C is Collection, CT is collection and treatment.**

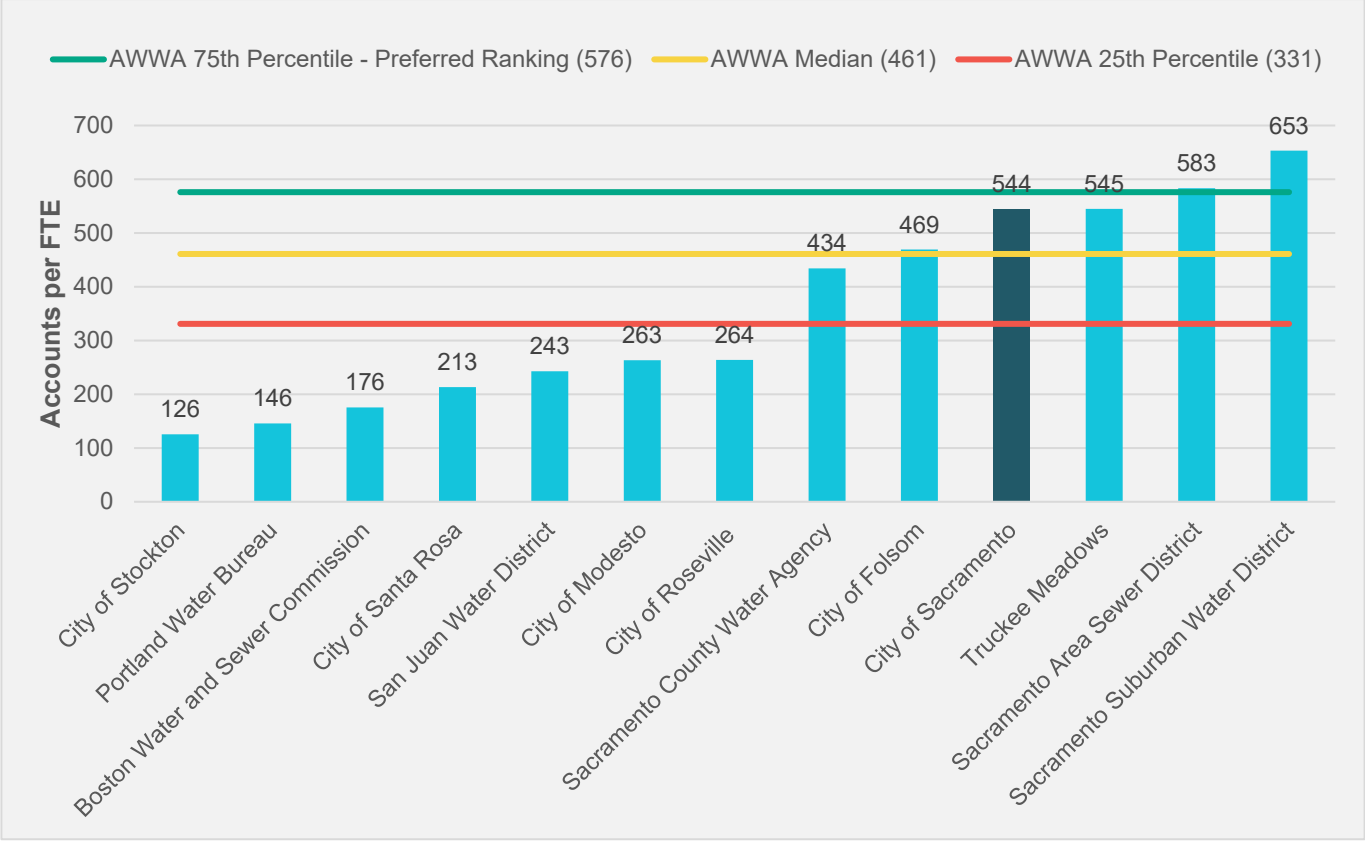
3.2. Staffing Levels

Benchmarking attempts to use a variety of metrics to piece together a picture of how utilities compare. One of the common performance metrics used by AWWA to show relative staffing levels is the number of customer accounts per FTE. AWWA defines an FTE as the allocation of employee time equal to 2,080 hours per year based on 40 hours per week and 52 weeks per year. For combined water and wastewater utilities, this is

expressed as the sum of water customer accounts and wastewater customer accounts divided by the total number of FTEs (226,264 accounts divided by 416 FTEs equals 544 accounts per FTE).

The preferred ranking is above the AWWA 75th percentile of 576 accounts per FTE. As seen in Figure 3-1, the City serves 544 customer accounts per FTE, which falls below the AWWA's 75th percentile[6] However, in comparison with the selected benchmark organizations, the City is grouped on the higher end of its peers.[7]

Figure 3-1: Total Water and Wastewater Accounts per FTE



Note: We excluded the City of Seattle due to insufficient data regarding the number of accounts served and the City of Bakersfield because they charge on a parcel basis multiplied by a Revised Single-Family Dwelling Equivalent (SFDE) ratio, which is not equivalent to accounts.

The comparison for wastewater accounts served per FTE is shown in Figure 3-2. The Wastewater Division serves 590 wastewater accounts per FTE (79,114 accounts divided by 134 FTEs equals 590 accounts per FTE), which is less than most of its peers and just below the AWWA 75th percentile. The preferred ranking is above the AWWA 75th percentile of 600 accounts per FTE.

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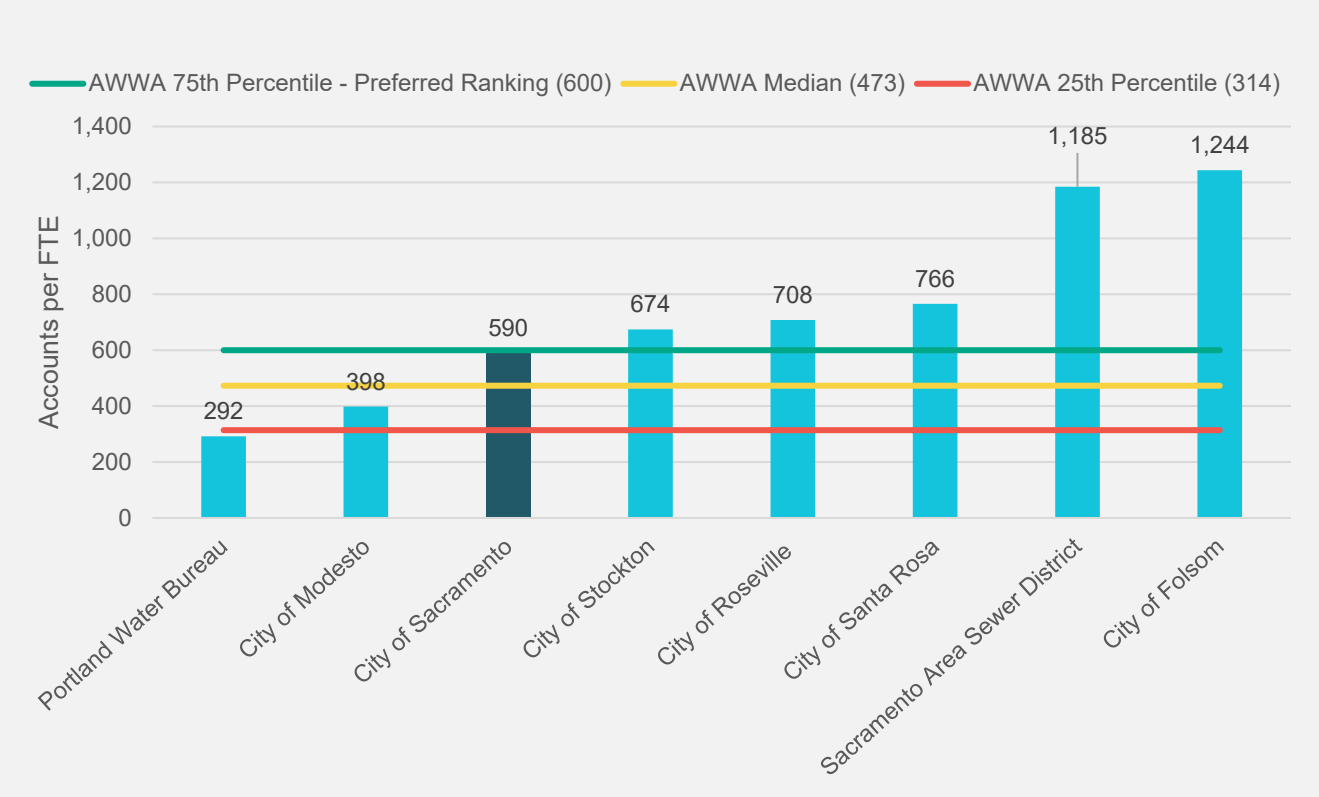
[6] AWWA reports its benchmarking survey results in terms of 25th percentile, median, and 75th percentile. However, the 25th percentile does not always indicate the lowest value, and the 75th percentile does not always indicate the highest numerical value. Usually, AWWA ascribes the 75th percentile to the perceived "most-efficient" quartile (e.g., most customer accounts served per FTE, lowest operating cost per million gallons, etc.).

[7] We excluded the City of Seattle due to insufficient data regarding the number of accounts served and the City of Bakersfield from the per account comparison since they charge on a parcel basis multiplied by a Revised Single-Family Dwelling Equivalent (SFDE) ratio, which is not equivalent to accounts.

There are numerous open FTE positions for the wastewater utility that the City is trying to fill, with a total staffing cost need of approximately $1.7 million over the next five years. Finding qualified staff has been difficult, and a Citywide classification and compensation study is currently underway.

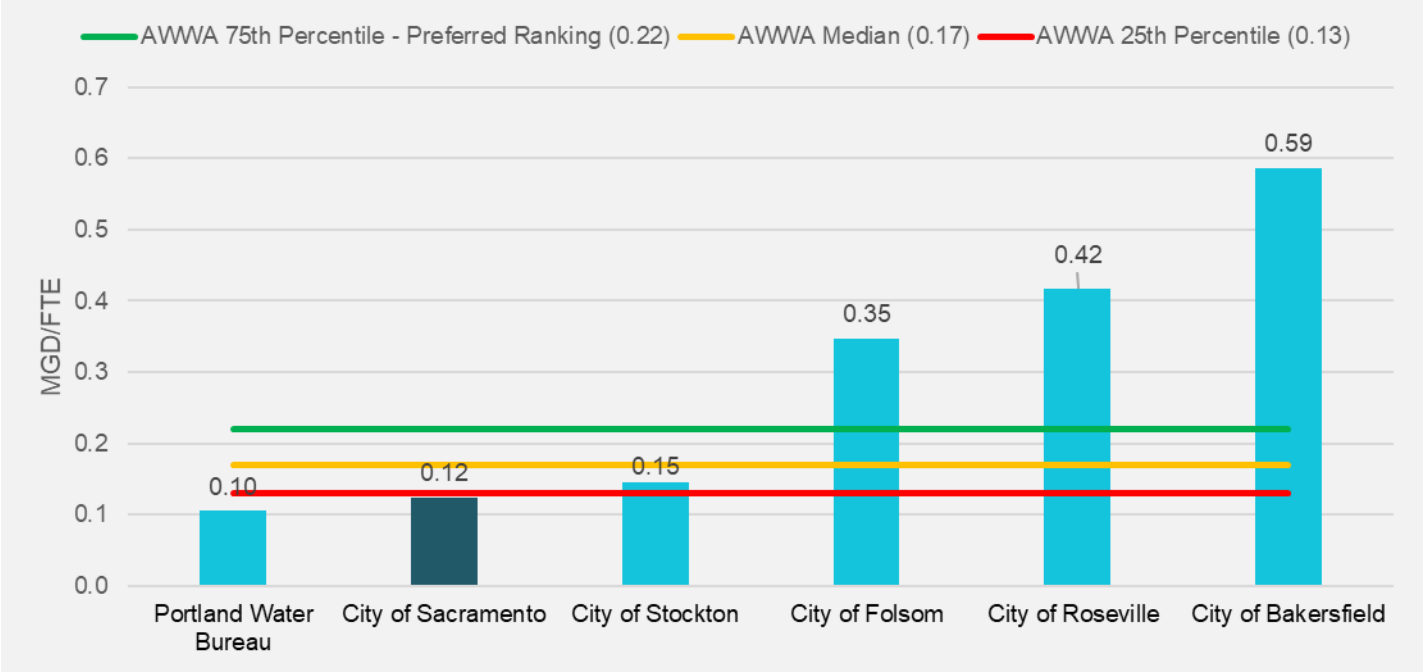
Figure 3-2: Wastewater Accounts per FTE



Note: We excluded the City of Seattle due to insufficient data regarding the number of accounts served and the City of Bakersfield because they charge on a parcel basis multiplied by a Revised Single-Family Dwelling Equivalent (SFDE) ratio, which is not equivalent to accounts.

A common metric used by the AWWA to show relative staffing levels is the amount of wastewater treated per treatment and collections FTE. Wastewater is generally more labor intensive and the volume per FTE is typically lower compared to drinking water treatment. Figure 3-3 shows the wastewater MGD treated per FTE across benchmarked organizations. The preferred ranking is above the AWWA 75th percentile of 0.22. The City treats approximately 0.12 MGD per wastewater FTE (16.55 MGD average wastewater treatment divided by 134.0 FTEs equals 0.12 MGD per FTE). For the City of Sacramento, wastewater is only treated during large storm events, which is why this metric is low. Of note, most of the benchmarked peers do not operate a large CCS, which may account for some of the difference between Sacramento and the benchmarked peers.

Figure 3-3: Wastewater Treated (MGD) per FTE



Note: City of Santa Rosa, City of Modesto, City of Seattle, and Boston Water and Sewer Commission are excluded from this figure due to the lack of average wastewater treatment data found.

3.3. Operational Comparisons

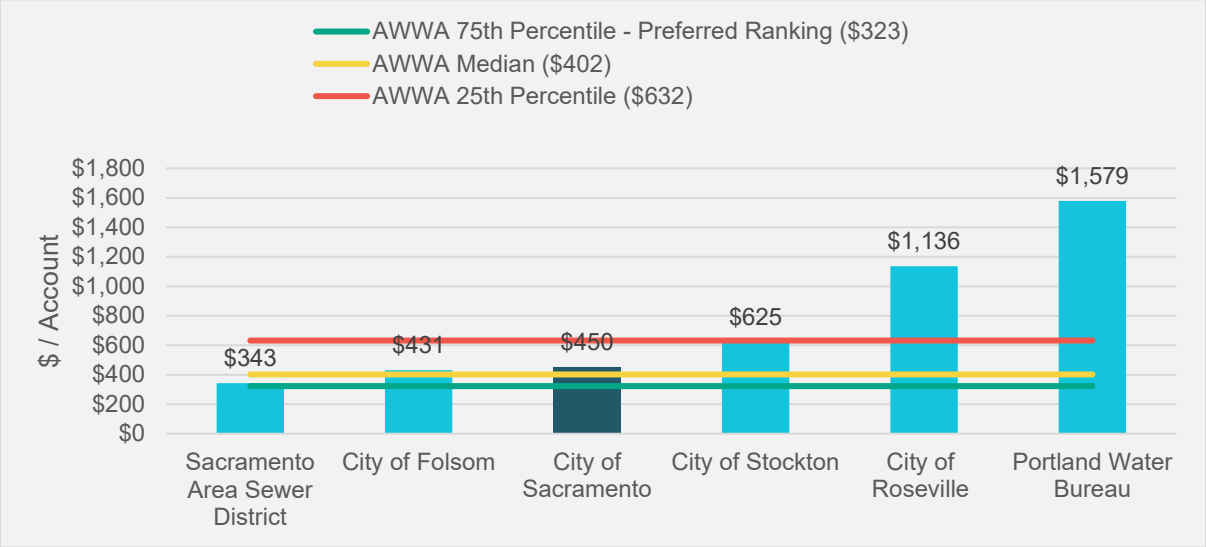
To examine the relative cost of service across different organizations, a common industry metric is to calculate the annual operations and maintenance (O&M) expenditures per customer account[8] (FY 2024 Wastewater Operating Budget of $35.6 million divided by 79,114 wastewater accounts equals $450 per account). The preferred ranking is below the AWWA 75th percentile.

Figure 3-4 shows wastewater operations and maintenance expenditures per customer account across the benchmarked organizations. The City of Sacramento appears to be approximately in the middle of its peers and has kept O&M costs down but still higher than the preferred AWWA 75th percentile. The City comes in between the median and AWWA 25th percentile of AWWA's Region V, falling within regional industry standards.

As discussed in later sections of this report, Raftelis identified that the City has a deferred capital investment of $1.1 billion in R/R needs for its existing wastewater assets. However, DOU has had limited capital budget funding available for several years, due to a lack of wastewater rate increases in FY 2021 through FY 2023, so sufficient asset R/R has been deferred due to lack of funding. This lack of funding increases the risk of assets failing catastrophically, increases the consequences of failure, and increases the need for higher levels of O&M costs to keep the existing assets functional. These reasons are likely why the City's O&M costs are above the AWWA 75th percentile.

[8] Operations and maintenance costs generally consist of labor (e.g., wages and benefits), services (e.g., repair services, janitorial services, etc.), and consumables (e.g., chemicals, utilities, office supplies) that need to be expended on a periodic or ongoing basis to operate a utility. Operations and maintenance costs exclude the costs of debt service and capital.

Figure 3-4: Annual Wastewater O&M Expenditures per Customer Account

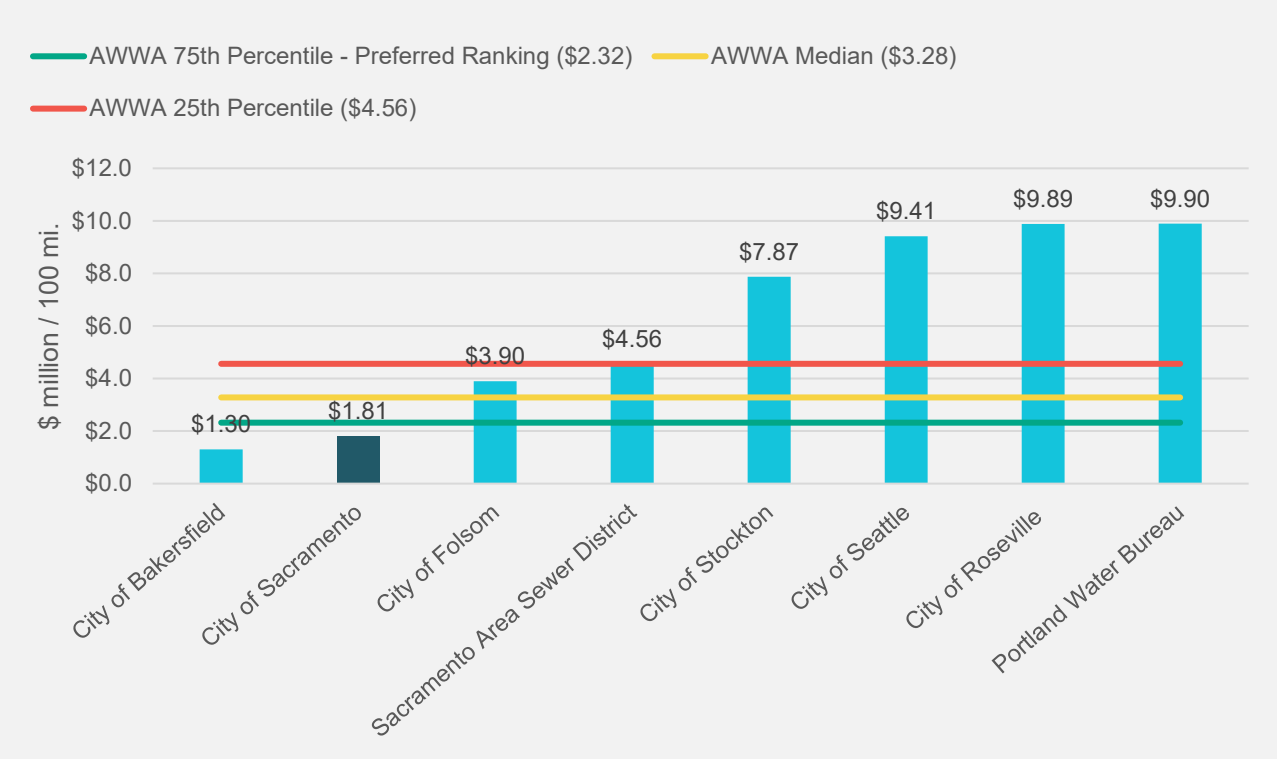


Note: City of Santa Rosa and City of Modesto are excluded from the figure since their operations and maintenance budget is not separated out by water and wastewater divisions.

To examine another aspect of the cost of providing wastewater service, the annual wastewater operations and maintenance cost is calculated on the basis of pipeline length rather than the number of customer accounts. Figure 3-5 presents the annual wastewater operating cost per 100 miles of wastewater pipeline (FY 2024 Water Operating Budget of $35.6 million divided by 19.67 (100 miles of pipe) equals $1.8 million per 100 miles of pipe). The preferred ranking is below the AWWA 75th percentile. For annual wastewater O&M cost per 100 miles of pipeline, Sacramento is lower than the AWWA 75th percentile and is the second lowest of the benchmarked agencies, with only the City of Bakersfield spending less.

While this may appear to contradict the previous metric, the City of Sacramento has the third highest amount of piping compared to its peers. Thus, the previous metric helps to provide more of a contextual background that O&M costs are likely high due to the need for more R/R.

Figure 3-5: Annual Wastewater O&M Costs per 100 Miles of Pipeline



Note: City of Santa Rosa, City of Modesto and Boston Water and Sewer Commission are excluded from this figure due to insufficient data.

3.4. Wastewater Rate Comparisons

Comparing rates between peers is not always a straightforward process. Given different rate structures between utilities, one utility may have relatively lower bills at one usage level and relatively higher bills at another usage level. Moreover, the rates that utilities charges reflect many factors, some of which are often outside of a community's control (e.g., source water quality, topography, environmental regulations, etc.). This benchmarking effort presents calculated monthly bills at 5 hundred cubic feet (ccf) and 10 ccf usage levels. In addition to the benchmarked peers, rates from the AWWA Rate Survey are included. As before, AWWA reports the 25th percentile, median, and 75th percentile of bills. Note that the rate data from the benchmarked peers is current; however, the AWWA Rate Survey collected its data in July 2022. Below the 25th percentile is preferred.

Figure 3-6 shows that the City's monthly 5 ccf residential wastewater bill for wastewater collection service lies roughly halfway between the AWWA 25th percentile and median, and that it is generally less than most benchmarked peers' bills. It is important to note that the City's wastewater rates do not include a volume component (which is a common wastewater rate structure), and therefore appear increasingly "affordable" at higher consumption levels.

Figure 3-6: Monthly Residential Wastewater Bill – 5 ccf

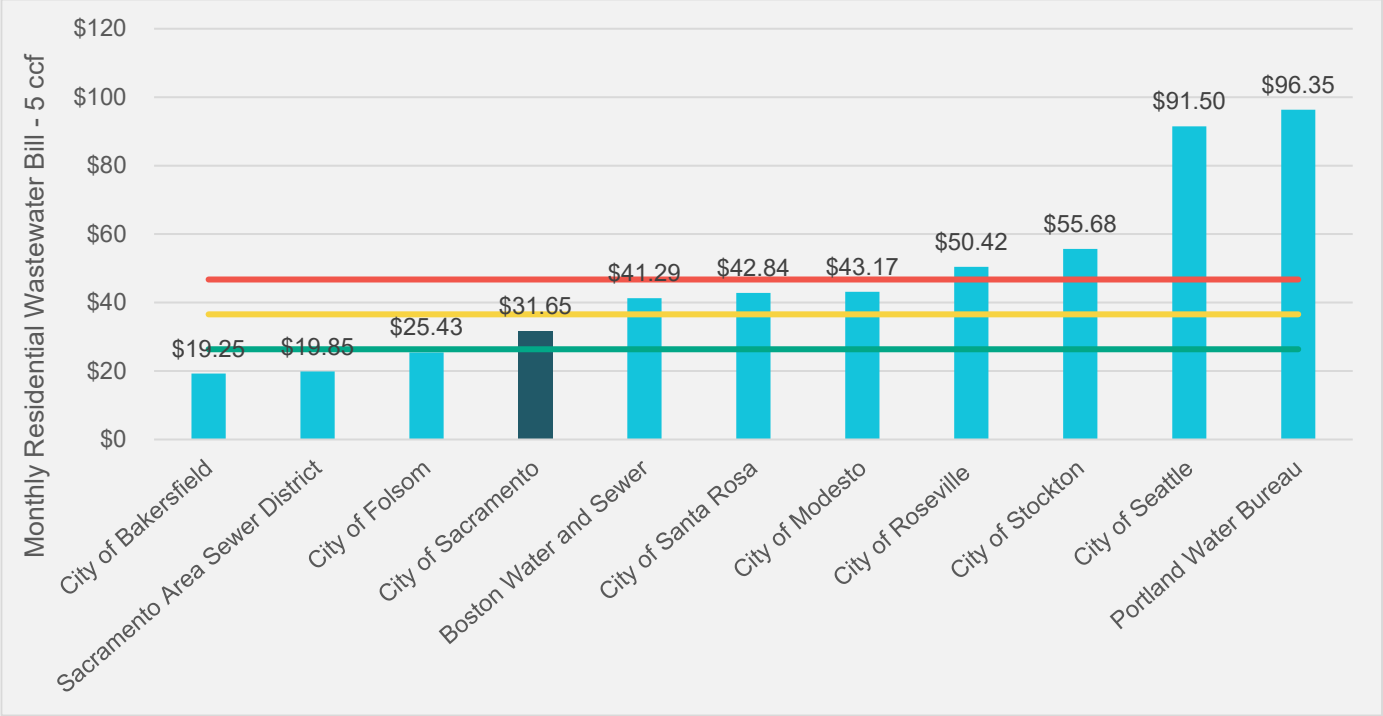
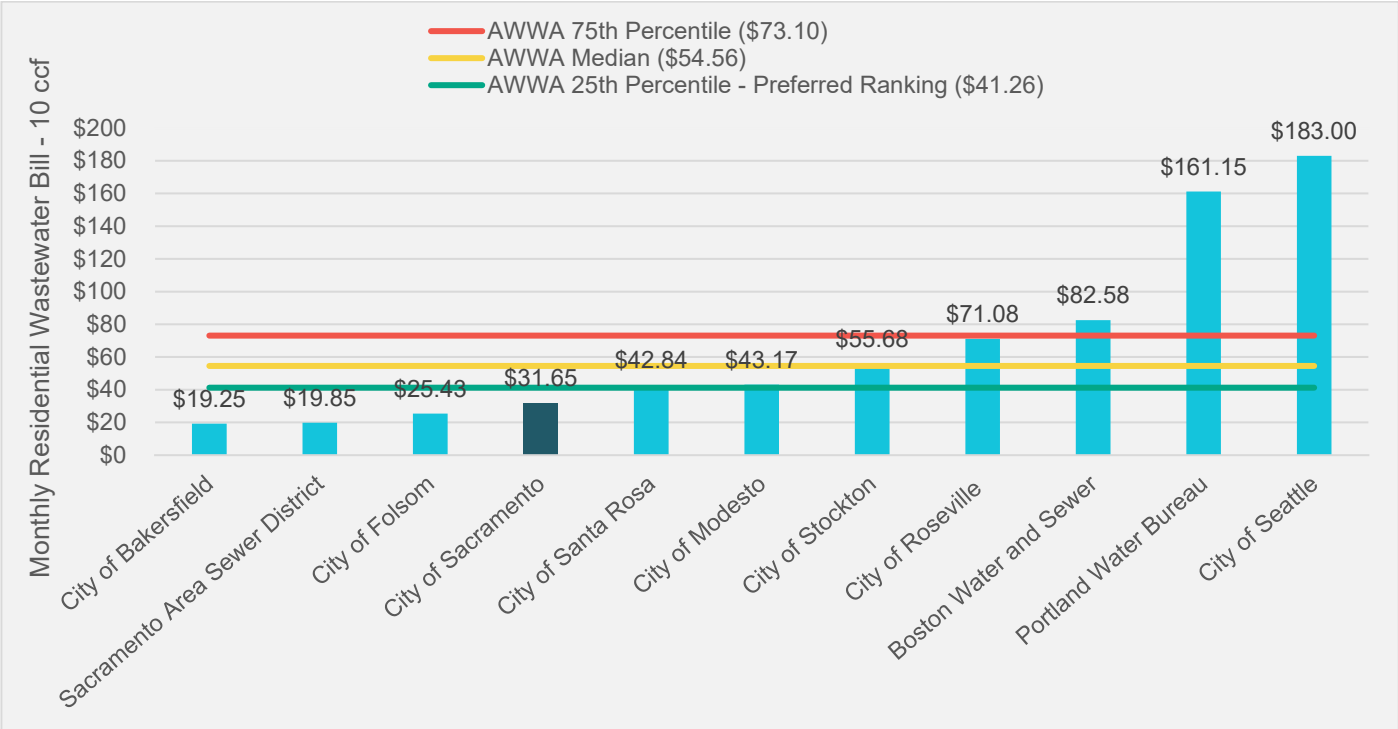


Figure 3-7 shows that the City's 10 ccf wastewater bills continue to be among the lowest of the benchmarked peers, as it does not have a volume component, and is less than the AWWA 25th percentile.

Figure 3-7: Monthly Residential Wastewater Bill – 10 ccf



As discussed in later sections of this report, Raftelis identified that DOU has significant additional capital investment needs over the next 10 years that need to be funded and addressed to efficiently operate and maintain the wastewater system. The associated rate increases are summarized in the Conclusions section of this report.

3.5. Benchmarking Summary

A summary of the benchmarking section is presented below. Rankings based on FTEs, O&M costs, and residential bills are in order of highest to lowest compared to the City's benchmarked peers:

- The Wastewater Division serves 590 wastewater accounts per FTE, which is less than most of its benchmarked peers and just below the AWWA 75th percentile of 600 wastewater accounts per FTE. There are numerous open FTE positions for the wastewater utility that the City is trying to fill, with a total staffing cost need of approximately $1.7 million over the next five years. Finding qualified staff has been difficult, and a Citywide classification and compensation study is currently underway.

- A common metric used by the AWWA to show relative staffing levels is the amount of wastewater treated per treatment and collections FTE. Wastewater is generally more labor intensive and the volume per FTE is typically lower compared to drinking water treatment. The preferred ranking is above the AWWA 75th percentile of 0.22. The City treats 0.12 MGD per wastewater FTE and is below the AWWA 25th percentile. For the City of Sacramento, wastewater is only treated during large storm events, which is why this metric is low. Of note, most of the benchmarked peers do not operate a large CCS, which may account for some of the difference between Sacramento and the benchmarked peers.

- The O&M costs for providing services are compared by normalizing the data and dividing the O&M costs by the number of accounts served. The preferred ranking is below the AWWA 75th percentile. The City spends slightly more than its peers at $450 per account and has kept O&M costs down but is still higher than the preferred AWWA 75th percentile of $323. The City ranks in the middle of its benchmarked peers. As discussed in later sections of this report, Raftelis identified that the City has a deferred capital investment of $1.1 billion in R/R needs for its existing wastewater assets. However, DOU has had limited capital budget funding available for several years, due to a lack of wastewater rate increases in FY 2021 through FY 2023, so sufficient asset R/R has been deferred due to lack of funding. This lack of funding increases the risk of assets failing catastrophically, increases the consequences of failure, and increases the need for higher levels of O&M costs to keep the existing assets functional. These reasons are likely why the City's O&M costs are above the AWWA 75th percentile.

- Another method to normalize O&M costs is to divide the O&M costs by the length of pipe maintained. The preferred ranking is below the AWWA 75th percentile. The City is $1.81 million per 100 miles of pipe and is lower than the AWWA 75th percentile of $2.32 million per 100 miles of pipe. Ranking second lowest amongst its peers, the City's wastewater O&M expenditures are relatively low compared with benchmark peers. While this may appear to contradict the previous metric, the City of Sacramento has the third highest amount of piping compared to its peers. Thus, the previous metric helps to provide more of a contextual background that O&M costs are likely high due to the need for more R/R.

- The City's monthly residential wastewater bill for 5 and 10 ccf per month ranks fourth lowest at both levels compared to its peers. As discussed in later sections of this report, Raftelis identified that DOU has significant additional capital investment needs over the next 10 years that need to be funded and addressed to efficiently operate and maintain the wastewater system. The associated rate increases are summarized in the Conclusions section of this report.

4. Expense, Revenue, and Funding History

4.1. Operating Expenses

Raftelis reviewed the budgeted and actual expenses for wastewater from FY 2014 through FY 2023. Budgets were compared to actuals to evaluate the budget assumptions and projections and to identify escalation factors that should be used in the fiscal forecast. Revenues were compared to expenses to determine if past rate revenue increases have been sufficient to meet operating and capital revenue requirements.

The budgeted and actual expenses and revenues analyzed for this review were provided by the DOU and are based on cash monitored by the DOU. Therefore, these numbers vary from audited financial statements that are reported in accordance with Generally Accepted Auditing Standards (GAAS) and Government Auditing Standards. The DOU, like most utilities, uses a cash basis to identify total revenues required to meet its annual cash expenditures and to set rates needed to meet fiscal requirements and targets. This is different than accrual accounting cash basis that recognizes revenues as earned when cash is received, and expenses charged when cash is distributed.[9]

4.1.1. Budgeted Operating Expenses

The budgeted expenses and Compound Annual Growth Rate (CAGR) for each line item in the Wastewater Fund are shown in the following tables. Interfund expenses on lines 2 through 4 relate to various activities for the Wastewater Fund including, but not limited to, the General Fund Tax, central services mail, annual citywide cost plan, project labor and indirect cost reimbursements, grant labor reimbursements, and interdepartmental reimbursements or expenses for services provided or received.

Table 4-1: Budgeted Expenses from FY 2014 through FY 2018 (in thousands)

Line No.	Description	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	Employee Services	$8,637	$8,566	$8,637	$10,971	$9,910
2	Interfund Reimbursement	$3,261	$5,654	$7,063	$4,315	$6,647
3	Interfund Provided & Used	$0.14	$0.14	$0.14	$0.14	$0.14
4	Interfund Transfer	$2,854	$3,311	$3,311	$3,629	$3,953
5	Other Objects	$916	$346	$346	$196	$201
6	Property	$132	$65	$66	$417	$393
7	Services and Supplies	$4,617	$4,617	$4,617	$4,617	$4,004
8	MYOP	$4,018	$3,866	$4,770	$2,233	$3,359
9	**Budgeted Expenses Total**	**$24,436**	**$25,501**	**$27,892**	**$25,753**	**$28,525**

[9] American Water Works Association, M1: Principles of Water Rates, Fees, and Charges, Seventh Edition

Table 4-2: Budgeted Expenses from FY 2019 through FY 2023 (in thousands)

Line No.	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
1	Employee Services	$10,608	$11,294	$13,312	$13,565	$13,569
2	Interfund Reimbursement	$8,369	$9,549	$7,349	$7,890	$7,189
3	Interfund Provided & Used	$0.05	$0.05	$0.07	$0.07	$0.06
4	Interfund Transfer	$4,315	$4,706	$4,727	$4,576	$4,598
5	Other Objects	$194	$194	$393	$394	$195
6	Property	$144	$144	$153	$147	$155
7	Services and Supplies	$4,107	$4,235	$4,494	$4,792	$5,653
8	MYOP	$2,579	$2,474	$165	$853	$981
9	**Budgeted Expenses Total**	**$30,316**	**$32,595**	**$30,593**	**$32,216**	**$32,520**

Table 4-3: Budgeted Expenses CAGR from FY 2014 through FY 2023

Line No.	Description	CAGR
1	Employee Services	5.1%
2	Interfund Reimbursement	9.2%
3	Interfund Provided & Used	-8.9%
4	Interfund Transfer	5.4%
5	Other Objects	-15.8%
6	Property	1.8%
7	Services and Supplies	2.3%
8	MYOP	-14.51%
9	**Budgeted Expenses Total**	**3.2%**

4.1.2. Actual Operating Expenses

The actual expenses and CAGR for each line item in the Wastewater Fund are shown in the following tables. Actual expenses had a higher CAGR of 3.7% compared to 3.2% for budgeted expenses from FY 2014 to FY 2023. Since the percentage increase difference is less than a percentage, it indicates that the DOU is accurately budgeting for operating expenses.

Inflation as measured by the consumer price index (CPI)[10] was 2.8% from FY 2014 to FY 2023. Employee services, other objects, and services and supplies had CAGRs for actual expenses in Table 4-6 that were

[10] Bureau of Labor Statistics Data, Series ID CUUR0000SA0, U.S. City Average, All urban customers, Unadjusted.

higher than inflation. However, there were planned increases during this period due to approved rate increases that do not have a relationship to inflation.

Table 4-4: Actual Expenses from FY 2014 through FY 2018 (in thousands)

Line No.	Description	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	Employee Services	$7,937	$6,180	$8,002	$10,503	$9,724
2	Interfund Reimbursement	$5,484	$5,721	$7,279	$4,289	$5,913
3	Interfund Provided & Used	$0.16	$0.03	$0.03	$0.05	$0.11
4	Interfund Transfer	$3,002	$3,645	$3,326	$3,503	$3,922
5	Other Objects	$281	$175	$195	$172	$116
6	Property	$76	$82	$98	$433	$322
7	Services and Supplies	$3,447	$3,807	$3,599	$4,219	$4,078
8	MYOP	$1,860	$2,389	$629	$1,945	$1,759
9	**Actual Expenses Total**	**$20,227**	**$19,611**	**$22,499**	**$23,119**	**$24,075**

Table 4-5: Actual Expenses from FY 2019 through FY 2023 (in thousands)

Line No.	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
1	Employee Services	$9,701	$10,172	$11,827	$12,339	$12,997
2	Interfund Reimbursement	$8,141	$8,074	$5,358	$6,653	$5,502
3	Interfund Provided & Used	$0.05	$0.02	$0.00	$0.01	$0.00
4	Interfund Transfer	$4,167	$4,570	$4,604	$4,657	$4,557
5	Other Objects	$93	$6	$167	$97	$50
6	Property	$191	$74	$203	$161	$131
7	Services and Supplies	$4,833	$4,542	$4,809	$4,741	$6,038
8	MYOP	$989	$1,058	$1,407	$883	$1,261
9	**Actual Expenses Total**	**$28,115**	**$28,496**	**$28,374**	**$29,530**	**$30,536**

Table 4-6: Actual Expenses CAGR from FY 2014 through FY 2023

Line No.	Description	CAGR
1	Employee Services	5.6%
2	Interfund Reimbursement	0.04%
3	Interfund Provided & Used	-43.1%
4	Interfund Transfer	4.8%
5	Other Objects	-17.4%
6	Property	6.2%
7	Services and Supplies	6.4%
8	MYOP	-4.23%
9	**Actual Expenses Total**	**3.7%**

Note: Interfund transfers vary based on the City's internal methods and accounting procedures.

4.2. Capital Expenses

4.2.1. Budgeted Capital Expenses

The budgeted capital expenses for the Wastewater Fund are shown in the following tables. The average annual cash funded capital was $4.8 million. Some years have more of an impact on the average expense than others. For example, bond proceeds were awarded in FY 2019 for $32.0 million, and a Wastewater Grant Fund was awarded in FY 2019 for $14.5 million, which resulted in a total average capital budget expense of $11.0 million.

Table 4-7: Budgeted Capital Expenses from FY 2014 through FY 2018 (in thousands)

Line No.	Description	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	Sewer Development Fees	$147	$0	$0	$601	$0
2	Wastewater Fund	$531	$1,200	$8,928	$10,409	$3,123
3	Wastewater Grant Fund	$0	$0	$0	$0	$0
4	Wastewater Revenue Bonds 2013	$0	($132)	($509)	$35	$0
5	Wastewater Revenue Bonds 2019	$0	$0	$0	$0	$0
6	**Total Budgeted Capital Expenses**	**$678**	**$1,068**	**$8,419**	**$11,045**	**$3,123**

Table 4-8: Budgeted Capital Expenses from FY 2019 through FY 2023 (in thousands)

Line No.	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
1	Sewer Development Fees	$3,762	$0	$16,086	$1,550	$0
2	Wastewater Fund	$10,380	$178	$4,740	$7,396	$2,557
3	Wastewater Grant Fund	$14,558	$298	($14,525)	$3,475	$1,973
4	Wastewater Revenue Bonds 2013	$0	$0	$423	$63	$0
5	Wastewater Revenue Bonds 2019	$32,005	$0	$178	$0	$0
6	**Total Budgeted Capital Expenses**	**$60,704**	**$476**	**$6,902**	**$12,484**	**$4,530**

4.2.2. Actual Capital Expenses

The actual capital expenses for the Wastewater Fund are shown in the following tables. The average annual actual capital expenses were $14.0 million. Capital projects have multi-year funding. Carryover funding was available in the CIP to support the annual variance of approximately $3.0 million.

Table 4-9: Actual Capital Expenses from FY 2014 through FY 2018 (in thousands)

Line No.	Description	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	Sewer Development Fees	$733	$208	($222)	$279	$517
2	Wastewater Fund	$1,705	$1,101	($28)	$4,448	$5,758
3	Wastewater Grant Fund	$610	$2,465	$823	$236	$1,726
4	Wastewater Revenue Bonds 2013	$11,719	$3,165	$11,150	$2,695	$0
5	Wastewater Revenue Bonds 2019	$0	$0	$0	$0	$0
6	**Total Actual Capital Expenses**	**$14,767**	**$6,939**	**$11,723**	**$7,658**	**$8,001**

Table 4-10: Actual Capital Expenses from FY 2019 through FY 2023 (in thousands)

Line No.	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
1	Sewer Development Fees	$394	$1,562	$17,425	$2,391	$110
2	Wastewater Fund	($2,527)	$14,124	$8,807	$5,716	$2,123
3	Wastewater Grant Fund	$611	$7,426	($7,118)	$306	$3,889
4	Wastewater Revenue Bonds 2013	$0	$0	$423	$63	$0
5	Wastewater Revenue Bonds 2019	$13,502	$1,335	$6,312	$9,069	$1,938
6	**Total Actual Capital Expenses**	**$11,980**	**$24,447**	**$25,849**	**$17,544**	**$8,059**

4.3. Debt Service History

4.3.1. Budgeted Debt Service

The budgeted debt service history for wastewater is shown in the following tables. The total debt service the wastewater utility budgeted to pay from FY 2014 through FY 2023 was approximately $31.3 million.

Table 4-11: Budgeted Debt Service History from FY 2014 through FY 2018 (in thousands)

Line No.	Description	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	Debt Service Transfer out	$51	$1,468	$2,022	$2,020	$2,021
2	Principal Payments	$720	$736	$899	$921	$789
3	Interest Payment	$140	$123	$114	$92	$70
4	**Budgeted Debt Service Total**	**$910**	**$2,327**	**$3,035**	**$3,033**	**$2,880**

Table 4-12: Budgeted Debt Service History from FY 2019 through FY 2023 (in thousands)

Line No.	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
1	Debt Service Transfer out	$2,436	$3,167	$3,298	$3,911	$3,908
2	Principal Payments	$766	$783	$716	$0	$0
3	Interest Payment	$52	$34	$16	$0	$0
4	**Budgeted Debt Service Total**	**$3,254**	**$3,985**	**$4,031**	**$3,911**	**$3,908**

4.3.2. Actual Debt Service

The actual debt service history paid from FY 2014 through FY 2023 was $29.9 million. The actual expenditures for debt service aligned with the budgeted amounts and are shown in the following tables.

Table 4-13: Actual Debt Service History from FY 2014 through FY 2018 (in thousands)

Line No.	Description	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	Debt Service Transfer out	$51	$1,460	$1,965	$2,020	$2,021
2	Principal Payments	$857	$878	$899	$738	$789
3	Interest Payment	$157	$135	$114	($1,500)	$70
4	**Actual Debt Service Total**	**$1,064**	**$2,473**	**$2,978**	**$1,258**	**$2,880**

Table 4-14: Actual Debt Service History from FY 2019 through FY 2023 (in thousands)

Line No.	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
1	Debt Service Transfer out	$2,433	$3,521	$3,091	$3,911	$3,909
2	Principal Payments	$766	$783	$716	$0	$0
3	Interest Payment	$52	$34	$16	$0	$0
4	**Actual Debt Service Total**	**$3,251**	**$4,339**	**$3,823**	**$3,911**	**$3,909**

4.4. Revenues

4.4.1. Budgeted Revenues

The budgeted revenues and CAGR for the Wastewater Fund are shown in the following tables. Miscellaneous and other agency revenues are excluded due to being immaterial.

Table 4-15: Budgeted Revenues from FY 2014 through FY 2018 (in thousands)

Line No.	Description	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	Charge to Regional Sanitation District	$768	$715	$715	$1,013	$1,013
2	Interest and Investment Income	$392	$392	$392	$392	$392
3	User Fees and Charges	$27,178	$30,463	$30,488	$33,230	$36,216
4	**Total Budgeted Revenues**	**$28,338**	**$31,570**	**$31,595**	**$34,634**	**$37,620**

Table 4-16: Budgeted Revenues from FY 2019 through FY 2023 (in thousands)

Line No.	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
1	Charge to Regional Sanitation District	$1,013	$1,013	$800	$800	$1,000
2	Interest and Investment Income	$392	$392	$392	$392	$392
3	User Fees and Charges	$39,471	$43,019	$42,118	$42,118	$42,115
4	**Total Budgeted Revenues**	**$40,875**	**$44,423**	**$43,310**	**$43,310**	**$43,545**

Table 4-17: Budgeted Revenues CAGR from FY 2014 through FY 2023

Line No.	Description	CAGR
1	Charge to Regional Sanitation District	3.0%
2	Interest and Investment Income	1.0%
3	User Fees and Charges	5.0%
4	**Budgeted Revenues Total**	**4.8%**

4.4.2. Actual Revenues

The actual revenues and CAGR for the Wastewater Fund are shown in the following tables. Miscellaneous and other agency revenues are excluded due to being immaterial.

Table 4-18: Actual Revenues from FY 2014 through FY 2018 (in thousands)

Line No.	Description	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	Charge to Regional Sanitation District	$948	$1,018	$1,030	$1,006	$860
2	Interest and Investment Income	$217	$224	$294	$445	$643
3	User Fees and Charges	$27,822	$31,207	$30,685	$33,464	$36,834
4	**Total Actual Revenues**	**$28,987**	**$32,449**	**$32,009**	**$34,915**	**$38,337**

Table 4-19: Actual Revenues from FY 2019 through FY 2023 (in thousands)

Line No.	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
1	Charge to Regional Sanitation District	$1,090	$1,032	$1,192	$1,186	$1,737
2	Interest and Investment Income	$963	$1,168	$537	$385	$1,028
3	User Fees and Charges	$41,273	$43,479	$42,800	$43,235	$43,120
4	**Total Actual Revenues**	**$43,326**	**$45,679**	**$44,529**	**$44,806**	**$45,885**

Table 4-20: Actual Revenues CAGR from FY 2014 through FY 2023

Line No.	Description	CAGR
1	Charge to Regional Sanitation District	7.0%
2	Interest and Investment Income	19.0%
3	User Fees and Charges	5.0%
4	**Actual Revenues Total**	**5.2%**

Budgeted revenues for wastewater averaged $37.9 million annually, and actual revenues averaged slightly higher at $39.1 million annually from FY 2014 through FY 2023. Actual revenues had a higher CAGR of 5.2% compared to 4.8% for budget revenues from FY 2014 to FY 2023. The CAGR for actual revenues of 5.2% was also higher compared to 4.2% for actual expenses. Since the growth in actual revenues and expenses were higher than budgeted revenues and expenses, it indicates that the City is accurately budgeting for wastewater revenues and expenses.

As previously discussed, inflation as measured by the CPI was 2.8% from FY 2014 to FY 2023. The following revenue categories had increases higher than inflation over the same period: charges to Regional Sanitation District, interest on investment income, and user fees and charges. This is due to increased costs in O&M for maintaining the facilities, as well as approved rate increases that do not have a relationship to inflation.

4.5. Capital Improvement Funding History

The wastewater capital improvement projects funded from FY 2014 through FY 2023 were analyzed to determine the ratio of cash-funded, grant, and debt-financed projects. The cash-funded projects include cash from rate revenues and revenues from wastewater development fees[11]. The debt-financed projects include proceeds from revenue bonds and State Revolving Loan Funds.

Table 4-21 shows the DOU has a balanced mix of cash and debt funding for its wastewater capital projects.

[11] Wastewater development fees are restricted revenues that can only be used for development-related projects

Table 4-21: Capital Improvement Funding History for FY 2014 through FY 2023

Line No.	Description	Budget	Percentage	Actual	Percentage
1	Cash funded capital	$71,587,722	65.4%	$64,626,215	47.2%
2	Grants	$5,779,362	5.3%	$10,972,872	8.0%
3	Debt financing	$32,061,835	29.3%	$61,371,044[12]	44.8%
4	**Total**	**$109,428,919**	**100.0%**	**$136,970,131**	**100.0%**

4.6. Historical Wastewater Rates

The City implemented the wastewater rate increases shown in the following table for a 65% total increase between FY 2014 and FY 2023. However, the actual revenue generated from customer rates, which is less than total revenues, only increased by 55% over the same period. Ideally, if rates were increased by 65%, then revenues generated from those rates should increase by the same proportion.

The City has both metered and unmetered wastewater customers. Metered customers are charged a fixed monthly fee that varies by meter size, and a uniform commodity rate for the volume of pumped wastewater. The revenue from the commodity rate only represents about 7% of wastewater rate revenues. Unmetered customers are charged a flat rate that varies by customer classification.

Approximately 93% of wastewater revenues are generated by multiplying the number of accounts times the rates and the billing period. The total number of wastewater accounts in FY 2014 was 76,657. The total number of accounts in FY 2023 was 79,287, which is an increase of 3.4%. Since the number of customer accounts billed for wastewater service has increased and it represents the majority of the rate revenues, the rate structure used for the recovering revenue should be investigated. This type of in-depth investigation is part of a cost-of-service analysis to ensure rates are adequate and have a nexus to wastewater costs.

[12] The difference in debt financing is due to a 2013 wastewater revenue bond that was budgeted in 2013 but spent in subsequent years.

Table 4-22: Historical Wastewater Rate Increases for FY 2014 through FY 2023

Line No.	Year	Rate Increase
1	2014	15%
2	2015	14%
3	2016	0%
4	2017	9%
5	2018	9%
6	2019	9%
7	2020	9%
8	2021	0%
9	2022	0%
10	2023	0%
11	**Total**	**65%**

4.7. Regulatory Requirement Changes

The wastewater utility sector has experienced some changes in regulatory requirements over the previous five years. This section of the report presents key changes in regulatory requirements including California legislation and regulations. This is not a legal review or a comprehensive list of all legal changes in California and should not be used as legal guidance. The details of compliance would need to be reviewed by the City's legal counsel.

4.7.1. California Legislation

Senate Bill 323

Senate Bill 323 was passed in 2021. The bill requires lawsuits challenging water or wastewater rates to be filed within 120 days of the effective date. Utilities must include a statement of the 120-day statute of limitations to challenge any new, increased, or extended fee or rate in their proposed rate notification. It also mandates that challenges be brought through a reverse validation action. Senate Bill 323 does not appear to have any financial impact on the City.

4.7.2. Wastewater Regulations

Water Quality Order No. 2022-0103-DWQ

California adopted revised regulations in 2022 for sanitary sewer systems waste discharge requirements (SSS WDR). The regulations supersede the previous ones issued in 2006. The regulations require utilities to develop and implement sewer system management plans and report all sanitary sewer spills to the California State Water Resources Control Board. The intent of the regulatory update is to provide a more consistent approach to sanitary sewer spills. The financial impact to the City of Sacramento was not assessed by Raftelis.

Water Quality Order No. 2020-0039-DWQ

The City's CSS and discharge to the Sacramento River are regulated by the Central Valley Regional Water Quality Control Board (Central Valley Water Regional Board) which issued the City's National Pollutant

Discharge Elimination System (NPDES) Permit specifying Waste Discharge Requirements for the City's Combined Wastewater Collection and Treatment System (i.e., currently the 2020 Permit R5-2020-0039). The 2020 Permit implements federal and state regulations, including requirements to meet the Combined Sewer Overflow Policy. The permit specifies minimum control measures and the requirement to implement a Long-Term Control Plan. The financial impact to the City of Sacramento was not assessed by Raftelis.

4.8. Weather Impacts

Raftelis was asked to answer the following question based on available information from the City.

How have changes in the frequency and severity of weather events in the previous twenty years affected the wastewater system costs?

The City has recognized that global warming is posing risks to human health and property due to hotter average daytime temperatures, increased rainfall, and more extreme weather events. The City has prepared both the Sacramento 2040 General Plan and the Climate Action & Adaptation Plan (CAAP) to not only preserve and enhance environmental resources in and around the City, but to also provide protection from natural hazards and to build community-wide resilience to climate change.

The City recognizes the urgent need for bold action to reduce greenhouse gas (GHG) emissions. The City's CAAP lays out strategies and specific measures for achieving a pathway to carbon neutrality by 2045, with bold actions that will cut waste, pollution, and carbon emissions community-wide and commit to building resilience for all its communities from the effects of climate change, especially the most vulnerable.

Climate change is affecting DOU's wastewater infrastructure and associated capital cost needs. For example, DOU will be required to convert its fleet vehicles to zero emission vehicles (ZEVs) by 2045. It is estimated that the cost of purchasing some vehicles, such as heavy-duty vehicles, could double. Additionally, the City does not currently have sufficient infrastructure in place, such as charging stations, to accommodate the increase in ZEVs. DOU is in the process of determining the costs required to convert to ZEVs, including the limitations of meeting this requirement for heavy excavation equipment and trucks. These costs have not yet been included in the 30-year capital plans prepared for the wastewater system infrastructure but are expected to have a significant financial impact.

Using global climate model projections, DOU has evaluated and analyzed changes to rainfall amounts, and changes to storm durations and intensities used for designing wastewater system infrastructure to account for climate change effects on the wastewater systems. Storm events used for designing wastewater system infrastructure are called design storms. This analysis determined that there will be an increasing trend in rainfall amounts and intensities into the future, which will likely increase costs. Work to-date indicates the percent changes in rainfall intensities (e.g., how much rain falls in a given time period) will increase with return period (e.g., 1-year, 5-year, 10-year, etc. storm events). A 1-year storm is defined as a design storm event that has a 100% chance of occurring in any given year; 5-year design storm has a 20% chance of occurring in any given year; 10-year design storm has a 10% chance of occurring in any given year, etc.

While Raftelis did not quantitatively determined how the frequency and severity of weather events in the previous twenty years has affected the wastewater system costs, DOU has observed increased rainfall and increased operations of the CSS treatment facilities system during storm events; the exact volumes have not been formally quantified.

DOU has modeled the impacts on the combined wastewater system from the updated regional hydrology and rainfall data to meet the requirement of the Water Quality Order No. 2020-0039-DWQ and has input available climate change data to allow for the assessment of climate change on combined system improvements. Currently, the climate change data is comprised of worst-case scenario for atmospheric greenhouse gas concentrations limiting what assessments are done and the further evaluation of wastewater system projects to address future capacity and overflow volumes will be dependent on regionally accepted climate change levels and on upcoming requirements due to be issued in 2025. Therefore, the capital and associated operations costs from the climate change modified rainfall data have not yet been determined for the combined or separated wastewater infrastructure but it is likely there will be an impact on the projected costs for addressing climate change forecasts. As such, the current 30-year wastewater system CIP doesn't reflect the full cost impacts from climate change as DOU is actively working to evaluate and determine those additional costs.

4.9. Summary

A summary of the expense, revenue, and funding history is as follows:

- Actual operating and capital expenses were higher than their budgeted projections. Actual operating expenses had a higher CAGR of 3.7% compared to 3.2% for budgeted operating expenses from 2014 to 2023. Since the percentage increase difference is less than a percentage, it indicates that the DOU is accurately budgeting for operating expenses. Also, additional operations budget is needed for critical operating needs; these costs have been included as part of Financial Plans 1 and 2 later in this report.
- The average annual budgeted capital expenses were $11.0 million. The average annual actual capital expenses were $14.0 million. Capital projects have multi-year funding. Carryover funding was available in the CIP to support the annual variance of approximately $3.0 million.
- Budgeted revenues for wastewater averaged $37.9 million annually, and actual revenues averaged slightly higher at $39.1 million annually from FY 2014 through FY 2023. Actual revenues had a higher CAGR of 5.2% compared to 4.8% for budget revenues from FY 2014 to FY 2023. This indicates that the City is accurately budgeting for wastewater revenues.
- Actual revenues (5.2% CAGR) increased at approximately the same pace as expenses (5.4% CAGR) over these ten fiscal years.
- The analysis of the funding history shows the DOU has a very balanced mix of cash and debt funding for its capital projects. Capital projects were funded as follows: cash-funded capital (47.2%), grants (8.0%), and debt (44.8%).
- The City implemented rate increases for the wastewater utility, authorized by the Sacramento City Council, totaling 65% from FY 2014 to FY 2023. However, the actual revenue generated from customer rates, which is less than total revenues, have only increased by 55% over the same period. Ideally, if rates were increased by 65%, revenues generated from those rates should increase by the same proportion. This indicates that DOU should consider evaluating the wastewater rates with a comprehensive rate cost-of-service analysis.
- While the full scope of additional costs due to regulatory changes and weather impacts has not been determined, the overall financial impact is likely to be significant. DOU is actively working to determine these additional costs.

5. Service Level and Wastewater System Capacity

5.1. Current Capacity of Wastewater Infrastructure

Raftelis was asked to answer the following question based on available information from the City:

What is the current capacity of the wastewater infrastructure and how does that compare to stated policies and levels of service?

The City provides domestic water treatment and distribution, wastewater collection, combined wastewater treatment, and stormwater systems services. These systems are complemented by other regional agencies and organizations that provide additional sewage and stormwater collection and treatment. The City's General Plan states that, "*ensuring that this infrastructure operates in ways that minimize adverse impacts on the environment, protect public health, and optimize benefit to the community is essential for a sustainable and equitable city*."

The City has developed policies included in the General Plan to provide for proactive planning and maintenance of utility systems, with investments made strategically to ensure that built capacity matches demand and that improvements to accommodate new development are balanced with the need to maintain quality services for existing residents and businesses.

The City's policies are also intended to improve the sustainability, resilience, and energy efficiency of its facilities, infrastructure, and operations consistent with the goal of achieving carbon neutrality by 2045. The City's goals, policies, and levels of service included in the General Plan for the wastewater system infrastructure are provided in Table 5-1 below.

Table 5-1: City of Sacramento General Plan Key Goals and Policies for Wastewater Infrastructure

City of Sacramento General Plan Key Goals and Policies for Wastewater Infrastructure under Public Facilities & Safety (PFS)	
Goal PFS-3 – Efficient, high-quality utility infrastructure and services to meet the needs of residents and business throughout the City.	
Policy Number	Policy
PFS-3.1 - Provision of Adequate Utilities	The City shall continue to provide reliable water, wastewater, and stormwater drainage utility services.
PFS-3.2 – Utility Sustainability Standards	The City shall continue to improve the sustainability, resilience, and energy efficiency of its facilities, infrastructure, and operations consistent with the CAAP and the goal of achieving carbon neutrality by 2045.

City of Sacramento General Plan Key Goals and Policies for Wastewater Infrastructure under Public Facilities & Safety (PFS)

Goal PFS-3 – Efficient, high-quality utility infrastructure and services to meet the needs of residents and business throughout the City.

Policy Number	Policy
PFS-3.3 – Development Impacts	Through the development review process, including through development impact fees and offsite improvements constructed by new development, the City shall ensure that adequate public utilities and services are available to serve new development.
PFS-3.6 – CSS Rehabilitation and Improvements	In keeping with its CSS LTCP, the City shall continue to rehabilitate and improve the CSS to decrease flooding, CSS outflows, and Combined System Overflows (CSOs). Through these improvements and requirements for new development, the City shall also ensure that development in the CSS area does not result in increased flooding, CSS outflows or CSOs or reduce the overall percentage of flow routed to SacSewer.
PFS-3.7 – Rate and Fee Studies	The City shall periodically conduct rate and fee studies to ensure adequate funds are collected to maintain and expand utility systems as needed to support projected growth, implementing rate and fee increases as needed.
PFS-3.8 – Capital Improvement Programming	The City shall give high priority in capital improvement programming to funding the rehabilitation or replacement of critical infrastructure that has reached the end of its useful life, considering probability and risk of infrastructure failure. In prioritizing R/R projects for inclusion in the CIP, the City shall consider the potential for projects and locations to support inclusive economic development and climate adaptation objectives and serve to build healthy, climate-resilient, sustainable, and inclusive communities.
PFS-3.9 – Methane Recovery	The City shall support the efforts of SacSewer to develop and maintain methane recovery facilities and coordinate efforts to evaluate and minimize methane emissions.
PFS-3.10 – Meet Projected Needs	The City shall foster the orderly and efficient expansion of facilities and infrastructure to adequately meet projected needs, comply with current and future regulations, and maintain public health, safety, and welfare. Infrastructure and facility planning should discourage oversizing of infrastructure that could induce growth at the edges of the City beyond what is anticipated in the General Plan.

City of Sacramento General Plan Key Goals and Policies for Wastewater Infrastructure under Public Facilities & Safety (PFS)	
Goal PFS-3 – Efficient, high-quality utility infrastructure and services to meet the needs of residents and business throughout the City.	
Policy Number	Policy
PFS-3.11 – Joint-Use Facilities	Wherever feasible, the City shall pursue the development of joint-use water, stormwater quality, flood control and other utility facilities as appropriate in conjunction with schools, parks, bike paths, golf courses, and other suitable uses to achieve economy and efficiency in the provision of services and facilities.
PFS-3.12 – Safe and Compatible Utility Design	The City shall ensure that public utility facilities are designed to be safe and compatible with adjacent uses.
PFS-3.13 – Impacts to Environmentally Sensitive Lands	The City shall consider the impacts on environmentally sensitive areas and habitats when locating and designing municipal utilities.

5.1.1. Wastewater System Infrastructure

The components and capacities of the City's wastewater infrastructure, regulatory compliance requirements and associated costs are described below.

DOU's wastewater system includes:

- 2 primary treatment wastewater facilities
- 4 wastewater storage facilities
- 41 separated wastewater Sump stations
- 9 combined wastewater Sump stations
- Approximately 840 miles of wastewater collection sewers ranging from 6" to 114" in diameter
- Serves approximately 80 thousand accounts

The CSS National Pollutant Discharge Elimination System (NPDES) Permit requires system improvements to manage existing system deficiencies. The City was required to update the CSS Long Term Control Plan (LTCP) by September 30, 2024, and submit it to the Central Valley Regional Water Quality Control Board. Moving forward, the LTCP will include the process for demonstrating compliance, and details of projects and associated costs will no longer be included. However, DOU has committed to updating the Combined Sewer System Improvement Plan (CSSIP) which will contain a more comprehensive project list of improvement projects needed.

DOU's current combined wastewater capacity-related programs and costs to meet the LTCP and the Nine Minimum Controls (NMC) requirements are listed below:

- Rainfall Dependent Inflow & Infiltration Program to reduce stormwater entering the wastewater system and free up system capacity - Cost estimate as of FY 2018 was $125 million

- Green Infrastructure Program - Cost estimate as of FY 2018 was $25 million
- Storage and Conveyance Improvement Projects - Cost estimate as of FY 2018 was $263.6 million
- Four of the six CSS LTCP Phase 1 (Top 20%) projects have been completed, and two of the remaining Phase 1 storage projects are in design. One of the remaining Phase 1 projects is at 90% design and on hold for construction funding to be allocated in upcoming years, and the other project has been put on hold for re-evaluation due to Caltrans right-of-way impacts.
- Sump 1 R/R, Pioneer R/R, CWTP capacity improvement and R/R to meet the NMC requirements - Cost estimate as of FY 2018 was $146 million
- DOU's current capacity-related program in the SSS has identified 14 separated sewer basins needing improvements for existing system capacity deficiencies identified in the 2023 Development Impact Fee Nexus Report - Cost estimate as of FY 2023 was $86.5 million

The CSS has two treatment facilities for primary treatment of excess CSS flows that exceed the agreed upon maximum flows that can be sent to the Sacramento Area Sewer District's (SacSewer) Wastewater Treatment Plant. The City-owned and operated treatment facilities first provide wet-weather storage, and if storage at the facilities and large-diameter pipes are exceeded, then treated overflows through the two treatment facilities are permitted for the following flow rates:

- Pioneer Reservoir Treatment Plant: 250 MGD
- CWTP: 130 MGD

If those flows are exceeded, and storage is maximized, then excess flow may be discharged from Pioneer Reservoir Treatment Plant and/or untreated overflows are permitted, which typically occur from Sump 2. There has been no change in the CSS's treatment capacity since 1997 and there are currently no plans to increase or decrease treatment capacity.

DOU also is regulated under the Separated Sewer System Waste Discharge Requirements (SSS WDR) which requires the City have a proactive CIP and maintenance program to prevent sewage spills. DOU has included the following separate and combined wastewater system renewal and replacement (R/R) costs associated with the collection system assets (pump stations and treatment facility assets not included) in the 30-year CIP. Costs shown are the total R/R costs over the 30-year CIP period from FY 2024 through FY 2054 for a grand total of $137 million:

- On-Call Urgent Sewer Repair Program - $6.85 million
- Separate Sewer System Annual Pipe and Manhole Critical R/R - $12.7 million
- Separate Sewer System Annual Pipe and Manhole Essential R/R - $6 million
- Sump 85 Force Main Replacement - $3 million
- Separated Sewer Annual Pipe Best Practices - Rainfall Derived Inflow & Infiltration (RDII) Improvements - $11 million
- Force Main R/R - $24 million
- CSS Annual Pipe and Manhole Critical R/R - $49.5 million
- CSS Annual Pipe and Manhole Essential R/R - $24 million

Based on our review, DOU appears to have incorporated the City's General Plan goals, policies, and desired

levels of service considerations into their wastewater 30-year CIP.

5.1.2. Recommendations for Wastewater Infrastructure

DOU has developed an extensive and detailed 30-year CIP for their wastewater utility. Additionally, they have performed detailed studies and evaluations of their future wastewater needs with additional studies ongoing. As DOU is still developing and maturing their wastewater asset management program, the linear and facilities asset R/R costs in the 30-year CIP likely does not reflect the full cost needs for ongoing linear and facilities assets R/R. In addition, DOU has had limited capital budget funding available for several years, due to the lack of wastewater rate increases in FY 2021 through FY 2023, so sufficient asset R/R has been deferred due to lack of funding. This lack of funding increases the risk of assets failing catastrophically, increases the consequences of failure, and increases the need for higher levels of asset R/R funding in the next 5 to 10 years to "catchup" on the deferments.

To help address these issues, the following recommendations are offered for consideration.

1. DOU developed risk scores in 2019 for their sanitary and combined sewer linear asset and is in the process of updating those risk scores and developing more formal Business Risk Exposure (BRE) scores for both their wastewater linear and facility assets. To develop BRE scores, each asset is assessed for condition and given a likelihood of failure (LOF) score and then assessed for its consequence(s) of failure (COF) and given a COF score. BRE scores are then calculated as LOF × COF. Assets are typically categorized as Extreme, High, Medium and Low risk based on the BRE scores. The higher the BRE score the higher the priority for investment for asset renewal or replacement (i.e., addressing all the Extreme risk assets first, High-risk assets second, etc.). Developing these BRE scores will allow Sacramento to prioritize which assets should be renewed or replaced first, the level of investments needed, and the timeframes for completing those investments.

2. As DOU updates its risk scores and develops BRE scores, if asset condition or COF data is not available, DOU should first determine COF scores for the missing assets, and then collect and develop the missing asset condition data; this should take 2 to 3 years to complete based on DOU's current progress. When considering asset condition data, inspections or physical condition data of the asset should be collected and used. Age, material, and assumed useful life data could be used for initial future projections of asset renewal needs, but this approach can often oversimplify the estimations and lead to higher estimated capital cost needs, especially for timeframes beyond 5 years, compared to a BRE based approach. Age, material, and assumed useful life data could also be used for initial future projections of asset renewal needs, but should be appropriately qualified and BRE scores updated routinely as asset condition data gaps are filled from collected data.

3. For linear wastewater assets, i.e., separated and combined wastewater and force mains (pressurized wastewater pipes):

    A. A target annual R/R rate by total system length should be selected and tailored to Sacramento. A R/R rate of 1% represents an average asset renewal timeframe of once every 100 years for renewing or replacing the asset. This R/R rate is used by many utilities in the industry.

    Utility best practices are to tailor the utility's R/R rate depending on the actual condition of the linear assets and consequences of failure. Utilities moving from reactive to proactive asset renewal may need

to "catchup" on renewing existing Extreme or High-risk assets, thus increasing the R/R rate to greater than 1% (i.e., 2 – 3%) by total system length. Other utilities who are more proactive with R/R may find that achieving a 1% or less R/R rate is sufficient to mitigate risks of failures.

For example, DOU has about 840 miles of wastewater collection sewers. A 1% annual R/R rate would be 8.4 miles per year which at an average cost of $940/ft[13] equals a potential R/R budget need of $41.7 million per year for linear asset renewal. There appears to be about $136.2 million budgeted over 30-years for wastewater system R/R; that is, $4.5 million per year on average. This is a great start but may reflect less than a 1% R/R rate and therefore DOU may want to revisit these budget needs based on a BRE prioritization approach. Again, the necessary annual rate of investment may need to be lower or higher per year based on the actual assets' BRE scores.

A BRE prioritization approach will allow the City to perform a deeper dive into the linear assets conditions, COF, and available BRE data to help develop more defensible and data driven annual linear assets R/R investment rates and capital budgets for the wastewater infrastructure.

B. The R/R rate should be linked to actual assets and condition assessment data, and an intentional balancing of risk and COF. Utilities that have invested in R/R for some time, or have newer wastewater linear assets, may find 1% is too high because the condition does not warrant the need for that much R/R. Therefore, it is important to consider these details when selecting and tailoring an annual R/R rate for the utility.

C. The selected asset annual R/R rate also may not be able to be completed in Year 1 and may take several years to ramp up to the selected rate. For example, if a 1% annual R/R rate is selected, ramping up to that rate of R/R over 3 to 5 years considering available funding, staff, and capital project delivery capabilities may be necessary.

D. Projects should be selected from BRE scores developed for each asset to address Extreme and High-risk assets first.

E. Accurate costs for the R/R projects should be developed based on recent bid costs or recent cost estimates. Engineering and construction costs should be calculated and used to develop a total project cost following the Association for the Advancement of Cost Engineering (AACE) Class 5 estimates or better.

F. For Extreme and High-risk assets, it may be too expensive or not possible from a capital delivery standpoint to renew or replace all Extreme risk (and/or High-risk) assets in a 5-year period or even in a 10-year period. A balance of costs and priority for asset renewal and replacement should be developed with the available funding and available condition assessment and BRE scores data.

4. For wastewater facilities assets, i.e., equipment, pumps, valves, etc. at treatment facilities, pump stations, and other system facilities:

   A. Projects should be selected primarily from BRE scores developed for each asset (see Item 1 above for the explanation of how BRE scores are developed) to address Extreme and High-risk assets. If there is

[13] From the Basin G354 Sewer Master Plan report dated June 2022 – average cost of Cured in Place Pipe (CIPP), open-cut replace, & trenchless replace escalated to 2024$

a backlog of existing projects or assets that need improvements, those projects should be prioritized for implementation based on the asset BRE score.

B. Selecting an annual R/R rate for facilities assets should be tailored to Sacramento's asset needs and BRE scores. This rate may need to be 1%, 2% or higher of the asset replacement value depending on the amount of asset renewal that has been deferred and the number of current Extreme and High-risk assets. Achieving the selected annual R/R rate by ramping up to that R/R rate over 3 to 5 years considering available funding, staff, and capital project delivery capabilities may be necessary.

C. DOU indicated the replacement/reconstruction cost values for the wastewater facilities have not yet been determined. The wastewater asset replacement cost spreadsheet indicates a total replacement cost of only $95.4 million for the wastewater system, which doesn't appear to account for all of the system assets. Given the size and capacities of the wastewater facilities, it is reasonable to assume that the reconstruction cost for the wastewater facilities is similar to the water facilities reconstruction cost value of $2.35 billion (estimate in 2022 dollars). Using 0.5% to 1% of the of the reconstruction value of $2.35 billion, as a potential annual R/R investment rate equates to a potential annual R/R investment rate need of $12 million (0.5%) - $24 million (1%) for the wastewater facilities. The 30-year wastewater CIP budget appears to include about $11.0 million of annual facilities R/R. Therefore, there is potentially about a $1 million to $13 million shortfall in wastewater facilities assets annual R/R investment.

   Again, this annual rate of investment may need to be lower or higher based on the actual assets BRE scores. A BRE prioritization approach will allow the City to perform a deeper dive into the facilities assets conditions and available BRE data to help develop more defensible and data-driven annual facilities R/R investment rates and capital budgets for the wastewater infrastructure.

D. If asset condition or COF data is not available, DOU should first determine COF scores for the missing assets and then collect and develop the missing asset condition data. When considering asset condition data, inspections or physical condition data of the asset should be collected and used, Using age, material, and assumed useful life data can be used for initial future projections of asset renewal needs, but this approach can often oversimplify the estimations and lead to higher estimated capital cost needs, especially for timeframes beyond 5 years, compared to a BRE based approach. Age, material, and assumed useful life data can be used for initial future projections of asset renewal needs but should be appropriately qualified and BRE scores updated routinely as asset condition data gaps are filled from collected data.

E. Implement reliability centered maintenance (RCM) approaches for all treatment and facilities primary assets to inform ongoing asset O&M and triggers for asset replacement. Evaluate if the current computerized maintenance management system (CMMS) software is sufficient for recording the necessary RCM data and adjust as necessary to efficiently record the needed data.

F. Use the collected data to monitor asset performance and proactively rehabilitate or replace worn components of the assets, when O&M costs become excessive, or performance drops below acceptable levels.

G. Record O&M costs at the asset level and review annual asset O&M costs to compare to replacement costs for critical assets. Use this data to determine which assets should be prioritized to be replaced

through a capital investment versus continuing to maintain. A good metric is when annual maintenance cost divided by asset replacement cost exceeds 4% to 5%, the asset should be evaluated for replacement. For example, if a pump costs $100,000 to replace and is costing $4,000 - $5,000 annually to maintain (4% - 5%), then the pump should be evaluated for replacement. Use the RCM data and the BRE scores to inform the asset life cycle and the priority for inclusion of the asset renewal or replacement in the capital budget.

5.2. Risks of Catastrophic Failure and Extent of Deferred Capital Investment

Raftelis was asked to answer the following questions based on available information from the City:

What are the risks of catastrophic system failure?
What is the extent of any deferred capital investment of wastewater infrastructure?
How does the deferred capital investment impact infrastructure capacity and valuation?

These three questions are best answered together because they are inextricably linked. DOU has developed an extensive and detailed 30-year CIP for their wastewater utility. DOU has performed detailed studies and evaluations of their future wastewater needs with additional studies ongoing. Due to limited capital budget funding of the wastewater utility over the last several years, asset R/R has been deferred. This lack of funding increases the risk of assets failing catastrophically, increases the consequences of failure, and increases the need for higher levels of asset R/R funding in the next 5 to 10 years to "catch up" on the deferments. From a financial perspective, the assets' book value is also lower because many assets are at or beyond their remaining useful lives; meaning little to no residual value because they haven't been renewed or replaced.

5.2.1. Wastewater System Infrastructure Deferred Capital Needs

DOU conducted a review of existing asset information and has identified significant deferred maintenance needs for the wastewater system infrastructure. The wastewater system infrastructure and facilities require routine maintenance and repair to keep them in acceptable condition and to preserve and extend their useful lives. This includes preventative maintenance, replacement of parts, systems, or components, and other activities needed to preserve or maintain the various assets. Deferred maintenance refers to necessary maintenance and repairs that have accumulated, typically due to lack of dedicated funding to perform non-routine replacements, upgrades, or preventative maintenance, and were therefore delayed.

Deferred maintenance also includes equipment and infrastructure components that need to be replaced as they are past the end of their useful life and can no longer be repaired. For example, in the Central City, underground infrastructure can be more than or close to 100 years old. Deferred maintenance is a critical issue as it can result in failures in infrastructure and services (e.g., broken sewers or treatment facilities, leaking roofs, electrical outages, increased overflow volumes and water quality pollution), often results in increased costs due to the need for major emergency repairs or replacements, can increase risks and liability, and can result in sub-optimal services to users of City facilities and infrastructure.

DOU provided the following deferred capital R/R costs and descriptions by asset category. These costs represent DOU's current cost investment needs for the listed assets.

Table 5-2: Wastewater System Infrastructure Summary of Deferred Capital Investments

Asset Category	30-Year Deferred Capital Investment Amount
CSS Sump R/R Program	$54.2 million
CSS Pipe R/R Program	$152.5 million
CSS Treatment Facilities Rehabilitation and Improvement Program	$157.2 million
CSS NPDES Permit Compliance Program	$298.5 million
SSS Sump and Pipe R/R Program	$455.9 million
Total	**$1.1 billion**

The asset R/R needs descriptions for each wastewater asset category are provided below:

Table 5-3: Description of Asset Renewal and Replacement Needs

Asset Category	Description
CSS Sump R/R Program	This program will rehabilitate and improve sewer sumps in the CSS that are extended past their useful life. This includes operational, reconstruction, pump replacement electrical, SCADA, civil, mechanical and/or facility improvements
CSS Pipe R/R Program	This annual program will rehabilitate and improve sewer pipes in the CSS that are past their useful life. Most of the infrastructure in the CSS is close to 100 years old and pipe sizes range from 6 inches to 114 inches.
CSS Treatment Facilities Rehabilitation and Improvement Program	The City CSS has two primary treatment facilities that remove sedimentation, screen solids/floatables, and disinfect using chlorine. The CWTP has a treatment capacity of 130 MGD and Pioneer Treatment Reservoir has a treatment capacity of 250 MGD. This program will rehabilitate and improve CSS Treatment Facilities in the CSS that are extended past their useful life. This includes operational, reconstruction, pump replacement, electrical, SCADA, civil, structural, treatment, capacity, mechanical and/or facility improvements.
CSS NPDES Permit Compliance Program	The CSS area of the City of Sacramento consists of Downtown, East Sacramento, Land Park, and Oak Park areas. These areas have historically been subject to flooding or sewer outflows during heavy storm events due to insufficient conveyance capacity. This program is in place per the NPDES permit to construct capacity improvement project to the CSS to reduce flooding and capacity surcharges.
SSS Sump and Pipe R/R Program	This program will rehabilitate, replace, and improve sewer sumps and pipes in the separated sewer that are extended past their useful life. This includes operational, reconstruction, pump replacement, electrical, SCADA, civil, mechanical and/or facility

	improvements, and sewer pipes from 6 inches to 42 inches.

As noted in Section 5.1.2, DOU is in the process of updating its BRE scores for their wastewater assets. Given the deferred investments listed above, the need for current BRE scores for the wastewater assets to be developed, and the historical lack of funding experienced by DOU, the risks of catastrophic wastewater system assets failure appear to be high.

In addition to the recommendations Raftelis provided under section 5.1, we offer the following for consideration:

1. Additional capital funding for the wastewater system is needed to address the $1.1 billion[14] of wastewater system deferred capital investments to-date.
2. When these funds are provided, performing a capital projects delivery assessment of DOU is recommended for potential project management process improvements and staffing needs in order to spend the additional wastewater system capital and efficiently convert the increased funding into completed projects.

5.3. Extent of Deferred O&M of Wastewater Infrastructure

Raftelis was asked to answer the following questions based on available information from the City:

What is the extent of any deferred operations and maintenance of the wastewater infrastructure?
How does the deferred O&M maintenance impact infrastructure capacity and valuation?

While DOU indicated that the wastewater facilities and linear assets are currently able to be operated and maintained within the approved annual operating budgets, with the deferred capital investment discussed above, keeping the existing assets functioning and running efficiently and at the necessary conveyance and treatment capacities is becoming increasingly difficult. And because many assets are older, finding spare parts to keep the assets running is a challenge, often requiring custom parts to be fabricated at increased costs. Additionally, DOU has also identified an additional $5.52 million in O&M funding needs over the next 5 years associated with the deferred capital investments. These costs are summarized in Table 7-11 in Section 7 of this report.

The deferred capital investment is increasing the risk of assets failing catastrophically, increasing the consequences of failure, and increasing the need for higher levels of asset R/R funding in the next 5 to 10 years to "catchup" on the deferments. In addition, by not renewing and replacing the existing assets, they become harder to keep operational and properly maintained, the capacity of the infrastructure decreases, it is significantly less reliable and resilient, and the value of the assets decrease.

Another potential concern is recruiting and hiring qualified staff to operate and maintain the existing assets. Historically, as assets are added, the necessary staffing to maintain and operate those assets has not kept pace. As stated previously, there are numerous open FTE positions for the wastewater utility that the City is

[14] Note that the $1.1 billion will continue to increase as DOU seeks additional funding.

trying to fill, with a total staffing cost need of approximately $1.7 million over the next five years. Finding qualified staff has been difficult, and a Citywide classification and compensation study is currently underway.

In addition to the recommendations Raftelis provided under sections 5.1.2 and 5.2.1, we offer the following for consideration:

1. Perform a staffing study and organizational assessment for the Wastewater Utility to: a) evaluate the number, positions, and experience of current staff; b) confirm the staffing needs for the City's current and future wastewater infrastructure needs, and the needed increase in O&M spending; and c) recommend necessary improvements. This assessment would build upon the benchmarking work discussed in this report.

6. Valuation

6.1. Value, Age, & Remaining Useful Life of Wastewater Infrastructure

Raftelis was asked to determine the valuation, age and remaining useful life of the wastewater infrastructure based on available information from the City.

The City's wastewater system includes:

- 2 primary treatment wastewater facilities
- 4 wastewater storage facilities
- 41 separated wastewater Sump stations
- 9 combined wastewater Sump stations
- Approximately 840 miles of wastewater collection sewers ranging from six inches to 114 inches in diameter

The two primary treatment facilities remove sedimentation, screen solids/floatables, and disinfect using chlorine. The Combined Wastewater Treatment Plant (CWTP) has a treatment capacity of 130 MGD and Pioneer Treatment Reservoir has a treatment capacity of 250 MGD.

The wastewater collection system consists of about 48 miles of interceptor sewers, 149 miles of trunk sewers, 312 miles of collector sewers, and 333 miles of branch sewers. The CSS area of Sacramento consists of Downtown, East Sacramento, Land Park, and Oak Park areas. These areas have historically been subject to flooding or sewer outflows during heavy storm events due to insufficient conveyance capacity.

Most of the wastewater pipes infrastructure in the CSS is close to 100 years old with the average age over 50 years old, which means the majority of the sewers have reached the end of their useful life or have less than 20 years of useful life remaining. Useful life in this context is defined as the expected number of years that an asset will function properly before failing; remaining useful life is defined as the number of years left before the asset is expected to fail. The number of wastewater pipes assets with one year of remaining useful life, five years, or ten-years remaining was not currently available. However, this information would be available when DOU completes the recommended BRE analysis discussed in Section 5.1.2 of this report. Due to budget restrictions DOU has primarily focused on reactive renewal and repairs to the wastewater system.

While the DOU has not yet developed a valuation of the current wastewater system assets, DOU did provide a wastewater assets lifecycle and replacement cost spreadsheet that indicates a total replacement cost of $95.4 million for the wastewater system; however, this doesn't appear to account for all of the system assets. Given the size and capacities of the wastewater facilities and the wastewater system assets, we would expect the wastewater system assets to have a replacement or reconstruction cost similar to or in excess of the water system assets ($4.6 billion). The City's wastewater assets lifecycle and replacement cost spreadsheet includes a register of 8,190 separate assets associated with the wastewater system. Based on this information, about 74% of the assets (6,100 out of the 8,190) have 20-years or less of remaining useful life and about 53% of the assets (4,323 out of 8,190) have 10-years or less of remaining useful life.

There are about 30% of the wastewater assets (2,457 out of 8,190) that appear to have no useful life remaining and should be assessed for immediate replacement. Table 6-1 summarizes the remaining useful life of the wastewater system's assets based on the available information from DOU.

Table 6-1: Wastewater Assets Remaining Useful Life

Number of Wastewater Assets	Remaining Useful Life (years)
2,457	0
866	3 - 5
1,000	6 - 10
869	12 - 15
908	17 - 20
1,717	25 - 30
Total = 8,190	

By not renewing and replacing the existing assets, the capacity of the infrastructure decreases, it is significantly less reliable and resilient, and the value of the assets decreases. From a financial perspective, the asset's book value is also lower because many assets are at or beyond their remaining useful lives, meaning little to no residual value because they haven't been renewed or replaced. DOU indicated they do not have an asset register list for all of their linear and facility wastewater system assets that includes original installed cost, remaining useful life, depreciation, and current asset values, so a comprehensive list of these asset values was not available.

6.2. Risks and Costs to Replace Aging Wastewater Infrastructure

The current risks of catastrophic wastewater system assets failure appear to be high. DOU has identified $1.1 billion in needed capital investments into the wastewater system infrastructure that have been deferred (see Section 5.2.1 of this report). Catastrophic failure of the wastewater system could be a major trunk sewer line breaking or one of the treatment facilities or pump stations failing, spilling hundreds of thousands or millions of gallons of sewage into the streets and waterways within the City. These types of failures are very expensive and can take considerable time to fix, resulting in a significant risk to public health.

As discussed in Section 5, DOU has performed detailed studies and evaluations of their future wastewater needs with additional studies ongoing. DOU is still developing and maturing their wastewater asset management program so the linear and facilities asset R/R costs in the 30-year CIP likely does not reflect the full cost needs. In addition, DOU has had limited capital budget funding available for several years, so sufficient asset R/R has been deferred. This lack of funding increases the risk of assets failing catastrophically, increases the consequences of failure, and increases the need for higher levels of asset R/R funding in the next 5 to 10 years to "catchup" on the deferments.

In addition to the recommendations Raftelis provided under sections 5.1.2, 5.2.1 and 5.3, we offer the following for consideration:

1. Develop a financial asset register for all of the linear and facility wastewater system assets that includes original installed cost, remaining useful life, depreciation, and current asset values. For assets that may not have original installed cost data available, these assets should still be included in the asset register, and an engineering estimate developed for the current replacement costs. Remaining useful life should also be estimated based on available condition data.

7. Fiscal Forecasting

This section of the report details financial plans developed for the Wastewater Fund based on the projected revenues, expenses, debt service, and capital project costs from the City's 30-year CIP schedule and multi-year operating projects (MYOP). Raftelis modeled the current conditions of the fund (status quo) without any proposed rate increases as well as three different financial planning scenarios. Financial Plan 1 includes the existing 30-year CIP and MYOP without any additional operating and capital costs. Financial Plan 2 includes everything from Financial Plan1 and additional operating and capital costs to address aging infrastructure, deficiencies, and gaps not included in the 30-year CIP. Financial Plan 3 includes everything from the first two financial plans and additional linear and facilities renewal and replacement costs from the recommendations outlined in Section 5.

This analysis and report are primarily based on data provided from FY 2024 instead of the approved budget foy FY 2025 due to timing. There are often differences between actual and projected data. Some of the assumptions used in this report may not be realized, and unanticipated events and circumstances may occur. Therefore, there are likely to be differences between the data or results projected in the report and the actual results achieved. Nevertheless, this report provides valuable information and analysis for the City to consider in its strategic and financial planning for the Wastewater Fund.

7.1. Assumptions

The assumptions outlined below were utilized to project the number of customer accounts, revenues, and expenses for future years.

7.1.1. Customer Demand and Account Growth

Wastewater customer demand is used for growth in billed usage, and account growth is the increase or decrease in the total number of accounts. Customer demand and account growth projections for each customer class are shown below and are based on historical trends and data provided by the City. Demand and account growth factors are applied to the previous year's estimate of billed usage and number of accounts.

Table 7-1: Wastewater Customer Demand and Account Growth Projections

Line No.	Description	Demand Growth Factor	Account Growth Factor
1	Unmetered accounts	--	0.2%
2	Metered accounts	0.2%	--

7.1.2. Revenue Escalation Factors

Table 7-2 shows the revenue escalation factors used to project future wastewater revenues and calculate investment income. The reserve interest rate is used to calculate the investment income based on projected fund balances and uses an estimated interest earnings rate of 1.0%.

Table 7-2: Wastewater Revenue Escalation Factors

Line No.	Description	Escalation Factors
1	Miscellaneous and Non-Rate Revenues	1.5% (FY 2025), 0.0% (thereafter)
2	Interest Earnings	1.0%

7.1.3. Expenditures Escalation Factors

Table 7-3 shows the expense escalation factors used to project future operating expenses for the study periods. These factors were determined based on a review of City data.

Table 7-3: Wastewater Expenditures Escalation Factors

Line No.	Description	Escalation Factors
1	Non-inflated	0.0%
2	Employee Services	2.0%
3	Interfund Reimbursement	3.0%
4	Interfund Service Provided and Used	3.0%
5	Interfund Transfer	3.0%
6	MYOP	2.5%
7	Other Objects[15]	2.5%
8	Property	3.0%
9	Service and Supplies	3.0%

7.2. Projected Demand

City staff provided customer account data for metered and unmetered accounts for FY 2023. Raftelis forecasted future account growth using the growth factors presented in Table 7-1. Table 7-4 shows the assumed growth in the number of accounts and billed usage for the next five years. Customers are only billed for exceeding the threshold associated with each meter. The total projected consumption exceeding the threshold is shown in line 13 below. The projections for the total forecast period are shown in the Appendix.

[15] Examples of other objects include chemicals, fuel, and utilities.

Table 7-4: Projected Wastewater Accounts and Billed Usage for Metered Customers (CCF)

Line No.	Description	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
1	5/8-in	137	138	138	138	138
2	3/4-in	108	108	109	109	109
3	1-in	1,855	1,858	1,862	1,866	1,870
4	1-1/2-in	875	876	878	880	882
5	2-in	1,273	1,275	1,278	1,280	1,283
6	3-in	287	287	288	288	289
7	4-in	229	230	230	231	231
8	6-in	102	102	103	103	103
9	8-in	21	21	21	21	21
10	10-in	6	6	6	6	6
11	12-in	0	0	0	0	0
12	**Total Metered Accounts**	**4,893**	**4,902**	**4,912**	**4,922**	**4,932**
13	**Billed Consumption (CCF)**	**2,194,042**	**2,198,431**	**2,202,827**	**2,207,233**	**2,211,648**

The total number of units for unmetered accounts charged the flat rates equaled 104,551 in FY 2023. There were approximately 95 variations of billing codes applied to those units. The units are escalated by the growth factors in Table 7-1.

7.3. Projected Revenues

City staff provided the actual revenues for FY 2014 through FY 2023 and budgeted FY 2024 revenues for the wastewater utility, which were used to confirm calculated rate revenues and project miscellaneous revenues for the study periods. Table 7-5 shows the projected revenues without rate increases for the first five years of the study period; the remaining years are shown in the Appendix. Rate revenues on line 1 were calculated using the units of service shown in Table 7-4 and the units associated with each unmetered account times the existing rates.

The City expects increases in wastewater rate revenues for all years of the study as a result of increases in customer accounts and demand. The projection of development impact fee revenues (line 2) were provided by the DOU. The interest earnings (line 3) are calculated using the reserve interest rate (Table 7-2, line 2). The interest earnings calculations reflect lower fund balances since there are no revenue adjustments from rate increases. Other revenues (line 4) are escalated using the non-rate revenue escalation factor (Table 7-2, line 1).

Table 7-5: Projected Revenues without Rate Increases

Line No.	Description	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
1	Rate Revenue	$43,243,191	$43,328,984	$43,414,948	$43,501,084	$43,587,392
2	Interest Earnings	$339,755	$339,928	$299,768	$228,857	$148,160
3	Other Revenues	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705
4	**Total Revenue**	**$44,848,651**	**$44,934,617**	**$44,980,421**	**$44,995,646**	**$45,001,257**

The projected development impact fees (DIF) revenues were provided by the City and are shown in the following table. DIF revenues are restricted for growth-related capital improvement projects.

Table 7-6: Projected Development Impact Fee Revenues

Line No.	Description	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
1	DIF Revenue	$2,238,243	$2,497,502	$2,861,983	$3,068,631	$3,074,768
2	Interest Earnings	$107,266	$122,347	$136,829	$152,377	$164,381
3	**Total Revenues**	**$2,345,509**	**$2,619,849**	**$2,998,812**	**$3,221,008**	**$3,239,149**

7.4. Projected O&M Expenses

City staff provided the actual O&M expenses for FY 2014 through FY 2023 and budgeted FY 2024 O&M expenses for the wastewater utility, based on expense function. Table 7-7 shows the projected O&M expenses for the first five years of the study period summarized by expense function, and the remainder of the study period is shown in the Appendix. Each line item is escalated based on the expense escalation factors in Table 7-3.

The City also includes MYOP in its budget and forecast. The projected MYOP expenses for wastewater were provided by the City for the next five years. MYOP expenses after FY 2029 are based on the annual average of MYOP expenses from FY 2024 through FY 2029, escalated by an escalation factor of 2.5%, and include additional MYOP identified by the DOU. The wastewater MYOP projected expenses are shown on line 8.

Table 7-7: Projected O&M Expenses

Line No.	Description	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
1	Employee Services	$14,099,718	$14,381,712	$14,669,347	$14,962,734	$15,261,988
2	Interfund Reimbursement	$7,845,724	$8,081,096	$8,323,529	$8,573,235	$8,830,432
3	Interfund Provided & Used	$62	$64	$66	$68	$70
4	Interfund Transfer	$4,775,389	$4,918,651	$5,066,210	$5,218,196	$5,374,742
5	Other Objects	$200,736	$205,754	$210,898	$216,171	$221,575
6	Property	$159,135	$163,909	$168,826	$173,891	$179,108
7	Service And Supplies	$6,271,554	$6,459,700	$6,653,491	$6,853,096	$7,058,689
8	MYOP	$3,340,815	$3,492,323	$4,128,160	$4,097,882	$5,736,207
9	**Total**	**$36,693,133**	**$37,703,209**	**$39,220,527**	**$40,095,272**	**$42,662,810**

7.5. Debt Service

The City currently has several existing debt issuances for the wastewater utility. Table 7-8 shows the annual payments for the existing debt service.

Table 7-8: Existing Debt Service Schedules

Line No.	Description	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
1	Wastewater Revenue Bonds, Series 2019	$2,116,375	$2,116,375	$2,118,750	$2,118,375	$2,115,250
2	2003 Cirbs + 2006 Refinancing	$44,842	$44,828	$45,094	$45,418	$47,299
3	Wastewater Revenue Bonds, Series 2020	$1,749,241	$1,751,954	$1,747,365	$1,745,246	$1,745,614
4	**Total**	**$3,910,458**	**$3,913,157**	**$3,911,209**	**$3,909,039**	**$3,908,163**

7.6. Capital Improvement Projects

City staff provided a 30-year CIP for the wastewater utility for the study period. Table 7-9 shows a summary of the CIP costs for the first five years of the study period on line 1. The entire CIP plan with project-level detail is provided in the Appendix. Projects are funded through a combination of wastewater rate revenues, cash reserves, wastewater development impact fees (DIF), and bond proceeds.

Due to the extent of capital improvement planned, the CIP cannot be entirely funded with pay-go from wastewater operations; therefore, debt is needed to fund a portion of the capital program beginning in FY 2030[16]. The terms for this debt issue are assumed to be a 20-year bond at 4% interest with a 0.85% issuance cost. It is assumed an additional reserve fund would not need to be created for the debt. Future debt will be included in the absolute floor debt service coverage ratio requirement as shown in the financial planning sections 7.7, 7.8, and 7.9. The proposed annual debt service is also shown in the financial planning section.

[16] Debt issuance begins in FY 2030 due to timing of the projects included in the 30-year CIP.

Table 7-9: 30-year CIP– Summary of Total Costs

Line No.	Description	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
1	30-year CIP Costs	$3,588,305	$3,873,500	$8,197,500	$10,733,500	$6,467,100

The growth-related capital projects are separate from the CIP projects listed in the previous table and are funded with DIF revenues. The following table provides a summary of the growth-related CIP.

Table 7-10: 30-year Growth-related CIP – Summary of Total Costs

Line No.	Description	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
1	Growth-related CIP Costs	$773,665	$1,160,497	$1,547,330	$1,547,330	$2,500,000

7.7. Status Quo without Rate Increases

The current condition of the fund (status quo) without rate increase was modeled to show when the wastewater utility will no longer be able to meet its absolute floor debt service coverage ratio requirement of 1.20, minimum operating reserve target of 120 days of O&M, and capital reserve target of next year's pay-go[17]. If the wastewater utility does not implement rate increases, it will not meet its absolute floor debt service coverage ratio requirement in FY 2029. It will not meet its capital reserve target beginning in FY 2028 and its minimum operating target in FY 2029.

Table 7-11 shows the proforma through FY 2029. Rate revenues on line 2 are derived from the projected baseline revenues Table 7-5 (line 1). Interest earnings and other revenues are shown on lines 3 and 4. O&M expenses on line 6 are derived from projected O&M expenses in Table 7-7. The existing debt service on line 8 is from the annual debt service payments for outstanding debt in Table 7-8. Cash-funded capital projects on line 11 are from the capital financing plan in Table 7-9.

The total revenue requirements on line 12 are a sum of the operating expenses, debt service payments, and cash funded capital. Net cash flow on line 13 is calculated by subtracting the total revenue requirements from the total revenues. Net operating revenue on line 20 is equal to total revenues less O&M expenses. The total debt service coverage ratio on line 21 is calculated by dividing the net operating revenue by the total debt service.

[17] Pay-go is cash funded capital.

Table 7-11: Proforma for Status Quo

Line No.	Description	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
	Revenues					
1	Rate Increase	0%	0%	0%	0%	0%
2	Rate Revenues	$43,243,191	$43,328,984	$43,414,948	$43,501,084	$43,587,392
3	Interest Earnings	$339,755	$339,928	$299,768	$228,857	$148,160
4	Other Revenue	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705
5	**Total Revenues**	**$44,848,651**	**$44,934,617**	**$44,980,421**	**$44,995,646**	**$45,001,257**
	Revenue Requirements					
6	Operating Expenses	$36,693,133	$37,703,209	$39,220,527	$40,095,272	$42,662,810
	Debt Service					
7	Existing Debt Service	$3,910,458	$3,913,157	$3,911,209	$3,909,039	$3,908,163
8	Proposed Debt Service	$0	$0	$0	$0	$0
9	Total Debt Service	$3,910,458	$3,913,157	$3,911,209	$3,909,039	$3,908,163
10	Cash Funded Capital	$3,962,175	$3,566,246	$9,672,941	$7,420,114	$8,221,673
11	**Total Revenue Requirements**	**$44,565,766**	**$45,182,612**	**$52,804,678**	**$51,424,425**	**$54,792,646**
12	Net Cash Flow	$282,885	($247,995)	($7,824,257)	($6,428,779)	($9,791,390)
13	Beginning Balance	$34,003,924	$34,286,809	$34,038,814	$26,214,557	$19,785,778
14	Ending Balance with Reserves	$34,286,809	$34,038,814	$26,214,557	$19,785,778	$9,994,389
15	Ending Cash Balance less Reserves	$18,657,067	$11,970,297	$5,900,023	($1,617,902)	($5,471,671)
16	Operating Reserve	$12,063,496	$12,395,576	$12,894,420	$13,182,007	$14,026,129
17	Capital Reserve	$3,566,246	$9,672,941	$7,420,114	$8,221,673	$1,439,930
	Debt Coverage Section					
18	Net Operating Revenue	$8,155,518	$7,231,408	$5,759,893	$4,900,374	$2,338,446
19	**Total Debt Service Coverage Ratio**	**2.09**	**1.85**	**1.47**	**1.25**	**0.60**

Notes: Other revenues include service fees, sewer permits, and proprietary revenues.
The minimum operating target of 120 days of O&M is a policy set by the DOU.
The absolute floor debt service coverage ratio of 1.20 is required for parity obligation and bonds per wastewater's existing revenue bonds.
This financial plan is based on data from FY 2024 and not the FY 2025 approved budget due to timing.

Figure 7-1 shows the ending cash balance compared to the operating and capital reserve targets.

Figure 7-1: Status Quo – Ending Balance and Reserve Targets

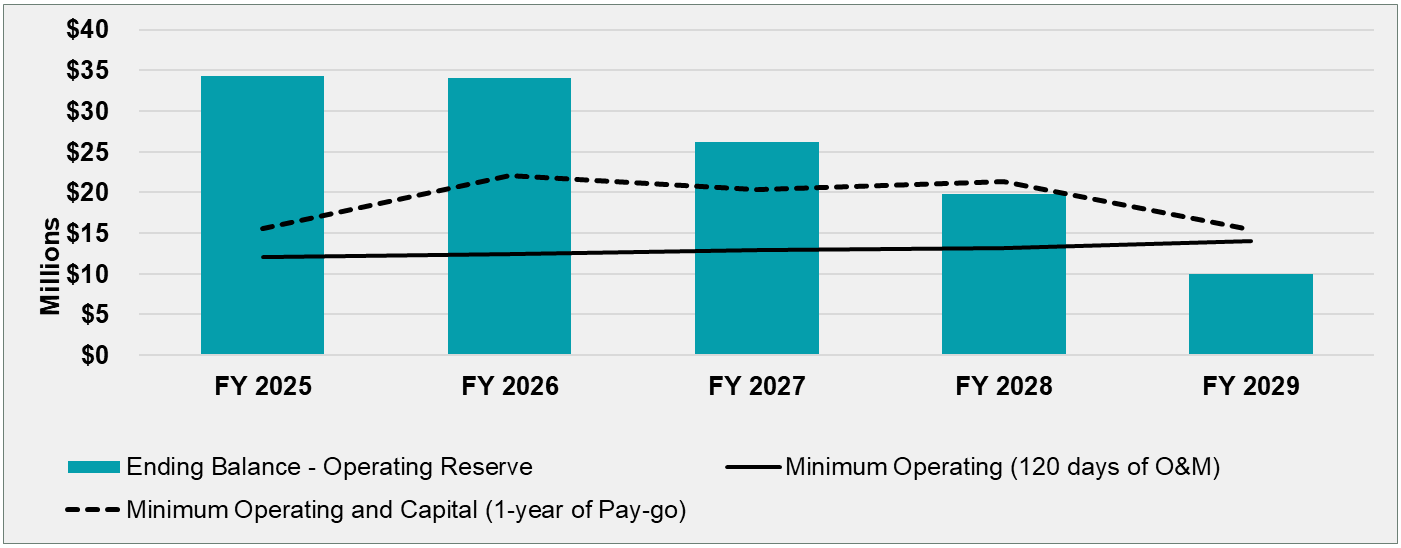
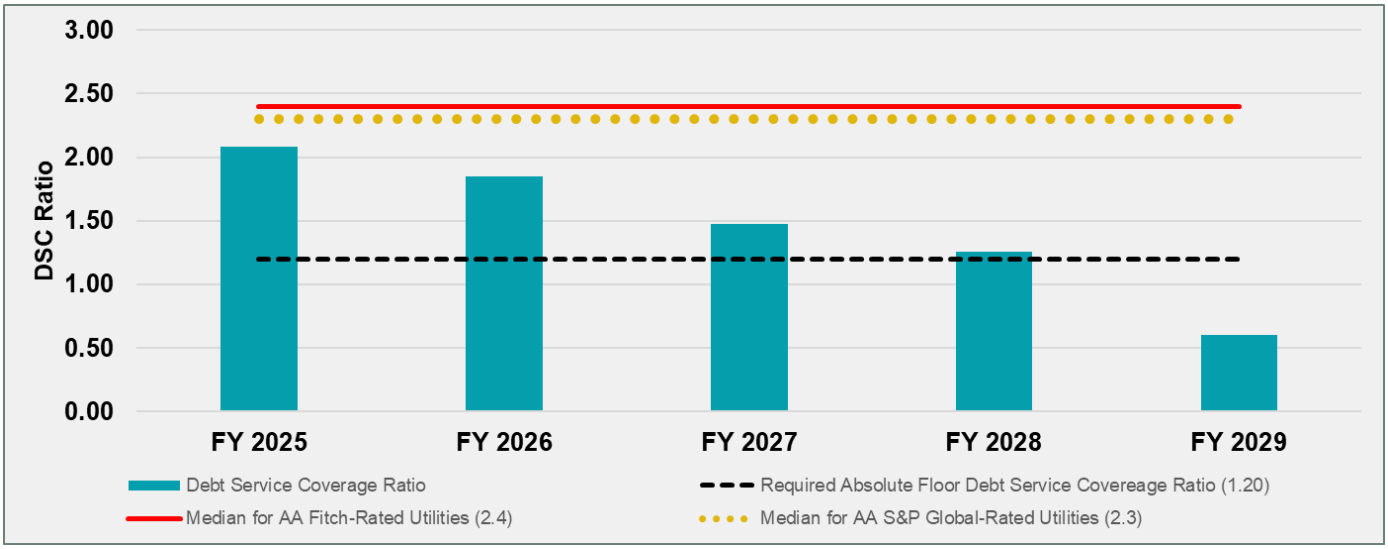


Figure 7-2 shows the debt service coverage ratio compared to its absolute floor. If the wastewater utility does not implement rate increases, it will not meet its absolute floor 1.20 debt coverage ratio in FY 2029.

Figure 7-2: Status Quo – Debt Service Coverage Ratio



Without rate increases, the wastewater utility will soon not be able to meet its fiscal requirements. Specifically, it will not meet its absolute floor debt service coverage ratio requirement in FY 2029, it will not meet its capital reserve target beginning in FY 2028, and it will not meet its minimum operating target in FY 2029. Additionally, this does not account for the 30-year CIP, additional MYOPs, additional operating and capital needs, and R/R to efficiently and effectively operate the wastewater utility. Sections 7.9 through 7.11 below offer proposed financial plans that incorporate these needs while also meeting fiscal requirements.

7.8. Development Impact Fee Fund for All Scenarios

Table 7-12 shows the development impact fee (DIF) fund for the status quo, financial plan 1, financial plan 2, and financial plan 3. The tables and figures for the first five years are included in this section. The tables and figures for years 6 through 25 are in the Appendix.

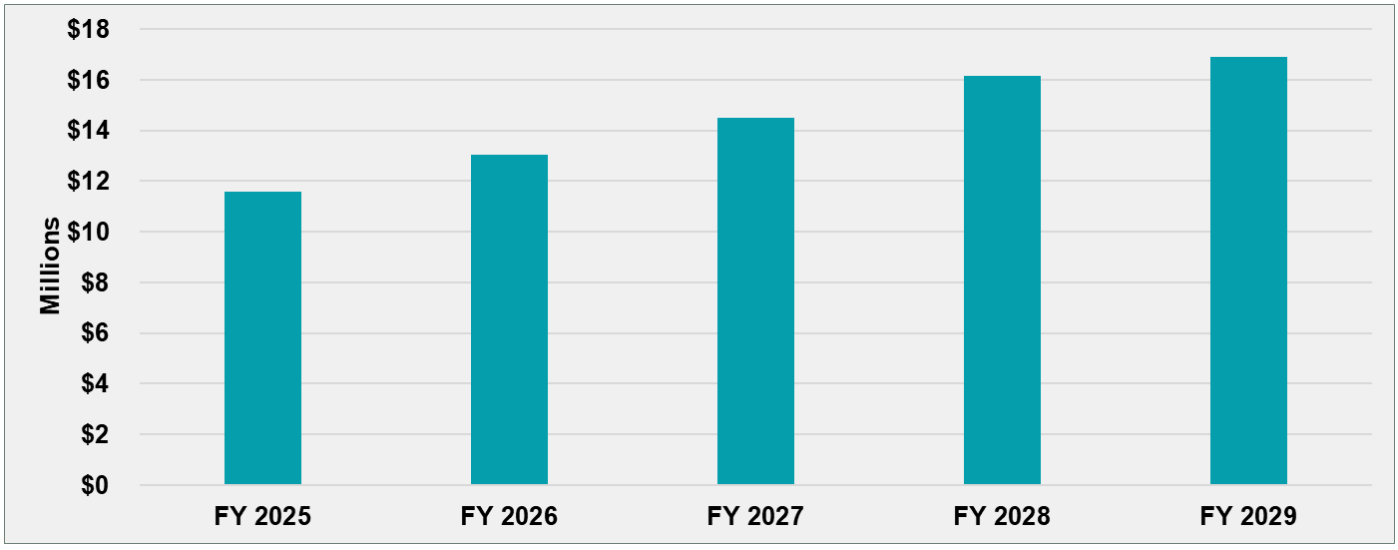
The projection of DIF funds and growth-related CIP are the same for each scenario. The projection of DIF funds for the first four years were provided by the City, and the remaining years were escalated by 0.2 percent each year to match the assumption used for account growth.

The City plans to reevaluate DIF fees in the future with another DIF nexus study.

Table 7-12: DIF Proforma

Line No.	Description	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
1	Development Impact Fee Revenues	$2,238,243	$2,497,502	$2,861,983	$3,068,631	$3,074,768
2	Interest Earnings	$107,266	$122,347	$136,829	$152,377	$164,381
3	Total Revenues	$2,345,509	$2,619,849	$2,998,812	$3,221,008	$3,239,149
4	Growth-related CIP	$773,665	$1,160,497	$1,547,330	$1,547,330	$2,500,000
5	Net Cash Flow	$1,571,844	$1,459,352	$1,451,482	$1,673,678	$739,149
6	Beginning Balance	$9,994,355	$11,566,199	$13,025,550	$14,477,032	$16,150,710
7	**Ending Balance**	**$11,566,199**	**$13,025,550**	**$14,477,032**	**$16,150,710**	**$16,889,860**

Figure 7-3: DIF Fund Ending Cash Balance



7.9. Financial Plan 1 with 30-year CIP and MYOP

Table 7-13 shows the proposed capital financing plan for the wastewater utility. The City will need to fund its 30-year wastewater CIP with a mix of pay-go and debt financing. This plan assumes 100% of the projects will

be completed within the funding schedule as noted in the 30-year CIP. The escalated capital costs (line 2) are the result of applying a capital escalation factor of 3% to the uninflated total capital costs from Table 7-8 (line 3). The proposed debt funding (line 6) uses the assumptions outlined in the previous section. The remainder will be funded with pay-go from rates.

Table 7-13: Financing Plan with 30-year CIP Schedule and MYOP

Line No.	Description	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
1	Uninflated Capital Costs	$3,773,500	$3,297,500	$8,683,500	$6,467,100	$6,957,000
2	Escalated Capital Costs	$3,962,175	$3,566,246	$9,672,941	$7,420,114	$8,221,673
3	Capital Spending Factor	100%	100%	100%	100%	100%
4	Total Funded Capital	$3,962,175	$3,566,246	$9,672,941	$7,420,114	$8,221,673
	Capital Financing Plan					
5	Proposed Debt Funding	$0	$0	$0	$0	$0
6	Pay-go	$3,962,175	$3,566,246	$9,672,941	$7,420,114	$8,221,673
7	**Total**	**$3,962,175**	**$3,566,246**	**$9,672,941**	**$7,420,114**	**$8,221,673**

Table 7-14 shows Financial Plan 1 with the 30-year CIP and wastewater MYOP. Rate increases needed to meet fiscal targets and requirements[18] are shown on line 1 and applied to the projected baseline revenues. Table 7-5 (line 1) to derive the rate revenues shown on line 2. Interest earnings and other revenues are shown on lines 3 and 4. O&M expenses on line 7 are derived from projected O&M expenses in Table 7-7. Existing debt service on line 9 is from the annual debt service payments for outstanding debt in Table 7-8. The proposed debt service on line 10 is for debt-financed capital projects and will begin in FY 2030. Cash-funded capital projects on line 11 are from the capital financing plan in Table 7-9. This scenario assumes capital projects are funded with a mix of pay-go and debt financing.

The total revenue requirements on line 12 are a sum of the operating expenses, debt service payments, and cash-funded capital. Net cash flow on line 13 is calculated by subtracting the total revenue requirements from the total revenues. Net operating revenue on line 20 is equal to total revenues less O&M expenses. The total debt service coverage ratio on line 21 is calculated by dividing the net operating revenue by the total debt service. The projected ending fund balance with reserves, ending balance less reserves, operating reserve, and capital reserve are shown on lines 16 through 19.

The tables and figures for the first five years are included in this section. The tables and figures for years 6 through 25 are in the Appendix.

[18] Fiscal targets and requirements include the absolute floor debt service coverage ratio requirement of 1.20, minimum operating reserve target of 120 days of O&M, and capital reserve target of next year's pay-go.

Table 7-14: Financial Plan 1 with Original 30-year CIP Schedule and MYOP

Line No.	Description	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
	Revenues					
1	Rate Increase	0%	0%	0%	32%	30%
2	Rate Revenues	$43,243,191	$43,328,984	$43,414,948	$57,421,430	$74,795,964
3	Interest Earnings	$339,755	$339,928	$299,768	$298,459	$444,102
4	Other Revenue	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705
5	**Total Revenues**	**$44,848,651**	**$44,934,617**	**$44,980,421**	**$58,985,594**	**$76,505,772**
	Revenue Requirements					
6	Operating Expenses	$36,693,133	$37,703,209	$39,220,527	$40,095,272	$42,662,810
	Debt Service					
7	Existing Debt Service	$3,910,458	$3,913,157	$3,911,209	$3,909,039	$3,908,163
8	Proposed Debt Service	$0	$0	$0	$0	$0
9	Total Debt Service	$3,910,458	$3,913,157	$3,911,209	$3,909,039	$3,908,163
10	Cash Funded Capital	$3,962,175	$3,566,246	$9,672,941	$7,420,114	$8,221,673
11	**Total Revenue Requirements**	**$44,565,766**	**$45,182,612**	**$52,804,678**	**$51,424,425**	**$54,792,646**
12	Net Cash Flow	$282,885	($247,995)	($7,824,257)	$7,561,170	$21,713,125
13	Beginning Balance with Reserves	$34,003,924	$34,286,809	$34,038,814	$26,214,557	$33,775,727
14	Ending Balance with Reserves	$34,286,809	$34,038,814	$26,214,557	$33,775,727	$55,488,852
15	Ending Cash Balance less Reserves	$18,657,067	$11,970,297	$5,900,023	$12,372,046	$40,022,792
16	Operating Reserve	$12,063,496	$12,395,576	$12,894,420	$13,182,007	$14,026,129
17	Capital Reserve	$3,566,246	$9,672,941	$7,420,114	$8,221,673	$1,439,930
	Debt Coverage Section					
18	Net Operating Revenue	$8,155,518	$7,231,408	$5,759,893	$18,890,322	$33,842,961
19	**Total Debt Service Coverage Ratio**	**2.09**	**1.85**	**1.47**	**4.83**	**8.66**

Notes: Other revenues include service fees, sewer permits, and proprietary revenues.
The minimum operating target of 120 days of O&M is a policy set by the DOU.
The absolute floor debt service coverage ratio of 1.20 is required for parity obligation and bonds per the wastewater's existing revenue bonds.
This financial plan is based on data from FY 2024 instead of the approved budget for FY 2025 due to timing.

Figure 7-4 shows Financial Plan 1 in a graphical format based on the proforma shown in Table 7-14.

Figure 7-4: Financial Plan 1

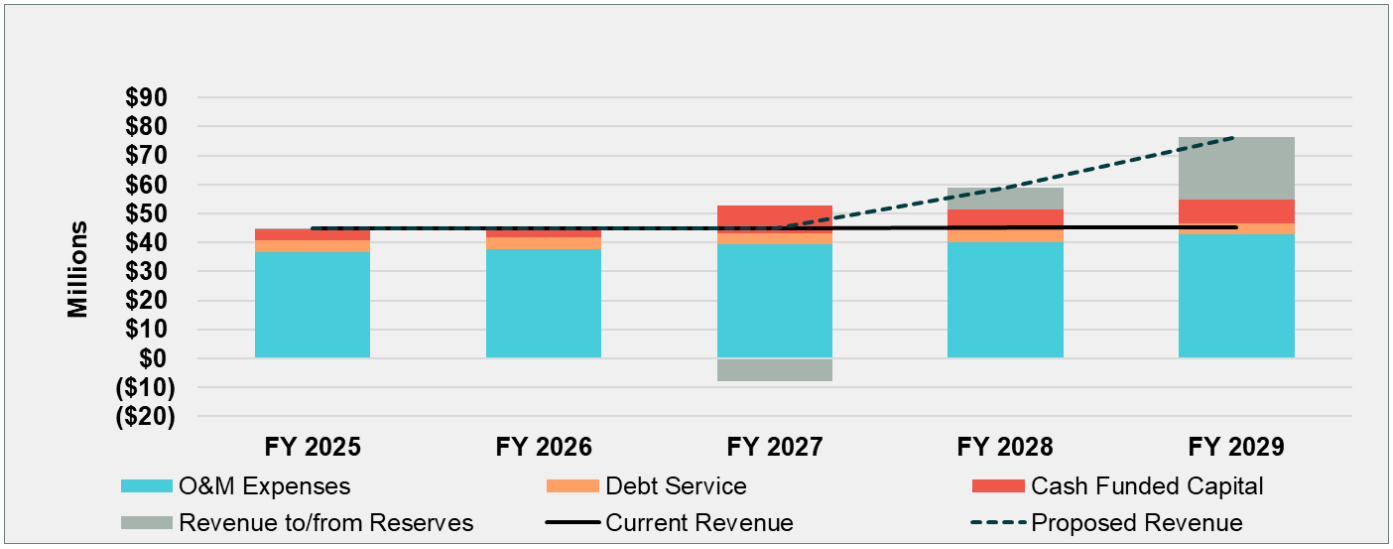


Figure 7-5 shows the capital financing plan for Financial Plan 1 in graphical format. Capital projects are funded with a mix of cash and debt. New debt funding is used for projects beginning in FY 2030.

Figure 7-5: Financial Plan 1 – Capital Financing Plan

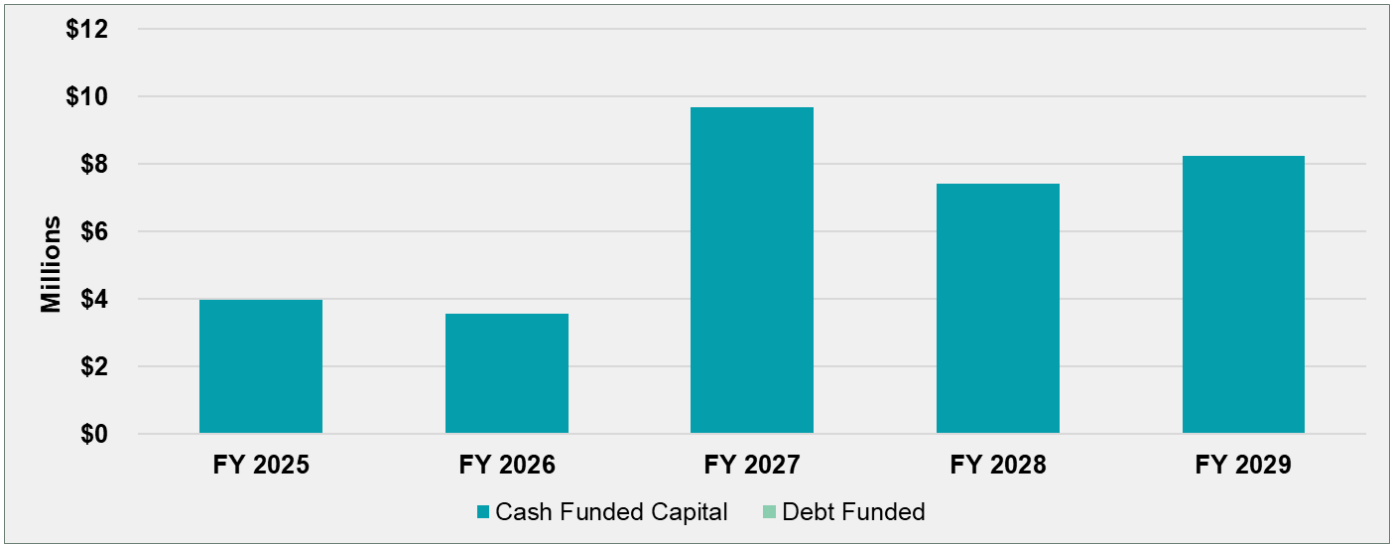


Figure 7-6 shows the wastewater operating and capital funds ending cash balance in comparison to the reserve targets. The ending cash balance exceeds the minimum operating balance and capital reserve target each year. The minimum operating reserve target is shown with the solid line. The minimum capital reserve target is shown with the dashed line.

Figure 7-6: Financial Plan 1 – Ending Balances and Reserve Targets

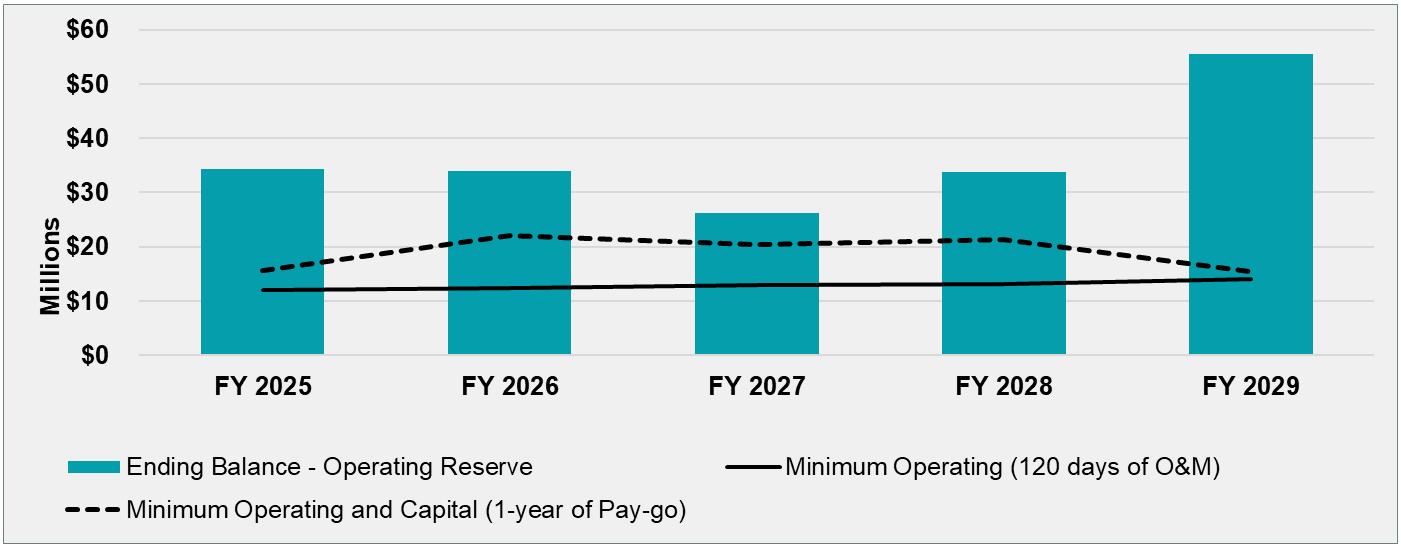


Figure 7-7 shows the calculated all-in debt service coverage ratio with bars. The required absolute floor of 1.20 is achieved in each year and shown with the black dashed line. Fitch issued an AA rating for the City's wastewater utility in 2023. The median debt service coverage ratio for wastewater utilities with a similar rating reported by Fitch is equal to 2.4 and shown with the red solid line. The median reported by S&P Global is equal to 2.3 and is shown with the yellow dotted line. The total debt service coverage ratio exceeds the median thresholds of similar-rated wastewater utilities in FY 2028 and FY 2029.

Figure 7-7: Financial Plan 1 – Debt Service Coverage Ratio

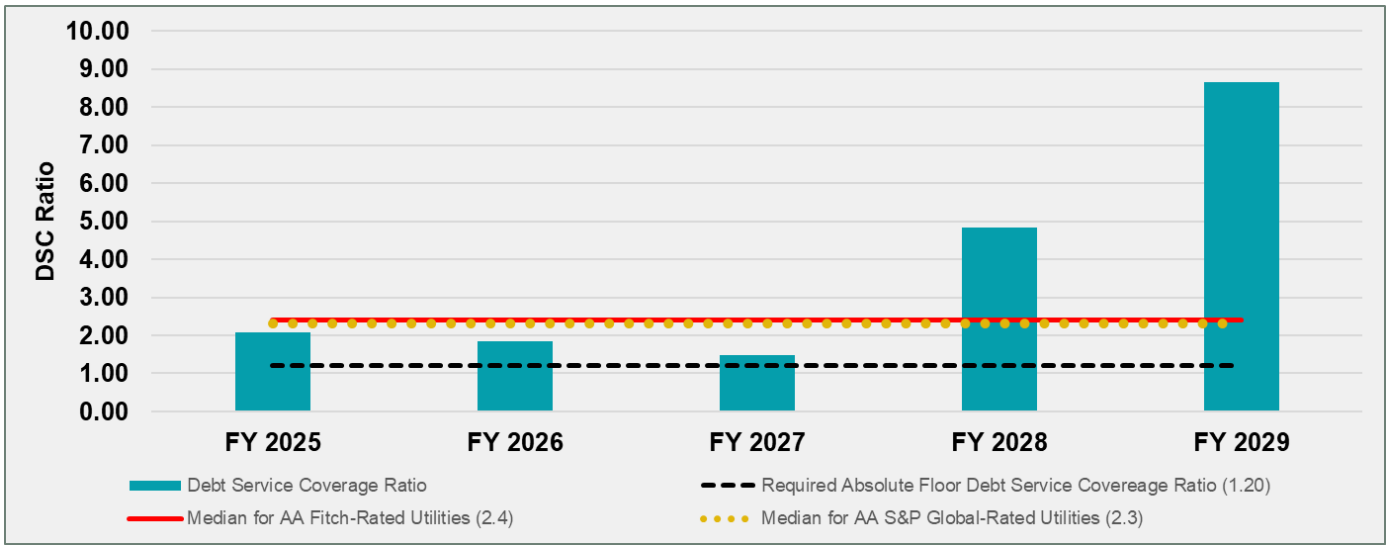


Figure 7-8 shows the days of cash on hand for Financial Plan 1. The ending cash balance is divided by the operating expenses and then divided by 365. It is an indicator of financial flexibility to fund near-term obligations. The median days of cash on hand for wastewater utilities with a similar rating reported by Fitch is equal to 621 days and shown with the red solid line. The median reported by S&P Global is equal to 584 days and is shown with the yellow dotted line. The days of cash on hand for Financial Plan 1 are below the medians of similarly rated utilities in each year.

Figure 7-8: Financial Plan 1 – Days of Cash on Hand

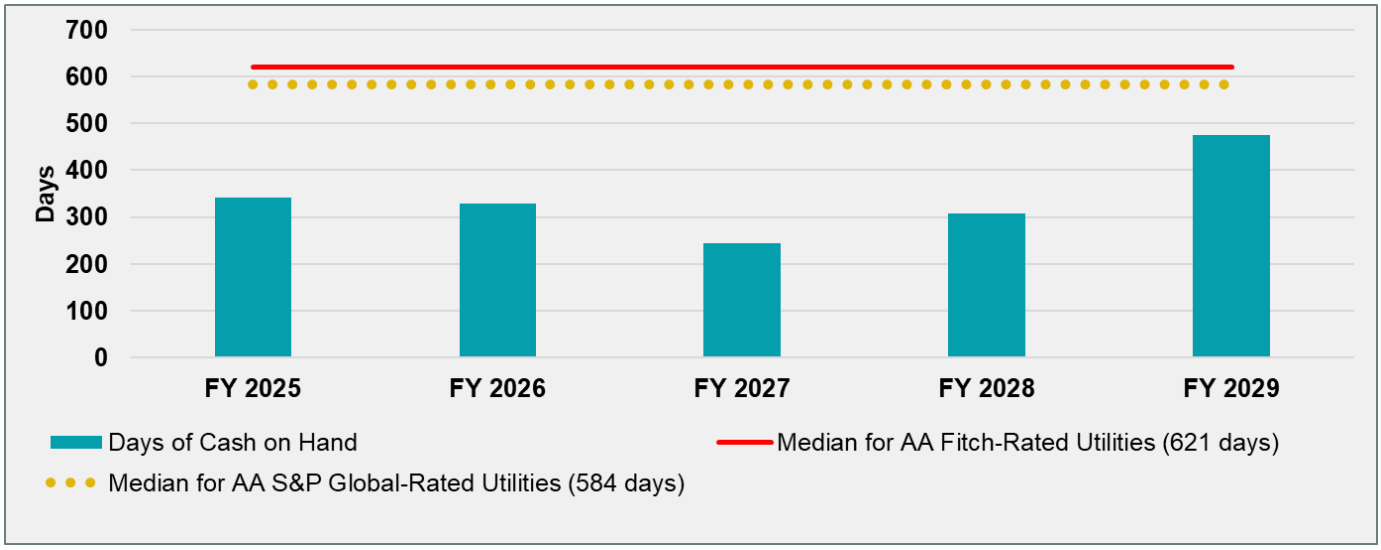
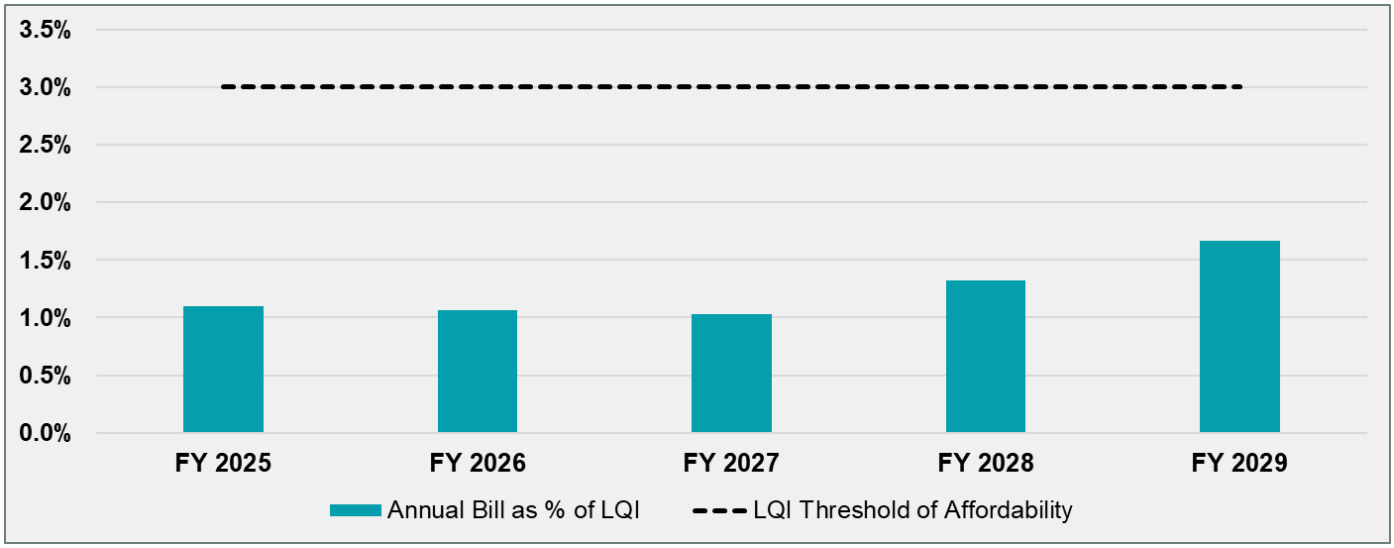


Figure 7-9 shows the annual wastewater bill as a percentage of the lowest quintile income (LQI). The USEPA uses the annual bill as a percentage of median household income (MHI) for the residential indicator in its Financial Capability Assessment Guidance[19]. However, MHI does not account for the variability of income distribution between communities, therefore LQI is used in this study to assess the potential impact of rate increases. It is commonly inferred by many utilities that annual wastewater bills as a percentage of LQI of 3% or higher are considered to place a burden on those households. This threshold is represented with the dashed line.

The highest concentration of residential wastewater customers are billed the single-family residence flat rate for 6 to 7 rooms. The estimated annual wastewater bill for this residential customer equals $379.80. The estimated annual wastewater bill increases by the proposed rates for that fiscal year. The US Census Bureau reported that the LQI for the City of Sacramento, CA was $31,769 in 2022. The LQI is escalated by 3% each year of the study period to account for inflation and was assumed to be approximately $34,715 in 2025. The annual wastewater bill as a percentage of LQI is calculated by dividing the estimated wastewater bill as the numerator by the LQI as the denominator. The wastewater bills as a percentage of LQI are below the 3% affordability threshold.

[19] Clean Water Act Financial Capability Assessment Guidance, USEPA, February, 2023.

Figure 7-9: Financial Plan 1 – Annual Wastewater Bill as Percentage of Lowest Quintile Income



The following are key takeaways for Financial Plan 1:

Key Takeaways for Financial Plan 1 (First Five Years):

- Rate increases are as follows: 0% (FY 2025 through FY 2027), 32% (FY 2028), and 30% (FY 2029).
- The average cash-funded capital for the first five years is $6.6 million annually.
- The minimum operating target is achieved each year.
- The minimum capital reserve target is achieved each year.
- The total absolute floor debt service coverage ratio requirement is achieved each year.
- The total debt service coverage ratio exceeds the medians for Fitch and S&P Global in FY 2028 and FY 2029.
- Annual wastewater bills as a percentage of LQI are less than the 3% affordability threshold each year.
- The days of cash on hand are below the medians for Fitch and S&P Global each year.

Key Takeaways for Financial Plan 1 (Years 6 through 25):

- Rate increases are as follows: 7% (FY 2030 – FY 2033), 4% (FY 2034), 3% (FY 2035 – FY 2039), 7% (FY 2040 – FY 2044), 3% (FY 2045) and 0% for the remainder of the study period.
- The average cash funded capital throughout the study period is $54.7 million annually.
- The minimum operating target is achieved each year.
- The minimum capital reserve target is achieved each year.
- The total absolute floor debt service coverage ratio requirement is achieved each year.
- The total debt service coverage ratio exceeds the medians for Fitch and S&P Global each year except FY 2032 and FY 2034 – FY 2038.
- The annual wastewater bills as a percentage of LQI remain below the 3% affordability threshold.
- The days of cash on hand exceed the medians for Fitch and S&P Global each year.

7.10. Financial Plan 2 with Costs to Address Deficiencies and Gaps

Raftelis coordinated with City staff to identify additional FTE staffing, operating and capital needs to address aging infrastructure, deficiencies, and gaps. The needs identified by these divisions are not included in the City's current budget, projections, or 30-year CIP. Financial Plan 2 includes 100 percent of these additional operating, MYOP, and capital needs along with everything from Financial Plan 1.

7.10.1. Additional Operating Costs

The DOU provided a schedule of additional operating costs that are one-time and recurring expenditures. The additional operating and MYOP costs for the next five years are shown in the table below, and the additional operating costs and MYOP costs for the remainder of the study period are shown in the Appendix. They were included in this financial scenario and were not escalated above the DOU's estimates.

Table 7-15: Additional Operating Costs

Line No.	Description	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
1	Additional Operating Costs	$0	$0	$0	$2,837,352	$4,343,528
2	**MYOP**	**$0**	**$0**	**$0**	**$6,235,706**	**$6,754,461**

7.10.2. Additional Capital Costs

The additional capital costs for the next five years are shown in the following table, and the additional capital costs for the remainder of the study period are shown in the Appendix. They were included in this financial scenario and escalated using the CIP escalation factor.

Table 7-16: Additional Capital Costs

Line No.	Description	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
1	**Capital**	**$0**	**$0**	**$0**	**$8,836,691**	**$7,518,543**

7.10.3. Financial Plan 2 with Additional Operating and Capital Costs

Table 7-17 shows Financial Plan 2 with funding for the 30-year CIP, MYOP, additional operating expenses, additional MYOP, and additional capital costs. Rate increases needed to meet fiscal targets and requirements[20] are shown on line 1 and applied to the projected baseline revenues. Table 7-5 (line 1) to derive the rate revenues shown on line 2. Interest earnings and other revenues are shown on lines 3 and 4. O&M expenses on line 7 are derived from projected O&M expenses in Table 7-7. Existing debt service on line 9 is from the annual debt service payments for outstanding debt in Table 7-8. The proposed debt service on line 10 is for debt-financed capital projects and will begin in FY 2030. Cash funded capital projects on line 11 are

[20] Fiscal targets and requirements include the absolute floor debt service coverage ratio requirement of 1.20, minimum operating reserve target of 120 days of O&M, and capital reserve target of next year's pay-go.

from the capital financing plan in Table 7-9. This scenario assumes capital projects are funded with a mix of pay-go and debt financing.

The total revenue requirements on line 12 are a sum of the operating expenses, debt service payments, and cash funded capital. Net cash flow on line 13 is calculated by subtracting the total revenue requirements from the total revenues. Net operating revenue on line 20 is equal to total revenues less O&M expenses. The total debt service coverage ratio on line 21 is calculated by dividing the net operating revenue by the total debt service. The projected ending fund balance with reserves, ending balance less reserves, operating reserve, and capital reserve are shown on lines 16 through 19.

The tables and figures for the first five years are included in this section. The tables and figures for years 6 through 25 are in the Appendix.

Table 7-17: Financial Plan 2 with Additional Operating and Capital Costs

Line No.	Description	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
	Revenues					
1	Rate Increase	0%	0%	0%	50%	50%
2	Rate Revenues	$43,243,191	$43,328,984	$43,414,948	$65,251,625	$98,071,631
3	Interest Earnings	$339,755	$339,928	$299,768	$241,550	$346,178
4	Other Revenue	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705
5	**Total Revenues**	**$44,848,651**	**$44,934,617**	**$44,980,421**	**$66,758,881**	**$99,683,514**
	Revenue Requirements					
6	Operating Expenses	$36,693,133	$37,703,209	$39,220,527	$49,168,330	$53,760,799
	Debt Service					
7	Existing Debt Service	$3,910,458	$3,913,157	$3,911,209	$3,909,039	$3,908,163
8	Proposed Debt Service	$0	$0	$0	$0	$0
9	Total Debt Service	$3,910,458	$3,913,157	$3,911,209	$3,909,039	$3,908,163
10	Cash Funded Capital	$3,962,175	$3,566,246	$9,672,941	$17,559,009	$17,106,969
11	**Total Revenue Requirements**	**$44,565,766**	**$45,182,612**	**$52,804,678**	**$70,636,378**	**$74,775,931**
12	Net Cash Flow	$282,885	($247,995)	($7,824,257)	($3,877,498)	$24,907,584
13	Beginning Balance with Reserves	$34,003,924	$34,286,809	$34,038,814	$26,214,557	$22,337,059
14	Ending Balance with Reserves	$34,286,809	$34,038,814	$26,214,557	$22,337,059	$47,244,643
15	Ending Cash Balance less Reserves	$18,657,067	$11,970,297	($4,238,872)	($10,934,840)	$24,120,557
16	Operating Reserve	$12,063,496	$12,395,576	$12,894,420	$16,164,931	$17,674,783
17	Capital Reserve	$3,566,246	$9,672,941	$17,559,009	$17,106,969	$5,449,303
	Debt Coverage Section					
18	Net Operating Revenue	$8,155,518	$7,231,408	$5,759,893	$17,590,550	$45,922,715
19	**Total Debt Service Coverage Ratio**	**2.09**	**1.85**	**1.47**	**4.50**	**11.75**

Notes: Other revenues include service fees, sewer permits, and proprietary revenues.
The minimum operating target of 120 days of O&M is a policy set by the DOU.
The absolute floor debt service coverage ratio of 1.20 is required for parity obligation and bonds per the wastewater's existing revenue bonds.
This financial plan is based on data from FY 2024 instead of the approved budget for FY 2025 due to timing.

Figure 7-10 shows Financial Plan 2 in a graphical format based on the proforma shown in Table 7-17.

Figure 7-10: Financial Plan 2

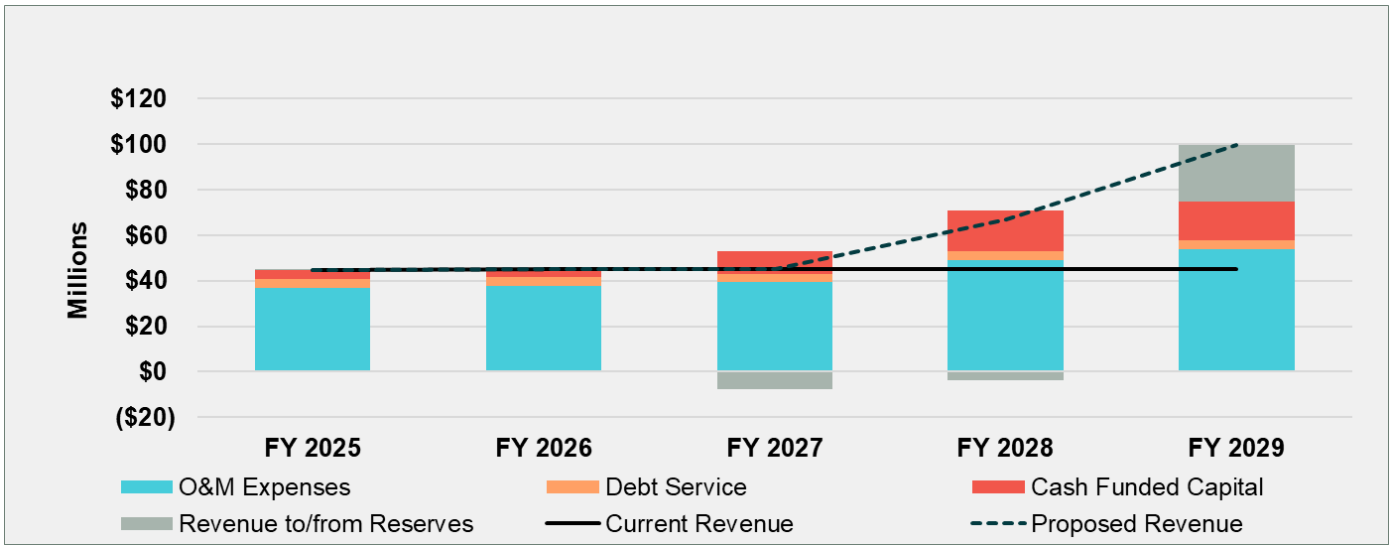


Figure 7-11 shows the financing plan for Financial Plan 2 in graphical format. Capital projects are funded with a mix of cash and debt. New debt funding is used for projects beginning in FY 2030.

Figure 7-11: Financial Plan 2 – Capital Financing Plan

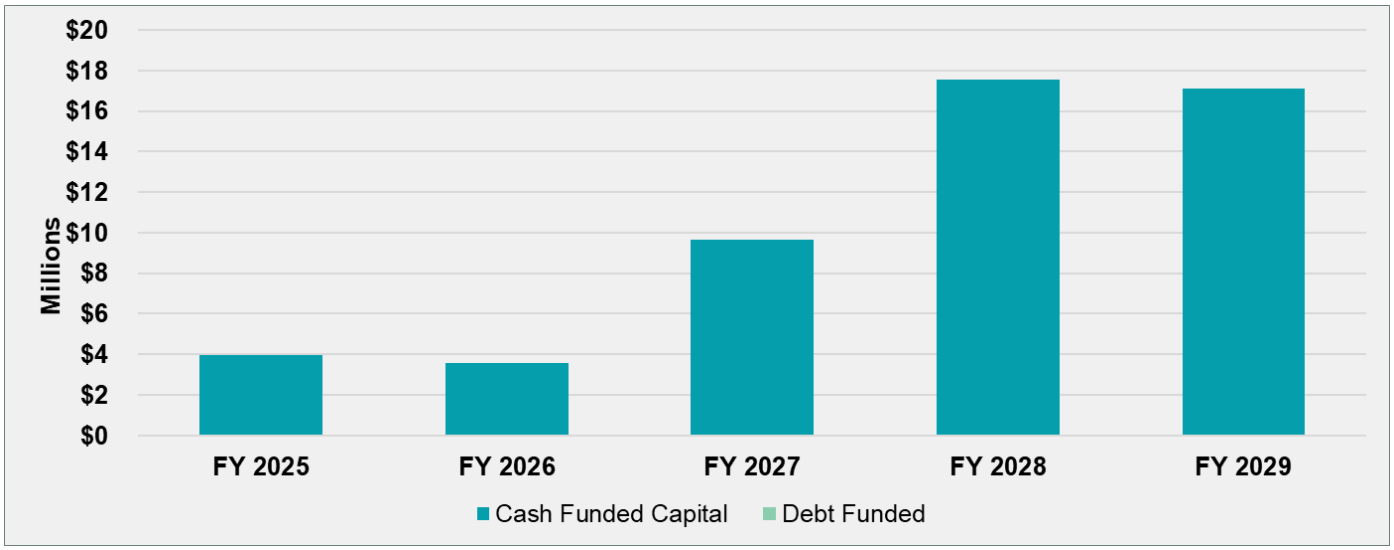


Figure 7-12 shows the wastewater operating ending cash balance in comparison to the reserve targets. The ending cash balance exceeds the minimum operating balance each year and is below the capital reserve target in FY 2027 and FY 2028. The minimum operating reserve target is shown with the solid line. The minimum capital reserve target is shown with the dashed line.

Figure 7-12: Financial Plan 2 – Ending Balances and Reserve Targets

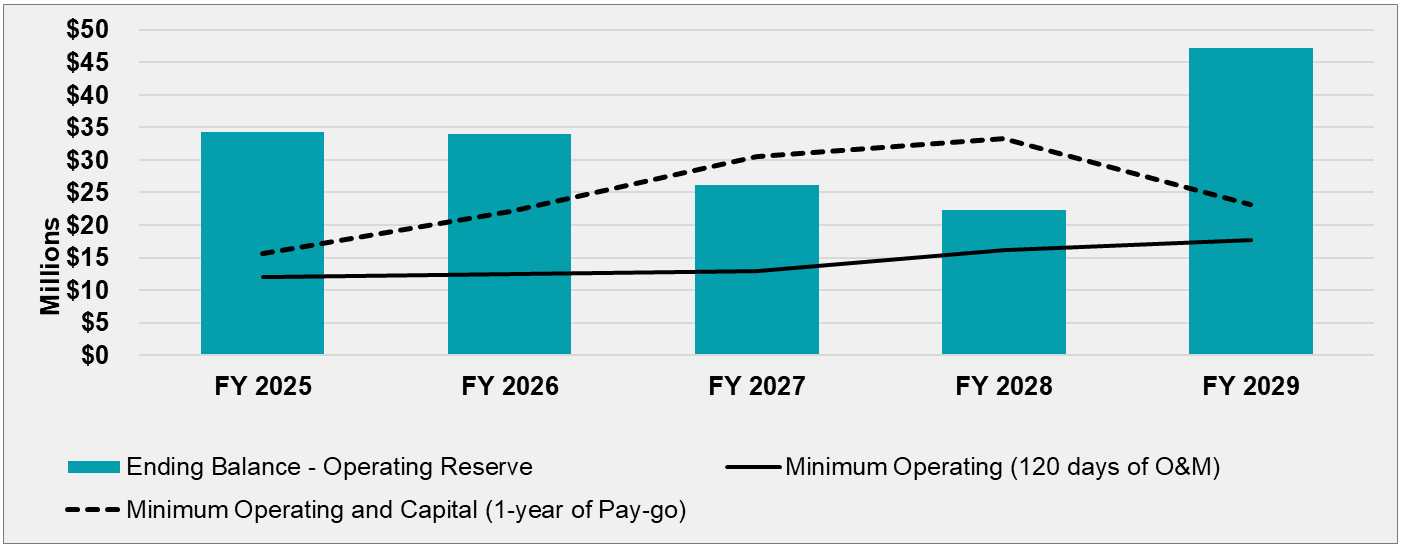


Figure 7-13 shows the calculated total debt service coverage ratio with bars. The required absolute floor of 1.20 is achieved each year and shown with the black dashed line. Fitch issued an AA rating for the City's wastewater utility in 2023. The median debt service coverage ratio for wastewater utilities with a similar rating reported by Fitch is equal to 2.4 and shown with the red solid line. The median reported by S&P Global is equal to 2.3 and is shown with the yellow dotted line. The total debt service coverage ratio exceeds the median thresholds of similar-rated wastewater utilities in FY 2028 and FY 2029.

Figure 7-13: Financial Plan 2 – Debt Service Coverage Ratio

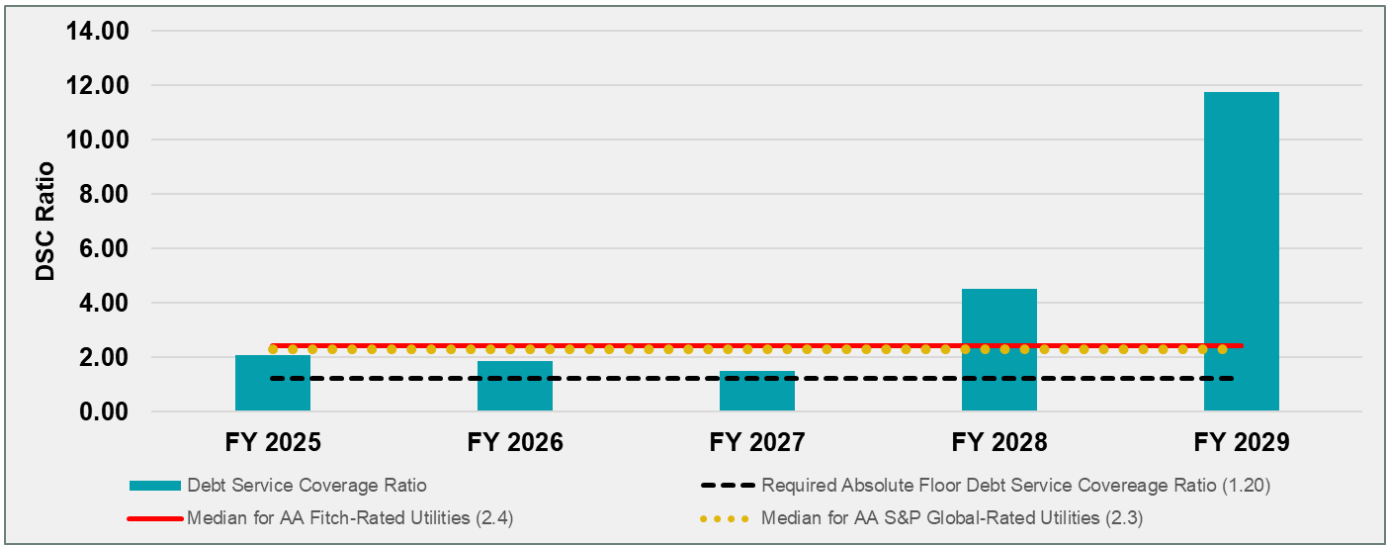


Figure 7-14 shows the days of cash on hand for Financial Plan 2. The ending cash balance is divided by the operating expenses and then divided by 365. It is an indicator of financial flexibility to fund near-term obligations. The median days of cash on hand for wastewater utilities with a similar rating reported by Fitch is equal to 621 days and shown with the red solid line. The median reported by S&P Global is equal to 584 days and is shown with the yellow dotted line. The days of cash on hand for Financial Plan 2 are less than the medians of similarly rated utilities each year.

Figure 7-14: Financial Plan 2 – Days of Cash on Hand

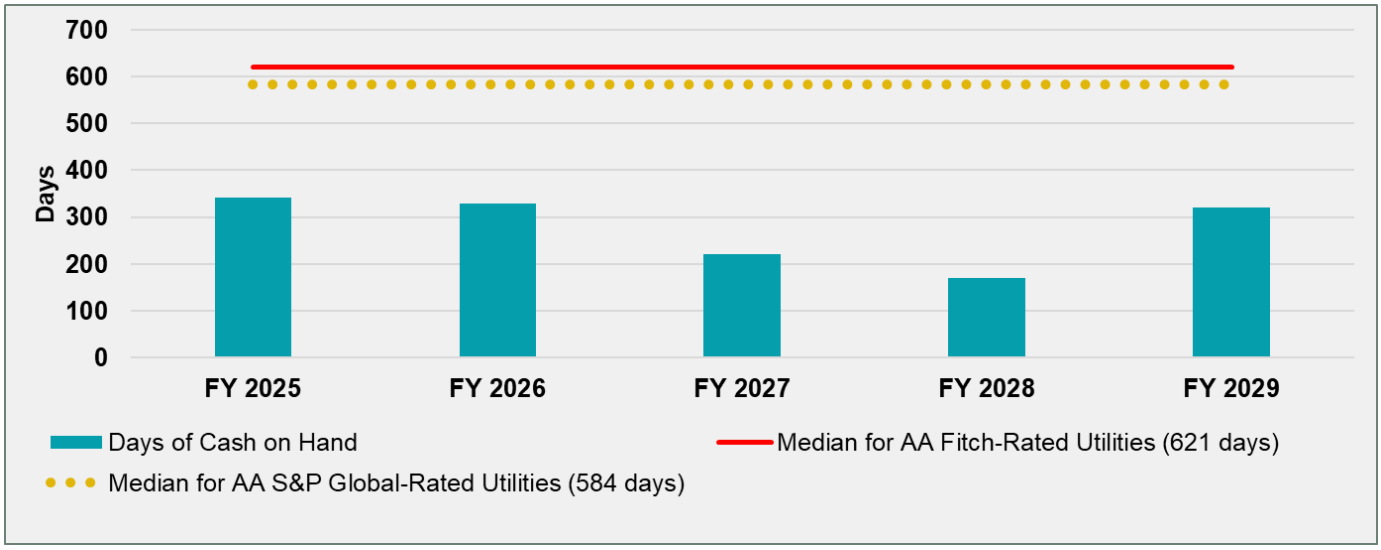
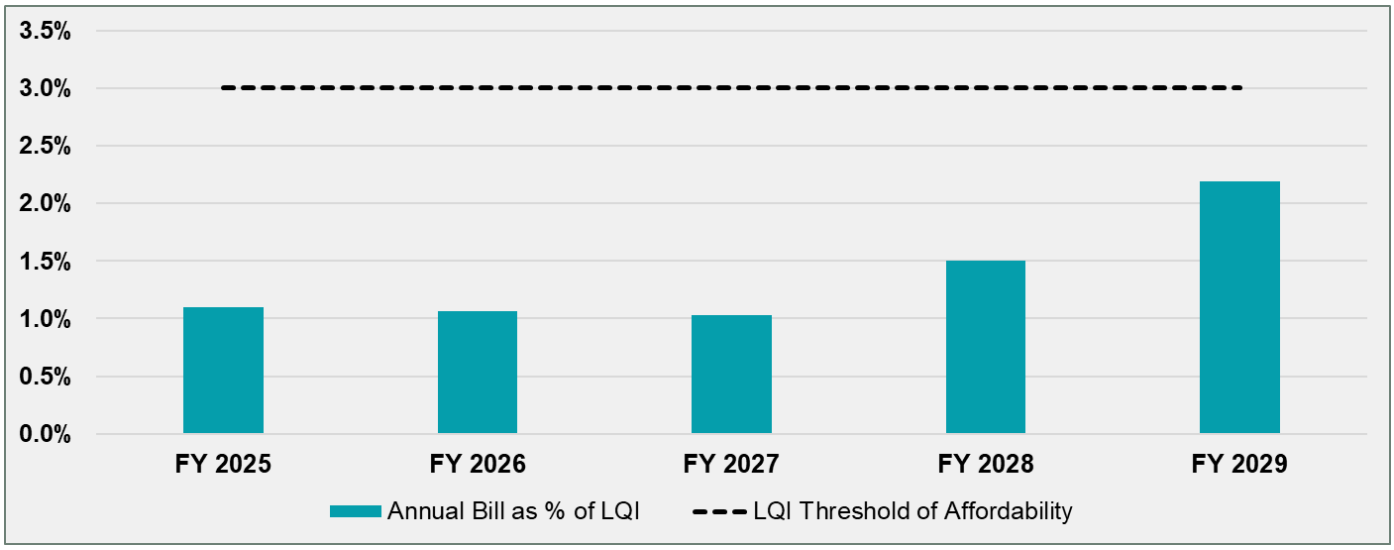


Figure 7-15 shows the annual wastewater bill as a percentage of the LQI. The wastewater bills as a percentage of LQI is below the 3% affordability threshold each year.

Figure 7-15: Financial Plan 2 – Annual Wastewater Bill as a Percentage of Lowest Quintile Income



The following are key takeaways for Financial Plan 2:

Key Takeaways for Financial Plan 2 (First Five Years):

- Rate increases are as follows: 0% (FY 2025 through FY 2027) and 50% (FY 2028 and FY 2029).
- The average cash-funded capital for the first five years is $10.4 million annually, which is $3.8 million more than the average for Financial Plan 1.
- The minimum operating target is achieved each year.
- The minimum capital reserve target is achieved each year except FY 2027 and FY 2028.
- The total absolute floor debt service coverage ratio requirement is achieved each year.
- The total debt service coverage ratio exceeds the medians for Fitch and S&P Global in FY 2028 and FY 2029.
- Annual water bills as a percentage of LQI are less than the 3% affordability threshold each year.
- The days of cash on hand are below the medians for Fitch and S&P Global each year.

Key Takeaways for Financial Plan 2 (Years 6 through 25):

- Rate increases are as follows: 5% (FY 2030 – FY 2033), 3% (FY 2034 – FY 2037), 5% (FY 2038 – FY 2045), and 0% for the remainder of the study period.
- The average cash-funded capital throughout the study period is $67.9 million annually, which is $13.2 million more than the average for Financial Plan 1.
- The minimum operating target is achieved each year.
- The minimum capital reserve target is achieved each year.
- The total absolute floor debt service coverage ratio requirement is achieved each year.
- The total debt service coverage ratio exceeds the medians for Fitch and S&P Global each year.
- The annual wastewater bills as a percentage of LQI remain below the 3% affordability threshold.
- The days of cash on hand exceed the medians for Fitch and S&P Global each year beginning in FY 2030.

7.11. Financial Plan 3 with Renewal and Replacement Costs

Raftelis provided additional linear and facilities renewal and replacement costs in Section 5 of this Report. Financial Plan 3 includes everything from Financial Plans 1 and 2 and additional linear and facilities renewal and replacement costs. The renewal and replacement costs for linear assets are gradually included in the projections by 25% beginning in FY 2028 and are fully included by FY 2031. The renewal and replacement costs for facilities are fully included beginning in FY 2028. The renewal and replacement costs were not escalated beyond the recommended values in Financial Plan 3.

Table 7-18 shows Financial Plan 3 with funding for the 30-year CIP, MYOP, additional operating expenses, additional MYOP, additional capital costs, and the renewal and replacement costs. Rate increases needed to meet fiscal targets and requirements[21] are shown on line 1 and applied to the projected baseline revenues. Table 7-5 (line 1) to derive the rate revenues shown on line 2. Interest earnings and other revenues are shown on lines 3 and 4. O&M expenses on line 7 are derived from projected O&M expenses in Table 7-7. Existing debt service on line 9 is from the annual debt service payments for outstanding debt in Table 7-8. The proposed debt service on line 10 is for debt-financed capital projects and will begin in FY 2028. Cash-funded capital projects on line 11 are from the capital financing plan in Table 7-9. This scenario assumes capital projects are funded with a mix of pay-go and debt financing.

The total revenue requirements on line 12 are a sum of the operating expenses, debt service payments, and cash-funded capital. Net cash flow on line 13 is calculated by subtracting the total revenue requirements from the total revenues. Net operating revenue on line 20 is equal to total revenues less O&M expenses. The total debt service coverage ratio on line 21 is calculated by dividing the net operating revenue by the total debt service. The projected ending fund balance with reserves, ending balance less reserves, operating reserve, and capital reserve are shown on lines 16 through 19.

The tables and figures for the first five years are included in this section. The tables and figures for years 6 through 25 are in the Appendix.

[21] Fiscal targets and requirements include the absolute floor debt service coverage ratio requirement of 1.20, minimum operating reserve target of 120 days of O&M, and capital reserve target of next year's pay-go.

Table 7-18: Financial Plan 3 with Additional Operating, Capital, and R/R Costs

Line No.	Description	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
	Revenues					
1	Rate Increase	0%	0%	0%	65%	65%
2	Rate Revenues	$43,243,191	$43,328,984	$43,414,948	$71,776,788	$118,666,674
3	Interest Earnings	$339,755	$339,928	$299,768	$184,709	$298,586
4	Other Revenue	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705
5	**Total Revenues**	**$44,848,651**	**$44,934,617**	**$44,980,421**	**$73,227,202**	**$120,230,965**
	Revenue Requirements					
6	Operating Expenses	$36,693,133	$37,703,209	$39,220,527	$49,168,330	$53,760,799
	Debt Service					
7	Existing Debt Service	$3,910,458	$3,913,157	$3,911,209	$3,909,039	$3,908,163
8	Proposed Debt Service	$0	$0	$0	$650,514	$650,514
9	Total Debt Service	$3,910,458	$3,913,157	$3,911,209	$4,559,553	$4,558,677
10	Cash Funded Capital	$3,962,175	$3,566,246	$9,672,941	$24,841,892	$43,639,602
11	**Total Revenue Requirements**	**$44,565,766**	**$45,182,612**	**$52,804,678**	**$78,569,776**	**$101,959,078**
12	Net Cash Flow	$282,885	($247,995)	($7,824,257)	($5,342,574)	$18,271,888
13	Beginning Balance with Reserves	$34,003,924	$34,286,809	$34,038,814	$26,214,557	$20,871,983
14	Ending Balance with Reserves	$34,286,809	$34,038,814	$26,214,557	$20,871,983	$39,143,871
15	Ending Cash Balance less Reserves	$18,657,067	$11,970,297	($11,521,755)	($38,932,549)	($18,981,402)
16	Operating Reserve	$12,063,496	$12,395,576	$12,894,420	$16,164,931	$17,674,783
17	Capital Reserve	$3,566,246	$9,672,941	$24,841,892	$43,639,602	$40,450,490
	Debt Coverage Section					
18	Net Operating Revenue	$8,155,518	$7,231,408	$5,759,893	$24,058,872	$66,470,167
19	**Total Debt Service Coverage Ratio**	**2.09**	**1.85**	**1.47**	**5.28**	**14.58**

Notes: Other revenues include service fees, sewer permits, and proprietary revenues.
The minimum operating target of 120 days of O&M is a policy set by the DOU.
The absolute floor debt service coverage ratio of 1.20 is required for parity obligation and bonds per the wastewater's existing revenue bonds.
This financial plan is based on data from FY 2024 instead of the approved budget for FY 2025 due to timing.

Figure 7-16 shows Financial Plan 3 in a graphical format based on the proforma shown in Table 7-18.

Figure 7-16: Financial Plan 3

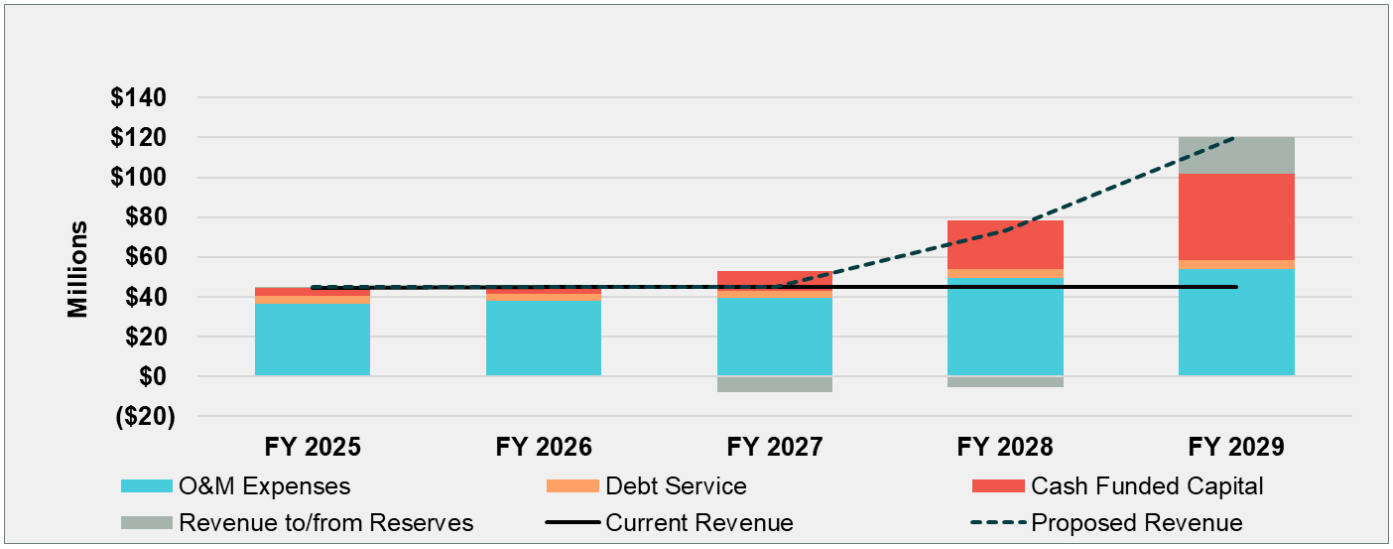


Figure 7-17 shows the financing plan for Financial Plan 3 in graphical format. Capital projects are funded with a mix of cash and debt.

Figure 7-17: Financial Plan 3 – Capital Financing Plan

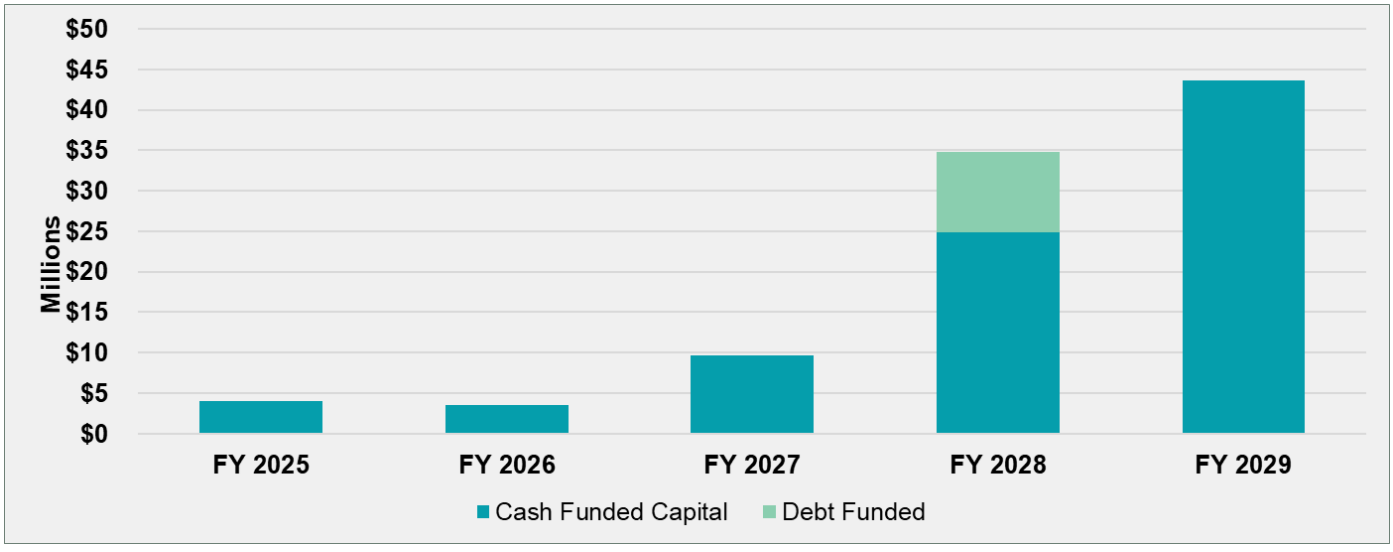


Figure 7-18 shows the wastewater operating and capital funds ending cash balance in comparison to the reserve targets. The ending cash balance exceeds the minimum operating balance each year and is below the minimum capital reserve target in FY 2027 through FY 2029. The minimum operating reserve target is shown with the solid line. The minimum capital reserve target is shown with the dashed line.

Figure 7-18: Financial Plan 3 – Ending Balances and Reserve Targets

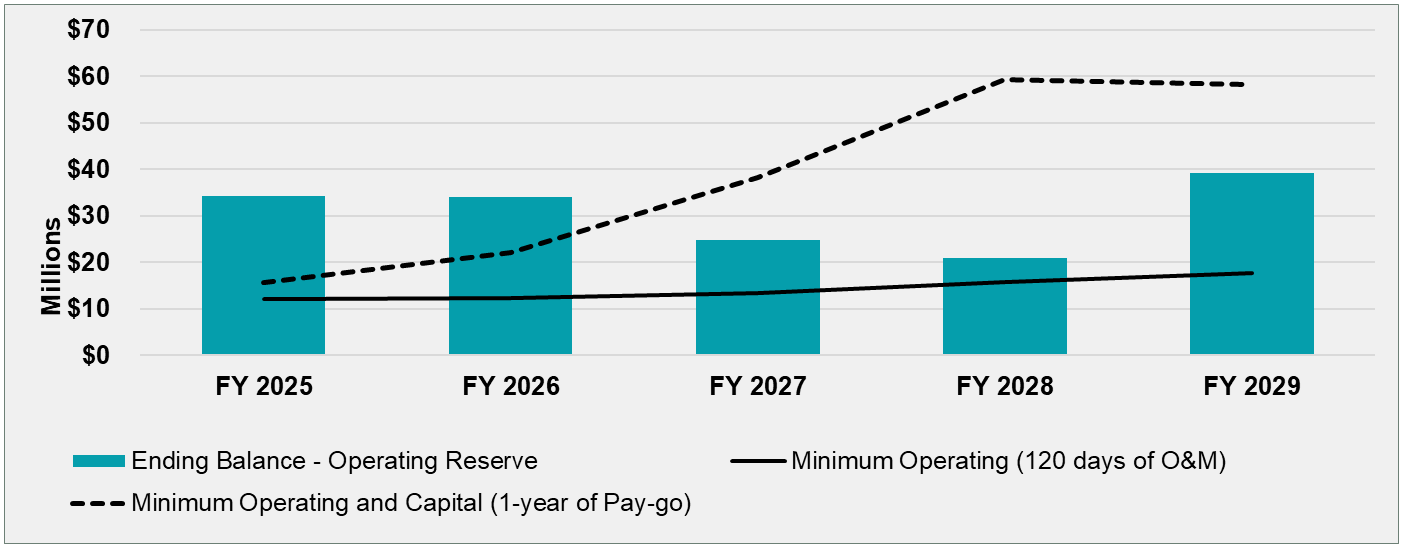


Figure 7-19 shows the calculated total debt service coverage ratio with bars. The required absolute floor of 1.20 is achieved in each year and shown with the black dashed line. Fitch issued an AA rating for the City's wastewater utility in 2023. The median debt service coverage ratio for wastewater utilities with a similar rating reported by Fitch is equal to 2.4 and shown with the red solid line. The median reported by S&P Global is equal to 2.3 and is shown with the yellow dotted line. The total debt service coverage ratio exceeds the median thresholds of similar-rated wastewater utilities in FY 2028 and FY 2029.

Figure 7-19: Financial Plan 3 – Debt Service Coverage Ratio

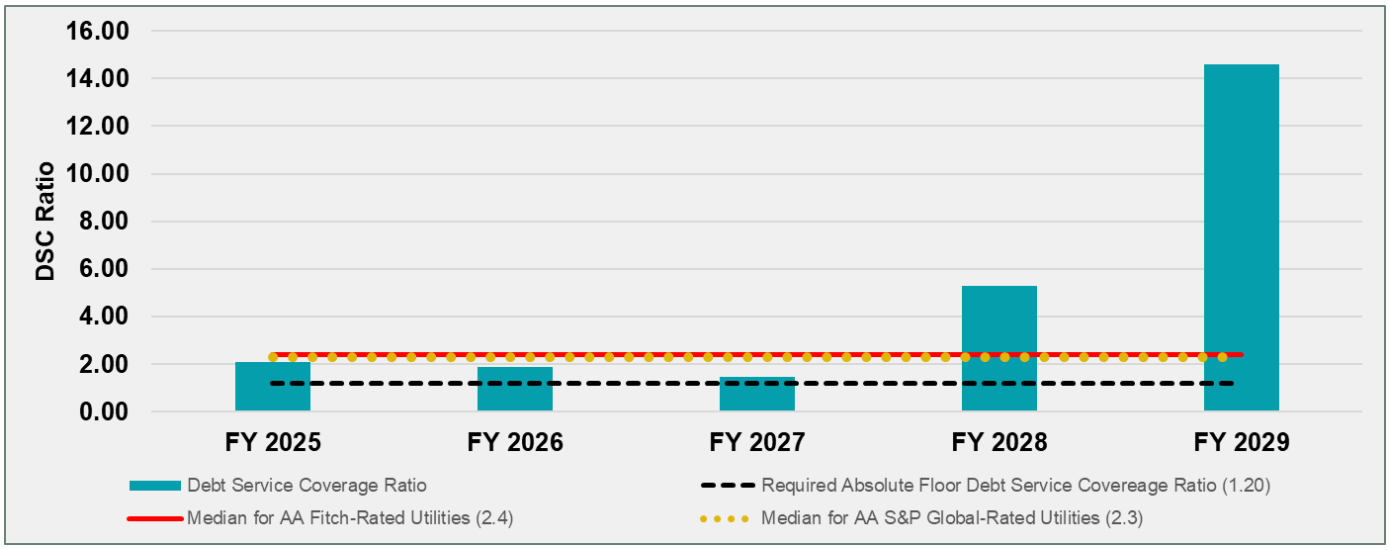


Figure 7-20 shows the days of cash on hand for Financial Plan 3. The ending cash balance is divided by the operating expenses and then divided by 365. It is an indicator of financial flexibility to fund near-term obligations. The median days of cash on hand for wastewater utilities with a similar rating reported by Fitch is equal to 621 days and shown with the red solid line. The median reported by S&P Global is equal to 584 days and is shown with the yellow dotted line. The days of cash on hand for Financial Plan 3 are less than the medians of similarly rated utilities each year.

Figure 7-20: Financial Plan 3 – Days of Cash on Hand

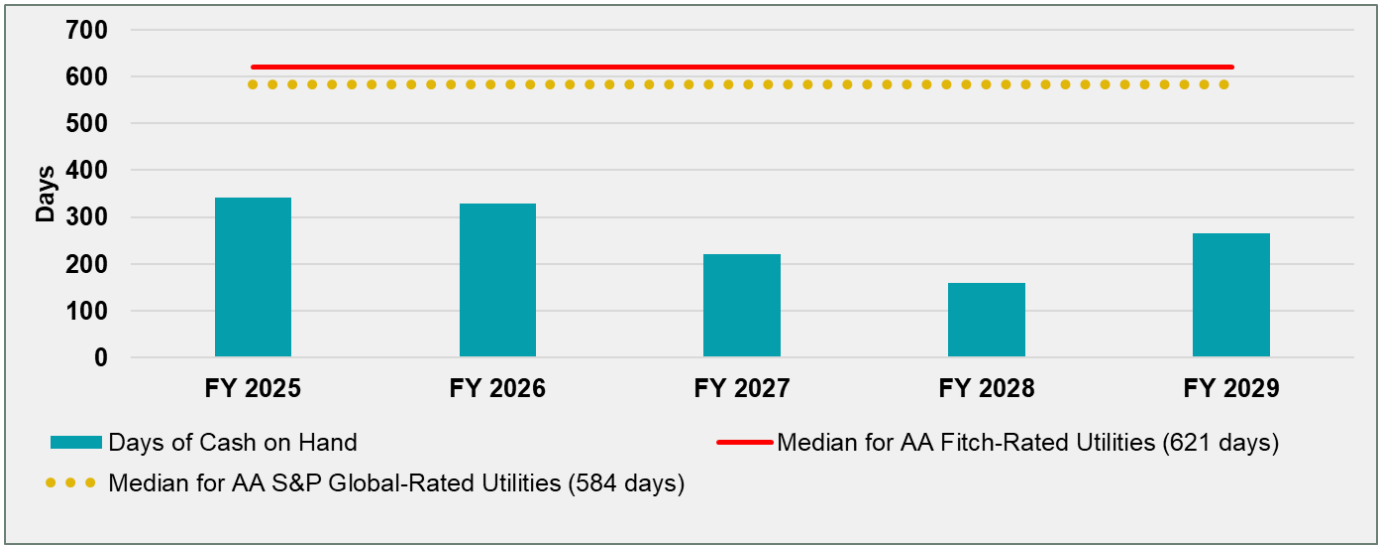
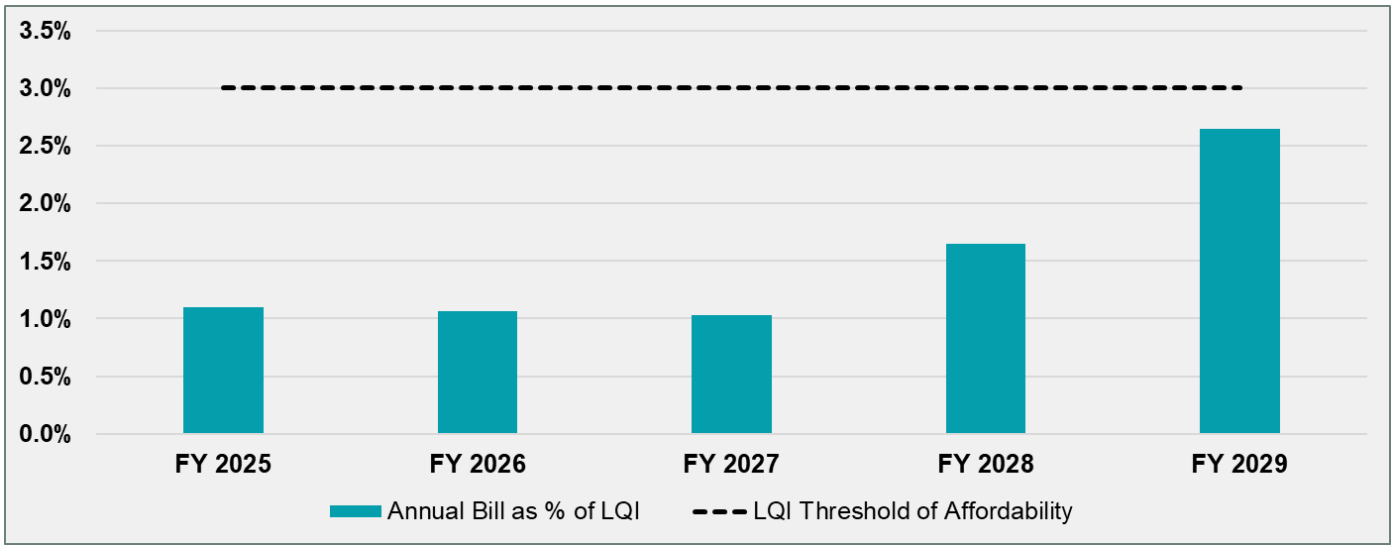


Figure 7-21 shows the annual wastewater bill as a percentage of the LQI. The wastewater bills as a percentage of LQI is below the 3% affordability threshold each year.

Figure 7-21: Financial Plan 3 – Annual Wastewater Bill as a Percentage of Lowest Quintile Income



The following are key takeaways for Financial Plan 3:

Key Takeaways for Financial Plan 3 (First Five Years):

- Rate increases are as follows: 0% (FY 2025 – FY 2027) and 65% (FY 2028 and FY 2029).
- The average cash-funded capital for the first five years is $17.1 million annually, which is approximately $10.5 million more than the average for the wastewater Financial Plan 1 and $6.7 million more than the average for the wastewater Financial Plan 2.
- The minimum operating target is achieved each year.
- The minimum capital reserve target is not achieved FY 2027 – FY 2029.
- The total absolute floor debt service coverage ratio requirement is achieved each year.
- The total debt service coverage ratio exceeds the medians for Fitch and S&P Global in FY 2028 and FY 2029.
- Annual wastewater bills as a percentage of LQI are less than the 3% affordability threshold each year.
- The days of cash on hand are below the medians for Fitch and S&P Global each year.

Key Takeaways for Financial Plan 3 (Years 6 through 25):

- Rate increases are as follows: 50% (FY 2030), 3% (FY 2031 and FY 2032), 0% (FY 2033 – FY 2042), 5% (FY 2043 – FY 2046), 0% for the remainder of the study period.
- The average cash-funded capital throughout the study period is $112.5 million annually, which is $57.8 million more than the average for the Financial Plan 1 and $44.6 million more than the average for Financial Plan 2.
- The minimum operating target is achieved each year.
- The minimum capital reserve target is achieved each year.
- The total absolute floor debt service coverage ratio requirement is achieved each year.
- The total debt service coverage ratio exceeds the medians for Fitch and S&P Global each year.
- The annual wastewater bills as a percentage of LQI exceed the 3% affordability threshold from FY 2030 through FY 2040, FY 2045, and FY 2046. It reaches a maximum point of 3.9% in FY 2030 – FY 2032.
- The days of cash on hand exceed the medians for Fitch and S&P Global each year.

8. Conclusion

The primary objective of this review was to assess the fiscal stability of the Wastewater Fund. An analysis of the status quo consisting of the 30-year CIP and MYOP shows that if the wastewater utility does not implement rate increases, it will not meet its absolute floor debt service coverage ratio requirement in FY 2029. It will not meet its capital reserve target beginning in FY 2028 and its minimum operating target in FY 2029.

Additionally, the analysis of status quo does not account for the 30-year CIP, MYOPs, additional operating and capital needs, and R/R to efficiently and effectively operate the wastewater utility. About 74% of the assets have 20-years or less of remaining useful life, about 53% have 10-years or less of remaining useful life, and about 30% of the wastewater assets appear to have no useful life remaining and should be assessed for immediate replacement. The current risks of catastrophic wastewater system assets failure appear to be high. DOU has identified $1.1 billion in needed capital investments into the wastewater system infrastructure that have been deferred. Catastrophic failure of the wastewater system could be a major trunk sewer line breaking or one of the treatment facilities or pump stations failing, spilling hundreds of thousands or millions of gallons of sewage into the streets and waterways within the City. These types of failures are very expensive and can take considerable time to fix, resulting in a significant risk to public health.

Other financial impacts that have and will continue to increase costs are regulatory requirements and increased frequency and severity of weather events. For example, the City will be required to convert its fleet vehicles to zero-emission vehicles (ZEVs) by 2045. It is estimated that the cost of purchasing some vehicles, such as heavy-duty vehicles, could double. Additionally, the City does not currently have sufficient infrastructure in place, such as charging stations, to accommodate the increase in ZEVs. DOU is in the process of determining what the required costs will be, including the limitations of meeting this requirement for heavy excavation equipment and trucks. These costs have not yet been included in the 30-year capital plans prepared for the wastewater system infrastructure but are expected to have a significant financial impact.

The last approved wastewater rate increase took effect in 2020. Thus, a cash flow analysis for three scenarios was completed to determine the projected rate increases necessary for the Wastewater Fund to have sufficient funds to meet the utility's operating and capital revenue requirements, achieve operating and capital reserve targets, and achieve the absolute floor debt service coverage ratio[22] required per debt covenants for a fiscally stable Wastewater Fund. These needed investments will require additional capital dollars than are currently included in the Wastewater Fund and future rate increases are necessary. The following tables are summaries comparing the descriptions and proposed rate increases for each scenario. Financial Plan 3 has the highest total of proposed rate increases, 206%, as it is the most holistic representation of the water utility's operational and capital needs.

[22] DOU must strive for a coverage ratio that is consistent with the applicable credit rating category for the water and wastewater systems.

Table 8-1: Wastewater Financial Plan Descriptions

Scenario	Description	30-year CIP	MYOP	Additional & Necessary O&M	Additional & Necessary MYOP	Additional & Necessary Capital	Additional & Necessary R/R
1	Financial Plan 1	Yes	Yes	No	No	No	No
2	Financial Plan 2	Yes	Yes	Yes	Yes	Yes	No
3	Financial Plan 3	Yes	Yes	Yes	Yes	Yes	Yes

Table 8-2: Comparison of Projected Wastewater Rate Increases

Fiscal Year	Financial Plan 1	Financial Plan 2	Financial Plan 3
FY 2025	0%	0%	0%
FY 2026	0%	0%	0%
FY 2027	0%	0%	0%
FY 2028	32%	50%	65%
FY 2029	30%	50%	65%
FY 2030	7%	5%	50%
FY 2031	7%	5%	3%
FY 2032	7%	5%	3%
FY 2033	7%	5%	0%
FY 2034	4%	3%	0%
FY 2035 – FY 2039	3%	3% (35 – 37), 5% (38,39)	0%
FY 2040 – FY 2042	7%	5%	0%
FY 2043 – FY 2046	7% (43,44), 3% (45)	5% (43 – 45)	5%
Total	**147%**	**172%**	**206%**

While the wastewater utility requires rate increases to meet its fiscal requirements to keep the status quo, the results of the three financial planning scenarios demonstrate that additional wastewater rate increases will also be needed to implement the 30-year CIP, MYOP, as well as additional and necessary O&M, MYOP, capital, and R/R. However, we recognize that it may not be feasible to implement the full projected wastewater rate increases in Table 8-2. Therefore, it is likely that the DOU will need to prioritize the most critical, highest-risk, and regulatory projects as full funding for the wastewater utility's comprehensive needs may not be available.

This analysis and report are primarily based on data provided from FY 2024 instead of the approved budget for FY 2025 due to timing. There are often differences between actual and projected data. Some of the assumptions used in this report may not be realized, and unanticipated events and circumstances may occur. Therefore, there are likely to be differences between the data or results projected in the report and the actual results achieved. Nevertheless, this report provides valuable information and analysis for the City to consider in its strategic and financial planning for the Wastewater Fund.

APPENDIX:

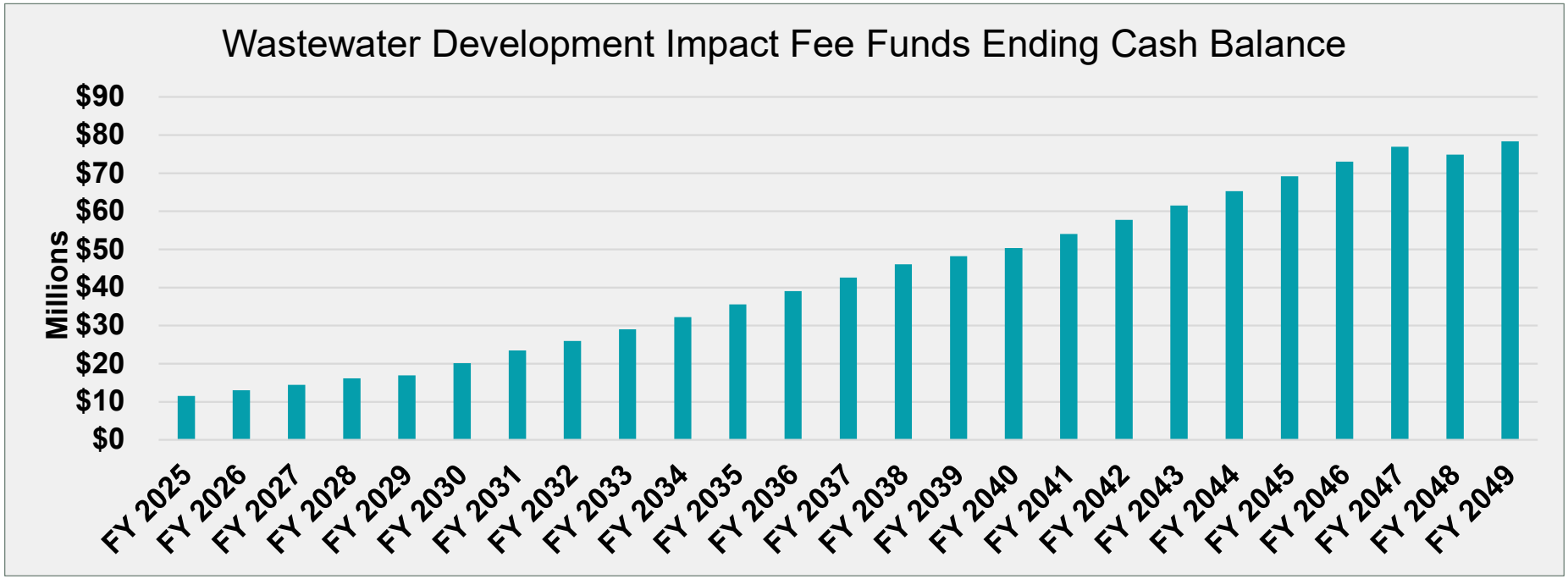
Tables and Figures for the 25-year Study Period

Wastewater Fund:

Development Impact Fees

City of Sacramento - Sewer Rate Model	FY 2036	FY 2037	FY 2038	FY 2039	FY 2040	FY 2041	FY 2042	FY 2043	FY 2044	FY 2045	FY 2046	FY 2047	FY 2048	FY 2049
Sewer Development Impact Fee Fund														
Beginning Cash Balances	**$35,549,662**	**$39,038,824**	**$42,569,144**	**$46,109,892**	**$48,215,995**	**$50,349,465**	**$54,018,086**	**$57,729,724**	**$61,484,822**	**$65,283,825**	**$69,127,188**	**$73,015,365**	**$76,948,817**	**$74,898,011**
Sources of Funds														
Transfers from/(to)														
Operating Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Development Impact Fee Revenues	$3,118,074	$3,124,310	$3,130,559	$3,136,820	$3,143,094	$3,149,380	$3,155,679	$3,161,990	$3,168,314	$3,174,651	$3,181,000	$3,187,362	$3,193,737	$3,200,124
Interest Income	$371,087	$406,010	$441,189	$469,283	$490,375	$519,242	$555,959	$593,107	$630,690	$668,712	$707,177	$746,090	$755,457	$762,231
Total - Source of Funds	**$3,489,161**	**$3,530,320**	**$3,571,748**	**$3,606,103**	**$3,633,469**	**$3,668,622**	**$3,711,638**	**$3,755,097**	**$3,799,004**	**$3,843,362**	**$3,888,177**	**$3,933,453**	**$3,949,194**	**$3,962,355**
Use of Funds														
Wastewater CIP	$0	$0	$31,000	$1,500,000	$1,500,000	$0	$0	$0	$0	$0	$0	$0	$6,000,000	$550,000
Total - Use of Funds	**$0**	**$0**	**$31,000**	**$1,500,000**	**$1,500,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$6,000,000**	**$550,000**
Net Cash Balance	$3,489,161	$3,530,320	$3,540,748	$2,106,103	$2,133,469	$3,668,622	$3,711,638	$3,755,097	$3,799,004	$3,843,362	$3,888,177	$3,933,453	($2,050,806)	$3,412,355
Ending Cash Balance	**$39,038,824**	**$42,569,144**	**$46,109,892**	**$48,215,995**	**$50,349,465**	**$54,018,086**	**$57,729,724**	**$61,484,822**	**$65,283,825**	**$69,127,188**	**$73,015,365**	**$76,948,817**	**$74,898,011**	**$78,310,366**

City of Sacramento - Sewer Rate Model	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035
Sewer Development Impact Fee Fund											
Beginning Cash Balances	**$9,994,355**	**$11,566,199**	**$13,025,550**	**$14,477,032**	**$16,150,710**	**$16,889,860**	**$20,155,081**	**$23,459,147**	**$25,964,289**	**$29,036,364**	**$32,208,705**
Sources of Funds											
Transfers from/(to)											
Operating Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Development Impact Fee Revenues	$2,238,243	$2,497,502	$2,861,983	$3,068,631	$3,074,768	$3,080,918	$3,087,080	$3,093,254	$3,099,440	$3,105,639	$3,111,851
Interest Income	$107,266	$122,347	$136,829	$152,377	$164,381	$184,303	$216,986	$245,888	$273,635	$304,702	$337,106
Total - Source of Funds	**$2,345,509**	**$2,619,849**	**$2,998,812**	**$3,221,008**	**$3,239,149**	**$3,265,221**	**$3,304,066**	**$3,339,142**	**$3,373,076**	**$3,410,341**	**$3,448,957**
Use of Funds											
Wastewater CIP	$773,665	$1,160,497	$1,547,330	$1,547,330	$2,500,000	$0	$0	$834,000	$301,000	$238,000	$108,000
Total - Use of Funds	**$773,665**	**$1,160,497**	**$1,547,330**	**$1,547,330**	**$2,500,000**	**$0**	**$0**	**$834,000**	**$301,000**	**$238,000**	**$108,000**
Net Cash Balance	$1,571,844	$1,459,352	$1,451,482	$1,673,678	$739,149	$3,265,221	$3,304,066	$2,505,142	$3,072,076	$3,172,341	$3,340,957
Ending Cash Balance	**$11,566,199**	**$13,025,550**	**$14,477,032**	**$16,150,710**	**$16,889,860**	**$20,155,081**	**$23,459,147**	**$25,964,289**	**$29,036,364**	**$32,208,705**	**$35,549,662**


Wastewater Development Impact Fee Funds Ending Cash Balance
Millions
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0
FY 2025
FY 2026
FY 2027
FY 2028
FY 2029
FY 2030
FY 2031
FY 2032
FY 2033
FY 2034
FY 2035
FY 2036
FY 2037
FY 2038
FY 2039
FY 2040
FY 2041
FY 2042
FY 2043
FY 2044
FY 2045
FY 2046
FY 2047
FY 2048
FY 2049

Wastewater Fund:

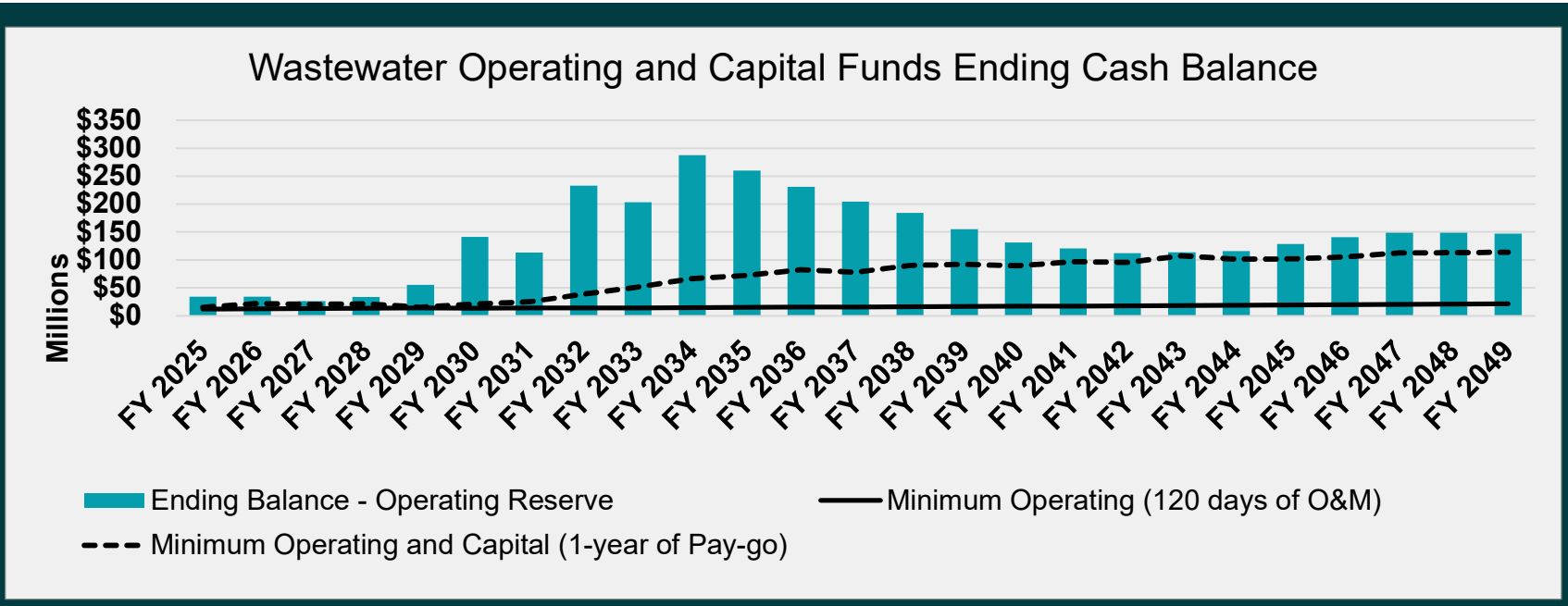
Financial Plan 1

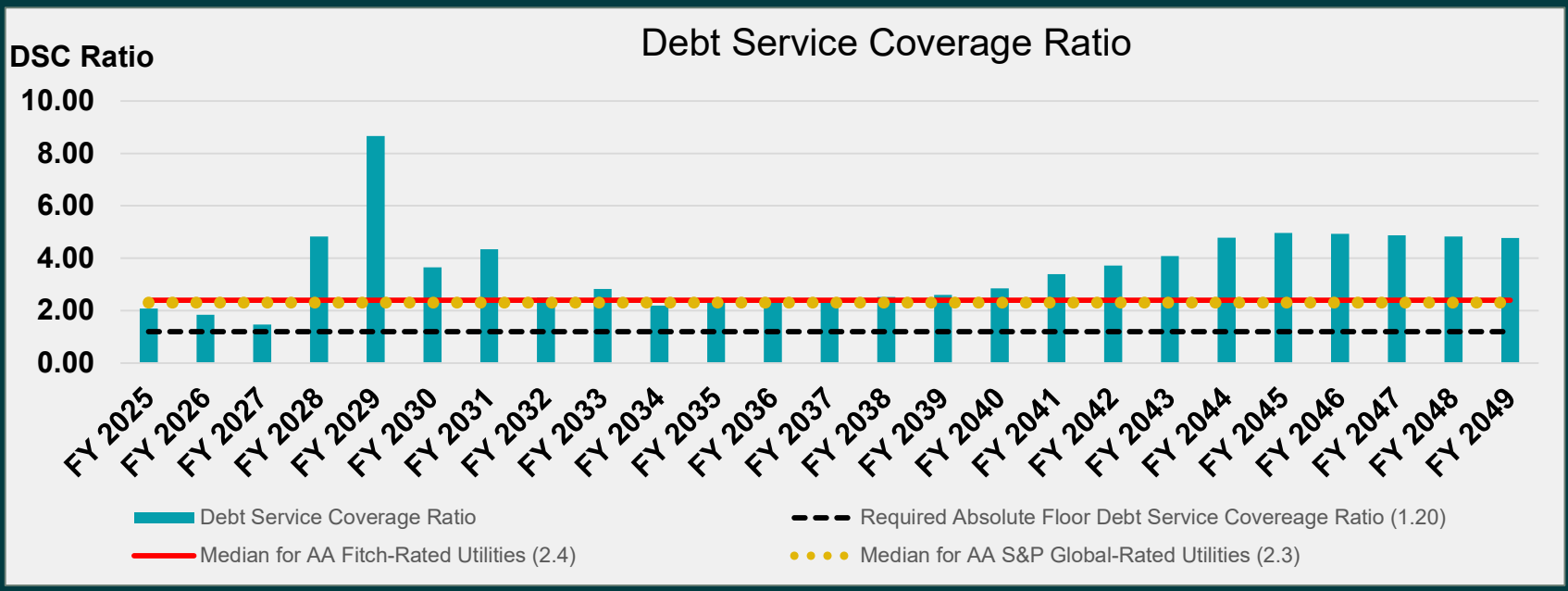
Financial Plan			FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035
Revenues													
Revenues from Existing Rates			**$43,243,191**	**$43,328,984**	**$43,414,948**	**$43,501,084**	**$43,587,392**	**$43,673,873**	**$43,760,526**	**$43,847,353**	**$43,934,354**	**$44,021,529**	**$44,108,878**
Revenue Adjustments													
Year	**Effective**	**% Adjustment**											
FY 2024	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2025	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2026	July	0%		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2027	July	0%			$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2028	July	32%				$13,920,347	$13,947,965	$13,975,639	$14,003,368	$14,031,153	$14,058,993	$14,086,889	$14,114,841
FY 2029	July	30%					$17,260,607	$17,294,854	$17,329,168	$17,363,552	$17,398,004	$17,432,525	$17,467,116
FY 2030	July	7%						$5,246,106	$5,256,514	$5,266,944	$5,277,395	$5,287,866	$5,298,358
FY 2031	July	7%							$5,624,470	$5,635,630	$5,646,812	$5,658,017	$5,669,244
FY 2032	July	7%								$6,030,124	$6,042,089	$6,054,078	$6,066,091
FY 2033	July	7%									$6,465,035	$6,477,863	$6,490,717
FY 2034	July	4%										$3,960,751	$3,968,610
FY 2035	July	3%											$3,095,516
FY 2036	July	3%											
FY 2037	July	3%											
FY 2038	July	3%											
FY 2039	July	3%											
FY 2040	July	7%											
FY 2041	July	7%											
FY 2042	July	7%											
FY 2043	July	7%											
FY 2044	July	7%											
FY 2045	July	3%											
FY 2046	July	0%											
FY 2047	July	0%											
FY 2048	July	0%											
FY 2049	July	0%											
Total Revenue Adjustments			**$0**	**$0**	**$0**	**$13,920,347**	**$31,208,573**	**$36,516,598**	**$42,213,522**	**$48,327,404**	**$54,888,329**	**$58,957,989**	**$62,170,491**
Rate Revenue (including Revenue Adjustments)			**$43,243,191**	**$43,328,984**	**$43,414,948**	**$57,421,430**	**$74,795,964**	**$80,190,471**	**$85,974,048**	**$92,174,757**	**$98,822,683**	**$102,979,518**	**$106,279,369**
Other Revenues													
Interest Income			$339,755	$339,928	$299,768	$298,459	$444,102	$434,886	$1,266,490	$980,350	$2,171,301	$1,896,656	$2,726,434
Other Revenues			$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705
Total - Revenues			**$44,848,651**	**$44,934,617**	**$44,980,421**	**$58,985,594**	**$76,505,772**	**$81,891,062**	**$88,506,243**	**$94,420,812**	**$102,259,690**	**$106,141,879**	**$110,271,508**
O&M Expenses													
Wastewater Operating Expenses			$36,693,133	$37,703,209	$39,220,527	$40,095,272	$42,662,810	$41,480,515	$42,460,127	$43,465,986	$44,498,816	$45,559,362	$46,648,389
Additional Expenditures Identified by the City													
FTE Expenditures			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Operating from Divisions			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total - O&M Expenses			**$36,693,133**	**$37,703,209**	**$39,220,527**	**$40,095,272**	**$42,662,810**	**$41,480,515**	**$42,460,127**	**$43,465,986**	**$44,498,816**	**$45,559,362**	**$46,648,389**
Debt Service													
Existing Debt Service			$3,910,458	$3,913,157	$3,911,209	$3,909,039	$3,908,163	$3,910,738	$3,442,675	$3,470,175	$3,489,175	$3,524,550	$3,556,050
Proposed Debt Service			$0	$0	$0	$0	$0	$7,155,658	$7,155,658	$16,913,373	$16,913,373	$24,069,031	$24,069,031
Capital Projects													
Cash Funded Capital			$3,962,175	$3,566,246	$9,672,941	$7,420,114	$8,221,673	$0	$7,199,651	$0	$0	$0	$0
Total - Revenue Requirements			**$44,565,766**	**$45,182,612**	**$52,804,678**	**$51,424,425**	**$54,792,646**	**$52,546,911**	**$60,258,111**	**$63,849,534**	**$64,901,364**	**$73,152,943**	**$74,273,470**
Net Annual Cash Flow			**$282,885**	**($247,995)**	**($7,824,257)**	**$7,561,170**	**$21,713,125**	**$29,344,151**	**$28,248,132**	**$30,571,278**	**$37,358,325**	**$32,988,936**	**$35,998,038**
Net Operating Revenue			$8,155,518	$7,231,408	$5,759,893	$18,890,322	$33,842,961	$40,410,547	$46,046,116	$50,954,826	$57,760,873	$60,582,517	$63,623,119
Debt Service Coverage Ratio			**2.09**	**1.85**	**1.47**	**4.83**	**8.66**	**3.65**	**4.34**	**2.50**	**2.83**	**2.20**	**2.30**
Required Absolute Floor Debt Service Coverage Rati			1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20

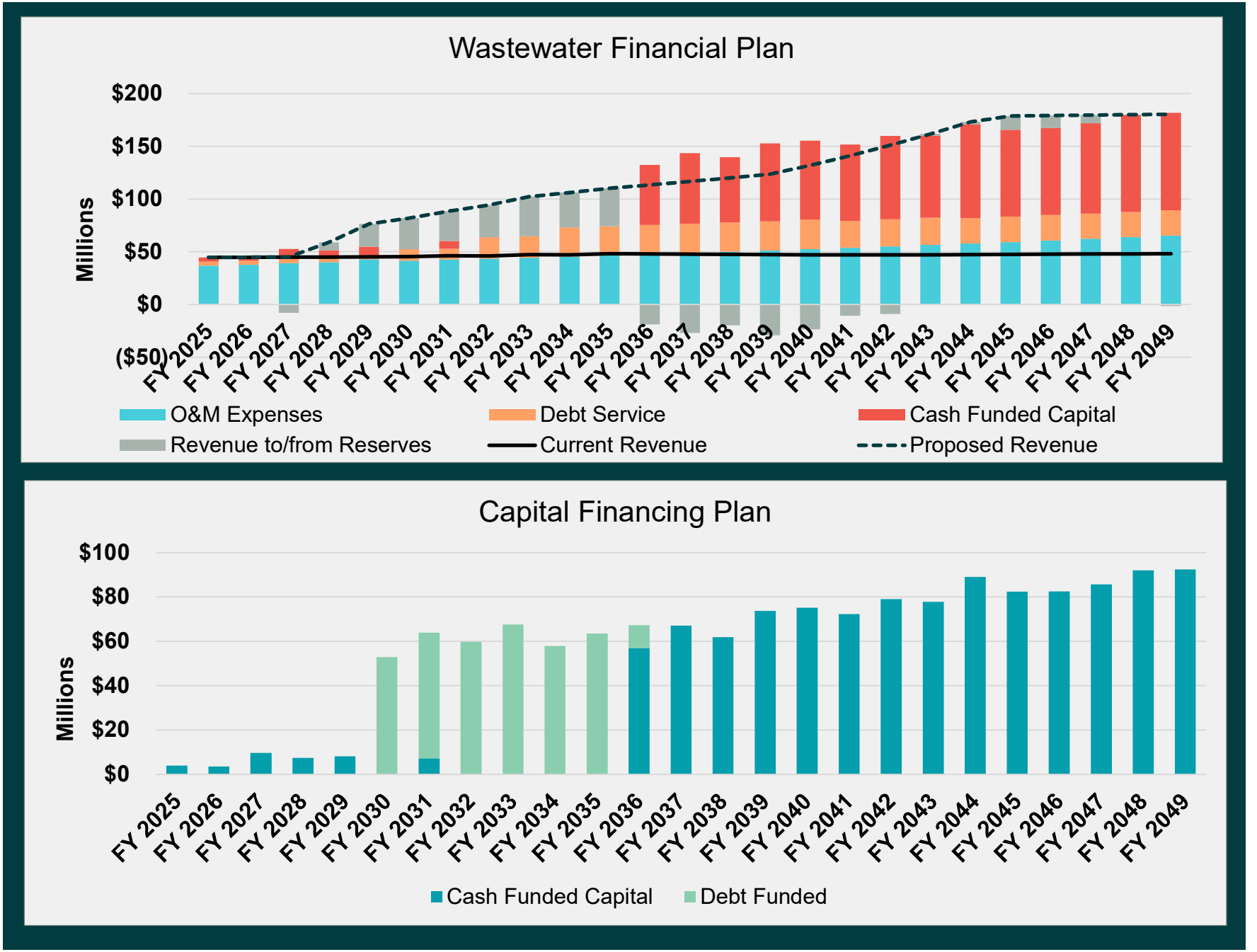
Fund Balance Projections	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035
Total Beginning Cash Balance With Reserves	**$34,003,924**	**$34,286,809**	**$34,038,814**	**$26,214,557**	**$33,775,727**	**$55,488,852**	**$141,483,329**	**$113,081,135**	**$233,369,279**	**$203,062,320**	**$287,725,516**
Sources of Funds											
Total Revenues from Rates	$43,243,191	$43,328,984	$43,414,948	$57,421,430	$74,795,964	$80,190,471	$85,974,048	$92,174,757	$98,822,683	$102,979,518	$106,279,369
Other Revenues	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705
Interest Income	$339,755	$339,928	$299,768	$298,459	$444,102	$434,886	$1,266,490	$980,350	$2,171,301	$1,896,656	$2,726,434
Debt Proceeds	$0	$0	$0	$0	$0	$109,560,000	$0	$149,400,000	$0	$109,560,000	$0
Total - Source of Funds	**$44,848,651**	**$44,934,617**	**$44,980,421**	**$58,985,594**	**$76,505,772**	**$191,451,062**	**$88,506,243**	**$243,820,812**	**$102,259,690**	**$215,701,879**	**$110,271,508**
Use of Funds											
Total O&M Expenses	$36,693,133	$37,703,209	$39,220,527	$40,095,272	$42,662,810	$41,480,515	$42,460,127	$43,465,986	$44,498,816	$45,559,362	$46,648,389
Total Debt Service	$3,910,458	$3,913,157	$3,911,209	$3,909,039	$3,908,163	$11,066,396	$10,598,333	$20,383,548	$20,402,548	$27,593,581	$27,625,081
Debt-funded CIP	$0	$0	$0	$0	$0	$52,909,674	$56,650,326	$59,683,134	$67,665,284	$57,885,740	$63,435,843
Pay-go funded CIP	$3,962,175	$3,566,246	$9,672,941	$7,420,114	$8,221,673	$0	$7,199,651	$0	$0	$0	$0
Total - Use of Funds	**$44,565,766**	**$45,182,612**	**$52,804,678**	**$51,424,425**	**$54,792,646**	**$105,456,585**	**$116,908,437**	**$123,532,669**	**$132,566,648**	**$131,038,683**	**$137,709,314**
Net Cash Balance	$282,885	($247,995)	($7,824,257)	$7,561,170	$21,713,125	$85,994,477	($28,402,194)	$120,288,143	($30,306,959)	$84,663,196	($27,437,805)
Ending Cash Balance With Reserves	**$34,286,809**	**$34,038,814**	**$26,214,557**	**$33,775,727**	**$55,488,852**	**$141,483,329**	**$113,081,135**	**$233,369,279**	**$203,062,320**	**$287,725,516**	**$260,287,711**
Ending Cash Balance	$18,657,067	$11,970,297	$5,900,023	$12,372,046	$40,022,792	$120,646,248	$87,739,775	$194,283,817	$151,264,761	$220,852,840	$188,041,923
Operating Reserve 33% of O&M	$12,063,496	$12,395,576	$12,894,420	$13,182,007	$14,026,129	$13,637,430	$13,959,494	$14,290,187	$14,629,748	$14,978,420	$15,336,457
Minimum Capital Reserve (Years of pay-g	$3,566,246	$9,672,941	$7,420,114	$8,221,673	$1,439,930	$7,199,651	$11,381,866	$24,795,275	$37,167,811	$51,894,256	$56,909,331
Minimum Operating Reserve Met?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Minimum Operating and Capital Reserve Met?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*

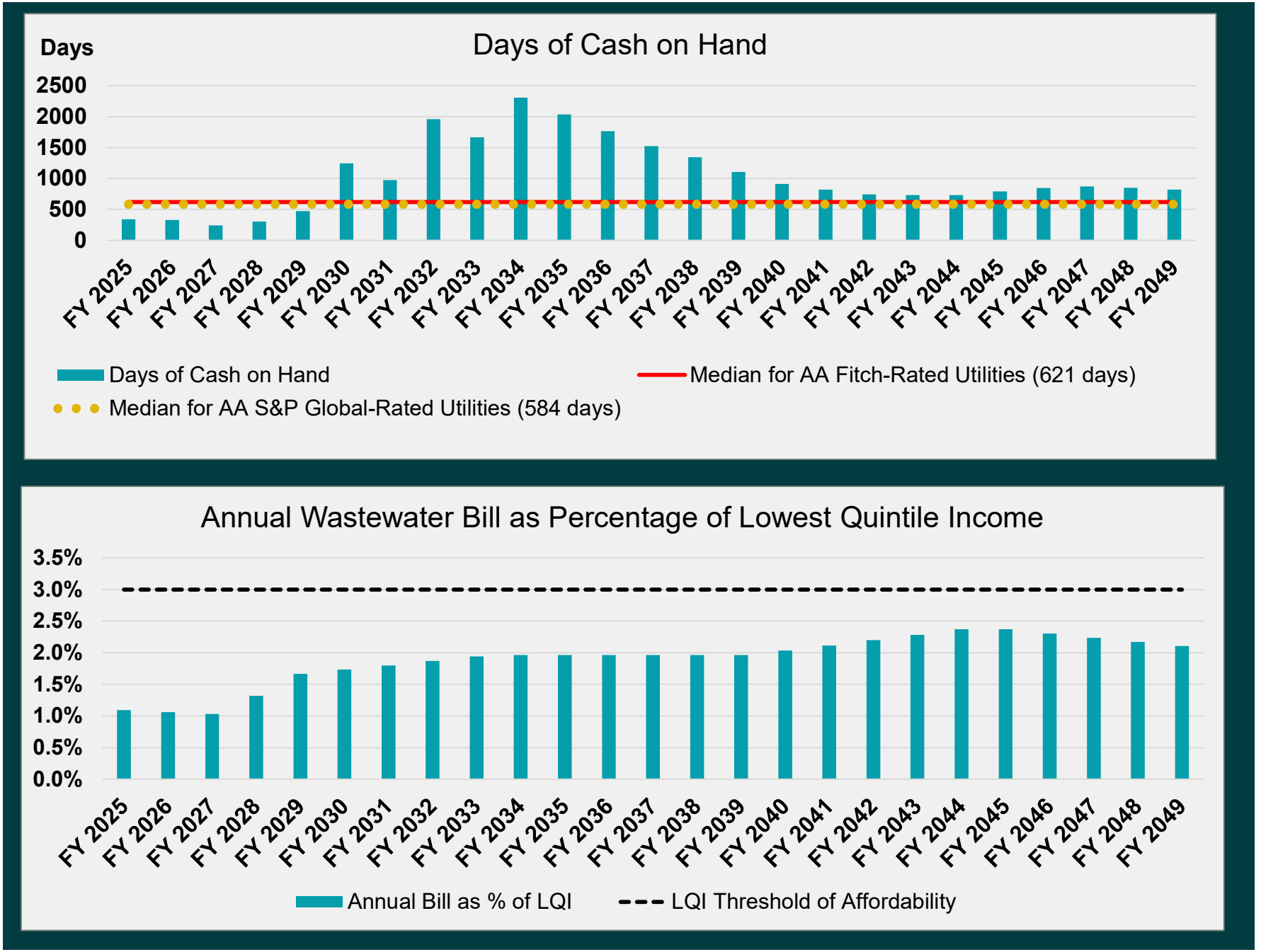
Financial Plan			FY 2036	FY 2037	FY 2038	FY 2039	FY 2040	FY 2041	FY 2042	FY 2043	FY 2044	FY 2045	FY 2046	FY 2047	FY 2048	FY 2049
Revenues																
Revenues from Existing Rates			**$44,196,402**	**$44,284,101**	**$44,371,975**	**$44,460,025**	**$44,548,251**	**$44,636,653**	**$44,725,233**	**$44,813,989**	**$44,902,923**	**$44,992,035**	**$45,081,325**	**$45,170,794**	**$45,260,442**	**$45,350,268**
Revenue Adjustments																
Year	**Effective**	**% Adjustment**														
FY 2024	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2025	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2026	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2027	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2028	July	32%	$14,142,849	$14,170,912	$14,199,032	$14,227,208	$14,255,440	$14,283,729	$14,312,074	$14,340,477	$14,368,935	$14,397,451	$14,426,024	$14,454,654	$14,483,341	$14,512,086
FY 2029	July	30%	$17,501,775	$17,536,504	$17,571,302	$17,606,170	$17,641,107	$17,676,115	$17,711,192	$17,746,340	$17,781,558	$17,816,846	$17,852,205	$17,887,634	$17,923,135	$17,958,706
FY 2030	July	7%	$5,308,872	$5,319,406	$5,329,962	$5,340,538	$5,351,136	$5,361,755	$5,372,395	$5,383,056	$5,393,739	$5,404,443	$5,415,169	$5,425,916	$5,436,684	$5,447,474
FY 2031	July	7%	$5,680,493	$5,691,765	$5,703,059	$5,714,376	$5,725,715	$5,737,078	$5,748,463	$5,759,870	$5,771,301	$5,782,754	$5,794,231	$5,805,730	$5,817,252	$5,828,797
FY 2032	July	7%	$6,078,127	$6,090,188	$6,102,273	$6,114,382	$6,126,515	$6,138,673	$6,150,855	$6,163,061	$6,175,292	$6,187,547	$6,199,827	$6,212,131	$6,224,460	$6,236,813
FY 2033	July	7%	$6,503,596	$6,516,501	$6,529,432	$6,542,389	$6,555,372	$6,568,380	$6,581,415	$6,594,476	$6,607,562	$6,620,675	$6,633,815	$6,646,980	$6,660,172	$6,673,390
FY 2034	July	4%	$3,976,485	$3,984,375	$3,992,281	$4,000,204	$4,008,141	$4,016,095	$4,024,065	$4,032,051	$4,040,052	$4,048,070	$4,056,104	$4,064,154	$4,072,219	$4,080,301
FY 2035	July	3%	$3,101,658	$3,107,813	$3,113,979	$3,120,159	$3,126,350	$3,132,554	$3,138,771	$3,145,000	$3,151,241	$3,157,495	$3,163,761	$3,170,040	$3,176,331	$3,182,635
FY 2036	July	3%	$3,194,708	$3,201,047	$3,207,399	$3,213,763	$3,220,141	$3,226,531	$3,232,934	$3,239,350	$3,245,778	$3,252,220	$3,258,674	$3,265,141	$3,271,621	$3,278,114
FY 2037	July	3%		$3,297,078	$3,303,621	$3,310,176	$3,316,745	$3,323,327	$3,329,922	$3,336,530	$3,343,151	$3,349,786	$3,356,434	$3,363,095	$3,369,770	$3,376,458
FY 2038	July	3%			$3,402,729	$3,409,482	$3,416,247	$3,423,027	$3,429,820	$3,436,626	$3,443,446	$3,450,280	$3,457,127	$3,463,988	$3,470,863	$3,477,751
FY 2039	July	3%				$3,511,766	$3,518,735	$3,525,718	$3,532,714	$3,539,725	$3,546,749	$3,553,788	$3,560,841	$3,567,908	$3,574,989	$3,582,084
FY 2040	July	7%					$8,456,693	$8,473,474	$8,490,290	$8,507,138	$8,524,021	$8,540,937	$8,557,887	$8,574,872	$8,591,890	$8,608,942
FY 2041	July	7%						$9,066,618	$9,084,610	$9,102,638	$9,120,703	$9,138,803	$9,156,940	$9,175,113	$9,193,322	$9,211,567
FY 2042	July	7%							$9,720,533	$9,739,823	$9,759,152	$9,778,519	$9,797,925	$9,817,370	$9,836,854	$9,856,377
FY 2043	July	7%								$10,421,610	$10,442,292	$10,463,015	$10,483,780	$10,504,586	$10,525,434	$10,546,324
FY 2044	July	7%									$11,173,253	$11,195,427	$11,217,645	$11,239,907	$11,262,214	$11,284,566
FY 2045	July	3%										$5,133,903	$5,144,091	$5,154,300	$5,164,530	$5,174,780
FY 2046	July	0%											$0	$0	$0	$0
FY 2047	July	0%												$0	$0	$0
FY 2048	July	0%													$0	$0
FY 2049	July	0%														$0
Total Revenue Adjustments			**$65,488,562**	**$68,915,589**	**$72,455,070**	**$76,110,613**	**$84,718,339**	**$93,953,073**	**$103,860,052**	**$114,487,771**	**$125,888,226**	**$131,271,960**	**$131,532,479**	**$131,793,519**	**$132,055,081**	**$132,317,167**
Rate Revenue (including Revenue Adjustments)			**$109,684,964**	**$113,199,690**	**$116,827,045**	**$120,570,638**	**$129,266,590**	**$138,589,727**	**$148,585,284**	**$159,301,760**	**$170,791,149**	**$176,263,995**	**$176,613,804**	**$176,964,313**	**$177,315,523**	**$177,667,435**
Other Revenues																
Interest Income			$2,444,537	$2,164,605	$1,932,242	$1,689,218	$1,426,706	$1,256,332	$1,158,941	$1,122,447	$1,141,514	$1,217,613	$1,341,756	$1,439,324	$1,478,839	$1,473,186
Other Revenues			$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705
Total - Revenues			**$113,395,206**	**$116,630,000**	**$120,024,992**	**$123,525,560**	**$131,959,001**	**$141,111,763**	**$151,009,930**	**$161,689,912**	**$173,198,368**	**$178,747,313**	**$179,221,265**	**$179,669,342**	**$180,060,067**	**$180,406,326**
O&M Expenses																
Wastewater Operating Expenses			$47,766,686	$48,915,062	$50,094,351	$51,305,408	$52,549,114	$53,826,374	$55,138,122	$56,485,313	$57,868,933	$59,289,995	$60,749,540	$62,248,641	$63,788,398	$65,369,945
Additional Expenditures Identified by the City																
FTE Expenditures			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Operating from Divisions			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total - O&M Expenses			**$47,766,686**	**$48,915,062**	**$50,094,351**	**$51,305,408**	**$52,549,114**	**$53,826,374**	**$55,138,122**	**$56,485,313**	**$57,868,933**	**$59,289,995**	**$60,749,540**	**$62,248,641**	**$63,788,398**	**$65,369,945**
Debt Service																
Existing Debt Service			$3,583,550	$3,621,925	$3,660,800	$3,704,925	$3,749,175	$1,630,000	$1,675,000	$1,720,000	$0	$0	$0	$0	$0	$0
Proposed Debt Service			$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031
Capital Projects																
Cash Funded Capital			$56,909,331	$67,067,044	$61,862,680	$73,632,225	$75,170,487	$72,252,830	$79,036,818	$77,841,751	$89,001,786	$82,350,951	$82,487,275	$85,656,002	$91,955,760	$92,350,548
Total - Revenue Requirements			**$132,328,598**	**$143,673,062**	**$139,686,862**	**$152,711,588**	**$155,537,806**	**$151,778,236**	**$159,918,971**	**$160,116,095**	**$170,939,750**	**$165,709,977**	**$167,305,846**	**$171,973,674**	**$179,813,189**	**$181,789,524**
Net Annual Cash Flow			**($18,933,392)**	**($27,043,062)**	**($19,661,870)**	**($29,186,028)**	**($23,578,805)**	**($10,666,472)**	**($8,909,041)**	**$1,573,817**	**$2,258,619**	**$13,037,336**	**$11,915,419**	**$7,695,668**	**$246,877**	**($1,383,198)**
Net Operating Revenue			$65,628,520	$67,714,937	$69,930,641	$72,220,153	$79,409,887	$87,285,389	$95,871,809	$105,204,599	$115,329,436	$119,457,318	$118,471,725	$117,420,701	$116,271,669	$115,036,381
Debt Service Coverage Ratio			**2.37**	**2.45**	**2.52**	**2.60**	**2.85**	**3.40**	**3.72**	**4.08**	**4.79**	**4.96**	**4.92**	**4.88**	**4.83**	**4.78**
Required Absolute Floor Debt Service Coverage Rati			1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20

Fund Balance Projections	FY 2036	FY 2037	FY 2038	FY 2039	FY 2040	FY 2041	FY 2042	FY 2043	FY 2044	FY 2045	FY 2046	FY 2047	FY 2048	FY 2049
Total Beginning Cash Balance With Reserves	**$260,287,711**	**$231,064,321**	**$204,021,258**	**$184,359,388**	**$155,173,360**	**$131,594,555**	**$120,928,082**	**$112,019,042**	**$113,592,859**	**$115,851,477**	**$128,888,814**	**$140,804,233**	**$148,499,901**	**$148,746,778**
Sources of Funds														
Total Revenues from Rates	$109,684,964	$113,199,690	$116,827,045	$120,570,638	$129,266,590	$138,589,727	$148,585,284	$159,301,760	$170,791,149	$176,263,995	$176,613,804	$176,964,313	$177,315,523	$177,667,435
Other Revenues	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705
Interest Income	$2,444,537	$2,164,605	$1,932,242	$1,689,218	$1,426,706	$1,256,332	$1,158,941	$1,122,447	$1,141,514	$1,217,613	$1,341,756	$1,439,324	$1,478,839	$1,473,186
Debt Proceeds	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total - Source of Funds	**$113,395,206**	**$116,630,000**	**$120,024,992**	**$123,525,560**	**$131,959,001**	**$141,111,763**	**$151,009,930**	**$161,689,912**	**$173,198,368**	**$178,747,313**	**$179,221,265**	**$179,669,342**	**$180,060,067**	**$180,406,326**
Use of Funds														
Total O&M Expenses	$47,766,686	$48,915,062	$50,094,351	$51,305,408	$52,549,114	$53,826,374	$55,138,122	$56,485,313	$57,868,933	$59,289,995	$60,749,540	$62,248,641	$63,788,398	$65,369,945
Total Debt Service	$27,652,581	$27,690,956	$27,729,831	$27,773,956	$27,818,206	$25,699,031	$25,744,031	$25,789,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031
Debt-funded CIP	$10,289,998	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pay-go funded CIP	$56,909,331	$67,067,044	$61,862,680	$73,632,225	$75,170,487	$72,252,830	$79,036,818	$77,841,751	$89,001,786	$82,350,951	$82,487,275	$85,656,002	$91,955,760	$92,350,548
Total - Use of Funds	**$142,618,596**	**$143,673,062**	**$139,686,862**	**$152,711,588**	**$155,537,806**	**$151,778,236**	**$159,918,971**	**$160,116,095**	**$170,939,750**	**$165,709,977**	**$167,305,846**	**$171,973,674**	**$179,813,189**	**$181,789,524**
Net Cash Balance	($29,223,390)	($27,043,062)	($19,661,870)	($29,186,028)	($23,578,805)	($10,666,472)	($8,909,041)	$1,573,817	$2,258,619	$13,037,336	$11,915,419	$7,695,668	$246,877	($1,383,198)
Ending Cash Balance With Reserves	**$231,064,321**	**$204,021,258**	**$184,359,388**	**$155,173,360**	**$131,594,555**	**$120,928,082**	**$112,019,042**	**$113,592,859**	**$115,851,477**	**$128,888,814**	**$140,804,233**	**$148,499,901**	**$148,746,778**	**$147,363,580**
Ending Cash Balance	$148,293,161	$126,076,914	$94,257,787	$63,135,342	$42,065,303	$24,194,922	$16,049,689	$6,020,559	$14,475,124	$26,908,937	$35,175,779	$36,078,834	$35,424,703	$33,521,544
Operating Reserve 33% of O&M	$15,704,116	$16,081,664	$16,469,376	$16,867,531	$17,276,421	$17,696,342	$18,127,602	$18,570,514	$19,025,403	$19,492,601	$19,972,452	$20,465,307	$20,971,528	$21,491,489
Minimum Capital Reserve (Years of pay-g	$67,067,044	$61,862,680	$73,632,225	$75,170,487	$72,252,830	$79,036,818	$77,841,751	$89,001,786	$82,350,951	$82,487,275	$85,656,002	$91,955,760	$92,350,548	$92,350,548
Minimum Operating Reserve Met?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Minimum Operating and Capital Reserve Met?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*


Wastewater Operating and Capital Funds Ending Cash Balance
Millions
$350
$300
$250
$200
$150
$100
$50
$0
FY 2025
FY 2026
FY 2027
FY 2028
FY 2029
FY 2030
FY 2031
FY 2032
FY 2033
FY 2034
FY 2035
FY 2036
FY 2037
FY 2038
FY 2039
FY 2040
FY 2041
FY 2042
FY 2043
FY 2044
FY 2045
FY 2046
FY 2047
FY 2048
FY 2049
Ending Balance - Operating Reserve
Minimum Operating (120 days of O&M)
Minimum Operating and Capital (1-year of Pay-go)


Debt Service Coverage Ratio
DSC Ratio
10.00
8.00
6.00
4.00
2.00
0.00
FY 2025
FY 2026
FY 2027
FY 2028
FY 2029
FY 2030
FY 2031
FY 2032
FY 2033
FY 2034
FY 2035
FY 2036
FY 2037
FY 2038
FY 2039
FY 2040
FY 2041
FY 2042
FY 2043
FY 2044
FY 2045
FY 2046
FY 2047
FY 2048
FY 2049
Debt Service Coverage Ratio
Required Absolute Floor Debt Service Covereage Ratio (1.20)
Median for AA Fitch-Rated Utilities (2.4)
Median for AA S&P Global-Rated Utilities (2.3)


Wastewater Financial Plan
$200
$150
$100
$50
$0
($50)
Millions
FY 2025
FY 2026
FY 2027
FY 2028
FY 2029
FY 2030
FY 2031
FY 2032
FY 2033
FY 2034
FY 2035
FY 2036
FY 2037
FY 2038
FY 2039
FY 2040
FY 2041
FY 2042
FY 2043
FY 2044
FY 2045
FY 2046
FY 2047
FY 2048
FY 2049
O&M Expenses
Debt Service
Cash Funded Capital
Revenue to/from Reserves
Current Revenue
Proposed Revenue
Capital Financing Plan
$100
$80
$60
$40
$20
$0
Millions
Cash Funded Capital
Debt Funded


Days of Cash on Hand
Days
2500
2000
1500
1000
500
0
FY 2025
FY 2026
FY 2027
FY 2028
FY 2029
FY 2030
FY 2031
FY 2032
FY 2033
FY 2034
FY 2035
FY 2036
FY 2037
FY 2038
FY 2039
FY 2040
FY 2041
FY 2042
FY 2043
FY 2044
FY 2045
FY 2046
FY 2047
FY 2048
FY 2049
Days of Cash on Hand
Median for AA Fitch-Rated Utilities (621 days)
Median for AA S&P Global-Rated Utilities (584 days)
Annual Wastewater Bill as Percentage of Lowest Quintile Income
3.5%
3.0%
2.5%
2.0%
1.5%
1.0%
0.5%
0.0%
FY 2025
FY 2026
FY 2027
FY 2028
FY 2029
FY 2030
FY 2031
FY 2032
FY 2033
FY 2034
FY 2035
FY 2036
FY 2037
FY 2038
FY 2039
FY 2040
FY 2041
FY 2042
FY 2043
FY 2044
FY 2045
FY 2046
FY 2047
FY 2048
FY 2049
Annual Bill as % of LQI
LQI Threshold of Affordability

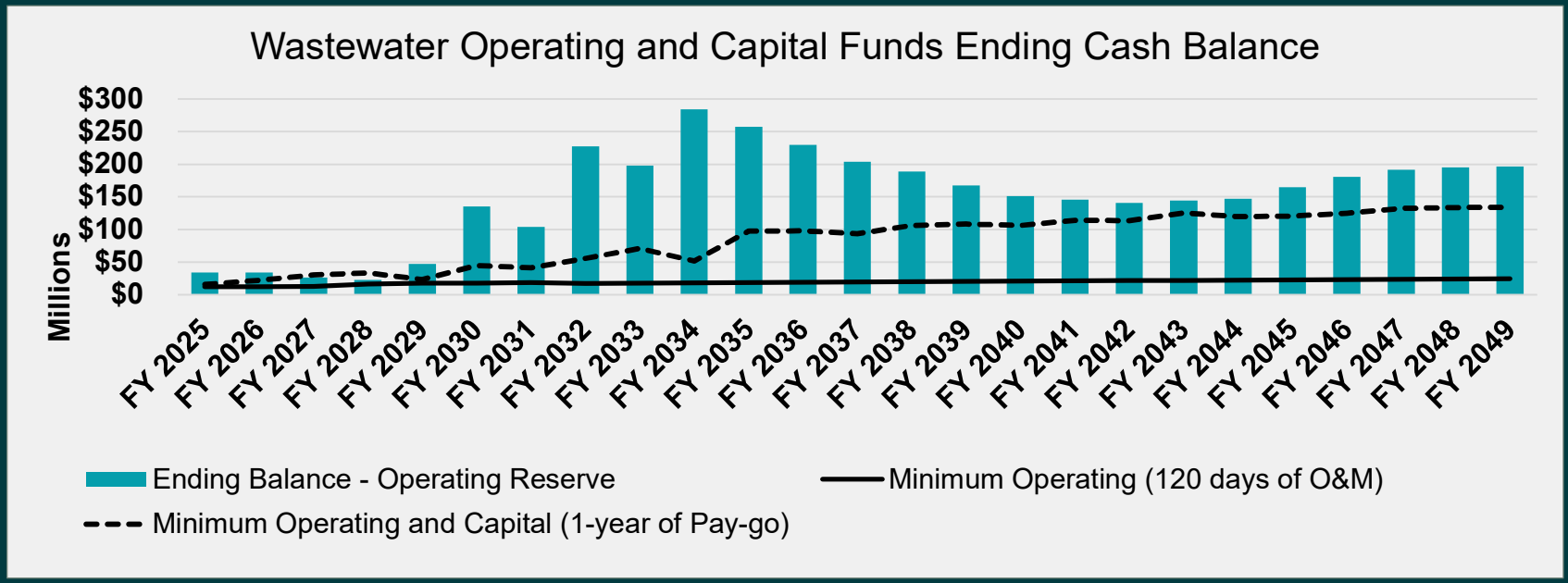
Wastewater Fund:

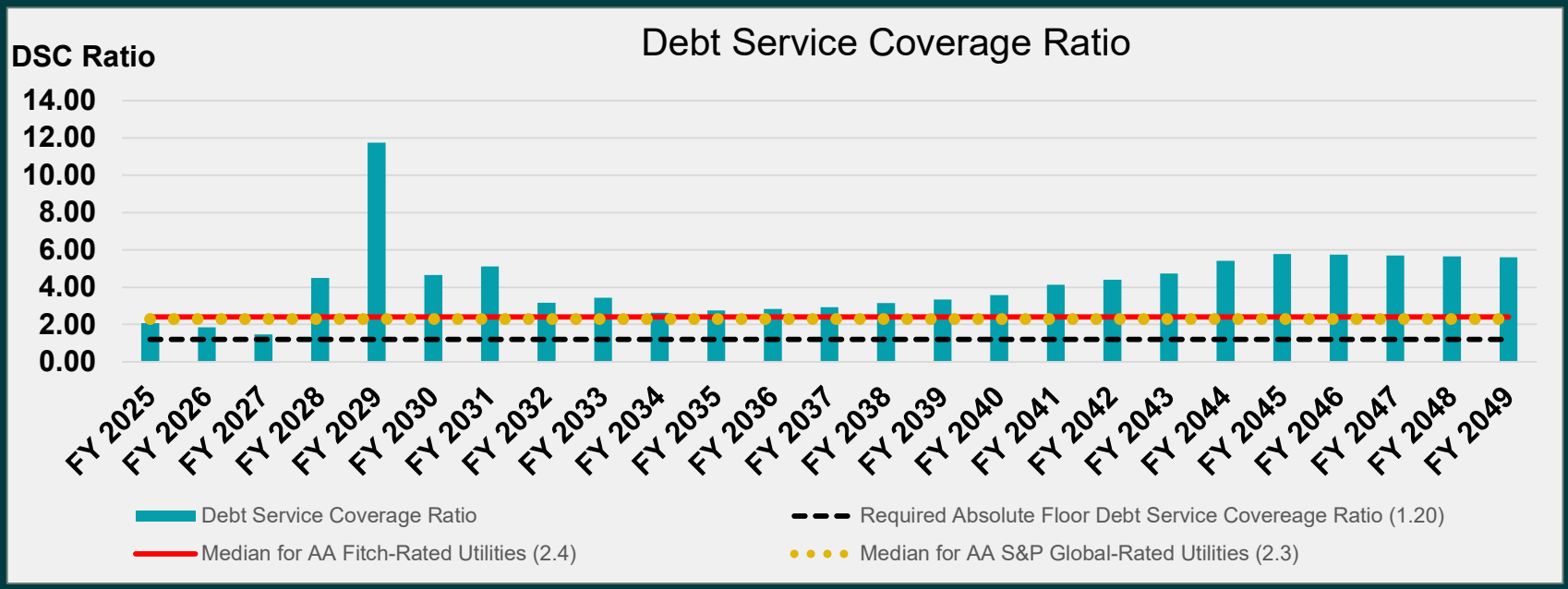
Financial Plan 2

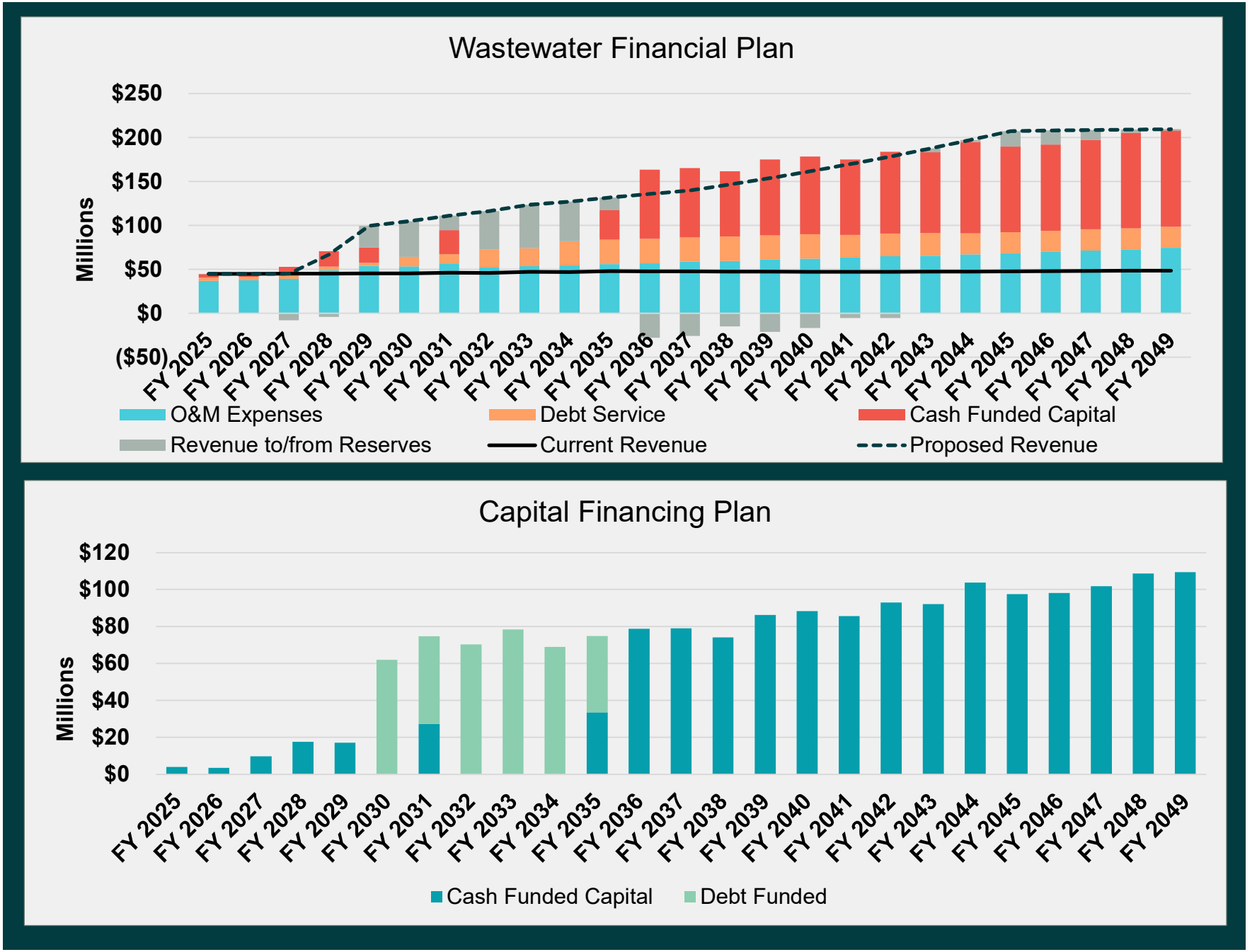
Financial Plan			FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034
Revenues												
Revenues from Existing Rates			**$43,243,191**	**$43,328,984**	**$43,414,948**	**$43,501,084**	**$43,587,392**	**$43,673,873**	**$43,760,526**	**$43,847,353**	**$43,934,354**	**$44,021,529**
Revenue Adjustments												
Year	**Effective**	**% Adjustment**										
FY 2024	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2025	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2026	July	0%		$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2027	July	0%			$0	$0	$0	$0	$0	$0	$0	$0
FY 2028	July	50%				$21,750,542	$21,793,696	$21,836,936	$21,880,263	$21,923,677	$21,967,177	$22,010,764
FY 2029	July	50%					$32,690,544	$32,755,404	$32,820,395	$32,885,515	$32,950,766	$33,016,147
FY 2030	July	5%						$4,913,311	$4,923,059	$4,932,827	$4,942,615	$4,952,422
FY 2031	July	5%							$5,169,212	$5,179,469	$5,189,746	$5,200,043
FY 2032	July	5%								$5,438,442	$5,449,233	$5,460,045
FY 2033	July	5%									$5,721,695	$5,733,048
FY 2034	July	3%										$3,611,820
FY 2035	July	3%										
FY 2036	July	3%										
FY 2037	July	3%										
FY 2038	July	5%										
FY 2039	July	5%										
FY 2040	July	5%										
FY 2041	July	5%										
FY 2042	July	5%										
FY 2043	July	5%										
FY 2044	July	5%										
FY 2045	July	5%										
FY 2046	July	0%										
FY 2047	July	0%										
FY 2048	July	0%										
FY 2049	July	0%										
Total Revenue Adjustments			**$0**	**$0**	**$0**	**$21,750,542**	**$54,484,240**	**$59,505,651**	**$64,792,929**	**$70,359,930**	**$76,221,231**	**$79,984,289**
Rate Revenue (including Revenue Adjustments)			**$43,243,191**	**$43,328,984**	**$43,414,948**	**$65,251,625**	**$98,071,631**	**$103,179,524**	**$108,553,456**	**$114,207,283**	**$120,155,585**	**$124,005,818**
Other Revenues												
Interest Income			$339,755	$339,928	$299,768	$241,550	$346,178	$362,466	$1,190,540	$904,931	$2,116,513	$1,853,826
Other Revenues			$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705
Total - Revenues			**$44,848,651**	**$44,934,617**	**$44,980,421**	**$66,758,881**	**$99,683,514**	**$104,807,695**	**$111,009,701**	**$116,377,920**	**$123,537,803**	**$127,125,349**
O&M Expenses												
Wastewater Operating Expenses			$36,693,133	$37,703,209	$39,220,527	$46,330,978	$49,417,271	$49,569,658	$51,602,241	$47,365,000	$48,359,547	$49,517,611
Additional Expenditures Identified by the City												
FTE Expenditures			$0	$0	$0	$315,805	$1,402,497	$1,669,802	$2,136,656	$2,276,986	$2,310,815	$2,310,672
Additional Operating from Divisions			$0	$0	$0	$2,521,547	$2,941,031	$2,070,543	$2,974,220	$2,423,303	$2,910,632	$2,656,154
Total - O&M Expenses			**$36,693,133**	**$37,703,209**	**$39,220,527**	**$49,168,330**	**$53,760,799**	**$53,310,002**	**$56,713,117**	**$52,065,289**	**$53,580,993**	**$54,484,438**
Debt Service												
Existing Debt Service			$3,910,458	$3,913,157	$3,911,209	$3,909,039	$3,908,163	$3,910,738	$3,442,675	$3,470,175	$3,489,175	$3,524,550
Proposed Debt Service			$0	$0	$0	$0	$0	$7,155,658	$7,155,658	$16,913,373	$16,913,373	$24,069,031
Capital Projects												
Cash Funded Capital			$3,962,175	$3,566,246	$9,672,941	$17,559,009	$17,106,969	$0	$27,246,516	$0	$0	$0
Total - Revenue Requirements			**$44,565,766**	**$45,182,612**	**$52,804,678**	**$70,636,378**	**$74,775,931**	**$64,376,398**	**$94,557,965**	**$72,448,838**	**$73,983,542**	**$82,078,019**
Net Annual Cash Flow			**$282,885**	**($247,995)**	**($7,824,257)**	**($3,877,498)**	**$24,907,584**	**$40,431,297**	**$16,451,736**	**$43,929,082**	**$49,554,262**	**$45,047,330**
Net Operating Revenue			$8,155,518	$7,231,408	$5,759,893	$17,590,550	$45,922,715	$51,497,693	$54,296,584	$64,312,630	$69,956,810	$72,640,911
Debt Service Coverage Ratio			**2.09**	**1.85**	**1.47**	**4.50**	**11.75**	**4.65**	**5.12**	**3.16**	**3.43**	**2.63**
Required Absolute Floor Debt Service Coverage Rati			1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20

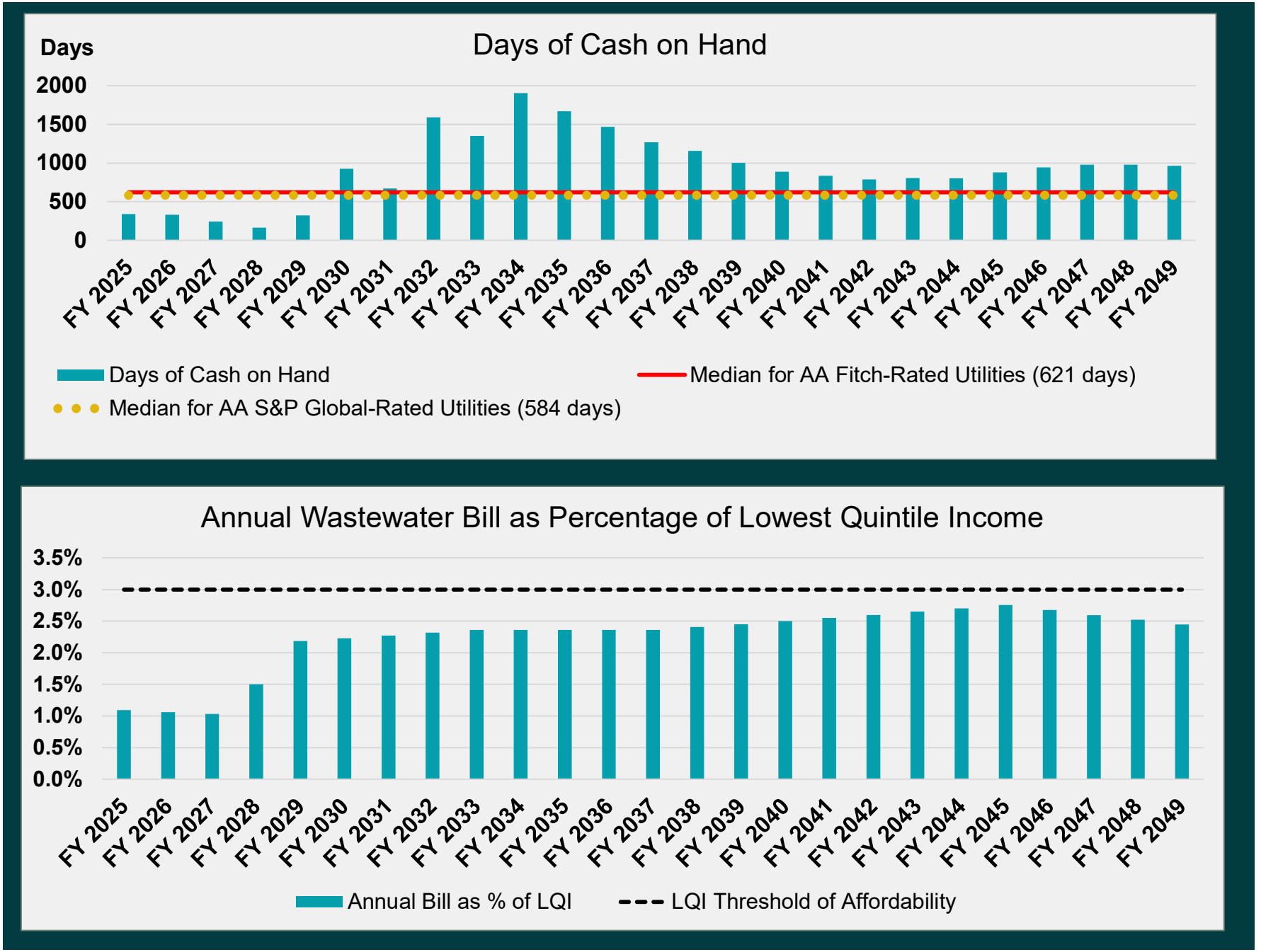
Fund Balance Projections			FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034
Total Beginning Cash Balance With Reserves			**$34,003,924**	**$34,286,809**	**$34,038,814**	**$26,214,557**	**$22,337,059**	**$47,244,643**	**$135,170,941**	**$104,127,675**	**$227,163,540**	**$198,255,660**
Sources of Funds												
Total Revenues from Rates			$43,243,191	$43,328,984	$43,414,948	$65,251,625	$98,071,631	$103,179,524	$108,553,456	$114,207,283	$120,155,585	$124,005,818
Other Revenues			$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705
Interest Income			$339,755	$339,928	$299,768	$241,550	$346,178	$362,466	$1,190,540	$904,931	$2,116,513	$1,853,826
Debt Proceeds			$0	$0	$0	$0	$0	$109,560,000	$0	$149,400,000	$0	$109,560,000
Total - Source of Funds			**$44,848,651**	**$44,934,617**	**$44,980,421**	**$66,758,881**	**$99,683,514**	**$214,367,695**	**$111,009,701**	**$265,777,920**	**$123,537,803**	**$236,685,349**
Use of Funds												
Total O&M Expenses			$36,693,133	$37,703,209	$39,220,527	$49,168,330	$53,760,799	$53,310,002	$56,713,117	$52,065,289	$53,580,993	$54,484,438
Total Debt Service			$3,910,458	$3,913,157	$3,911,209	$3,909,039	$3,908,163	$11,066,396	$10,598,333	$20,383,548	$20,402,548	$27,593,581
Debt-funded CIP			$0	$0	$0	$0	$0	$62,064,999	$47,495,001	$70,293,218	$78,462,141	$68,939,658
Pay-go funded CIP			$3,962,175	$3,566,246	$9,672,941	$17,559,009	$17,106,969	$0	$27,246,516	$0	$0	$0
Total - Use of Funds			**$44,565,766**	**$45,182,612**	**$52,804,678**	**$70,636,378**	**$74,775,931**	**$126,441,396**	**$142,052,967**	**$142,742,055**	**$152,445,683**	**$151,017,677**
Net Cash Balance			$282,885	($247,995)	($7,824,257)	($3,877,498)	$24,907,584	$87,926,298	($31,043,266)	$123,035,864	($28,907,880)	$85,667,672
Ending Cash Balance With Reserves			**$34,286,809**	**$34,038,814**	**$26,214,557**	**$22,337,059**	**$47,244,643**	**$135,170,941**	**$104,127,675**	**$227,163,540**	**$198,255,660**	**$283,923,332**
Ending Cash Balance			$18,657,067	$11,970,297	($4,238,872)	($10,934,840)	$24,120,557	$90,397,850	$63,013,868	$171,768,532	$127,530,222	$232,449,582
Operating Reserve	33%	of O&M	$12,063,496	$12,395,576	$12,894,420	$16,164,931	$17,674,783	$17,526,576	$18,645,408	$17,117,355	$17,615,669	$17,912,692
Minimum Capital Reserve		(Years of pay-g	$3,566,246	$9,672,941	$17,559,009	$17,106,969	$5,449,303	$27,246,516	$22,468,399	$38,277,652	$53,109,768	$33,561,058
Minimum Operating Reserve Met?			***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***
Minimum Operating and Capital Reserve Met?			***Yes***	***Yes***	***No***	***No***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***

Financial Plan			FY 2036	FY 2037	FY 2038	FY 2039	FY 2040	FY 2041	FY 2042	FY 2043	FY 2044	FY 2045	FY 2046	FY 2047	FY 2048	FY 2049
Revenues																
Revenues from Existing Rates			**$44,196,402**	**$44,284,101**	**$44,371,975**	**$44,460,025**	**$44,548,251**	**$44,636,653**	**$44,725,233**	**$44,813,989**	**$44,902,923**	**$44,992,035**	**$45,081,325**	**$45,170,794**	**$45,260,442**	**$45,350,268**
Revenue Adjustments																
Year	**Effective**	**% Adjustment**														
FY 2024	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2025	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2026	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2027	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2028	July	50%	$22,098,201	$22,142,050	$22,185,987	$22,230,012	$22,274,125	$22,318,327	$22,362,616	$22,406,995	$22,451,462	$22,496,018	$22,540,663	$22,585,397	$22,630,221	$22,675,134
FY 2029	July	50%	$33,147,301	$33,213,075	$33,278,981	$33,345,019	$33,411,188	$33,477,490	$33,543,925	$33,610,492	$33,677,192	$33,744,026	$33,810,994	$33,878,095	$33,945,331	$34,012,701
FY 2030	July	5%	$4,972,095	$4,981,961	$4,991,847	$5,001,753	$5,011,678	$5,021,624	$5,031,589	$5,041,574	$5,051,579	$5,061,604	$5,071,649	$5,081,714	$5,091,800	$5,101,905
FY 2031	July	5%	$5,220,700	$5,231,059	$5,241,440	$5,251,840	$5,262,262	$5,272,705	$5,283,168	$5,293,652	$5,304,158	$5,314,684	$5,325,232	$5,335,800	$5,346,390	$5,357,000
FY 2032	July	5%	$5,481,735	$5,492,612	$5,503,512	$5,514,432	$5,525,375	$5,536,340	$5,547,327	$5,558,335	$5,569,366	$5,580,418	$5,591,493	$5,602,590	$5,613,709	$5,624,850
FY 2033	July	5%	$5,755,822	$5,767,243	$5,778,687	$5,790,154	$5,801,644	$5,813,157	$5,824,693	$5,836,252	$5,847,834	$5,859,439	$5,871,068	$5,882,720	$5,894,395	$5,906,093
FY 2034	July	3%	$3,626,168	$3,633,363	$3,640,573	$3,647,797	$3,655,036	$3,662,289	$3,669,556	$3,676,839	$3,684,135	$3,691,447	$3,698,773	$3,706,113	$3,713,469	$3,720,839
FY 2035	July	3%	$3,734,953	$3,742,364	$3,749,790	$3,757,231	$3,764,687	$3,772,158	$3,779,643	$3,787,144	$3,794,659	$3,802,190	$3,809,736	$3,817,297	$3,824,873	$3,832,464
FY 2036	July	3%	$3,847,001	$3,854,635	$3,862,284	$3,869,948	$3,877,627	$3,885,322	$3,893,032	$3,900,758	$3,908,499	$3,916,256	$3,924,028	$3,931,816	$3,939,619	$3,947,438
FY 2037	July	3%		$3,970,274	$3,978,152	$3,986,046	$3,993,956	$4,001,882	$4,009,823	$4,017,781	$4,025,754	$4,033,744	$4,041,749	$4,049,770	$4,057,807	$4,065,861
FY 2038	July	5%			$6,829,161	$6,842,713	$6,856,292	$6,869,897	$6,883,530	$6,897,191	$6,910,878	$6,924,593	$6,938,335	$6,952,105	$6,965,903	$6,979,728
FY 2039	July	5%				$7,184,849	$7,199,106	$7,213,392	$7,227,707	$7,242,050	$7,256,422	$7,270,823	$7,285,252	$7,299,711	$7,314,198	$7,328,714
FY 2040	July	5%					$7,559,061	$7,574,062	$7,589,092	$7,604,153	$7,619,243	$7,634,364	$7,649,515	$7,664,696	$7,679,908	$7,695,150
FY 2041	July	5%						$7,952,765	$7,968,547	$7,984,360	$8,000,205	$8,016,082	$8,031,991	$8,047,931	$8,063,903	$8,079,907
FY 2042	July	5%							$8,366,974	$8,383,578	$8,400,216	$8,416,886	$8,433,590	$8,450,327	$8,467,098	$8,483,903
FY 2043	July	5%								$8,802,757	$8,820,226	$8,837,730	$8,855,270	$8,872,844	$8,890,453	$8,908,098
FY 2044	July	5%									$9,261,238	$9,279,617	$9,298,033	$9,316,486	$9,334,976	$9,353,503
FY 2045	July	5%										$9,743,598	$9,762,935	$9,782,310	$9,801,725	$9,821,178
FY 2046	July	0%											$0	$0	$0	$0
FY 2047	July	0%												$0	$0	$0
FY 2048	July	0%													$0	$0
FY 2049	July	0%														$0
Total Revenue Adjustments			**$87,883,976**	**$92,028,638**	**$99,040,414**	**$106,421,795**	**$114,192,038**	**$122,371,408**	**$130,981,223**	**$140,043,910**	**$149,583,067**	**$159,623,519**	**$159,940,304**	**$160,257,722**	**$160,575,776**	**$160,894,465**
Rate Revenue (including Revenue Adjustments)			**$132,080,378**	**$136,312,738**	**$143,412,389**	**$150,881,819**	**$158,740,289**	**$167,008,062**	**$175,706,456**	**$184,857,899**	**$194,485,990**	**$204,615,554**	**$205,021,629**	**$205,428,516**	**$205,836,217**	**$206,244,734**
Other Revenues																
Interest Income			$2,421,409	$2,155,337	$1,953,485	$1,774,367	$1,586,429	$1,477,209	$1,423,965	$1,417,629	$1,450,139	$1,549,205	$1,715,847	$1,850,779	$1,923,753	$1,948,343
Other Revenues			$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705
Total - Revenues			**$135,767,492**	**$139,733,780**	**$146,631,579**	**$153,921,892**	**$161,592,423**	**$169,750,976**	**$178,396,126**	**$187,541,234**	**$197,201,834**	**$207,430,465**	**$208,003,181**	**$208,545,000**	**$209,025,675**	**$209,458,781**
O&M Expenses																
Wastewater Operating Expenses			$51,832,475	$53,177,921	$54,102,682	$55,464,141	$56,640,705	$58,101,811	$59,493,418	$59,914,590	$61,402,117	$62,711,272	$64,182,052	$65,844,565	$67,180,947	$68,855,367
Additional Expenditures Identified by the City																
FTE Expenditures			$2,366,898	$2,366,898	$2,401,315	$2,401,172	$2,438,336	$2,438,183	$2,438,183	$2,472,599	$2,472,457	$2,509,621	$2,509,467	$2,509,467	$2,543,883	$2,543,741
Additional Operating from Divisions			$2,914,184	$3,152,736	$3,108,385	$3,109,053	$3,109,741	$3,110,450	$3,156,180	$3,111,932	$3,112,706	$3,113,504	$3,114,326	$3,160,172	$3,116,043	$3,116,941
Total - O&M Expenses			**$57,113,557**	**$58,697,556**	**$59,612,382**	**$60,974,366**	**$62,188,783**	**$63,650,444**	**$65,087,781**	**$65,499,120**	**$66,987,280**	**$68,334,396**	**$69,805,845**	**$71,514,204**	**$72,840,874**	**$74,516,050**
Debt Service																
Existing Debt Service			$3,583,550	$3,621,925	$3,660,800	$3,704,925	$3,749,175	$1,630,000	$1,675,000	$1,720,000	$0	$0	$0	$0	$0	$0
Proposed Debt Service			$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031
Capital Projects																
Cash Funded Capital			$78,780,939	$79,046,261	$74,160,583	$86,304,971	$88,229,681	$85,710,448	$92,957,282	$92,133,684	$103,730,415	$97,529,860	$98,130,485	$101,838,343	$108,571,459	$109,475,385
Total - Revenue Requirements			**$163,547,077**	**$165,434,773**	**$161,502,796**	**$175,053,293**	**$178,236,670**	**$175,059,923**	**$183,789,094**	**$183,421,836**	**$194,786,726**	**$189,933,287**	**$192,005,361**	**$197,421,578**	**$205,481,363**	**$208,060,465**
Net Annual Cash Flow			**($27,779,585)**	**($25,700,994)**	**($14,871,217)**	**($21,131,401)**	**($16,644,247)**	**($5,308,947)**	**($5,392,968)**	**$4,119,398**	**$2,415,108**	**$17,497,177**	**$15,997,820**	**$11,123,422**	**$3,544,311**	**$1,398,316**
Net Operating Revenue			$78,653,935	$81,036,224	$87,019,197	$92,947,526	$99,403,640	$106,100,532	$113,308,345	$122,042,113	$130,214,554	$139,096,068	$138,197,336	$137,030,796	$136,184,801	$134,942,732
Debt Service Coverage Ratio			**2.84**	**2.93**	**3.14**	**3.35**	**3.57**	**4.13**	**4.40**	**4.73**	**5.41**	**5.78**	**5.74**	**5.69**	**5.66**	**5.61**
Required Absolute Floor Debt Service Coverage Rati			1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Fund Balance Projections			**FY 2036**	**FY 2037**	**FY 2038**	**FY 2039**	**FY 2040**	**FY 2041**	**FY 2042**	**FY 2043**	**FY 2044**	**FY 2045**	**FY 2046**	**FY 2047**	**FY 2048**	**FY 2049**
Total Beginning Cash Balance With Reserves			**$257,241,405**	**$229,461,820**	**$203,760,826**	**$188,889,609**	**$167,758,208**	**$151,113,961**	**$145,805,014**	**$140,412,046**	**$144,531,444**	**$146,946,552**	**$164,443,729**	**$180,441,550**	**$191,564,972**	**$195,109,284**
Sources of Funds																
Total Revenues from Rates			$132,080,378	$136,312,738	$143,412,389	$150,881,819	$158,740,289	$167,008,062	$175,706,456	$184,857,899	$194,485,990	$204,615,554	$205,021,629	$205,428,516	$205,836,217	$206,244,734
Other Revenues			$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705
Interest Income			$2,421,409	$2,155,337	$1,953,485	$1,774,367	$1,586,429	$1,477,209	$1,423,965	$1,417,629	$1,450,139	$1,549,205	$1,715,847	$1,850,779	$1,923,753	$1,948,343
Debt Proceeds			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total - Source of Funds			**$135,767,492**	**$139,733,780**	**$146,631,579**	**$153,921,892**	**$161,592,423**	**$169,750,976**	**$178,396,126**	**$187,541,234**	**$197,201,834**	**$207,430,465**	**$208,003,181**	**$208,545,000**	**$209,025,675**	**$209,458,781**
Use of Funds																
Total O&M Expenses			$57,113,557	$58,697,556	$59,612,382	$60,974,366	$62,188,783	$63,650,444	$65,087,781	$65,499,120	$66,987,280	$68,334,396	$69,805,845	$71,514,204	$72,840,874	$74,516,050
Total Debt Service			$27,652,581	$27,690,956	$27,729,831	$27,773,956	$27,818,206	$25,699,031	$25,744,031	$25,789,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031	$24,069,031
Debt-funded CIP			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pay-go funded CIP			$78,780,939	$79,046,261	$74,160,583	$86,304,971	$88,229,681	$85,710,448	$92,957,282	$92,133,684	$103,730,415	$97,529,860	$98,130,485	$101,838,343	$108,571,459	$109,475,385
Total - Use of Funds			**$163,547,077**	**$165,434,773**	**$161,502,796**	**$175,053,293**	**$178,236,670**	**$175,059,923**	**$183,789,094**	**$183,421,836**	**$194,786,726**	**$189,933,287**	**$192,005,361**	**$197,421,578**	**$205,481,363**	**$208,060,465**
Net Cash Balance			($27,779,585)	($25,700,994)	($14,871,217)	($21,131,401)	($16,644,247)	($5,308,947)	($5,392,968)	$4,119,398	$2,415,108	$17,497,177	$15,997,820	$11,123,422	$3,544,311	$1,398,316
Ending Cash Balance With Reserves			**$229,461,820**	**$203,760,826**	**$188,889,609**	**$167,758,208**	**$151,113,961**	**$145,805,014**	**$140,412,046**	**$144,531,444**	**$146,946,552**	**$164,443,729**	**$180,441,550**	**$191,564,972**	**$195,109,284**	**$196,507,600**
Ending Cash Balance			$131,638,499	$110,302,416	$82,986,047	$59,482,160	$44,957,885	$31,921,558	$26,879,639	$19,267,072	$27,393,477	$43,847,142	$55,653,340	$59,481,994	$61,686,214	$62,533,788
Operating Reserve	33%	of O&M	$18,777,060	$19,297,827	$19,598,591	$20,046,367	$20,445,627	$20,926,173	$21,398,722	$21,533,957	$22,023,216	$22,466,103	$22,949,867	$23,511,519	$23,947,684	$24,498,427
Minimum Capital Reserve		(Years of pay-g	$79,046,261	$74,160,583	$86,304,971	$88,229,681	$85,710,448	$92,957,282	$92,133,684	$103,730,415	$97,529,860	$98,130,485	$101,838,343	$108,571,459	$109,475,385	$109,475,385
Minimum Operating Reserve Met?			***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***
Minimum Operating and Capital Reserve Met?			***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***	***Yes***


Wastewater Operating and Capital Funds Ending Cash Balance
Millions
$300
$250
$200
$150
$100
$50
$0
FY 2025
FY 2026
FY 2027
FY 2028
FY 2029
FY 2030
FY 2031
FY 2032
FY 2033
FY 2034
FY 2035
FY 2036
FY 2037
FY 2038
FY 2039
FY 2040
FY 2041
FY 2042
FY 2043
FY 2044
FY 2045
FY 2046
FY 2047
FY 2048
FY 2049
Ending Balance - Operating Reserve
Minimum Operating (120 days of O&M)
Minimum Operating and Capital (1-year of Pay-go)


Debt Service Coverage Ratio
DSC Ratio
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
FY 2025
FY 2026
FY 2027
FY 2028
FY 2029
FY 2030
FY 2031
FY 2032
FY 2033
FY 2034
FY 2035
FY 2036
FY 2037
FY 2038
FY 2039
FY 2040
FY 2041
FY 2042
FY 2043
FY 2044
FY 2045
FY 2046
FY 2047
FY 2048
FY 2049
Debt Service Coverage Ratio
Required Absolute Floor Debt Service Covereage Ratio (1.20)
Median for AA Fitch-Rated Utilities (2.4)
Median for AA S&P Global-Rated Utilities (2.3)


Wastewater Financial Plan
$250
$200
$150
$100
$50
$0
($50)
Millions
FY 2025
FY 2026
FY 2027
FY 2028
FY 2029
FY 2030
FY 2031
FY 2032
FY 2033
FY 2034
FY 2035
FY 2036
FY 2037
FY 2038
FY 2039
FY 2040
FY 2041
FY 2042
FY 2043
FY 2044
FY 2045
FY 2046
FY 2047
FY 2048
FY 2049
O&M Expenses
Debt Service
Cash Funded Capital
Revenue to/from Reserves
Current Revenue
Proposed Revenue
Capital Financing Plan
$120
$100
$80
$60
$40
$20
$0
Millions
Cash Funded Capital
Debt Funded


Days of Cash on Hand
Days
2000
1500
1000
500
0
FY 2025
FY 2026
FY 2027
FY 2028
FY 2029
FY 2030
FY 2031
FY 2032
FY 2033
FY 2034
FY 2035
FY 2036
FY 2037
FY 2038
FY 2039
FY 2040
FY 2041
FY 2042
FY 2043
FY 2044
FY 2045
FY 2046
FY 2047
FY 2048
FY 2049
Days of Cash on Hand
Median for AA Fitch-Rated Utilities (621 days)
Median for AA S&P Global-Rated Utilities (584 days)
Annual Wastewater Bill as Percentage of Lowest Quintile Income
3.5%
3.0%
2.5%
2.0%
1.5%
1.0%
0.5%
0.0%
FY 2025
FY 2026
FY 2027
FY 2028
FY 2029
FY 2030
FY 2031
FY 2032
FY 2033
FY 2034
FY 2035
FY 2036
FY 2037
FY 2038
FY 2039
FY 2040
FY 2041
FY 2042
FY 2043
FY 2044
FY 2045
FY 2046
FY 2047
FY 2048
FY 2049
Annual Bill as % of LQI
LQI Threshold of Affordability

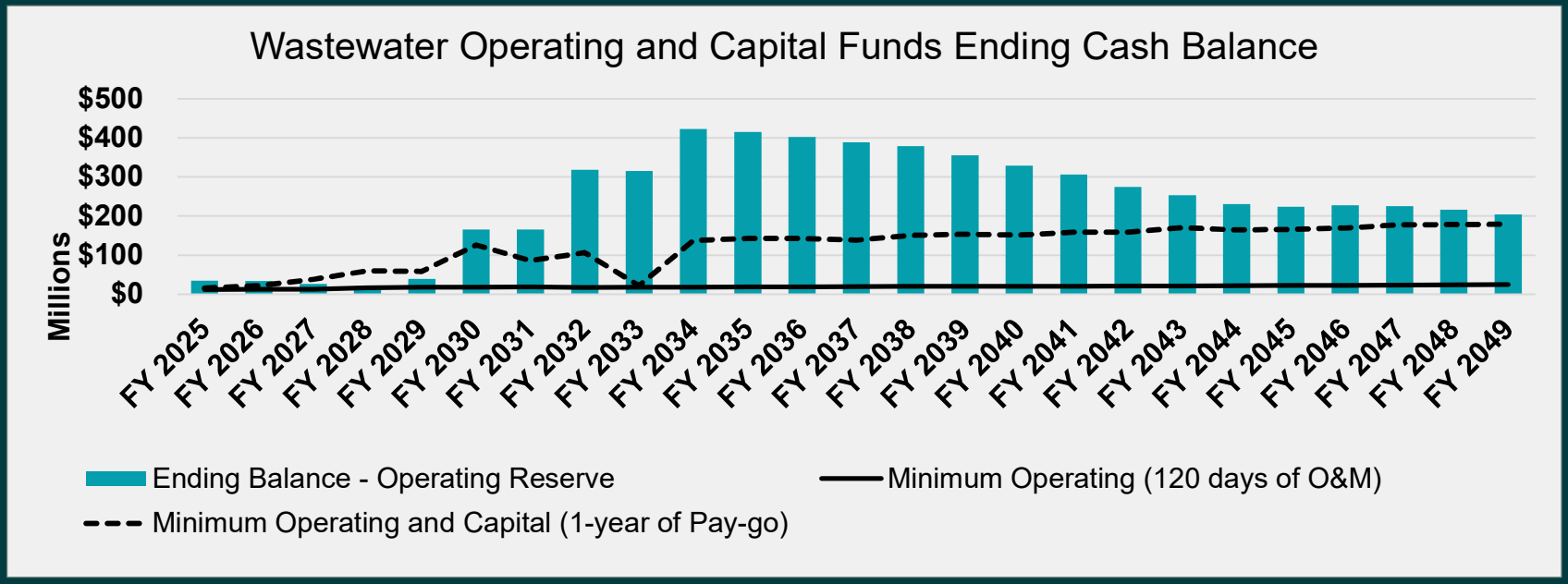
Wastewater Fund:

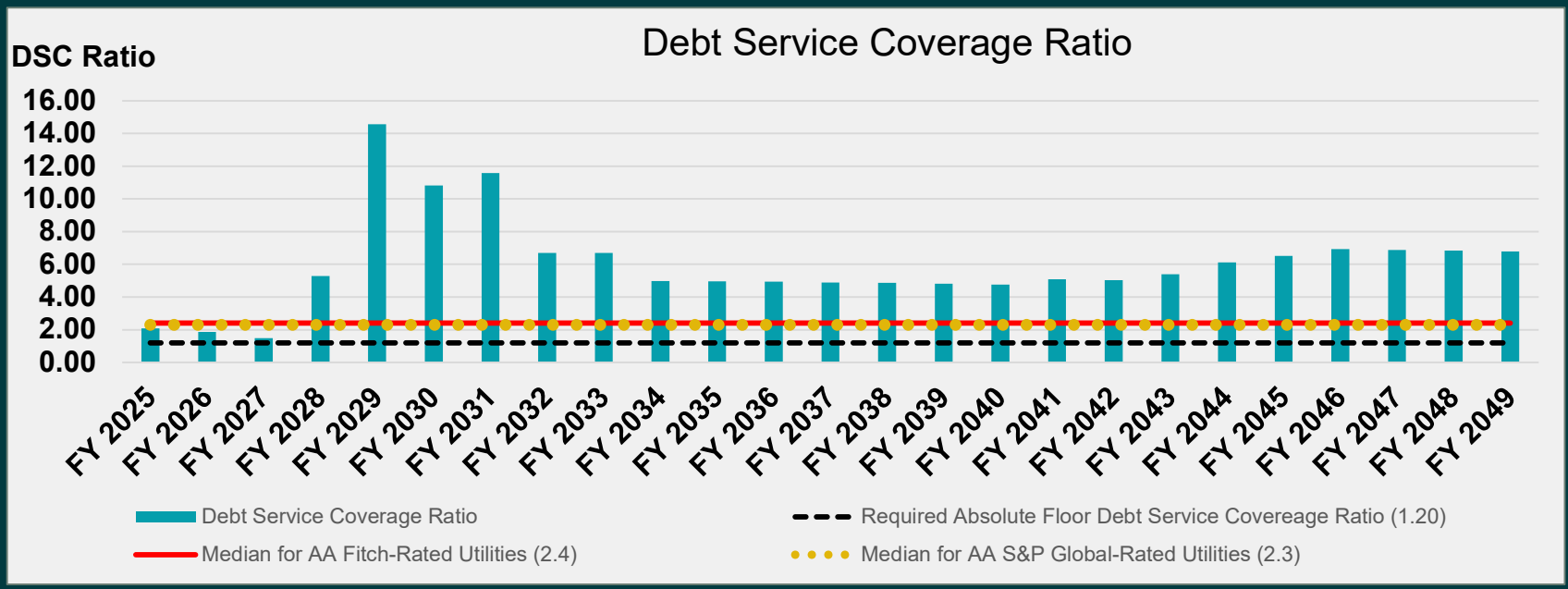
Financial Plan 3

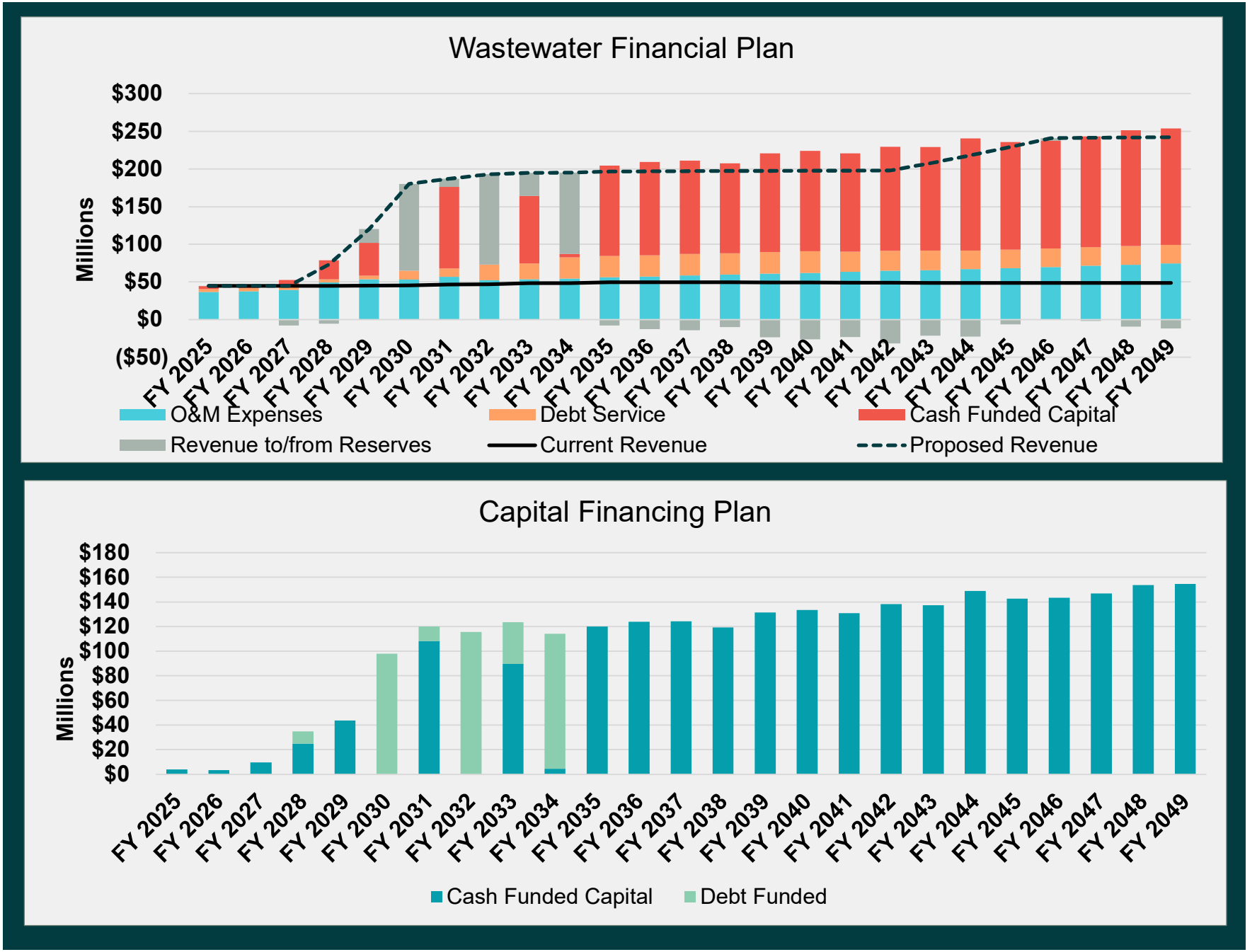
Financial Plan			FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035
Revenues													
Revenues from Existing Rates			**$43,243,191**	**$43,328,984**	**$43,414,948**	**$43,501,084**	**$43,587,392**	**$43,673,873**	**$43,760,526**	**$43,847,353**	**$43,934,354**	**$44,021,529**	**$44,108,878**
Revenue Adjustments													
Year	**Effective**	**% Adjustment**											
FY 2024	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2025	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2026	July	0%		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2027	July	0%			$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2028	July	65%				$28,275,704	$28,331,805	$28,388,017	$28,444,342	$28,500,780	$28,557,330	$28,613,994	$28,670,771
FY 2029	July	65%					$46,747,478	$46,840,228	$46,933,165	$47,026,287	$47,119,595	$47,213,090	$47,306,772
FY 2030	July	50%						$59,451,059	$59,569,017	$59,687,210	$59,805,640	$59,924,306	$60,043,210
FY 2031	July	3%							$5,361,211	$5,371,849	$5,382,508	$5,393,188	$5,403,889
FY 2032	July	3%								$5,533,004	$5,543,983	$5,554,983	$5,566,006
FY 2033	July	0%									$0	$0	$0
FY 2034	July	0%										$0	$0
FY 2035	July	0%											$0
FY 2036	July	0%											
FY 2037	July	0%											
FY 2038	July	0%											
FY 2039	July	0%											
FY 2040	July	0%											
FY 2041	July	0%											
FY 2042	July	0%											
FY 2043	July	5%											
FY 2044	July	5%											
FY 2045	July	5%											
FY 2046	July	5%											
FY 2047	July	0%											
FY 2048	July	0%											
FY 2049	July	0%											
Total Revenue Adjustments			**$0**	**$0**	**$0**	**$28,275,704**	**$75,079,282**	**$134,679,305**	**$140,307,735**	**$146,119,129**	**$146,409,055**	**$146,699,561**	**$146,990,647**
Rate Revenue (including Revenue Adjustments)			**$43,243,191**	**$43,328,984**	**$43,414,948**	**$71,776,788**	**$118,666,674**	**$178,353,177**	**$184,068,261**	**$189,966,483**	**$190,343,409**	**$190,721,089**	**$191,099,525**
Other Revenues													
Interest Income			$339,755	$339,928	$299,768	$184,709	$298,586	$474,962	$1,646,426	$1,664,119	$3,155,402	$3,129,992	$4,172,840
Other Revenues			$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705
Total - Revenues			**$44,848,651**	**$44,934,617**	**$44,980,421**	**$73,227,202**	**$120,230,965**	**$180,093,844**	**$186,980,392**	**$192,896,307**	**$194,764,516**	**$195,116,787**	**$196,538,070**
O&M Expenses													
Wastewater Operating Expenses			$36,693,133	$37,703,209	$39,220,527	$46,330,978	$49,417,271	$49,569,658	$51,602,241	$47,365,000	$48,359,547	$49,517,611	$50,584,983
Additional Expenditures Identified by the City													
FTE Expenditures			$0	$0	$0	$315,805	$1,402,497	$1,669,802	$2,136,656	$2,276,986	$2,310,815	$2,310,672	$2,367,132
Additional Operating from Divisions			$0	$0	$0	$2,521,547	$2,941,031	$2,070,543	$2,974,220	$2,423,303	$2,910,632	$2,656,154	$3,216,188
Total - O&M Expenses			**$36,693,133**	**$37,703,209**	**$39,220,527**	**$49,168,330**	**$53,760,799**	**$53,310,002**	**$56,713,117**	**$52,065,289**	**$53,580,993**	**$54,484,438**	**$56,168,303**
Debt Service													
Existing Debt Service			$3,910,458	$3,913,157	$3,911,209	$3,909,039	$3,908,163	$3,910,738	$3,442,675	$3,470,175	$3,489,175	$3,524,550	$3,556,050
Proposed Debt Service			$0	$0	$0	$650,514	$650,514	$7,806,172	$7,806,172	$17,563,887	$17,563,887	$24,719,545	$24,719,545
Capital Projects													
Cash Funded Capital			$3,962,175	$3,566,246	$9,672,941	$24,841,892	$43,639,602	$0	$108,181,032	$0	$89,579,625	$4,491,791	$119,938,174
Total - Revenue Requirements			**$44,565,766**	**$45,182,612**	**$52,804,678**	**$78,569,776**	**$101,959,078**	**$65,026,912**	**$176,142,996**	**$73,099,352**	**$164,213,681**	**$87,220,324**	**$204,382,072**
Net Annual Cash Flow			**$282,885**	**($247,995)**	**($7,824,257)**	**($5,342,574)**	**$18,271,888**	**$115,066,932**	**$10,837,396**	**$119,796,955**	**$30,550,835**	**$107,896,463**	**($7,844,002)**
Net Operating Revenue			$8,155,518	$7,231,408	$5,759,893	$24,058,872	$66,470,167	$126,783,842	$130,267,275	$140,831,018	$141,183,523	$140,632,349	$140,369,768
Debt Service Coverage Ratio			**2.09**	**1.85**	**1.47**	**5.28**	**14.58**	**10.82**	**11.58**	**6.70**	**6.71**	**4.98**	**4.96**
Required Absolute Floor Debt Service Coverage Rati			1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Fund Balance Projections			**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**FY 2032**	**FY 2033**	**FY 2034**	**FY 2035**
Total Beginning Cash Balance With Reserves			**$34,003,924**	**$34,286,809**	**$34,038,814**	**$26,214,557**	**$20,871,983**	**$39,143,871**	**$165,883,421**	**$165,048,199**	**$318,839,803**	**$315,395,989**	**$423,292,452**
Sources of Funds													
Total Revenues from Rates			$43,243,191	$43,328,984	$43,414,948	$71,776,788	$118,666,674	$178,353,177	$184,068,261	$189,966,483	$190,343,409	$190,721,089	$191,099,525
Other Revenues			$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705
Interest Income			$339,755	$339,928	$299,768	$184,709	$298,586	$474,962	$1,646,426	$1,664,119	$3,155,402	$3,129,992	$4,172,840
Debt Proceeds			$0	$0	$0	$9,960,000	$0	$109,560,000	$0	$149,400,000	$0	$109,560,000	$0
Total - Source of Funds			**$44,848,651**	**$44,934,617**	**$44,980,421**	**$83,187,202**	**$120,230,965**	**$289,653,844**	**$186,980,392**	**$342,296,307**	**$194,764,516**	**$304,676,787**	**$196,538,070**
Use of Funds													
Total O&M Expenses			$36,693,133	$37,703,209	$39,220,527	$49,168,330	$53,760,799	$53,310,002	$56,713,117	$52,065,289	$53,580,993	$54,484,438	$56,168,303
Total Debt Service			$3,910,458	$3,913,157	$3,911,209	$4,559,553	$4,558,677	$11,716,910	$11,248,847	$21,034,062	$21,053,062	$28,244,095	$28,275,595
Debt-funded CIP			$0	$0	$0	$9,960,000	$0	$97,887,382	$11,672,618	$115,405,351	$33,994,649	$109,560,000	$0
Pay-go funded CIP			$3,962,175	$3,566,246	$9,672,941	$24,841,892	$43,639,602	$0	$108,181,032	$0	$89,579,625	$4,491,791	$119,938,174
Total - Use of Funds			**$44,565,766**	**$45,182,612**	**$52,804,678**	**$88,529,776**	**$101,959,078**	**$162,914,294**	**$187,815,614**	**$188,504,703**	**$198,208,330**	**$196,780,324**	**$204,382,072**
Net Cash Balance			$282,885	($247,995)	($7,824,257)	($5,342,574)	$18,271,888	$126,739,550	($835,222)	$153,791,604	($3,443,814)	$107,896,463	($7,844,002)
Ending Cash Balance With Reserves			**$34,286,809**	**$34,038,814**	**$26,214,557**	**$20,871,983**	**$39,143,871**	**$165,883,421**	**$165,048,199**	**$318,839,803**	**$315,395,989**	**$423,292,452**	**$415,448,450**
Ending Cash Balance			$18,657,067	$11,970,297	($11,521,755)	($38,932,549)	($18,981,402)	$40,175,814	$78,822,258	$212,142,822	$293,288,529	$285,441,586	$273,089,087
Operating Reserve	33%	of O&M	$12,063,496	$12,395,576	$12,894,420	$16,164,931	$17,674,783	$17,526,576	$18,645,408	$17,117,355	$17,615,669	$17,912,692	$18,466,291
Minimum Capital Reserve		(Years of pay-g	$3,566,246	$9,672,941	$24,841,892	$43,639,602	$40,450,490	$108,181,032	$67,580,532	$89,579,625	$4,491,791	$119,938,174	$123,893,072
Minimum Operating Reserve Met?			*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Minimum Operating and Capital Reserve Met?			*Yes*	*Yes*	*No*	*No*	*No*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*

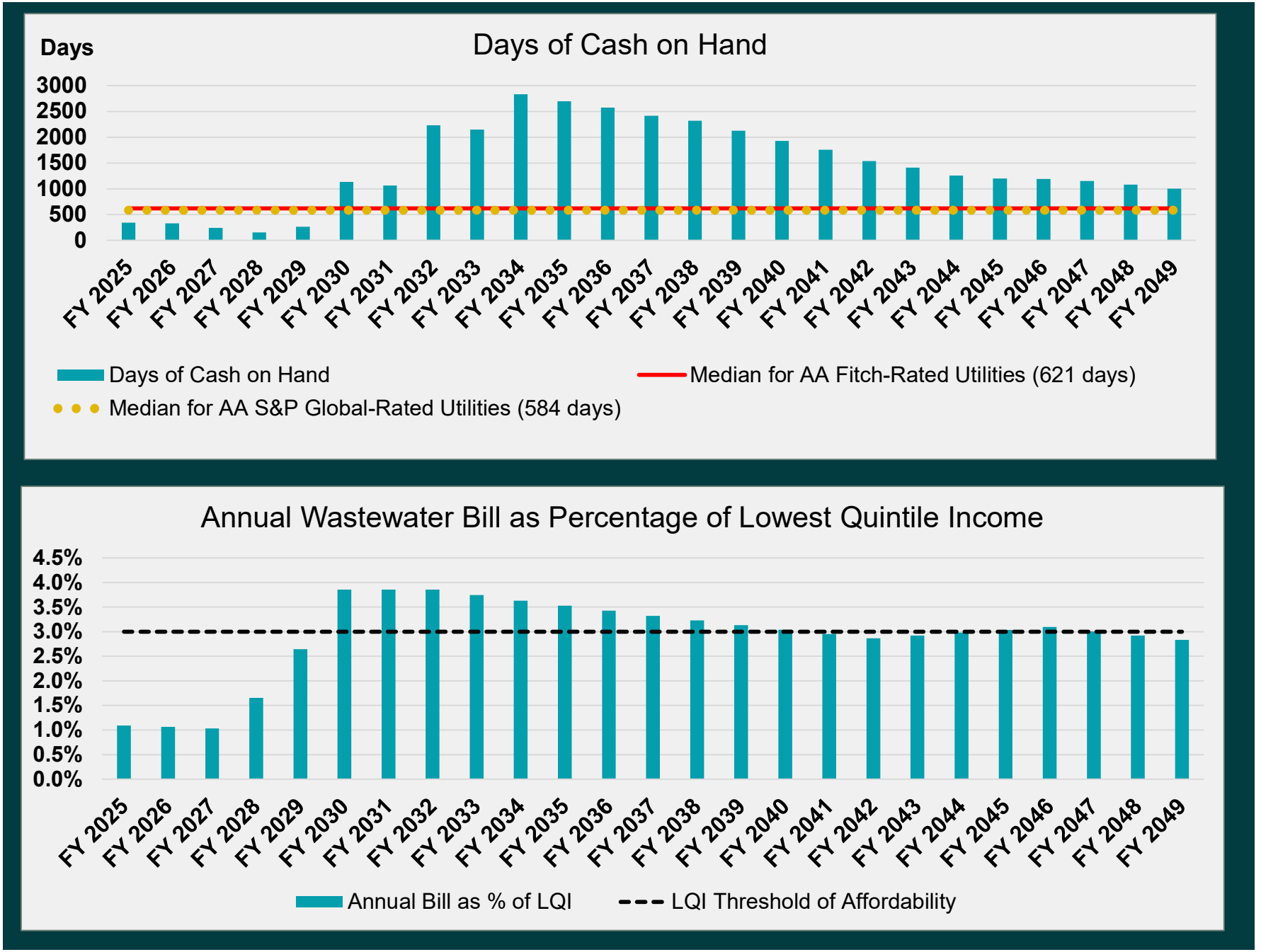
Financial Plan			FY 2036	FY 2037	FY 2038	FY 2039	FY 2040	FY 2041	FY 2042	FY 2043	FY 2044	FY 2045	FY 2046	FY 2047	FY 2048	FY 2049
Revenues																
Revenues from Existing Rates			**$44,196,402**	**$44,284,101**	**$44,371,975**	**$44,460,025**	**$44,548,251**	**$44,636,653**	**$44,725,233**	**$44,813,989**	**$44,902,923**	**$44,992,035**	**$45,081,325**	**$45,170,794**	**$45,260,442**	**$45,350,268**
Revenue Adjustments																
Year	**Effective**	**% Adjustment**														
FY 2024	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2025	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2026	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2027	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2028	July	65%	$28,727,661	$28,784,665	$28,841,784	$28,899,016	$28,956,363	$29,013,825	$29,071,401	$29,129,093	$29,186,900	$29,244,823	$29,302,861	$29,361,016	$29,419,287	$29,477,674
FY 2029	July	65%	$47,400,641	$47,494,698	$47,588,943	$47,683,377	$47,777,999	$47,872,811	$47,967,812	$48,063,003	$48,158,385	$48,253,958	$48,349,721	$48,445,676	$48,541,824	$48,638,163
FY 2030	July	50%	$60,162,352	$60,281,732	$60,401,351	$60,521,209	$60,641,307	$60,761,644	$60,882,223	$61,003,043	$61,124,104	$61,245,408	$61,366,954	$61,488,743	$61,610,776	$61,733,053
FY 2031	July	3%	$5,414,612	$5,425,356	$5,436,122	$5,446,909	$5,457,718	$5,468,548	$5,479,400	$5,490,274	$5,501,169	$5,512,087	$5,523,026	$5,533,987	$5,544,970	$5,555,975
FY 2032	July	3%	$5,577,050	$5,588,117	$5,599,205	$5,610,316	$5,621,449	$5,632,604	$5,643,782	$5,654,982	$5,666,204	$5,677,449	$5,688,717	$5,700,006	$5,711,319	$5,722,654
FY 2033	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2034	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2035	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2036	July	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2037	July	0%		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2038	July	0%			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2039	July	0%				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2040	July	0%					$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2041	July	0%						$0	$0	$0	$0	$0	$0	$0	$0	$0
FY 2042	July	0%							$0	$0	$0	$0	$0	$0	$0	$0
FY 2043	July	5%								$9,707,719	$9,726,984	$9,746,288	$9,765,630	$9,785,011	$9,804,431	$9,823,889
FY 2044	July	5%									$10,213,334	$10,233,602	$10,253,912	$10,274,262	$10,294,652	$10,315,084
FY 2045	July	5%										$10,745,282	$10,766,607	$10,787,975	$10,809,385	$10,830,838
FY 2046	July	5%											$11,304,938	$11,327,374	$11,349,854	$11,372,380
FY 2047	July	0%												$0	$0	$0
FY 2048	July	0%													$0	$0
FY 2049	July	0%														$0
Total Revenue Adjustments			**$147,282,316**	**$147,574,568**	**$147,867,404**	**$148,160,826**	**$148,454,835**	**$148,749,432**	**$149,044,619**	**$159,048,115**	**$169,577,081**	**$180,658,897**	**$192,322,366**	**$192,704,050**	**$193,086,498**	**$193,469,710**
Rate Revenue (including Revenue Adjustments)			**$191,478,718**	**$191,858,668**	**$192,239,379**	**$192,620,851**	**$193,003,086**	**$193,386,086**	**$193,769,852**	**$203,862,104**	**$214,480,005**	**$225,650,932**	**$237,403,691**	**$237,874,844**	**$238,346,939**	**$238,819,979**
Other Revenues																
Interest Income			$4,071,658	$3,939,183	$3,819,408	$3,654,153	$3,407,395	$3,161,962	$2,890,147	$2,626,184	$2,408,145	$2,264,311	$2,247,565	$2,254,329	$2,198,497	$2,093,638
Other Revenues			$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705
Total - Revenues			**$196,816,081**	**$197,063,556**	**$197,324,492**	**$197,540,709**	**$197,676,186**	**$197,813,753**	**$197,925,704**	**$207,753,993**	**$218,153,854**	**$229,180,949**	**$240,916,961**	**$241,394,878**	**$241,811,141**	**$242,179,322**
O&M Expenses																
Wastewater Operating Expenses			$51,832,475	$53,177,921	$54,102,682	$55,464,141	$56,640,705	$58,101,811	$59,493,418	$59,914,590	$61,402,117	$62,711,272	$64,182,052	$65,844,565	$67,180,947	$68,855,367
Additional Expenditures Identified by the City																
FTE Expenditures			$2,366,898	$2,366,898	$2,401,315	$2,401,172	$2,438,336	$2,438,183	$2,438,183	$2,472,599	$2,472,457	$2,509,621	$2,509,467	$2,509,467	$2,543,883	$2,543,741
Additional Operating from Divisions			$2,914,184	$3,152,736	$3,108,385	$3,109,053	$3,109,741	$3,110,450	$3,156,180	$3,111,932	$3,112,706	$3,113,504	$3,114,326	$3,160,172	$3,116,043	$3,116,941
Total - O&M Expenses			**$57,113,557**	**$58,697,556**	**$59,612,382**	**$60,974,366**	**$62,188,783**	**$63,650,444**	**$65,087,781**	**$65,499,120**	**$66,987,280**	**$68,334,396**	**$69,805,845**	**$71,514,204**	**$72,840,874**	**$74,516,050**
Debt Service																
Existing Debt Service			$3,583,550	$3,621,925	$3,660,800	$3,704,925	$3,749,175	$1,630,000	$1,675,000	$1,720,000	$0	$0	$0	$0	$0	$0
Proposed Debt Service			$24,719,545	$24,719,545	$24,719,545	$24,719,545	$24,719,545	$24,719,545	$24,719,545	$24,719,545	$24,719,545	$24,719,545	$24,719,545	$24,719,545	$24,719,545	$24,719,545
Capital Projects																
Cash Funded Capital			$123,893,072	$124,158,394	$119,272,716	$131,417,104	$133,341,814	$130,822,581	$138,069,415	$137,245,817	$148,842,548	$142,641,993	$143,242,618	$146,950,476	$153,683,592	$154,587,518
Total - Revenue Requirements			**$209,309,724**	**$211,197,421**	**$207,265,443**	**$220,815,940**	**$223,999,318**	**$220,822,570**	**$229,551,741**	**$229,184,483**	**$240,549,374**	**$235,695,934**	**$237,768,008**	**$243,184,225**	**$251,244,011**	**$253,823,113**
Net Annual Cash Flow			**($12,493,644)**	**($14,133,865)**	**($9,940,951)**	**($23,275,231)**	**($26,323,131)**	**($23,008,817)**	**($31,626,037)**	**($21,430,490)**	**($22,395,519)**	**($6,514,986)**	**$3,148,953**	**($1,789,347)**	**($9,432,869)**	**($11,643,791)**
Net Operating Revenue			$139,702,524	$138,366,000	$137,712,110	$136,566,343	$135,487,403	$134,163,310	$132,837,923	$142,254,873	$151,166,574	$160,846,552	$171,111,116	$169,880,674	$168,970,268	$167,663,272
Debt Service Coverage Ratio			**4.94**	**4.88**	**4.85**	**4.80**	**4.76**	**5.09**	**5.03**	**5.38**	**6.12**	**6.51**	**6.92**	**6.87**	**6.84**	**6.78**
Required Absolute Floor Debt Service Coverage Rati			1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20

Fund Balance Projections	FY 2036	FY 2037	FY 2038	FY 2039	FY 2040	FY 2041	FY 2042	FY 2043	FY 2044	FY 2045	FY 2046	FY 2047	FY 2048	FY 2049
Total Beginning Cash Balance With Reserves	**$415,448,450**	**$402,954,806**	**$388,820,942**	**$378,879,991**	**$355,604,760**	**$329,281,628**	**$306,272,812**	**$274,646,774**	**$253,216,284**	**$230,820,765**	**$224,305,779**	**$227,454,732**	**$225,665,385**	**$216,232,516**
Sources of Funds														
Total Revenues from Rates	$191,478,718	$191,858,668	$192,239,379	$192,620,851	$193,003,086	$193,386,086	$193,769,852	$203,862,104	$214,480,005	$225,650,932	$237,403,691	$237,874,844	$238,346,939	$238,819,979
Other Revenues	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705	$1,265,705
Interest Income	$4,071,658	$3,939,183	$3,819,408	$3,654,153	$3,407,395	$3,161,962	$2,890,147	$2,626,184	$2,408,145	$2,264,311	$2,247,565	$2,254,329	$2,198,497	$2,093,638
Debt Proceeds	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total - Source of Funds	**$196,816,081**	**$197,063,556**	**$197,324,492**	**$197,540,709**	**$197,676,186**	**$197,813,753**	**$197,925,704**	**$207,753,993**	**$218,153,854**	**$229,180,949**	**$240,916,961**	**$241,394,878**	**$241,811,141**	**$242,179,322**
Use of Funds														
Total O&M Expenses	$57,113,557	$58,697,556	$59,612,382	$60,974,366	$62,188,783	$63,650,444	$65,087,781	$65,499,120	$66,987,280	$68,334,396	$69,805,845	$71,514,204	$72,840,874	$74,516,050
Total Debt Service	$28,303,095	$28,341,470	$28,380,345	$28,424,470	$28,468,720	$26,349,545	$26,394,545	$26,439,545	$24,719,545	$24,719,545	$24,719,545	$24,719,545	$24,719,545	$24,719,545
Debt-funded CIP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pay-go funded CIP	$123,893,072	$124,158,394	$119,272,716	$131,417,104	$133,341,814	$130,822,581	$138,069,415	$137,245,817	$148,842,548	$142,641,993	$143,242,618	$146,950,476	$153,683,592	$154,587,518
Total - Use of Funds	**$209,309,724**	**$211,197,421**	**$207,265,443**	**$220,815,940**	**$223,999,318**	**$220,822,570**	**$229,551,741**	**$229,184,483**	**$240,549,374**	**$235,695,934**	**$237,768,008**	**$243,184,225**	**$251,244,011**	**$253,823,113**
Net Cash Balance	($12,493,644)	($14,133,865)	($9,940,951)	($23,275,231)	($26,323,131)	($23,008,817)	($31,626,037)	($21,430,490)	($22,395,519)	($6,514,986)	$3,148,953	($1,789,347)	($9,432,869)	($11,643,791)
Ending Cash Balance With Reserves	**$402,954,806**	**$388,820,942**	**$378,879,991**	**$355,604,760**	**$329,281,628**	**$306,272,812**	**$274,646,774**	**$253,216,284**	**$230,820,765**	**$224,305,779**	**$227,454,732**	**$225,665,385**	**$216,232,516**	**$204,588,725**
Ending Cash Balance	$260,019,352	$250,250,399	$227,864,295	$202,216,578	$178,013,420	$147,277,223	$116,002,234	$82,839,779	$66,155,557	$58,597,059	$57,554,389	$48,470,274	$37,697,314	$25,502,780
Operating Reserve 33% of O&M	$18,777,060	$19,297,827	$19,598,591	$20,046,367	$20,445,627	$20,926,173	$21,398,722	$21,533,957	$22,023,216	$22,466,103	$22,949,867	$23,511,519	$23,947,684	$24,498,427
Minimum Capital Reserve (Years of pay-g	$124,158,394	$119,272,716	$131,417,104	$133,341,814	$130,822,581	$138,069,415	$137,245,817	$148,842,548	$142,641,993	$143,242,618	$146,950,476	$153,683,592	$154,587,518	$154,587,518
Minimum Operating Reserve Met?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Minimum Operating and Capital Reserve Met?	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*


Wastewater Operating and Capital Funds Ending Cash Balance
Millions
$500
$400
$300
$200
$100
$0
FY 2025
FY 2026
FY 2027
FY 2028
FY 2029
FY 2030
FY 2031
FY 2032
FY 2033
FY 2034
FY 2035
FY 2036
FY 2037
FY 2038
FY 2039
FY 2040
FY 2041
FY 2042
FY 2043
FY 2044
FY 2045
FY 2046
FY 2047
FY 2048
FY 2049
Ending Balance - Operating Reserve
Minimum Operating (120 days of O&M)
Minimum Operating and Capital (1-year of Pay-go)


Debt Service Coverage Ratio
DSC Ratio
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
FY 2025
FY 2026
FY 2027
FY 2028
FY 2029
FY 2030
FY 2031
FY 2032
FY 2033
FY 2034
FY 2035
FY 2036
FY 2037
FY 2038
FY 2039
FY 2040
FY 2041
FY 2042
FY 2043
FY 2044
FY 2045
FY 2046
FY 2047
FY 2048
FY 2049
Debt Service Coverage Ratio
Required Absolute Floor Debt Service Covereage Ratio (1.20)
Median for AA Fitch-Rated Utilities (2.4)
Median for AA S&P Global-Rated Utilities (2.3)


Wastewater Financial Plan
Millions
$300
$250
$200
$150
$100
$50
$0
($50)
FY 2025
FY 2026
FY 2027
FY 2028
FY 2029
FY 2030
FY 2031
FY 2032
FY 2033
FY 2034
FY 2035
FY 2036
FY 2037
FY 2038
FY 2039
FY 2040
FY 2041
FY 2042
FY 2043
FY 2044
FY 2045
FY 2046
FY 2047
FY 2048
FY 2049
O&M Expenses
Debt Service
Cash Funded Capital
Revenue to/from Reserves
Current Revenue
Proposed Revenue
Capital Financing Plan
Millions
$180
$160
$140
$120
$100
$80
$60
$40
$20
$0
FY 2025
FY 2026
FY 2027
FY 2028
FY 2029
FY 2030
FY 2031
FY 2032
FY 2033
FY 2034
FY 2035
FY 2036
FY 2037
FY 2038
FY 2039
FY 2040
FY 2041
FY 2042
FY 2043
FY 2044
FY 2045
FY 2046
FY 2047
FY 2048
FY 2049
Cash Funded Capital
Debt Funded


Days of Cash on Hand
Days
3000
2500
2000
1500
1000
500
0
FY 2025
FY 2026
FY 2027
FY 2028
FY 2029
FY 2030
FY 2031
FY 2032
FY 2033
FY 2034
FY 2035
FY 2036
FY 2037
FY 2038
FY 2039
FY 2040
FY 2041
FY 2042
FY 2043
FY 2044
FY 2045
FY 2046
FY 2047
FY 2048
FY 2049
Days of Cash on Hand
Median for AA Fitch-Rated Utilities (621 days)
Median for AA S&P Global-Rated Utilities (584 days)
Annual Wastewater Bill as Percentage of Lowest Quintile Income
4.5%
4.0%
3.5%
3.0%
2.5%
2.0%
1.5%
1.0%
0.5%
0.0%
FY 2025
FY 2026
FY 2027
FY 2028
FY 2029
FY 2030
FY 2031
FY 2032
FY 2033
FY 2034
FY 2035
FY 2036
FY 2037
FY 2038
FY 2039
FY 2040
FY 2041
FY 2042
FY 2043
FY 2044
FY 2045
FY 2046
FY 2047
FY 2048
FY 2049
Annual Bill as % of LQI
LQI Threshold of Affordability

City of SACRAMENTO
Department of Utilities

MEMORANDUM

DATE: January 10, 2025

TO: Farishta Ahrary, City Auditor

FROM: Pravani Vandeyar, Director Department of Utilities

CC: Yvette Rincon, Assistant Director

SUBJECT: Department of Utilities Response to Auditor's Water & Wastewater Funds Review

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This memo serves as the Department of Utilities (DOU) response to the Auditor's Water & Wastewater Funds Review.

We want to thank the Auditor and their team for their diligent work on this review. DOU agrees with the findings and conclusions in this report.