

## **Jackson's Water System - Financial Management Plan January 27, 2022**

This Financial Management Plan (the "Plan") for the City of Jackson Mississippi's ("the City") Water System ("the System") has been developed in accordance with paragraph 6.p. of the Interim Stipulated Order ("the Order") entered on November 29, 2022, in case 3:22-cv-00686-HTW-LGI, the United States of America v. the City of Jackson, Mississippi. The Order appoints an Interim Third-Party Manager (ITPM) of the Water System and Water/Sewer Business Administration Division of the City of Jackson to stabilize the System and build confidence in the System's ability to supply reliable and safe drinking water to customers.

The Order requires the Plan to include short-term, mid-term, and long-term funding needs; identify possible sources for those needs; opportunities for debt-restructuring; suggested rate structure changes, including the mechanism for assessing customers for water and sewage uses; and alternative governance options.

### **Summary**

The Plan has been prepared by the ITPM, in consultation with PFM Financial Advisors, LLC ("PFM"), one of the largest financial advisory firms in the nation, and Stantec Consulting Services Inc., with engineering and rate consulting expertise in the water and sewer industry. The analyses presented herein include projected revenue and revenue requirements for fiscal year 2023 through fiscal year 2042 (the "Planning Period"). Specifically, the Financial Management Plan addresses the following elements:

- Assesses the financial capability of the Water and Sewer Systems (together, the "Combined Systems") to meet current and future anticipated financial obligations,
- Evaluates various funding strategies, including rate structure and rate changes needed to meet financial objectives,
- Develops a financial plan through fiscal year 2042 sufficient to fund the Combined System's operations and capital financing needs, and
- Establishes minimum financial goals for the System to provide for future financial stability.

The Plan is preliminary and reflects early estimates of operating expenses, revenues, capital needs, and debt restructuring alternatives. The Plan was developed based upon the information available to the ITPM at the time of the report.

### **Background**

The System failed in the summer of 2022 due to unanticipated treatment challenges created by severe flooding. A Federal disaster was declared on August 30, 2022, as water pressures and water quality had been impacted across the City and access to safe, reliable drinking water was disrupted for the 150,000 people that live and work in Jackson.

The City, like many older core municipalities, has experienced a loss in population over the past decades, leaving a smaller number of customers to pay to maintain an oversized and aging water system. The loss

of customers does not reduce the costs of operating and maintaining a drinking water system, as those costs are largely fixed and are only incrementally impacted by reduced consumption. Plant sizes remain unchanged, requiring the same staffing. The size of the distribution system and related storage facilities do not change with population loss. The only savings of a reduced population is found in the incremental reduction in chemicals and power used to treat and distribute the water, a very small percentage of the cost of providing reliable and safe drinking water to a city of 150,000 spread over more than 100 square miles.

Compounding the rising operating and maintenance costs per resident, the System is stressed with aging infrastructure and escalating costs of repair and replacement. As stated in the Moody's Investors Service ("Moody's") rating report dated October 24, 2022, *"The System has struggled for years to effectively manage and resolve its infrastructure challenges, which is a key component of the of the System's failure to improve."* Exacerbating the cost of infrastructure, the City faces major construction cost inflation, including materials and labor. For example, iron and steel prices increased over 40% between December 2020 and December 2022 (PPI: Iron and Steel). The Consumer Price Index has increased by 14% over the same time period (CPI: U.S. Cities) and inflationary figures are significantly higher than in previous years adding cost pressures to the City's ratepayers in all other aspects of their lives.

The loss of revenue caused by a shrinking population and the escalating costs of infrastructure and maintenance must be made up with increases in water rates. Increased rates could lead to further population loss as citizens with the means could move to adjacent suburban communities with lower taxes and utility costs. The cycle is a slow death spiral that many cities in the United States have faced over the past four decades.

In the City's case, the issue is complicated by its high poverty rate with nearly one-quarter of the population at or below the Federal poverty level. over (26.1% per U.S. Census Bureau). Unable to raise rates without significant impact to those at or below the poverty level, the City has been unable to generate the needed funds for operations, maintenance, and regular reinvestment, the System has suffered from underinvestment and minimal maintenance. The result is a system that has little to no capacity to overcome any interruption like source water changes, or large or numerous (due to cold weather) pipe breaks. Without adequate revenues, staffing levels cannot be maintained and the remaining staff are overworked.

This Plan has been developed with a focus on getting the System onto a path to sustainable, affordable operation that can reliably provide safe drinking water to all current users of the System. Through the efforts of Mayor Chokwe Lumumba and advocates for the City across all levels of government, business, non-profits, foundations, and community organizations, significant funding has been provided to Jackson to get the water system infrastructure back to a stable and reliable condition. Keeping the System operated and maintained to provide reliable and safe water, will require on-going regular investments funded by the residents of Jackson through a local revenue stream generated by the System's customers.

### **Historical Financial Challenges**

In 1971, the City's water and sewer systems were separated, and, over time, the City established separate funds to account for the different operations of the systems: the Water Fund, the Jackson Disposal System fund (the "Sewer" fund), the Rankin Sewage Disposal System Fund and the Madison

Sewage Disposal System Fund. Following the issuance of the Water & Sewer Revenue Refunding Bonds, Series 1993-A and pursuant to the General Bond Resolution adopted March 11, 1993 (the “General Bond Resolution”), and as amended, the Water System and the Jackson Sewage Disposal System, along with the Water Fund and the Sewer Fund, were combined<sup>1</sup>. As such, holders of bonds issued under the General Bond Resolution are legally entitled to the net revenues of the Combined System Sewer system (“System”) for payment of their bonds. Currently, \$169 million of bonds are outstanding under the General Bond Resolution through FY 2041.

Like most other communities which sought to upgrade their metering technology, the City has experienced persistent challenges with its billing system (i.e., unbilled revenue) and the implementation of its new metering system in 2015. The most recent available data indicates that aging receivables, or uncollected revenues, exceed \$56 million from known customer accounts. A recent review of water accounts as compared with assessor data indicates over 6,500 parcels in the City of Jackson have improvements but no corresponding water accounts. While there may be valid reasons for this discrepancy, the majority are believed to be receiving water services without an account and would not be included in the \$56 million. Due to these challenges, there is uncertainty regarding consumption patterns and, consequently, the ability to collect adequate operating revenues going forward. While the most recently approved rate increase should improve revenues, these rate increases will be limited by the challenges with billing and collections.

The continued strain on finances has eroded the System’s liquidity, creating a need for support from the City’s General Fund and 1% infrastructure tax funds. S&P Global Ratings (“S&P”), in a report, dated September 1, 2022, notes transfers of \$14.5 million from the General Fund from fiscal years 2018 to 2020 and the City’s issuance of an “emergency” general obligation note of \$7 million in fiscal year 2020 to support utility operations.

As a result of these financial challenges, the System has failed to meet several General Bond Resolution requirements in recent fiscal years. The General Bond Resolution, requirements include but are not limited to the following:

- The “Rate Covenant,” (Section 6.01 of the General Bond Resolution) which requires Net Revenues of the System in each fiscal year must be at least the greater of:
  - 120% of the sum of the annual debt service requirement on the bonds in each fiscal year, or
  - 100% of the sum of:
    - The annual debt service requirement on all bonds (including subordinate debt). all indebtedness payable from Net Revenues) in each fiscal year
    - The amounts required to be paid during the fiscal year into any debt service reserve fund and contingent fund., and
    - The amount of all other charges and lines payable out of the revenues during each fiscal year.

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<sup>1</sup> Source: *City of Jackson, Mississippi, Water & Wastewater System, Series 2016 – Appendix B.*

- The “Additional Bonds Test” (Section 3.02 of the General Bond Resolution) to issue additional new money bonds requires a certificate of the City and an Independent Consulting Engineer [or Engineering Firm] that asserts that no Event of Default has occurred and is continuing. A failure to comply with any of the covenants in the General Bond Resolution or any Series Resolution is considered an “Event of Default.”
- The “Debt Service Reserve Account” (Section 6.03 of the General Bond Resolution) or subaccount must be equal to an amount which is the lesser of (1) 10% of the lesser of the par amount or the proceeds of such bond, (2) maximum annual debt service requirement for all outstanding bonds, and (3) 125% of the annual debt service requirement for all outstanding bonds; but not exceeding the maximum amount of Bond proceeds which may be deposited to the Account.
- Establishment & Maintenance of Certain Funds (Section 6.03 of the General Bond Resolution) – The City shall establish and maintain, among other funds and accounts,
  - Operation and Maintenance (O&M) Fund equal to one month (1/12th) of operating expenses;
  - A Bond Fund where it shall deposit on a monthly basis one-sixth (1/6th) of the next interest payment due on all outstanding bonds and one-twelfth (1/12th) of the next principal payment due on all outstanding bonds (together, the “1/6th and 1/12th payments”);
  - A Contingent Fund equal to two months (2/12<sup>th</sup>) of operating expenses.

The current credit ratings on System debt, which are Ba2 Moody’s and BB- by S&P, are non-investment grade and considered “to have speculative elements that are subject to substantial credit risk”<sup>2</sup>. These low credit ratings and the continued failure to meet the existing General Bond Resolution requirements mean that as of the Plan date, the System is unable to access the municipal bond market to support its capital program.

For the credit ratings to improve, the System will need to meet its various General Bond Resolution requirements, demonstrate steady growth of cash and reserve balances, strengthen revenue collections, and improve operations.

### **Financial Tenets**

Several financial tenets are foundational to the Financial Management Plan’s development:

- One-time funding should be used for one-time expenses such as, capital improvement and debt prepayment, until a recurring source of funding can be fully developed
- Rates for services must be equitable and affordable.

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<sup>2</sup> Ratings Scale and Definitions, Moody’s Investors Service

- Estimates for mid-term and long-term revenues and expenditures should be realistic but on the conservative side because of the significant unknowns and uncertainties regarding the future of the System.
- When possible, large capital investments should be supported by the benefiting users over the life of the assets. In other words, the System should strategically use financing to ensure future generations of users pay their fair share of long-life assets.
- Annual reinvestment should be at or above 2% of the plant value. See Appendix A for the calculation for the System included in this Plan.

### **Summary of the Financial Management Plan's Action Items**

The Financial Management Plan (the "Plan") is based upon several imperative actions in the short, medium, and long-term designed to meet the System's needs:

#### *Short-Term*

- Retire all debt using a portion of the \$450 million provided through the Consolidated Appropriations Act, 2023.
- Implement an alternative rate structure effective in FY 2024.
- Establish written financial goals as governing principles establishing (i) minimum days cash on hand (e.g., 90 days) (ii) full funding of capital program, and (iii) establishment of cash fund capital / pay-go target of \$20 million per year to align with medians for A rated utilities (e.g., 1.35x debt service coverage).

#### *Medium-Term*

- Complete implementation of rate structure alternative.
- Stabilize revenue and collections resulting in the System generating net revenues from rates to move towards financial goals established above.
- Adopt a new governance structure for the utility management, with ownership of the assets remaining with the City.
- Fund portions of the capital improvement plan with current revenues, ramping up to the policy target of \$20 million per year by FY 2029.

#### *Long-Term*

- Build to an investment grade credit that is sustainable and affordable for the citizens of Jackson.
- Fund all but the largest capital improvements with cash during the Planning Period. One borrowing of \$100 million, which may be financed in multiple tranches, is projected in the FY 2030 timeframe to construct a new plant or completely rehabilitate the existing facilities.

## **Introduction to Financial Plan Analysis**

The primary issue addressed in the analysis is revenue sufficiency. The results are meant to provide a framework to answer whether (i) existing revenues are sufficient to fund anticipated operating and capital costs and (ii) if not, what level of overall revenue adjustments may be needed.

The Plan also looks to address opportunities to reduce costs, particularly financing costs related to existing debt of the System.

To determine if the current revenues can be expected to generate revenues sufficient to meet the System's future operating and capital costs, the Interim Third-Party Manager through PFM, prepared a financial projection of revenues and expenditures for the System. A comparison of projected revenues and expenditures provides insight into the adequacy of overall revenue levels.

The Plan evaluates the following basic metrics:

- Projection of project revenues under existing rates.
- Projection of operating expenses and capital improvement plan costs.
- Forecast of potential additional needed revenue increases.

The financial performance of the scenarios modeled was evaluated based on the following requirements:

- Grow reserves to reach 90 days of cash by FY 2029.
- Reach targeted minimum debt service coverage of 1.35x by FY 2029
- Provide \$20 million per year of sustainable CIP pay-go annually by FY 2029.
- Support a \$100 million financing (\$30 million per year between FY 2030 and FY 2035) at an assumed rate and term of 3.0% for 40 years. Assumes financing is secured through the Mississippi State Drinking Water Revolving Loan Fund ("DWRLF").

## **Funding Requirements**

Operating expenses consist of all costs that are necessary and appropriate for the operation, maintenance, and administration of the System during each year.

Projections of operating expenses include expenses such as contracts, personal services, supplies, and other services and charges. Projected operation and maintenance expenses for the System increase from \$51.6 million in FY 2024 to more than \$84 million in FY 2042. This is with a relatively optimistic estimate of 3% per year of increase applied to operating expenses. The optimism is based on having a national utility operator contracted to operate and maintain the System. Costs are projected to come down with the efficiencies and upgrades made with a contract operator. The net growth of 3% is inclusive of the potential savings.

Current annual debt service, including principal and interest payments on all existing debt, for the System is approximately \$23 million for FY 2023.

## Capital Funding and Project Program

A significant amount of Federal grant funding has been provided to the City over the past few months. This includes:

- \$150,000,000 for technical assistance and grants under section 1442(b) of the Safe Drinking Water Act (42 U.S.C. 300j-1(b)) with up to 3% of the amounts made available for salaries, expenses, and administration.
- \$450,000,000, to remain available until expended, for capitalization grants under section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j-12). The requirements of section 1452(d) of the Safe Drinking Water Act, for the funds appropriated under this paragraph in this Act, each State shall use 100 percent of the amount of its capitalization grants to provide additional subsidization to eligible recipients in the form of forgiveness of principal, grants, negative interest loans, other loan forgiveness, and through buying, refinancing, or restructuring debt or any combination. (Consolidated Appropriations Act 2023).
- \$2,800,000 through an Environmental Protection Agency (“EPA”) State and Tribal Assistance Grant (“STAG”) included in the Congressional-directed spending portion of the Consolidated Appropriations Act 2023.
- In addition to the funds allocated in the Consolidated Appropriations Act, the System is further supported by \$71 million in American Rescue Plan Act (“ARPA”) funds, \$35M of which the City received in a direct allocation from the COVID-19 relief measure, and an equal amount it received through a matching grant program established by the State of Mississippi<sup>3</sup>. Of the ARPA funding, \$46,896,000 is available for drinking water projects. The balance has been programmed for sewer projects and, accordingly, is not reflected in the Plan. Hinds County has committed a \$12 million ARPA funded project to address pressure challenges in South Jackson. This was added to the \$46.9M for a total of \$58.9M available to JXN Water. ARPA funding recipients must obligate the funds by December 31, 2024, and spend them by December 31, 2026;<sup>4</sup>
- \$20,000,000 through the US Army Corps of Engineers Section 219 (“USCOE 219”) program.
- \$100,000,000 authorized (not yet appropriated) under the Water Resources Development Act (WRDA) through the USCOE 219 program.
- \$4,000,000 through an EPA Community Grant.
- \$13,750,000 anticipated through Building Resilient Infrastructure and Communities (“BRIC”) grant; and
- \$100,000,000 authorized (not yet appropriated) under the Water Resources Development Act (“WRDA”) through the US Army Corps of Engineers Section 219 program; and
- \$14.6 million which is the balance remaining to be obligated in an open DWRLF loan.

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<sup>3</sup> Reported: <https://www.wlbt.com/2023/01/05/800m-federal-funding-secured-shore-up-jacksons-water-system/>

<sup>4</sup> NCSL: <https://www.ncsl.org/fiscal/arpa-state-fiscal-recovery-fund-allocations>

These sources combine for more than \$814 million dollars available to address the System’s infrastructure and other needs. Each of these funding streams comes with restrictions on the permitted uses. Furthermore, not all of these funds are available immediately. The Financial Management Plan incorporates the use of these funds and the permitted uses, as the funds become available.

There are tremendous capital needs to make the System safe, reliable, and sustainable. The Order includes 13 priority projects. These are in addition to other needs already identified during the ARPA process, with the currently open SRF Loan, and with the USCOE 219 funding. Distribution system improvements remain largely undefined pending a modeled analysis of the System, with the exception of the replacement of the 109 miles of small pipes (4 inches and less) throughout the System.

A preliminary program (Appendix B) has been developed to apply the various sources of funding to eligible and priority projects along with revenue from the pay-go generated by the four financial scenarios that are described below. Based on this programming, all known requirements can be met with the existing funding except for a new plant or a fully rehabilitated existing plant. The \$13.75 million BRIC grant will be used to conduct the required study and economic analysis to determine the sustainable solution for the City’s water treatment needs for the next century. A \$211.5 million place holder has been included in the program (\$61.5 million from the \$450 million and a \$150 million DWRLF loan taken over 5 years between FY 2030 and FY 2035) to address the results of this evaluation.

With the pay-go and the \$150 million DWRLF loan added to the Federal funds, the 20-year CIP totals nearly \$1 billion and appears to be adequate to ensure safe and reliable drinking water for everyone in Jackson for decades to come.

**Financial Modeling**

Five scenarios were modeled, including a “Do Nothing” Scenario. The Do Nothing scenario was unable to meet the financial goals and objectives and as such was eliminated from further analysis. The other four scenarios were all solved to achieve the financial goals and objectives contained in this Financial Management Plan. – were modeled as summarized below (Model Outputs are shown in Appendix D). Two of the scenarios use only metered consumption as the basis for rates, as has been the traditional approach in Jackson. Two of the scenarios are based on an alternative rate structure, which would establish water fees as a percentage of assessed property values, subject to a monthly fee cap and include the continued cost of meters, to include a consumptive portion of the rate, should State law require such a rate structure. Scenario C includes the cost of meters for the entire planning period, whereas Scenario D only maintains metering through 2030. Scenarios B, C and D were modeled with the System’s existing debt fully retired as soon as practical, which is discussed in more detail in the “Debt Restructuring Evaluation” section of this Plan.

Scenario	Rate Basis	Consumptive Portion of Rate: Meters Required?	Existing Debt Paid Off
A	Consumption	Yes	No
B	Consumption	Yes	Yes
C	Property Attribute	Yes	Yes
D	Property Attribute	Yes – only through 2030	Yes

None of the four scenarios could meet the financial goals and objectives without addition revenue increases during the planning period. The required revenue increases were modeled to maintain the “days cash on hand” as close to 90 days throughout the planning period. There are infinite potential ways to increase revenue over the planning period – based on amount of the increase the timing of such increases. The amounts and timing used in these scenarios is reported in the table below.

Scenario	Total*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
A	172%	50%		15%		10%		6%		3%	
B	123%	25%		10%		8%		6%		6%	
C	88%			10%		15%		6%		6%	
D	86%			10%		10%		12%			

Scenario	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
A	4%		6%		6%		6%		6%	
B	6%		6%		6%		6%		6%	
C	6%		6%		6%		6%		6%	
D			15%		6%		6%		6%	

\* Total is the cumulative rate increase over the 20-year planning period accounting for compounding.

### Overview of Existing Debt

Currently, the System has two main types of debt outstanding. This includes:

- Water and Sewer Revenue bonds, issued under the General Bond Resolution adopted March 11, 1993 (“GBR debt”). The GBR debt is secured by a pledge of net revenues of the Combined System. This debt was issued in the capital markets, with the most recent bond issuance in 2016. As of December 31, 2022, there was \$169 million of GBR debt outstanding. It is important to note that 95% of the GBR debt can be prepaid at any time, with no penalty. This is because the System has reached the optional call dates on the bonds and has been unable to refinance because the System has not been and is not currently in compliance with its General Bond Resolution.

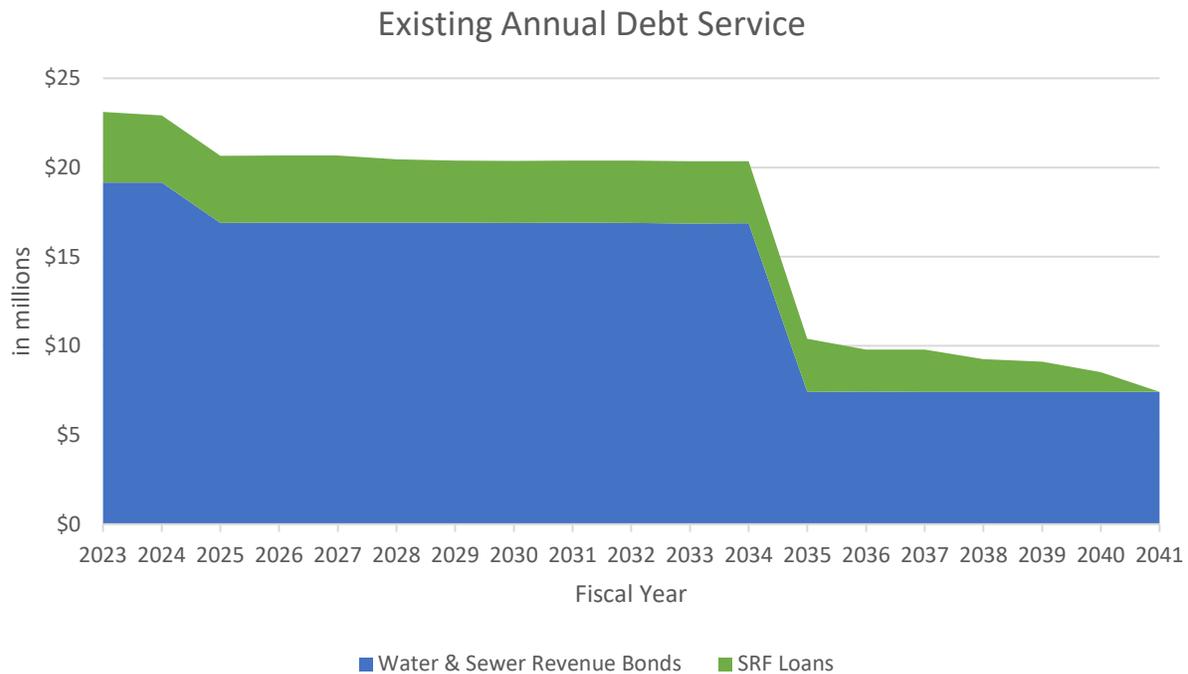
Series	Original Issue Size	Delivery Date	Final Maturity	Outstanding Par*	Next Call Date
2011A	\$46,720,000	8/18/11	9/1/34	\$28,300,000	Anytime
2011B	2,565,000	8/18/11	9/1/34	1,710,000	N/A
2012A	63,045,000	8/29/12	9/1/34	57,145,000	Anytime
2013	89,990,000	6/27/13	12/1/40	76,925,000	12/1/2023
2016	17,135,000	8/30/16	9/1/24	4,815,000	N/A
<b>Totals</b>	<b>\$238,635,000</b>			<b>\$168,895,000</b>	

\*Outstanding as of December 31, 2022

- DWRLF and Clean Water Revolving Loan Fund (“CWRLF”) loans. This debt was not issued under the General Bond Resolution, rather, it is paid from the City’s sales tax rebate payments before they are distributed to the City. The System then reimburses the City’s General Fund for that sales tax reduction. As of December 31, 2022, there was \$114.5 million of this type of debt outstanding. For FY 2023, debt service on these loans totals approximately \$ 2.3 million.

As of April 1, 2023	
<b>Clean Water</b>	<b>Principal Outstanding</b>
DEQ Loan No. 280738-01-1	628,723.99
SRF-C280838-02-1	4,155,135.78
SRF-C280886-03-2	114,103.46
SRF-C280886-02	7,783,837.59
DEQ SRF-C280886-04	6,696,667.97
DEQ WPE-C280028-01	203,808.69
DEQ WPE-C280028-02	195,901.69
MDEQ SRF C280838-04-1 (Savanna)	30,518,412.00
MDEQ SRF C280738	31,683,000.00
<b>Total</b>	<b>81,979,591.17</b>
<b>Drinking Water</b>	<b>Principal Outstanding</b>
Refi - Loan 1 & 2	15,451,894.69
Loan 3 Drawn Amount (per call on 1/25)	17,000,000.00
<b>Total</b>	<b>32,451,894.69</b>
<b>Grand Total</b>	<b>114,431,485.86</b>

For FY 2023, debt service on the Combined System’s debt totals approximately \$23.1 million (see graph below). This is equivalent to approximately 47% of unaudited fiscal year 2021 operating revenues of the Combined System. For comparison purposes, for water and sewer utilities rated in the “A” category by Moody’s, the median percent of debt service to operating revenues was 23% in FY 2022<sup>5</sup>. The Combined System’s aggregate debt service to final maturity in FY 2041 is approximately \$315 million, of which \$210 million will be paid over the next 10 years (including FY 2023).



<sup>5</sup> Source: Moody’s Financial Ratio Analysis database as of January 11, 2023.

## Debt Restructuring Evaluation

As described under “Historical Financial Challenges,” the System has not complied with all of the covenants under the General Bond Resolution for several years, particularly its Rate Covenant and the requirement to fund an O&M Fund, Bond Fund and Contingent Fund. As such, it appears that an Event of Default has occurred and is continuing. As a result, without a waiver, the System appears to be legally prohibited from refinancing its debt through the issuance of bonds under the existing General Bond Resolution.

Options to manage the System’s debt include:

- **Maintain the current debt portfolio.** When the financial condition of the System improves and the System comes into compliance with all terms of the General Bonds Resolution and meets the requirements to sell additional bonds, re-evaluate a refinancing of the debt. If the System is able to once again secure investment grade ratings, any refinancing is more likely to result in debt service savings (subject to market conditions). Depending on the implementation of a rate structure and/or rate increases (and possibly the successful installment of new meters), this option may take a while to come to fruition and, thus, the City’s opportunity for debt service savings could be greatly diminished.
- Refinance the water and sewer bonds through Mississippi’s SRF loan program in order to 1) secure a lower cost of funds and 2) potentially, restructure the debt by deferring payments due. This may be feasible, provided the original projects funded with the bond proceeds were eligible for the program(s) and there is sufficient allocation awarded for this purpose. Also, a critical component of this option is the security offered to the SRF for repayment of the debt. Preferably, the Combined System debt will be repaid from net revenues of the Combined System and the debt would not need to be secured by City’s sales tax rebate payments. Because the Combined System is currently legally prohibited from refinancing debt through the existing General Bond Resolution, this would require full repayment of all outstanding water and sewer revenue bonds and the establishment of a new bond covenants that are acceptable to both the System and the Mississippi Development Bank.
- The State’s maximum interest rate for a 40-year loan under its Drinking Water SRF program was 1.95% and 1.8% for a 30-year loan under its Clean Water SRF program according to the State’s respective fiscal year 2022 Intended Use available funds (i.e., a portion of the \$450 million under Section 1452 of the Safe Drinking Water Act, as described below) to pay-off all the outstanding debt. This is the recommended option under this Plan. This option would create significant debt service savings, which could be reinvested in the Combined System (among other benefits, summarized below). The table that follows summarizes the estimated cost and savings from paying off all outstanding debt. These estimates assume the debt is repaid as of March 1, 2023.

	Cost of Full Pay-Off	Debt Service Savings (FY24)
Water & Sewer Revenue Bonds	\$175.5 million	\$21.3 million
SRF Loans	\$114.5 million	\$2.1 million
<b>Total</b>	<b>\$190 million</b>	<b>\$23.4 million</b>

The benefits of paying off the outstanding debt include:

- Creates significant cash flow savings. The savings would be immediate, with an estimated \$23 million of savings in FY 2024. The elimination of the debt burden and related savings would more quickly re-establish the financial solvency and creditworthiness of the System.
- Allows the System to fund a portion of its future capital improvements with pay-go funding. As noted previously, this Financial Management Plan targets the use of \$20 million per year in Pay-go funding by FY 2029. Absent grant funding, pay-go funding is the lowest cost method of funding capital improvements because no interest costs are incurred.
- Assuming all water and sewer bonds are paid off, allows the System to close the existing General Bond Resolution. This would cure the covenant breaches that are currently present. This would also allow the System to establish a new General Bond Resolution to govern the issuance of future debt. Such new resolution could modernize the covenants that currently date back to 1993. A new resolution would also give the System flexibility to make changes to the organizational and operational structure, if desired.
- If all of the SRF loans are paid off, the City’s sales tax rebate payments would not be used to pay the Combined System’s debt. This would alleviate a current liability for the City and be viewed favorably in the context of the City’s existing credit ratings (e.g., its general obligation bond ratings).
- The System, with cooperation of EPA and facilitation through the DWRLF, could use \$290 million of the \$450,000,000 under section 1452 of the Safe Drinking Water Act to pay off the existing debt. This would require the System to refinance the existing debt with new debt. With the new debt structured with 100% principal forgiveness and 0% interest, this would have the practical effect of paying off the entire existing debt.

### **Metering Water Consumption**

The City has a unique and challenged history with metering water for billing purposes. The City entered into a contract with Siemens in 2015 to replace their existing meters with advanced metering infrastructure (“AMI”) and integrate the AMI with a completely new billing system. That contract failed to result in an operable metering and billing system and the City, and its attorneys successfully sued Siemens and recovered two-thirds of the \$90 million spent on the contract.

As a result of the failed contract and the delays in getting a replacement metering and billing system installed, thousands of customers went months (some even years) without a functioning meter and without a bill for services. Bills that were produced were often in question as the Siemens meters were subject to any number of failures and issues.

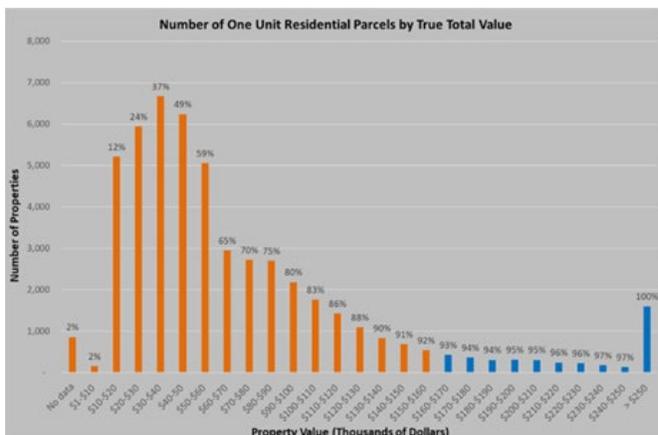
A new AMI metering contract was awarded in 2021 and meters are being installed in Jackson in accordance with the contract. The contract has been plagued with challenges as well and is behind schedule. While there was no upfront cost to the City under the terms of the current contract, the City is obligated to pay on-going fees for each meter read generated by the new meters. Once fully installed this recurring annual cost will be \$5.1 million per year (approximately 10% of the total annual Operations and Maintenance budget for the System) for the full planning period. An existing contract for IT integration adds \$1.2 million per year. Additional recurring costs are incurred with a metering system to cover the cost of the staff administering the billing system, the maintenance and licensing requirements and other related costs. Those costs are currently about \$3.5 million per year. **The total cost of metering alone will be around \$10 million per year once all the meters are fully installed.**

Many customers have lost confidence in the metering and billing system after nearly 8 years of meter challenges. In light of this unique challenge in Jackson, and the high recurring costs of Jackson’s metering system, an alternative rate was explored (see Appendix C). Under this rate structure, water billing is based upon a property attribute. Using publicly available data from the Hinds County Assessor’s office, a revenue model was developed based on assessed property value and another based on size of the building. Applying a standard water billing rate to a property attribute, creates an equitable basis for recovery of the cost of water costs for each customer classification. Under this proposal, each customer class’s total monthly bill is capped at an appropriate level for the specific uses within the customer class. A table of the proposed classification caps follows:

Customer Classification	Monthly Cap
Single Family Residential	\$150
All Other Properties	\$600

Using true total property value as the basis of the pricing structure, the median single-family residential monthly service fee would be approximately \$50, and the most frequently occurring bill would be between \$30-\$40. Single-family parcels with true total value at \$160,000 or above would be capped at \$150 per month. 92% of single-family customer monthly bills would naturally fall below the cap, and 75% of single-family customer bills would be less than \$90 per month. The table on the right shows true total values in increments of \$10,000 and the respective monthly fee associated with the single-family property values.

Total Fee By True Total Value	
True Total Value	Fee
No Data	\$150.00
\$10,000	\$9.84
\$20,000	\$19.69
\$30,000	\$29.53
\$40,000	\$39.37
\$50,000	\$49.22
\$60,000	\$59.06
\$70,000	\$68.91
\$80,000	\$78.75
\$90,000	\$88.59
\$100,000	\$98.44
\$110,000	\$108.28
\$120,000	\$118.12
\$130,000	\$127.97
\$140,000	\$137.81
\$150,000	\$147.65
\$160,000	\$150.00
\$170,000	\$150.00
\$180,000	\$150.00
\$190,000	\$150.00
\$200,000	\$150.00
\$210,000	\$150.00
\$220,000	\$150.00
\$230,000	\$150.00
\$240,000	\$150.00
\$250,000	\$150.00
> \$250,000	\$150.00



Water utilities are extremely capital-intensive industries. Costs related to the infrastructure are largely fixed once a system has been built out to serve a community. Plant size dictates staffing and maintenance requirements. The same holds true for the distribution system. The amount of water consumed has little impact on the cost to run the system beyond the incremental cost of chemicals to treat the water and energy used to pump it.

The value of water goes far beyond the water consumed by each citizen. One of the most critical needs for a community's water system is fire protection. The value of water is directly proportional to the value of the properties protected by the availability of water at each hydrant in the system. Another underappreciated value of water is the impact a reliable water system has on attracting businesses that provided needed services throughout the community as well as jobs for residents.

Conservation is a concern in a non-metered system. While there are few examples of conservation successfully driven by price (the price is just too low to price conservation behaviors), the City has yet another unique issue that promises significant conservation through a more robust and sustainable revenue model. The City is losing an estimated 30 million gallons each day in unaccounted for water. Due to the metering problems, the exact consumption by each connection is not known, but the EPA estimates the average per capita water consumption at 83 gallons per day per person, a number that continues to fall due to low flow fixtures and appliances and a generally higher awareness of water issues by the public. Utilities across the nation are delivering less water today to larger populations than they did 40 years ago. To estimate the real demand and consumptive need for water in the City, a value of 100 gallons per day per person was applied to the estimated 150,000 users. The total demand based on this average is approximately 15 million gallons per day. However, Plant output totals 45 – 50 million gallons a day which means the system is losing more than 30 million gallons each day. Continual reinvestment in the System, funded by a robust and sustainable revenue model, will reduce the amount of lost water, and easily result in more water conserved than any conservation efforts at the customer level motivated by consumptive billing.

### **Operation, Maintenance, and Reinvestment in the Jackson Sewer System**

This Financial Management Plan is focused on the drinking water system as the Order is limited to obligations under the Safe Drinking Water Act. Water and Sewer services are billed on the same bill as generated by the Water and Sewer Billing Administration. Previous debt issuance was blended, and this analysis does not draw a distinction between water and sewer revenues leading to the pay-go opportunities identified in this Financial Management Plan. Adding sewer responsibilities and authority to the Order would allow a holistic approach to the water issues facing Jackson. The sewer system has severely deteriorated with frequent overflows impacting neighborhoods throughout the service area. The system is currently under an enforcement action that has been reopened to renegotiate terms.

Combining water and sewer in the Order would allow for shared administrative costs, shared equipment, staff, and contractors, and the development of a cross-trained workforce. Economies of scale would be realized across the board. The other significant benefit would be the re-direction of non-

drinking water restricted funds (including pay-go) to fund needed sewer improvements while the drinking water restricted Federal funds are being expended.

### **Future Governance Models**

The Order includes future governance as an element to be addressed in the Plan. There are many potential options ranging from putting the System back under traditional City government as part of the Public Works Department to full privatization. The concept of privatization does not appear feasible or desirable for the City. The City would be challenged to find any entity willing to compensate them for the value of the assets based on their current condition, history of failures, and liability for future failures. Preliminary discussions with other investor-owned water utility companies clearly demonstrated the lack of interest in purchasing or even operating the System in the near term. With the significant investments that the Federal, State and ratepayers (pay-go) partnership will make over the next 20-years, the System will become more attractive to investor-owned utilities in the future. After this incredible public investment, privatization would essentially equate to a \$1B gratuity to any private purchaser (unless these funds were returned to the City as part of any sale).

The influx of Federal assistance could make regionalization more attractive for other communities in Central Mississippi. Where there was little interest in a regional approach when the System was in a state of disrepair with significant investment needs, the new Federal dollars have changed that dynamic. Applying the Federal dollars regionally would benefit the new entity and the members beyond Jackson that currently have no access to the more than \$800M provided to Jackson by the Federal government over the past several months. As a regional authority, much of those dollars could be invested in the surrounding communities further expanding and improving services in the region suburbs and likely driving further migration out of Jackson, stranding the legacy investments made in the Capital City. While a regional authority may once have been a viable future governance option, the significant Federal funding dedicated to Jackson seems to have taken that option off the table.

Another option would be the creation of a local utility authority for the Jackson System that includes the customers in Hinds County and Byram. This is a viable option under current state law but may not achieve the long-term goals of a sustainable and reliable water system with an entity bound by procurement and human resource rules and regulations applicable to political subdivisions.

Putting the System back under the traditional local government as a city department is also infinitely more challenging with the new Federal funding. The City would have the same procurement and human resource challenges cited in the local authority option and there is the added risk of each change in administration could bring a change in priorities and delay or impeded the spending of the significant Federal funding.

A final option considered in this Plan, while unusual and perhaps untested, is the creation of a corporate non-profit to operate the Jackson Water System. Such an entity would contract with the City to operate all facets of the Water and Sewer businesses serving the customers of the System. The new entity would assume the duties of the ITPM as defined in the Order with the addition of the Sewer System and the Stormwater System including collecting all revenues. The City would retain full ownership of all assets. As a non-profit, all excess revenues (if there were any) would be reinvested in the System. The articles of incorporation and by-laws would be tightly crafted to ensure the non-profit's purpose was entirely focused on providing safe, reliable, and affordable water to all customers on the System. The Board of

Director seats would need to be clearly identified and tied to specific constituencies. As an example, a seat could be filled by a nominee put forward by local government, by the Jackson community organizations, by the chamber of commerce, by the medical sector in Jackson, by the local restaurant and hotel association, etc., and one or more from water systems experts (perhaps even national experts). Additionally, EPA and MSDH could have ex officio seats, at least for a period of years (non-voting members as they would be regulating the new non-profit entity).

Creation of any future governance to operate the Jackson water, sewer, and stormwater systems should occur with judicial oversight. In the case of creation of a new non-profit, articles of incorporation, by-laws, etc., should be developed by the Parties as an amendment to the Order subject to the review and approval of the Court. The Court should appoint or at least concur in the initial proposed Board of Directors. Additionally, judicial oversight should remain in place until at least all the Federal funding has been obligated per this Plan, estimated to be no earlier than the end of Fiscal Year 2028. A determination as to further need for judicial oversight can be made at that time.

### **Recommendations**

Based upon this Plan the following actions will be undertaken by the ITPM after further consultation with the Community (there was not adequate time in the Order to conduct significant community engagement prior to developing this plan):

- Implement the financial model Scenario D.
  - Use a portion of the \$450,000,000 provided under section 1452 of the Safe Drinking Water Act to retire all debt as soon as practicable (\$23 million in annual debt service savings)
  - Implement a property attribute-based rate for water and sewer services (Generates \$70 million in annual revenues)
  - Eliminate metering for water consumption (\$10 million annual savings) when possible (no earlier than 2030 in this plan) as permitted by State Law
- Continue to refine the concept for future governance.
  - Work with the community and the Parties to develop a fully detailed transition plan
  - Propose an appropriate amendment to the Order to implement the resulting concept no later than September 30, 2023.
- Add the sewer and stormwater systems to the Stipulated Order (a one-water solution)
  - Gains savings for sewer with shared resources
  - Prioritizes investments in sewer with resources not restricted to drinking water
  - The three systems are inexorably connected and should be managed as one
- Continuously refine and update this Financial Management Plan as new information becomes available

## APPENDIX A - Calculation of Recurring Re-investment Needs Based on Plant Value

From 2020 Annual Comprehensive Financial Report

Property, plant, and equipment at cost

• Land	\$1,387,999
• Buildings	3,256,474
• Water plant, distribution system and equipment	<u>734,404,640</u>
	\$739,049,113

Minimum goal is 2% reinvestment per year = \$15,000,000

Financial Plan target = \$20,000,000 per year or 2.7%

## Appendix B – Investment Plan

**JXN Water Investment Plan**

**2023 - 2042**

Millions of Dollars

	Priority											
Source	Project No.	Description	Total	2023	2024	2025	2026	2027	2028	2029		
1442b	2	Winterization	\$ 1.0	\$ 1.0								
1442b	3	Corrosion Control	\$ 1.0	\$ 1.0								
1442b		ITPM Professional Budget	\$ 6.0	\$ 3.0	\$ 3.0							
1442b	5.a.ii	Valve and Hydrant Assessment	\$ 5.6	\$ 4.0	\$ 1.6							
1442b	5.a.vii	Service Line Inventory	\$ 0.1	\$ 0.1								
1442b	5.a.iv	Distribution System Leaks - Find and Fix	\$ 39.0	\$ 5.0	\$ 25.0	\$ 9.0						
1442b	6	System Stabilization and Sustainability Plan	\$ 0.5	\$ 0.5								
1442b	7	SCADA Improvements	\$ 4.5	\$ 1.0	\$ 3.5							
1442b	11	Plant Treatment Processes	\$ 26.0	\$ 5.0	\$ 8.0	\$ 8.0	\$ 5.0					
1442b	12	Sediment Assessment and Removal	\$ 2.0	\$ 2.0								
1442b	13	Resilient Power Plan	\$ 4.3	\$ 0.3	\$ 2.0	\$ 2.0						
			\$ 90.0									
1442b	1	O&M Contract	\$ 60.0	\$ 12.0	\$ 12.0	\$ 12.0	\$ 12.0	\$ 12.0				
		<b>TOTAL 1442b</b>	<b>\$ 150.0</b>									
ARPA	8	OBC/JHF Chemical Feed Improvements	\$ 2.9	\$ 2.9								
ARPA	11.g	JHF Filters	\$ 9.8		\$ 4.0	\$ 5.8						
ARPA	11.a.g	OBC Filters/Conventional and Membrane	\$ 9.6		\$ 9.6							
ARPA	11.i,j	JHF Pumps	\$ 5.5		\$ 5.5							
ARPA	11.b.	OBC Raw Water Pumps	\$ 3.3		\$ 3.3							
Active ARPA		48 Inch Transmission Line	\$ 7.8	\$ 7.8								
Active ARPA	11.g	OBC Filter Mods	\$ 8.0	\$ 8.0								
ARPA (Hinds Co)	5.a.v	Distribution System Optimization - South Jackson	\$ 12.0	\$ 3.0	\$ 9.0							
		<b>TOTAL ARPA</b>	<b>\$ 58.9</b>									
BRIC		New Plant Feasibility Study and Planning	\$ 13.8		\$ 4.0	\$ 4.0	\$ 4.0	\$ 1.8				
Comm Grant	4	Alternative Water Response Plan	\$ 0.5	\$ 0.5								
Comm Grant	9	Chlorine System Replacement	\$ 2.5	\$ 2.5								
Comm Grant		WSBA Facility Replacement	\$ 1.0	\$ 1.0								
		<b>TOTAL COMMUNITY GRANT</b>	<b>\$ 4.0</b>									
NEW SRF		Implement BRIC Study Findings (New/Rehab)	\$ 150.0									
Pay-Go		Distribution System Repairs	\$ 140.0									\$ 10.0
Pay-Go		Plant Treatment Processes	\$ 70.0									\$ 5.0
Pay-Go		Small Pipe Replacement	\$ 112.0									\$ 8.0
		<b>TOTAL PAY-GO</b>	<b>\$ 322.0</b>									
Active SRF Loan 3		Membrane Train	\$ 0.3	\$ 0.3								
Active SRF Loan 3		Membrane Building	\$ 1.5	\$ 1.5								
Active SRF Loan 3		OBC Winterization	\$ 4.1	\$ 4.1								
Active SRF Loan 3		JHF Corrosion Control	\$ 9.6	\$ 5.0	\$ 4.6							
Active SRF Loan 3		JHF Filters 24/26	\$ 1.8	\$ 1.8								
		<b>TOTAL ACTIVE SRF LOAN 3</b>	<b>\$ 17.3</b>									
SRF Omni	5.a.v	Distribution System Optimization	\$ 33.5	\$ 4.5	\$ 14.0	\$ 10.0	\$ 5.0					
SRF Omni	5.a.i	Distribution System Assessment/Modeling	\$ 6.0	\$ 4.0	\$ 2.0							
SRF Omni	5.a.vii	Corrosion Control Renewal	\$ 4.0		\$ 4.0							
SRF Omni	10	Intake Structure Repair	\$ 5.0	\$ 2.0	\$ 3.0							
SRF Omni		Implement BRIC Study Findings (New/Rehab)	\$ 61.5					\$ 1.5	\$ 30.0	\$ 30.0		
SRF Omni		Small Pipe Replacement	\$ 50.0	\$ 10.0	\$ 10.0	\$ 10.0	\$ 10.0	\$ 10.0				
SRF Omni		Retire Private Debt	\$ 175.5	\$ 175.5								
SRF Omni		Retire SRF	\$ 114.5	\$ 114.5								
		<b>TOTAL SRF OMNIBUS</b>	<b>\$ 450.0</b>									
SRF Omni (CD)	11.g	General Filter Repairs at JHF	\$ 2.8		\$ 2.8							
USCOE 219/CR		Small Pipe Replacement	\$ 20.0	\$ 20.0								
USCOE 219/WRDA		Small Pipe Replacement	\$ 30.0		\$ 30.0							
USCOE 219/WRDA		Sewer System Work	\$ 70.0	\$ 5.0	\$ 20.0	\$ 20.0	\$ 20.0	\$ 5.0				
				\$ 408.8	\$ 180.9	\$ 80.8	\$ 56.0	\$ 30.3	\$ 30.0	\$ 53.0		
		<b>TOTAL CIP SPEND</b>	<b>\$ 812.8</b>	\$ (12.2)	\$ 164.9	\$ 72.8	\$ 37.0	\$ 18.3	\$ 30.0	\$ 53.0		
		<b>TOTAL O&amp;M</b>	<b>\$ 60.0</b>									
		<b>TOTAL DEBT RETIREMENT</b>	<b>\$ 290.0</b>									
		<b>TOTAL FEDERAL AND STATE (ARPA) SPEND</b>	<b>\$ 1,162.8</b>									
		<b>TOTAL JXN WATER PAY-GO</b>	<b>\$ 322.0</b>									
		<b>TOTAL INVESTMENT 2023-2042</b>	<b>\$ 1,484.8</b>									

**JXN Water Investment Plan**

**2023 - 2042**

Millions of Dollars

		Priority											
Source	Project No.	Description	Total	2030	2031	2032	2033	2034	2035	2036	2037		
1442b	2	Winterization	\$ 1.0										
1442b	3	Corrosion Control	\$ 1.0										
1442b		ITPM Professional Budget	\$ 6.0										
1442b	5.a.ii	Valve and Hydrant Assessment	\$ 5.6										
1442b	5.a.vii	Service Line Inventory	\$ 0.1										
1442b	5.a.iv	Distribution System Leaks - Find and Fix	\$ 39.0										
1442b	6	System Stabilization and Sustainability Plan	\$ 0.5										
1442b	7	SCADA Improvements	\$ 4.5										
1442b	11	Plant Treatment Processes	\$ 26.0										
1442b	12	Sediment Assessment and Removal	\$ 2.0										
1442b	13	Resilient Power Plan	\$ 4.3										
			\$ 90.0										
1442b	1	O&M Contract	\$ 60.0										
		<b>TOTAL 1442b</b>	<b>\$ 150.0</b>										
ARPA	8	OBC/JHF Chemical Feed Improvements	\$ 2.9										
ARPA	11.g	JHF Filters	\$ 9.8										
ARPA	11.a.g	OBC Filters/Conventional and Membrane	\$ 9.6										
ARPA	11.i,j	JHF Pumps	\$ 5.5										
ARPA	11.b.	OBC Raw Water Pumps	\$ 3.3										
Active ARPA		48 Inch Transmission Line	\$ 7.8										
Active ARPA	11.g	OBC Filter Mods	\$ 8.0										
ARPA (Hinds Co)	5.a.v	Distribution System Optimization - South Jackson	\$ 12.0										
		<b>TOTAL ARPA</b>	<b>\$ 58.9</b>										
BRIC		New Plant Feasibility Study and Planning	\$ 13.8										
Comm Grant	4	Alternative Water Response Plan	\$ 0.5										
Comm Grant	9	Chlorine System Replacement	\$ 2.5										
Comm Grant		WSBA Facility Replacement	\$ 1.0										
		<b>TOTAL COMMUNITY GRANT</b>	<b>\$ 4.0</b>										
NEW SRF		Implement BRIC Study Findings (New/Rehab)	\$ 150.0	\$ 30.0	\$ 30.0	\$ 30.0	\$ 30.0	\$ 30.0					
Pay-Go		Distribution System Repairs	\$ 140.0	\$ 10.0	\$ 10.0	\$ 10.0	\$ 10.0	\$ 10.0	\$ 10.0	\$ 10.0	\$ 10.0	\$ 10.0	\$ 10.0
Pay-Go		Plant Treatment Processes	\$ 70.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0
Pay-Go		Small Pipe Replacement	\$ 112.0	\$ 8.0	\$ 8.0	\$ 8.0	\$ 8.0	\$ 8.0	\$ 8.0	\$ 8.0	\$ 8.0	\$ 8.0	\$ 8.0
		<b>TOTAL PAY-GO</b>	<b>\$ 322.0</b>										
Active SRF Loan 3		Membrane Train	\$ 0.3										
Active SRF Loan 3		Membrane Building	\$ 1.5										
Active SRF Loan 3		OBC Winterization	\$ 4.1										
Active SRF Loan 3		JHF Corrosion Control	\$ 9.6										
Active SRF Loan 3		JHF Filters 24/26	\$ 1.8										
		<b>TOTAL ACTIVE SRF LOAN 3</b>	<b>\$ 17.3</b>										
SRF Omni	5.a.v	Distribution System Optimization	\$ 33.5										
SRF Omni	5.a.i	Distribution System Assessment/Modeling	\$ 6.0										
SRF Omni	5.a.vii	Corrosion Control Renewal	\$ 4.0										
SRF Omni	10	Intake Structure Repair	\$ 5.0										
SRF Omni		Implement BRIC Study Findings (New/Rehab)	\$ 61.5										
SRF Omni		Small Pipe Replacement	\$ 50.0										
SRF Omni		Retire Private Debt	\$ 175.5										
SRF Omni		Retire SRF	\$ 114.5										
		<b>TOTAL SRF OMNIBUS</b>	<b>\$ 450.0</b>										
SRF Omni (CD)	11.g	General Filter Repairs at JHF	\$ 2.8										
USCOE 219/CR		Small Pipe Replacement	\$ 20.0										
USCOE 219/WRDA		Small Pipe Replacement	\$ 30.0										
USCOE 219/WRDA		Sewer System Work	\$ 70.0										
				\$ 53.0	\$ 53.0	\$ 53.0	\$ 53.0	\$ 53.0	\$ 23.0	\$ 23.0	\$ 23.0	\$ 23.0	\$ 23.0
		<b>TOTAL CIP SPEND</b>	<b>\$ 812.8</b>										
		<b>TOTAL O&amp;M</b>	<b>\$ 60.0</b>										
		<b>TOTAL DEBT RETIREMENT</b>	<b>\$ 290.0</b>										
		<b>TOTAL FEDERAL AND STATE (ARPA) SPEND</b>	<b>\$ 1,162.8</b>										
		<b>TOTAL JXN WATER PAY-GO</b>	<b>\$ 322.0</b>										
		<b>TOTAL INVESTMENT 2023-2042</b>	<b>\$ 1,484.8</b>										

**JXN Water Investment Plan**

**2023 - 2042**

Millions of Dollars

		Priority								
	Source	Project No.	Description	Total	2038	2039	2040	2041	2042	
	1442b	2	Winterization	\$ 1.0						
	1442b	3	Corrosion Control	\$ 1.0						
	1442b		ITPM Professional Budget	\$ 6.0						
	1442b	5.a.ii	Valve and Hydrant Assessment	\$ 5.6						
	1442b	5.a.vii	Service Line Inventory	\$ 0.1						
	1442b	5.a.iv	Distribution System Leaks - Find and Fix	\$ 39.0						
	1442b	6	System Stabilization and Sustainability Plan	\$ 0.5						
	1442b	7	SCADA Improvements	\$ 4.5						
	1442b	11	Plant Treatment Processes	\$ 26.0						
	1442b	12	Sediment Assessment and Removal	\$ 2.0						
	1442b	13	Resilient Power Plan	\$ 4.3						
				\$ 90.0						
	1442b	1	O&M Contract	\$ 60.0						
			<b>TOTAL 1442b</b>	<b>\$ 150.0</b>						
	ARPA	8	OBC/JHF Chemical Feed Improvements	\$ 2.9						
	ARPA	11.g	JHF Filters	\$ 9.8						
	ARPA	11.a.g	OBC Filters/Conventional and Membrane	\$ 9.6						
	ARPA	11.i.j	JHF Pumps	\$ 5.5						
	ARPA	11.b.	OBC Raw Water Pumps	\$ 3.3						
Active	ARPA		48 Inch Transmission Line	\$ 7.8						
Active	ARPA	11.g	OBC Filter Mods	\$ 8.0						
	ARPA (Hinds Co)	5.a.v	Distribution System Optimization - South Jackson	\$ 12.0						
			<b>TOTAL ARPA</b>	<b>\$ 58.9</b>						
	BRIC		New Plant Feasibility Study and Planning	\$ 13.8						
	Comm Grant	4	Alternative Water Response Plan	\$ 0.5						
	Comm Grant	9	Chlorine System Replacement	\$ 2.5						
	Comm Grant		WSBA Facility Replacement	\$ 1.0						
			<b>TOTAL COMMUNITY GRANT</b>	<b>\$ 4.0</b>						
	NEW SRF		Implement BRIC Study Findings (New/Rehab)	\$ 150.0						
	Pay-Go		Distribution System Repairs	\$ 140.0	\$ 10.0	\$ 10.0	\$ 10.0	\$ 10.0	\$ 10.0	
	Pay-Go		Plant Treatment Processes	\$ 70.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0	\$ 5.0	
	Pay-Go		Small Pipe Replacement	\$ 112.0	\$ 8.0	\$ 8.0	\$ 8.0	\$ 8.0	\$ 8.0	
			<b>TOTAL PAY-GO</b>	<b>\$ 322.0</b>						
Active	SRF Loan 3		Membrane Train	\$ 0.3						
Active	SRF Loan 3		Membrane Building	\$ 1.5						
Active	SRF Loan 3		OBC Winterization	\$ 4.1						
Active	SRF Loan 3		JHF Corrosion Control	\$ 9.6						
Active	SRF Loan 3		JHF Filters 24/26	\$ 1.8						
			<b>TOTAL ACTIVE SRF LOAN 3</b>	<b>\$ 17.3</b>						
	SRF Omni	5.a.v	Distribution System Optimization	\$ 33.5						
	SRF Omni	5.a.i	Distribution System Assessment/Modeling	\$ 6.0						
	SRF Omni	5.a.vii	Corrosion Control Renewal	\$ 4.0						
	SRF Omni	10	Intake Structure Repair	\$ 5.0						
	SRF Omni		Implement BRIC Study Findings (New/Rehab)	\$ 61.5						
	SRF Omni		Small Pipe Replacement	\$ 50.0						
	SRF Omni		Retire Private Debt	\$ 175.5						
	SRF Omni		Retire SRF	\$ 114.5						
			<b>TOTAL SRF OMNIBUS</b>	<b>\$ 450.0</b>						
	SRF Omni (CD)	11.g	General Filter Repairs at JHF	\$ 2.8						
	USCOE 219/CR		Small Pipe Replacement	\$ 20.0						
	USCOE 219/WRDA		Small Pipe Replacement	\$ 30.0						
	USCOE 219/WRDA		Sewer System Work	\$ 70.0						
					\$ 23.0	\$ 23.0	\$ 23.0	\$ 23.0	\$ 23.0	
			<b>TOTAL CIP SPEND</b>	<b>\$ 812.8</b>	<b>\$ 23.0</b>					
			<b>TOTAL O&amp;M</b>	<b>\$ 60.0</b>						
			<b>TOTAL DEBT RETIREMENT</b>	<b>\$ 290.0</b>						
			<b>TOTAL FEDERAL AND STATE (ARPA) SPEND</b>	<b>\$ 1,162.8</b>						
			<b>TOTAL JXN WATER PAY-GO</b>	<b>\$ 322.0</b>						
			<b>TOTAL INVESTMENT 2023-2042</b>	<b>\$ 1,484.8</b>						

## APPENDIX C - Rate Analysis

To: Ted Henifin  
Jackson, Mississippi

From: Andrew Burnham  
Tampa, Florida

Project/File: Water Rate/Pricing Structure

Date: January 26, 2023

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## **Reference: Water Rate/Pricing Structure – Preliminary Analysis**

### **Introduction**

The operational, maintenance, and capital financing costs of water and wastewater utilities are often recovered from a system of rates, fees, and charges to customers for services provided. Historically, the City of Jackson (City) has billed customers for these utility services using a fixed monthly service charge billed monthly at the same rate to each account, plus a flat volumetric rate per hundred cubic feet (HCF). While this is a common rate structure in the water resources industry, the City has experienced challenges supporting this methodology and affordability of service is an increasing priority given needed investments in infrastructure that will require greater funding. As such, Stantec has been engaged to evaluate alternative rate structure or pricing methods using property characteristics. This technical memo provides some insights gained from the preliminary results of the initial analysis in terms of potential customer impacts, identifies data requirements/limitations, and lists several areas to be evaluated to support further analysis and development of the pricing methods presented herein.

### **Analysis**

The initial analysis uses property data from the Hinds County Tax Assessor's office as provided by the City and is based upon an annual revenue requirement of \$70 million. The property characteristics from the City's parcel data used for pricing in this initial analysis include:

- True total property value (\$USD)
- Base area (square feet)

The true total value of a property is the sum of the true land value and the true improvement value of a property. The base area is generally described as the square footage of the development on a property. These property characteristics serve as the units for alternative pricing mechanisms for revenue recovery. Using land use codes from the Hinds County Tax Assessor's office, this analysis separates the parcel data into three general customer/property type classifications: single-family residential, multi-family residential, and non-residential. With the requisite data, further analysis could break out the parcels into more customer categories to appropriately distribute costs, specifically for the broad category of non-residential parcels.

As discussed, this analysis does include two notable adjustments. First, a cap or maximum monthly bill for single-family residential customers of \$150 per month was applied. Second, there are several single-family residential parcels with no data entries for true total value or base area, but that have data entries indicating improvements or developments on the property (these are largely comprised of tax exempt parcels). To avoid these parcels being assigned a \$0 fee for lack of data, a minimum charge equal to the \$150 cap was

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implemented for these single family residential parcels. The same cap and minimum process was applied to multi-family and non-residential parcels, but because the multi-family and non-residential parcels are typically valued much higher than single-family parcels and contain much larger base areas than single-family parcels, the cap and minimum were applied at a multiplier of four (4). This means for any non-single-family parcel, the maximum charge is \$600 per month, and the fee assumed for non-single-family parcels with no value or building data is also \$600.

For the purposes of this initial analysis, parcels in the Resource And Production And Extraction 8(000) and Undeveloped Land And Unused Land 9(000) land use categories were excluded from the fee calculation. However, further analysis could and should be performed of the individual properties in these categories to ensure those with developments receiving (or potentially able to receive) utility services are included in the fee calculation. A listing of the specific property use classifications excluded from the initial analysis are included below:

- 8100 – Agriculture
- 8990 – Agricultural use
- 9100 – Undeveloped or unused Land
- 9110 – Vacant land suitable for development
- 9120 – Vacant land not suitable for development
- 9310 – Rivers, streams, and creeks
- 9320 – Lakes
- 9390 – Other water areas
- 9450 – Vacant floors: commercial
- 9500 – Land being developed
- 9510 – Residential being developed
- 9520 – Other land being developed
- 9600 – Cemeteries
- 9900 – Other undeveloped land

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## Initial Results

The initial analysis and preliminary results presented should be viewed with the understanding and expectation that further analysis and adjustments/modifications are forthcoming.

Using true total property value as the basis of the pricing structure, the median single-family residential monthly service fee would be approximately \$50, and the most frequently occurring bill would be between \$30-\$40. Single-family parcels with true total value at \$160,000 or above would be capped at \$150 per month. 92% of single-family customer monthly bills would naturally fall below the cap, and 75% of single-family customer bills would be less than \$90 per month. Table 1 below shows true total values in increments of \$10,000 and the respective monthly fee associated with the single-family property values. Figure 1 shows a histogram of all single-family residential parcels in the City within Hinds County, labelling the cumulative percentile of properties that fall in each property value range. The blue bars in Figure 1 indicate property values that would have service fees capped at \$150 per month.

**Table 1: Monthly Service Fee Based on True Total Value**

Total Fee By True Total Value	
True Total Value	Fee
No Data	\$150.00
\$10,000	\$9.84
\$20,000	\$19.69
\$30,000	\$29.53
\$40,000	\$39.37
\$50,000	\$49.22
\$60,000	\$59.06
\$70,000	\$68.91
\$80,000	\$78.75
\$90,000	\$88.59
\$100,000	\$98.44
\$110,000	\$108.28
\$120,000	\$118.12
\$130,000	\$127.97
\$140,000	\$137.81
\$150,000	\$147.65
\$160,000	\$150.00
\$170,000	\$150.00
\$180,000	\$150.00
\$190,000	\$150.00
\$200,000	\$150.00
\$210,000	\$150.00
\$220,000	\$150.00
\$230,000	\$150.00
\$240,000	\$150.00
\$250,000	\$150.00
> \$250,000	\$150.00

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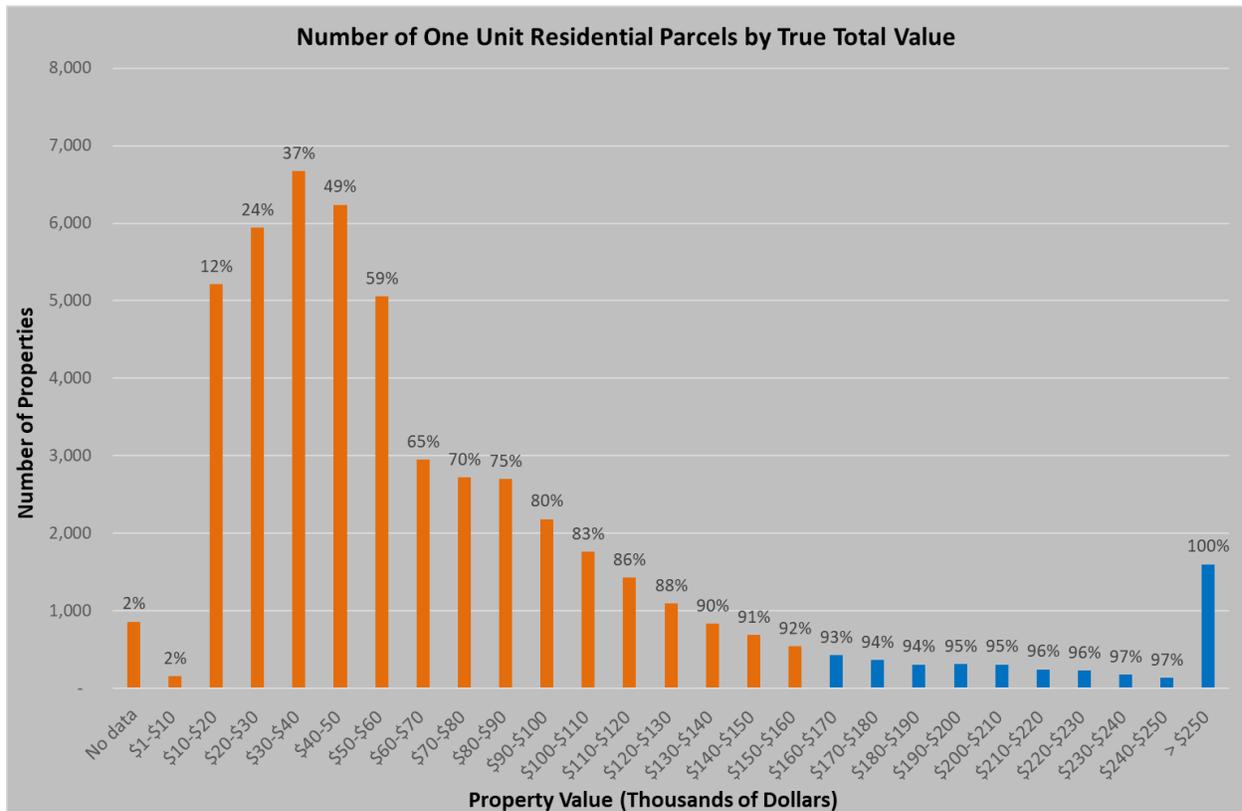


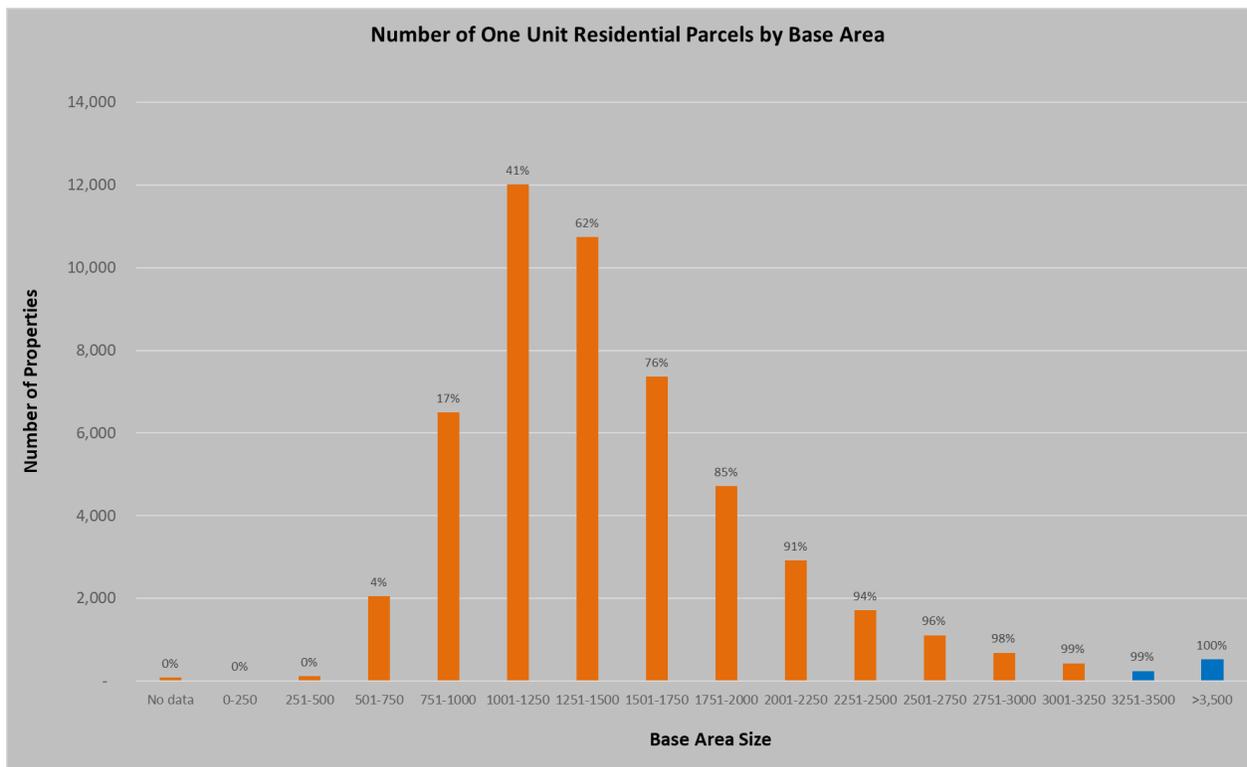
Figure 1: Histogram of Single-Family Parcels by Property Value

Using total base area as the alternative pricing unit, the median single-family residential monthly fee would be approximately \$60, and the most frequently occurring bill would be between \$47-\$60. Single-family parcels with base areas at 3,250 square feet or above would be capped at \$150 per month. 99% of single-family customer monthly bills would naturally fall below the cap, and 75% of single-family customer bills would be less than \$70 per month. Table 2 shows base areas in increments of 250 square feet and the respective fee associated with the single-family base areas. Figure 2 shows a histogram of all single-family residential parcels in the City within Hinds County, labelling the cumulative percentile of properties that fall in each base area range. The blue bars in Figure 2 indicate base areas that would have service fees capped at \$150 per month.

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**Table 2: Monthly Service Fee Based on Base Area**

Total Fee Based on Base Area	
Total Base Area	Fee
No Data	\$150.00
250	\$11.82
500	\$23.63
750	\$35.45
1000	\$47.26
1250	\$59.08
1500	\$70.90
1750	\$82.71
2000	\$94.53
2250	\$106.35
2500	\$118.16
2750	\$129.98
3000	\$141.79
3250	\$150.00
3500	\$150.00



**Figure 2: Histogram of Single-Family Parcels by Base Area**

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## Important Considerations & Potential Adjustments

- **Data Consistency and Veracity** – This analysis relied upon publicly available parcel data with limited insight into the details of the age of the data, and clear and specific descriptions for certain land use types and data fields (in addition to observed data limitations). These data must be thoroughly reviewed with the managing agency to clarify questions and address any discrepancies or incompleteness. Potential field investigations and auditing may also be required for the City to develop a complete and more accurate database of property information.
- **Implementation and Resources** – In addition to the data issues described above, keeping the data consistent and up to date as property characteristics evolve and change could present administrative challenges. Additionally, shifting the existing billing system from the current rate structure to alternative, property-based characteristics could present challenges and require support from technical experts familiar with these systems. The challenges associated with using this method for billing multi-family and non-residential parcels will need to be addressed. Identifying who gets the bill and how to divide billing among dwellings will be important for implementation.
- **Multi-Family and Non-Residential Billing** – The above preliminary results only present customer bill analysis for single-family residential customers. More research would need to be conducted to appropriately evaluate the bill impacts on multi-family and non-residential parcels. Furthermore, there could be different levels of caps or minimum billings applied to specific types of land uses within these broad categories. Finally, there may also be a preference or requirement to utilize metered water use and usage rates for all or a portion of the revenue requirements for all or a portion of these types of parcels.
- **Legal Authorization** – Careful consideration and analysis from legal counsel will be critical in determining the viability of pursuing any of the options discussed. Additionally, it may be necessary to take action at the local or state level to make these alternative approaches feasible.
- **Stakeholder Input** – Explaining this billing approach to the public and securing input on key parameters is an important step prior to finalizing. Under this pricing model, some customers will see their bills increase while others will see their bills go down as water consumption and property characteristics are never perfectly correlated. Outreach for this alternative approach should be clearly communicated to customers to explain not just how the system will change, but also why.

Respectfully,

**STANTEC CONSULTING SERVICES INC.**



**Andrew Burnham**

Vice President

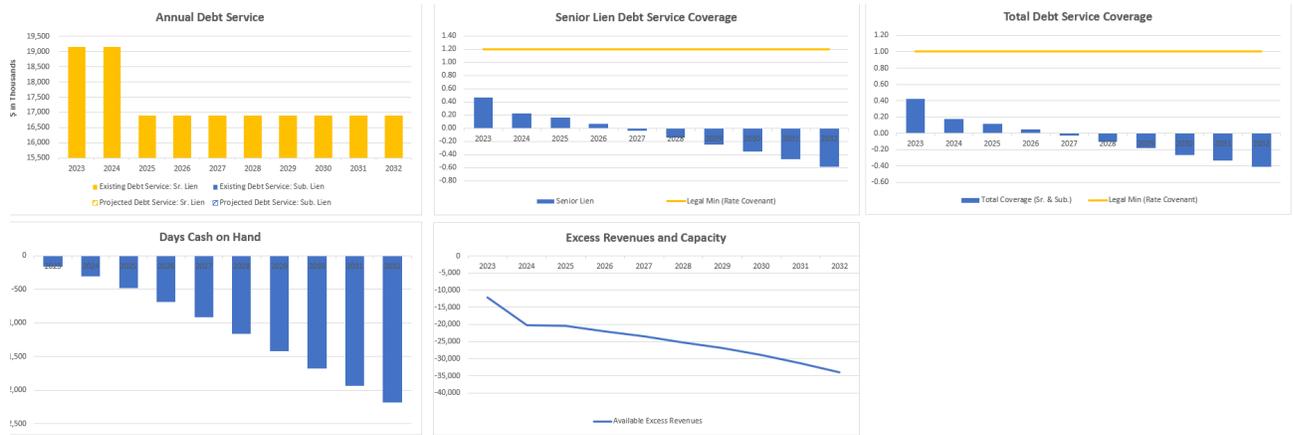
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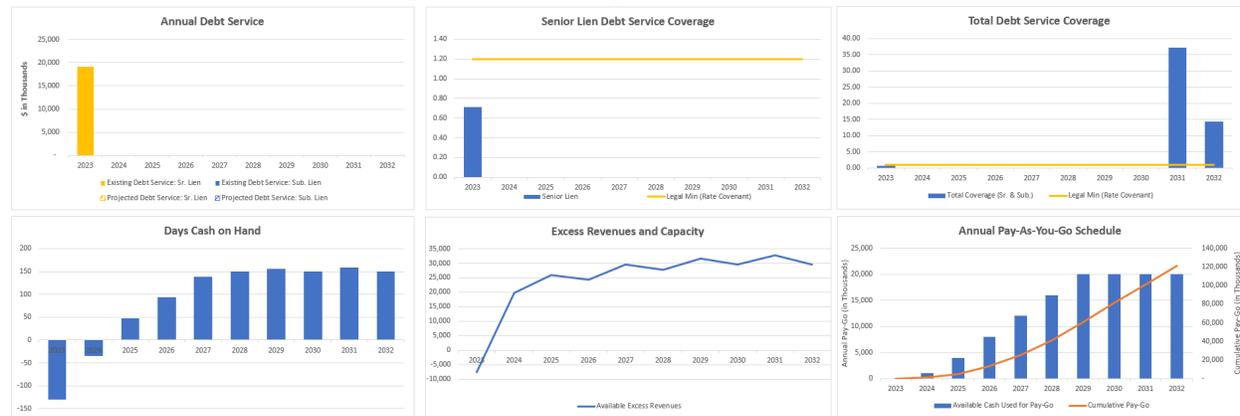
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# Appendix D– Model Outputs

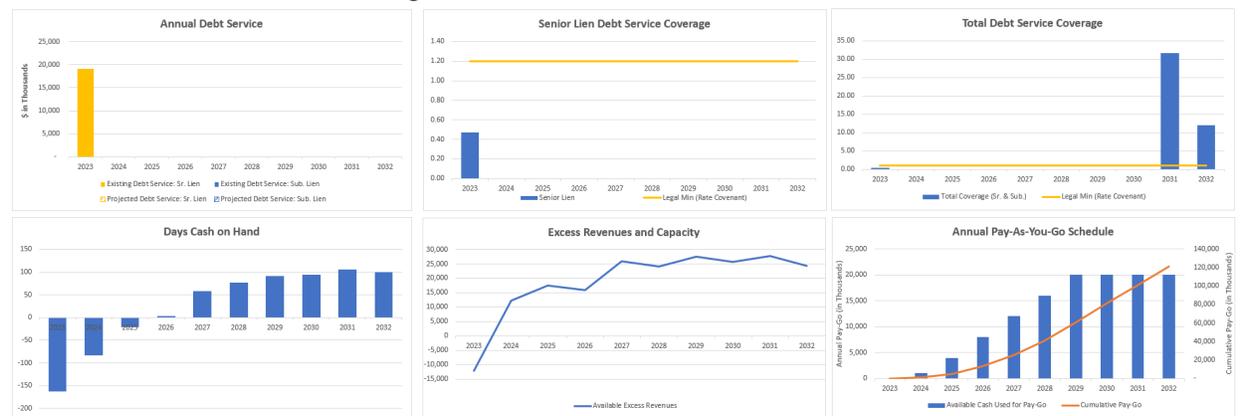
## Do nothing scenario



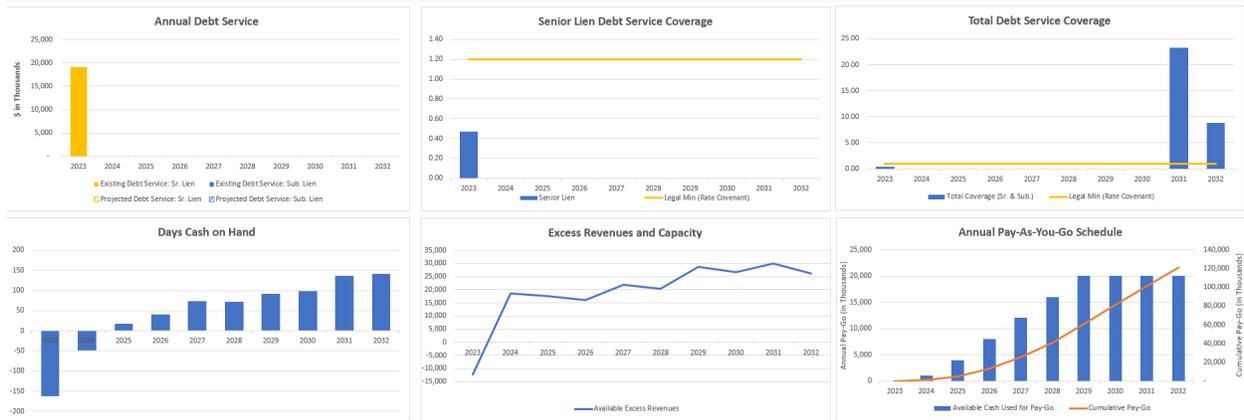
## Scenario A – Metered based billing, without retiring debt



## Scenario B – Metered based billing, retired debt



### Scenario C – Property attribute billing, retired debt, with meters



### Scenario D – Property attribute billing, retired debt, with meters through 2030