FWPHILADELPHIA WATER DEPARTMENT
STATEMENT 2A

BEFORE THE
PHILADELPHIA WATER, SEWER AND STORM WATER RATE BOARD

In the Matter of the Philadelphia Water Department's Proposed Change in Water, Wastewater and Stormwater Rates and Related Charges	Fiscal Years 2024 - 2025

Direct Testimony

of

Lawrence Yangalay, Lawrence Rich,

and Patricia Rogalski

on behalf of

The Philadelphia Water Department

Dated: January 2023

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I. INTRODUCTION AND PURPOSE OF TESTIMONY

Q1. PLEASE STATE YOUR NAME AND POSITION WITH THE PHILADELPHIA WATER DEPARTMENT.

A1. My name is Lawrence Yangalay**.** My position with the Philadelphia Water Department, also referred to in this testimony as PWD or the Department, is Acting Deputy Commissioner of Finance.

Testifying with me is Lawrence Rich who is the Utility Financial Services Manager for the Department; and, Patricia Rogalski, who is a Fiscal Analyst Manager.

We may be joined at the technical hearings by Valarie J. Allen of the law firm Ballard Sphar who is the City's Bond Counsel and who prepared Schedule FP-2. In addition, we may also be joined at the technical hearings by the Department's financial advisors who prepared PWD Statement 2B and Schedule FA-1.

Q2. WOULD EACH OF YOU PLEASE DESCRIBE YOUR JOB RESPONSIBILITIES, EXPERIENCE AND EDUCATIONAL BACKGROUND.

A2. Our respective backgrounds and experience are summarized below:

<u>Mr. Yangalay</u>

I am responsible for the Department's financial, accounting and budgetary functions, including overseeing the budget, accounting for financial activities, issuing financial reports, and developing the debt issuance requirements. In connection with debt financings, I participate in meetings with rating agencies with respect to the credit ratings on Water and Wastewater System debt. I also lead the Department's efforts related to the PWD Financial Plan and Cost of Service study for general rate proceedings.

I hold a Masters in Management with concentration in Public Administration from Wilmington University, a Masters in Accounting from Ohio State University and a Bachelor of Business Administration with a concentration in Accounting from the University of Liberia.

I started employment with the City of Philadelphia in 2005 at the Finance, Controller and Streets Departments. I joined the Water Department in 2017 and served as the Utility Financial Services Supervisor, Fiscal Officer and Utility Financial Services Manager. In 2021, I was appointed the Assistant Deputy Commissioner. I am currently the Acting Deputy Commissioner. A more detailed overview of my relevant work experience is set forth in my attached resume which is marked as Schedule LY-1.

<u>Mr. Rich</u>

I am responsible for managing the Department's budgetary, grants, and wholesale functions. I am also responsible for submitting financial reports for the Department.

I hold a Bachelor of Science Degree in Business Administration from Drexel University in 2009.

I started employment with the City of Philadelphia in December 2011 at the Division of Aviation (now Department). I joined the Water Department in September of 2019 as Utility Financial Services Supervisor. I was elevated to my current position in March

2022. A more detailed overview of my relevant work experience is set forth in my attached resume which is marked as Schedule LR-1.

<u>Ms. Rogalski</u>

I am responsible for managing the Department's analysis of program costs and data pertaining to the rate costing model. I am also responsible for managing the cash flow and debt service tracking for the Department.

I hold a Masters of Business Administration and a Bachelor of Science in Secondary Mathematics Education from Temple University.

I started employment with the City of Philadelphia in January of 2015 with the Department of Revenue. I joined the Water Department in October 2019 as a Fiscal Analyst II and was promoted to Fiscal Analyst III in April 2021. A more detailed overview of my relevant work experience is set forth in my attached resume which is marked as Schedule PR-1.

Q3. PLEASE DESCRIBE THE PURPOSE OF THIS DIRECT TESTIMONY.

A3. The purpose of our testimony is to: (1) provide an overview of the financial condition of the Department and the reasons PWD is requesting rate relief; (2) describe the applicable ratemaking and financial requirements, including the updated Financial Plan that the Department is requesting the Philadelphia Water, Sewer and Storm Water Rate Board ("Rate Board") to approve; (3) explain the Department's ratemaking methodology, development of revenue requirements, projected increase in revenue requirements and need for additional revenue; (4) discuss the proposed tariff changes; and (5) provide background information on prior rate proceedings.

Q4. PLEASE IDENTIFY THE SCHEDULES THAT ACCOMPANY THIS DIRECT TESTIMONY.

A4. The following schedules accompany our testimony.

Schedule LY-1:	Resume of Lawrence Yangalay
Schedule LR-1:	Resume of Lawrence Rich
Schedule PR-1:	Resume of Patricia Rogalski

Schedule FP-1:	Financial Plan
Schedule FP-2:	Bond Counsel Memorandum
Schedule FP-3:	Rating Agency Reports
Schedule FP-4:	Water Fund Projection Summary
Schedule FP-5:	Summary of Ratemaking Requirements, Methodology and Development of Revenue Requirements
Schedule FP-6:	Proposed Language and Other Changes
Schedule FP-7:	Summary of Prior Rate Proceedings

II. FINANCIAL CONDITION OF THE DEPARTMENT

Q5. PLEASE SUMMARIZE THE RELIEF THAT THE DEPARTMENT IS REQUESTING THROUGH THIS GENERAL RATE PROCEEDING.

A5. The requested rate increase is intended to sustain the Department's operations so that it can provide high-quality, reliable service to its customers.

The Department has no choice but to request rate relief. The standards, established by City Council, require that revenues (rates) be at least equal to operating expense and debt service requirements. Revenues at the requested rates are projected to meet the mandatory financial metrics and to be sufficient to pay all of the projected expenses in the Rate Period.

The Department needs additional revenues in FY 2024 and FY 2025 to meet operating and maintenance needs, to support its capital program, to maintain required reserves, and to achieve the defined financial performance metrics. As explained in greater detail herein and in the other supporting testimony, schedules and exhibits:

- Current base rate revenues are not sufficient to pay all of the projected expenses in FY 2023. The City's FY 2023 mid-year transfer ordinance, which increased the Department's budget to cover escalating costs, demonstrates the increased costs being experienced. Current projections indicate that the Department will need make a withdrawal from cash reserves to meet obligations and minimum debt service coverage requirements for FY 2023. See Table C-2 in Schedule BV-1.

- Revenues at current rates are not projected to pay all of the projected expenses in the Rate Period. Operating costs are projected to increase from FY 2023 to FY 2024. The overall capital program budget for FY 2023 to FY 2028 is also higher than previously estimated.

In FY 2024, without rate relief, the Department would not be able to meet the 90% test (Senior Debt Coverage from Current Revenues). PWD would not be able to maintain cash reserve targets in FY 2024, and would be required to make a substantial withdrawal from cash reserves to meet obligations and minimum debt service coverage requirements. The depletion of cash reserves would leave the Department with few options on a going-forward basis to fulfill its mission of providing high-quality, reliable service to its customers. Without rate relief, it is projected that the Department would not be able to meet the 90% test in FY 2025 and could deplete the Rate Stabilization Fund ("RSF") balance by the end of FY 2025.

Q6. PLEASE DESCRIBE CHANGES IN THE DEPARTMENT'S FINANCIAL POSITION SINCE THE 2021 GENERAL RATE CASE AND HOW THE RATE FILING ADDRESSES THESE CHANGES.

A6. The Department's financial condition is under stress due to increased costs, since the 2021 general rate case. In that proceeding, as summarized in Schedule FP-7, additional revenues were approved sufficient to generate an additional $10.411 million in FY 2022. Incremental additional revenues were also approved for FY 2023 in the amount of $34.110 which were reduced by $3.00 million in the 2022 Reconciliation Proceeding.

During FY 2023, however, PWD revenue requirements increased significantly above the level of authorized revenues. Stated differently, since the last rate case, the Department has experienced and continues to experience an increased level of expenditures related to materials, supplies, equipment, chemicals, services, workforce costs, and other expenses — all compared with final 2021 rate case projections for FY 2023. The decline in revenues is being driven by reduced consumption and reduced collections. Overall, this means that PWD is facing financial difficulties in FY 2023 which (absent additional revenues) are projected to continue during FY 2024 and FY 2025. .

The demonstrated need for rate relief is shown in Table C-1A in Schedule BV-1, PWD Statement 7. PWD Statements 3 and 4 explain why increased rates are needed to support operating and maintenance expenses as well as to support needed capital improvements. The need to improve PWD's financial outlook is described in this testimony and PWD Statement 2B

Q7. PLEASE SPECIFICALLY DESCRIBE SOME OF THE MATERIAL CHANGES IN THE FINANCIAL POSITION ALLUDED TO IN THE PRIOR RESPONSE.

A7. The Department has experienced several major cost increases that it cannot continue to absorb without additional revenues, if the Department is going to maintain its financial status and current favorable bond ratings.

<u>Fiscal Year 2022</u>

In FY 2022, the Department experienced the following:

- Revenue results for FY 2022 were higher than projections, with a 1.67% variance. That higher performance may be attributed to certain federally funded programs such as LIWHAP and PHDC, since the results for FY 2022 reflect the benefit of $6.7 million in revenues from the LIHWAP program and $1.5 million of revenues from the PHDC program. The Department does not anticipate that level of federal funding continuing beyond FY 2023, since the duration of that federal funding was limited by the Federal Government and is expected to end in FY 2023.

- Expenses for FY 2022 were lower than projections, with a -1.21% variance. That performance reflects the impact of $7.5M of maintenance contracts which experienced delays. It also reflects certain cost increases in FY 2022 that were partially offset by limited cost decreases in FY 2022 (both of which are described in Schedule FP-1 and below):

    - Workforce costs decreased from the prior rate case projection of $293.380 million to $288.970 million.
    - Costs related to services, excluding electricity and gas, decreased increased from the prior rate case projection of $172.131 million to $165.331 million. This result was primarily driven by the delay experienced by two contracts totaling $7.5 million.
    - Costs related to purchasing electricity and gas for operations decreased from prior rate case projections of $19.524 million to $19.312 million.
    - Materials, equipment & supplies, excluding chemicals, decreased from the prior rate case projection of $35.922 million to $31.391 million
    - Chemicals increased from prior rate case projection of $24.786 million to

$29.366 million.

- Indemnities increased from prior rate case projection of $3.595 million to $6.369 million
- General Fund reimbursement decreased from prior rate case projection of $6.772 million to $6.490 million.

The System made a deposit to the Rate Stabilization Fund ("RSF") at the end of FY 2022 totaling $15 million. This deposit will help address the FY 2023 cost escalation in chemicals, energy, natural gas and pensions.

Notable Impacts in Fiscal Year 2023

In FY 2023, the Department is experiencing and has experienced:

- **Increasing Costs**. During FY 2023, the Department is facing significant cost escalation in chemicals, energy, natural gas and pensions. This is demonstrated, and supported, by the City's FY 2023 mid-year transfer ordinance which increased the Department's budget to cover escalating costs. Cost increases are discussed in PWD Statement 4.

  We would emphasize — as shown in Schedule FP-1 — that the Department has experienced the following in FY 2023:

  - Workforce costs increased from the prior projection of $303.616 million to $316.437 million.
  - Costs related to purchasing electricity and gas for operations increased

from prior rate case projections of $19.883 million to $24,927 million.

- Chemicals increased from prior rate case projection of $29.743 million to $36.926 million.

The above-described increases were partially offset by decreases in other areas of expense. But, even with the offsets, the Department is looking at more than $19 million overall in increased expenses in FY 2023. To the extent necessary, that overall amount will be addressed by the anticipated withdrawal of funds from the RSF. See Table C-1 and C-1A in Schedule BV-1.

- **Shut-Off Moratorium**: As discussed in PWD Statement 5, the City's delinquency threshold to be eligible for shut off from $150 to $1,000 for residential accounts. The new threshold has reduced the number of accounts eligible for shut off, although residential accounts above the new threshold will still be subject to shut off.

- **Reserves and Metrics**: Historically, the Department has made transfers from the RSF to pay operating expenses and debt service (because the Revenue Fund is included as pledged security for the revenue bonds) that were not covered by revenues. An RSF withdrawal is anticipated in FY 2023 to address a portion of the cost escalations currently being experienced by the Department.

Q8. WHY IS PWD'S FINANCIAL CONDITION RELEVANT TO THE CURRENT RATE CASE?

A8. The Department needs higher rates (increased additional revenues) so that it will have additional cash-in-hand to pay its bills when due and to maintain efficient access to the capital markets at reasonable cost.

As explained above, the Department's FY 2023 financial results, as compared to the prior rate case projections, demonstrate a pattern of increased expenses above prior rate case levels which are continuing into FY 2024, FY 2025 and beyond. Absent rate relief, the Department's financial results will continue to deteriorate and financial reserves could be depleted by the end of FY 2025. This approach (running a deficit with rates not high enough to meet revenue requirements and using limited financial reserves to make up the difference) is unsustainable. The Department has no choice but to request that rates be raised.

As always, the Department's financial condition is a major concern to rating agencies and investors. It is particularly concerning for FY 2024 and FY 2025, given the Department's needs to access the capital markets to finance its sizeable and increasing Capital Improvement Program as well as the need for revenues to pay for increased operating and maintenance expenses.

Q9. HAS THE DEPARTMENT PREPARED A FINANCIAL STABILITY PLAN AS REQUIRED BY THE RATE ORDINANCE?

A9. Yes, the Department updated its Financial Plan prior to initiating this rate proceeding. The updated Financial Plan is attached to our testimony as Schedule FP-1.

Q10. PLEASE DESCRIBE THE CONTENTS OF DEPARTMENT'S FINANCIAL PLAN.

A10. The Financial Plan contains four major sections which provide the information required by the Rate Ordinance.

The first section provides an operational overview. It describes the projected expenses for FY 2024. It also describes the revised projected financial results for FY 2023.

The second section summarizes the Department's financial goals and key policies with respect to capital funding from current revenues, debt service coverage, debt issuance and cash revenues. It also describes the Department's pursuit of funding to support the CIP.

The third section of the Financial Plan is a peer utility review and includes a comparison of credit ratings, financial metrics for revenue and debt, debt service coverage, reserve levels, debt to revenue ratios, affordability and asset conditions.

The last major sections of the Financial Plan present the current Five-Year Plan for the Department (Appendix I) and the Department's financial performance in FY 2022 (Appendix II).

Q11. PLEASE DESCRIBE THE COMPONENTS OF THE FINANCIAL PLAN FOR WHICH APPROVAL IS REQUESTED.

A11. PWD is requesting that the Rate Board affirm its approval of the specific financial metrics authorized in the 2018 general rate proceeding. These metrics are incorporated in the Department's updated Financial Plan and include the following : (i) targeting pay-go funding of at least 20% of the Department's capital program from current revenues; (ii) targeting a Senior Debt Service Coverage Ratio of 1.30x; and, (iii) maintaining $150 million as the combined target for cash reserves in the Rate Stabilization and Residual Funds. As discussed below, PWD realizes that it will not meet all of these above targets during the Rate Period.

Q12. WHY IS PWD REQUESTING THAT THE RATE BOARD REAFFIRM THE FINANCIAL METRICS APPROVED IN THE 2018 RATE DETERMINATION?

A12. As discussed during the 2018 general rate proceeding, the rating agency reports have noted the Department's relatively large capital improvement plan and heavy reliance on long-term debt to fund its capital program, as well as the Department's relatively low coverage levels compared to its peers. The fundamental ratemaking philosophy for most financially stable municipal utilities is to provide safe and reliable service at rates that recover all current costs, plus a margin in excess of current costs. This margin, also referred to as coverage, is a municipal utility's only real alternative to issuing debt to fund a portion of the capital program costs. Using current revenues to fund capital expenditures is necessary to improve debt service coverage to industry standards and is just and reasonable as a principle of both finance and ratemaking. From both an operational and a credit rating perspective it is essential for the Department to sustain debt service coverage levels significantly above the minimum levels required by the Rate Covenants to provide rating agencies and bondholders comfort that the Department is not continually operating at the edge of an event that would cause a violation of the Rate Covenants.

As also noted in the memorandum from bond counsel, the 1989 General Bond Ordinance dictates the priority of payment and the flow of revenues collected from rates in and out of the funds and accounts of the Water Fund. There is never a guarantee that the Department's revenues will be sufficient in the future to cover the revenue requirements used to establish rates and charges. Given the required flow of funds under the General Bond Ordinance, any shortfall will impact the amount of revenue that can be used to fund the Capital Improvement Program before it impacts any other element of the revenue requirement.

Maintaining adequate cash reserves in funds such as the Department's Rate Stabilization and Residual Funds is a standard element of ratemaking for municipal utilities. This allows a municipal utility to deal with contingencies and help such utilities demonstrate the financial stability necessary to achieve and maintain good credit rating. Additional information in support of these financial policies regarding maintaining adequate cash reserves in the rate stabilization and residual fund and certain financial metrics is provided in the memorandum from the Department's financial advisors, which is attached their testimony (PWD Statement 2B) as Schedule FA-1.

Reaffirming these financial metrics (20% pay-go target, 1.30 times Senior Debt Service Coverage Ratio, and maintaining a $150 million combined balance target in the Rate Stabilization and Residual Fund) not only memorializes these goals along with resulting rate increases, but also assists the Department with its persuasion of the rating agencies to maintain or improve the Department's credit ratings.

That being said, due to current circumstances, PWD proposes to forego certain financial targets during the Rate Period.

First, for the Rate Period, the Department is forgoing the target for funding of the capital program from current revenues. PWD will adjust coverage to balance the Capital Program funding from current revenues target of 20%. Over the next few years, PWD is not projected to meet its goal of funding at least 20% of its capital program from current revenues. See Table C-2 in Schedule BV-1. Transfers to the Capital Account must increase, over time, to achieve the 20% goal.

Second, the Department is deferring the Cash Reserve goals for the Rate Period. PWD is utilizing cash reserves to offset the level of current rate increases. PWD's projected RSF balance is less than the target $135 million RSF balance by the end of FY 2024. See Table C-1 in Schedule BV-1. The RSF serves as the Department's primary source of liquidity and provides protection to ratepayers and bondholders. The RSF will need to be restored over time.

Third, the Department is requesting that proposed rates be established based on senior debt service coverage of 1.25 times for the Rate Period, which is below the above-stated target of 1.30 times. See Tables C-1 and C-2 in Schedule BV-1. PWD will maintain the goal of 1.30 times debt service coverage for revenue bonds. The target of 1.30 times recognizes that, from both an operational and a credit rating perspective, it is essential for the Department to sustain debt service coverage levels above the minimum levels required by the Rate Covenants to provide a hedge against unanticipated cost increases or revenue losses, as well as to provide bondholders comfort that the Department will meet its covenants with investors.

III. NEED FOR RATE RELIEF

Q13. IS OBTAINING RATE RELIEF ESSENTIAL TO MEETING THE OBJECTIVES OF THE FINANCIAL PLAN.

A13. Yes. The Department's only source of revenue is through its customer base. Additional revenues are needed in FY 2024 and FY 2025 to pay for the operating and maintenance needs of the Department, to fund its ongoing capital improvement program and to improve the Department's financial position. As such, the approval of the requested rate increases will ensure funding for safety and reliability of the system. Additionally, rate relief is essential to make progress in meeting the enumerated goals and financial metrics discussed above as well as remain in compliance with all rate covenant requirements (including the 90% Test); and maintain reasonable liquidity for FY 2024 and FY 2025.

It bears emphasis that PWD is facing financial difficulties in FY 2023 which only get worse in FY 2024 and FY 2025 without rate relief. The demonstrated need for rate relief is shown in Table C-1a in Schedule BV-1, PWD Statement 7 and should be approved to ensure that the Department can meet the objectives of the updated Financial Plan.

Q14. DOES THE DEPARTMENT'S FINANCIAL PLAN ADDRESS THE NECESSITY OF MAINTAINING ITS CURRENT CREDIT RATINGS AND FINANCIAL METRICS?

A14. Yes. The Department's updated Financial Plan is designed to maintain the Department's current credit rating. The most recent credit ratings, received in August 2022, in connection with the issuance of the City's Water and Wastewater Revenue Bonds, 2022C water and wastewater revenue bonds are as follows: Moody's, A1, "stable outlook;" S&P, A+, "stable outlook;" and Fitch, A+, "stable outlook." The most recent rating reports are attached as Schedule FP-3.

Credit ratings are important because the Department, like most utilities, is required to make significant capital infrastructure improvements each year for new and replacement assets. As reflected in the Department's Financial Plan, approximately 90% of the Department's capital costs will be funded with sizeable debt issuance. Credit ratings are a critical component in determining the cost of debt as the ratings signal the Department's ability and willingness to meet financial obligations, notably including the repayment of its debt in full and on time. A downgrade of the credit ratings would result in an increase in the Department's borrowing costs and necessitate higher rates over time.

Q15. PLEASE DESCRIBE WHAT MAY HAPPEN TO THE DEPARTMENT'S CREDIT RATING IN THE ABSENCE OF PROPOSED RATE RELIEF.

A15. Stated plainly, in light of the financial difficulties facing PWD in FY 2023, the Department is concerned that an insufficient level of rate relief for the Rate Period will be met with a negative reaction by the credit rating agencies. Such a reaction could take the form of a credit rating downgrade or market access deterioration. Municipal credit ratings are generally slow to rise and, often go down quickly. Thus, it is critical to assure rating agencies and investors of the long-term commitment to the cost recovery and stability of the Department's finances.

Bond investors may also react negatively to any failure to support needed rate relief. While PWD has been able to maintain access at low cost borrowing levels for the present, there is certainly no guarantee that this will continue without rate relief. And given the frequency of the Department's borrowing needs, it is critical to maintain confidence in the rate setting process.

While the Rate Board's rate support historically has been constructive in allowing the Department to maintain stable finances, additional operating revenues are needed for FY 2024 and FY 2025. PWD believes that withholding appropriate rate relief will be met with a negative reaction. These reactions include credit ratings downgrades and capital markets access deterioration.

Q16. ARE THERE ANY OTHER REASONS THAT JUSTIFY THE REQUESTED RATE RELIEF?

A16. Yes. PWD will not be able to meet a key covenant with investors (90% Test) absent increased rates in FY 2024 and FY 2025. The 90% test examines whether current revenues are sufficient to pay for current debt service. Under that test, 100% (or 1.00) means that current revenues are sufficient to pay for the Department's current debt service. A level higher than 1.00 means that current revenues are sufficient to not only pay current debt service, but also to pay for other expenses from current revenues. A level lower than 1.00 means that current revenues are not sufficient to pay for current debt service. The test mandates that a violation of Rate Covenants occurs if current revenues fall below 90% (or 0.90). That is the minimum level of required current revenues, and the fiscally responsible goal is to always pay for current debt service from current revenues. A failure to meet the 90% Test (covenant) would be a technical default.

IV. PROJECTED INCREASED REVENUE REQUIREMENTS

Q17. HOW DOES THE DEPARTMENT DETERMINE THAT A RATE INCREASE IS NECESSARY?

A17. The Department initially develops projected revenue requirements for future fiscal years in the same manner as in the previous general rate proceedings before the Rate Board. Additional general details on the applicable ratemaking and financial requirements, the Department's ratemaking methodology, and development of the Department's revenue requirements for the Rate Period are attached as Schedule FP-5. Specific details on the projected revenue requirements for the requested increase can also be found in PWD Statement 7.

Q18. WHAT LEVEL OF INCREASED REVENUES IS BEING REQUESTED?

A18. The Department is requesting annual revenue increases to generate approximately $80.412 million in FY 2024 and an additional $62.977 million in FY 2025 with proposed effective dates of September 1, 2023 and September 1, 2024, respectively.

Q19. OVER WHAT PERIOD OF TIME ARE THE PROPOSED INCREASED REVENUES BEING REQUESTED?

A19. The Department is requesting increased revenues based on forecasted revenues and revenue requirements for FY 2024 and FY 2025. This two-year rate period is consistent with the Rate Board's prior rate determinations in the 2016, 2018, and 2020 general rate proceedings. As discussed in PWD Statement 7 (the direct testimony of Black & Veatch), AWWA's "Principles of Water Rates, Fees, and Charges Manual of Water Supply M1" (the "AWWA Manual" or the "M1 Manual") is an industry manual, which was utilized in the cost of service study. The M1 Manual acknowledges that government-owned utilities may use multi-year rate periods and phase in rates over the rate period.

Q20. CAN THE DEPARTMENT PARTIALLY OFFSET THE PROPOSED RATE INCREASES BY MAKING ADDITIONAL WITHDRAWALS FROM THE RATE STABILIZATION FUND?

A20. Not in any significant way. The Department acknowledges that, in prior rate proceedings, transfers (withdrawals) from the RSF were used to offset rate increases. This is not a reasonable option for the Rate Period because the Department anticipates a transfer from the RSF to pay operating expenses and debt service that are not covered by revenues in FY 2023 and FY 2024. Making additional significant withdrawals from the Department's reserves would further lower those reserves (below the Department's long-term targets) and seriously weaken the Department's financial condition.

The solution is to avoid another significant (or sizeable) RSF transfer during the Rate Period. At the end of FY 2023, it is anticipated that the RSF will be just below the Rate Board's target level of $135 million (or $150 million for combined Residual Fund and

RSF balances) that was established to ensure that PWD has sufficient liquidity to meet (i) future unforeseen financial challenges and (ii) financial requirements such as meeting its rate covenants. We cannot continually draw down the RSF by making significant withdrawals and expect to have sufficient reserves to address future liquidity risks (e.g., escalating regulatory requirements, unanticipated operating needs or significant weather events).

Line 40 of Table C-1 in Schedule BV-1 shows that the Rate Period begins with the RSF projected to be decrease from a balance slightly above the target level to a balance slightly below the target level. It is projected that — even with the requested additional revenues — that the RSF will fall slightly below the target level in the Rate Period. See Table C-1 in Schedule BV-1. In that context, the appropriate fix is to increase rates (as requested). The fix is <u>not</u> to further lower PWD's liquidity below target level by making additional withdrawals from the RSF during the Rate Period.

Q21. CAN THE DEPARTMENT REDUCE ITS BUDGET TO PARTIALLY OFFSET THE PROPOSED RATE INCREASES?

A21. No — not if the Department is to pursue necessary maintenance activities and maintain current levels of service. As explained in PWD Statements 3 and 4, the Department needs to proceed with the activities and projects identified in the above testimony to provide utility services that are reliable, resilient and regulatory compliant.

Q22. WHAT ARE THE KEY DRIVERS FOR THE DEPARTMENT'S INCREASED REVENUE REQUIREMENTS?

A22. The need for rate relief in FY 2024 and 2025 is caused by the following key drivers: (1) unavoidable increases in operating costs, which includes increases in costs over various categories, such as chemicals used in the water treatment process, as previously mentioned; and (2) higher costs related to supporting its CIP program, including the increased cost of infrastructure maintenance;. Additionally, it is essential to meet the enumerated financial reserves and metrics, as we already discussed.

Q23. PLEASE EXPLAIN WHY OPERATION AND MAINTENANCE COSTS ARE INCREASING.

A23. The Department has experienced significant cost increases related to services, materials/equipment/supplies, workforce as well as other expense categories and workforce costs, as we previously mentioned. These costs are driven by a variety of factors including general economic conditions.

We would note that energy price increases being experienced (and anticipated) by the Department are significant, as explained in PWD Statement 4. In addition, PWD Statement 4 shows that the Department has experienced (and anticipates) significantly increasing expenses for operations, for upgrades, repairs, improvements and for maintenance activities.

Q24. PLEASE DESCRIBE HOW INCREASING WORK FORCE COSTS IMPACT REVENUE REQUIREMENTS.

A24. The Department's payments to the Municipal Pension Fund continue to increase. The payment for FY 2022 was $58.9 million and the payment for FY 2023 is expected to total at least $59.4 million (with $59.4 million paid as of December 13, 2022). This is a cost the Department does not control and is unavoidable. The payment is projected to be $61.7 million in FY 2024 and $63.8 million in FY 2025 assuming the Department's share of the City's pension fund does not change from current level of 8.11%.

Payments from the Water Fund to the City's General Fund for the Water Fund's allocable share of principal and interest payments on the City's Pension Bonds were $$8.5 million for FY 2022. It is projected to be $11 million in FY 2023, $12.5 million in FY 2024 and $13.0 million in FY 2025. These estimates assume the Department's share of the pension cost does not change from current level of 8.16%.

Please note that the Department's share of the pension cost may change based on pension performance, discount rates, and other factors, as noted in PWD Exhibit 5 (under "Pension Obligations of the Water Department").

Q25. PLEASE EXPLAIN THE DEPARTMENT'S FUTURE PLANS TO ACCESS THE CAPITAL MARKETS.

A25. The Department expects to finance its Capital Improvement Program during the FY 2024 and FY 2025 (the "Rate Period") with projected long term debt issuances totaling $975.296 million, revolving commercial paper program (totaling $200 million) which is relied on to provide interim funding for PENNVEST funding, current revenues (i.e.

coverage), and possibly alternate sources of funding, including loans or grants.[1] The City expects all of the above debt to be primarily in the form of new money revenue bonds and commercial paper issued in several transactions, as necessary. Debt issuance projections and debt service coverage for the Rate Period are shown in the direct testimony of Black & Veatch. See PWD Statement 7; Schedule BV-1, at Tables C-1, C-2, C-8 and C-9.

The City will need the above-described additional debt to support the Department's Capital Improvement Program.

Without additional debt, the Department's ability to fund upgrades, repairs and replacements of infrastructure will be limited. As explained in PWD Statements 3 and 4, financial support for Capital Improvement Program is critically needed to avoid jeopardizing the Department's ability to appropriately invest in infrastructure improvements that are needed to maintain system reliability and customer service levels as well as pay for increased operating expenses.

Q26. HAS THE DEPARTMENT TAKEN STEPS TO MAKE FINANCING ITS CAPITAL PROGRAM MORE ECONOMICAL?

A26. PWD has taken advantage of low interest rates to reduce debt service expenses and the associated debt burden on ratepayers. The Department's efforts to obtain grants and loans through (i) the Pennsylvania Infrastructure Investment Authority (PENNVEST), (ii) the federal Water Infrastructure Finance and Innovation Act of 2014 ("WIFIA") program and

[1] The City may from time to time receive state or federal grants, but any such amounts are immaterial for purposes of this discussion.

(iii) other entities and programs are summarized in Schedule FP-1 and in the Reports submitted to the Rate Board under the Settlement in the 2021 General Rate Proceeding The Department's efforts have resulted in benefits to the PWD and ratepayers, as described in PWD Statement 2B.

Regarding the American Rescue Plan Act ("ARPA"), we note that the City's adopted budgets for FY 2022 and FY 2023 did not allocate amounts under the American Rescue Plan Act ("ARPA") to PWD. Budgeted expenditures (including those supported by ARPA) are being used to support police, fire, health, recreation services. With that in mind, the Department did not project that the City would allocate any amounts under ARPA to PWD for FY 2024 or FY 2025.

V. PROPOSED TARIFF CHANGES

Q27. WHAT REVISIONS TO THE DEPARTMENT'S TARIFF ARE BEING PROPOSED IN THIS CASE?

A27. The proposed rates and charges are in PWD Exhibits 3A and 3C, and redline versions are provided as PWD Exhibits 3B and 3D. The proposed rates and charges changes are further discussed in Black & Veatch's testimony, PWD Statement 7.

Please note that those proposed rates and charges include (but are not limited) to the Department's proposed changes in the Stormwater Management Service (SWMS) credit (Section 4.5) and the Stormwater Management Fee In Lieu Charge (Section 8.2).

In addition, PWD is proposing to update various miscellaneous rates and charges, as summarized in Schedule BV-3 and as discussed in PWD Statement 7. The proposed miscellaneous charges are detailed in Tables M-1 and M-2, in Schedule BV-3. Please refer to Section 6 of PWD Exhibit No. 3 for additional information regarding these proposed updates.

At this time, PWD is not proposing any language and other “housekeeping” changes. We are however, presenting Schedule FP-6 in case the need arises during the course of this proceeding for such changes. If such changes are needed, they will also be shown on Schedule FP-6 and in redline on PWD Exhibits 3B and 3D.

VI. PRIOR RATE PROCEEDINGS

Q28. PLEASE SUMMARIZE RECENT CHANGES IN RATES AND CHARGES APPROVED BY THE RATE BOARD.

A28. The present proceeding is the fifth general rate proceeding before the Rate Board. As described in Schedule FP-7, the last general rate increases approved by the Rate Board were 1.85% and 5.37% in FY 2022 and FY 2023, respectively.

VII. CONCLUSION

Q29. DOES THIS CONCLUDE THE DIRECT TESTIMONY OF THIS PANEL?

A29. Yes, it does.

Schedule LY-1

LAWRENCE YANGALAY
lawrence.yangalay@phila.gov

Professional experiences
Over twenty years of professional experiences in auditing, accounting, consultancy, and financial management. Highly analytical and result oriented, an excellent team player and interact at any level: social, economic, political and educational.

Assistant Commissioner/Financial Services Supervisor/Manager, City of Philadelphia, Phila, PA, USA 2017 – Present

- Direct and Coordinate payroll verification; preparation, analysis and reporting of the organization's $800m operating budget across six departments; grants management work, revenue and rate analysis, bank and fund reconciliations and financial control oversight. Advise and coordinate with executive staff and departmental managers on a wide range of financial matters and provide leadership for financial staff engaged in policy development.
- Assign and review staff structure, duties and priorities for the attainment of organization's short and long-term goals and objectives. Supervise costing and billing of wholesale customers; and collection, analysis and reporting of performance metrics.
- Supervise the preparation of the quarterly budget update reports and the annual operating budget.
- Participate in preparing documents for budget hearings, bond offering and rate case.

Budget Officer I and II, City of Philadelphia, Philadelphia, PA, United States of America 2011 – 2017

- Managed the Streets Department's $240m capital budget, which involves preparing the capital budget, profiling grant funds from federal and state sources, setting up encumbrances for capital projects using grant and City funds and monitoring federal, state and the City's capital fund balances.
- Reviewed and approved nearly $450m annual disbursements involving federal and state grant and City funds and supervised four staffs (three accounts payable clerks and one administrative specialist).
- Supervised the preparation of the quarterly budget update reports and assisted in the preparation of the operating budget.

Auditor I and II, City of Philadelphia, Philadelphia, PA, United States of America 2006 – 2011

- Reviewed and evaluated internal controls over financial reporting to ensure that information generated from said systems are accurate and presented fairly in accordance with applicable standards.
- Reviewed Federal and State grant compliance requirements (including laws and regulations, administrative procedures, contract/grant terms) and evaluated whether departments or programs complied with these requirements.
- Reviewed assigned accounts of the City's CAFR and SFA to determine whether the accounts were presented in accordance with applicable standards and recommended adjustments or corrections where necessary. Was assigned accounts with revenue/expenditure of between $10m and $700m.

LAWRENCE YANGALAY

Accountant, City of Philadelphia, Philadelphia, PA, United States of America 2005 – 2006

- Reviewed and reconciled weekly payroll information from FAMIS and the Payroll System.
- Prepared financial statements of ten funds with total annual revenue of over $250m and managed the employees' vending machine funds.

Consultant, African Cultural Alliance of North America, Philadelphia, PA, USA 2004 – 2008

- Provided general and financial consultancy, which included accounting, financial management, staff recruitment and grant proposal writing.
- Assisted in increasing revenue from under $0.2m in 2004 to over $0.75m by 2007.
- Computerized the accounting system in QuickBooks and developed the organization financial management policy.

Finance Officer, National Drug Service (NDS), Liberia 1993 – 2003

- Managed all aspect of a L$225m ($3.5m) budget. Direct responsibilities included: developing the annual and program budgets, preparing financial statements, preparing grant expenditure report, ensuring compliance with grant financial requirements and assisting with writing grant proposals.
- Supervised ten staffs in accounting and data processing departments and one community pharmacy. Participated in the formulation of the national drug-cost-recovery policy and served on the national committees that evaluated tenders for the procurement of pharmaceuticals for Liberia. Participated in training health facilities in fiscal management and was member of a team contracted to manage the nation's largest hospital for two years during which time fee-for-service intake and patient load doubled.

Education/Training

- Master in Management with concentration in Public Administration, Wilmington University, USA.
- Master in Accounting, Ohio State University, USA.
- Bachelor of Business Administration with concentration in Accounting, University of Liberia
- Fellow, ACCA (Inactive)

Larry Rich
email:Lawrence.Rich@phila.gov

<u>EDUCATION:</u>
Drexel University Philadelphia, PA
Bachelor of Science in Business Administration June 2009

<u>WORK EXPERIENCE:</u>
City of Philadelphia, Water Department Philadelphia, PA

Utility Financial Services Manager March 2022 – Present

- Manage Financial Analysis and Rates Unit that includes Budget, Grants and Wholesale functions
- Prepare and submit Department's Annual Comprehensive Financial Report
- Research and apply for various federal funding opportunities

Fiscal Officer April 2020 – March 2022

- Manage Budget Unit responsible for preparing the Department's yearly budget and required reports
- Manage Accounts Payable unit responsible for processing professional services, capital, and public works invoices
- Transitioned Accounts Payable processes from paper to SharePoint site which lead to improved invoice processing times
- Manage Wholesale Unit

Utility Financial Services Supervisor September 2019 – April 2020

- Supervise staff performing Wholesale functions
- Review and approve monthly and quarterly bills
- Review expiring contracts
- Review and submit surveys participated in by Department

City of Philadelphia, Division of Aviation Philadelphia, PA

Accounting Transactions Supervisor, Accounting Supervisor June 2016 – September 2019

- Supervise the Airport's Finance Unit, specifically the Accounts Receivable and Accounts Payable functions
- Produce detailed internal report on the Aviation Operating Fund
- Prepare Statistical Section of the Annual Comprehensive Financial Report
- Participate in quarterly financial presentations given to executive staff
- Track and analyze the Airport's Airline and Non-Airline Revenue
- Perform expenditure analysis for the Airport Operating Fund
- Submit monthly Sales & Use Tax return to the State of PA
- Review Staff Accountant's revenue adjustments for monthly close
- Review and approve invoices in the City's accounting system
- Submit information and documentation, as requested, to the City's Controller Office for the fiscal year-end audit
- Create various ad hoc reports as requested

Senior Accountant, Accountant December 2010 – June 2016

- Performed daily revenue receipt analysis
- Submitted revenue receipt and revenue adjustment entries to the City's accounting system
- Reconciled revenue in Airport and City financial systems on a monthly basis
- Performed monthly bank reconciliations
- Applied payments to invoices in the Airport's billing system
- Analyzed monthly activity-based self-reports submitted by customers
- Created monthly billings for concessions and landing fees
- Compiled various statistics for landing fees and concession activity and revenue
- Tracked and analyzed revenue for Passenger Facility Charges and Customer Facility Charges

- Submit monthly Use and Occupancy Tax returns to City
- Send real estate tax bills to tenants in Delaware County and Car Rental Agencies

PATRICIA ROGALSKI
patricia.rogalski@phila.gov

PROFESSIONAL EXPERIENCE

City of Philadelphia **Jan 2016 - Present**

Philadelphia Water Department
Fiscal Analyst III April 2021 - Present
Fiscal Analyst II October 2019 – April 2021

- Responsible for the data analysis to support rates and charges as well as he administrative requirements for annual notices and filings
- Manage a team that performs, cash flows and reconciliation, invoice and payment tracking, capital project completion and various other financial analysis
- Manage the PennVest loan tracking, payment of invoices, reimbursements and debt schedules
- Responsible for the oversight of professional service contracts for the Finance Department
- Provide engineering consultants with data necessary to complete comprehensive cost or service reporting
- Responsible for tracking of all revenues and expenses for the Department and the Water Fund
- Assist in preparation of financial statements and annual budgeting process
- Responsible for tracking of costing for permits and consent order requirements
- Work with Financial Advisors for debt service schedules and analysis for financial transactions
- Serve as a liaison for the Department with disclosure council

Department of Revenue Jan 2016 – October 2019
Tax Analyst II, Settlement Group

- Manage the flow of settlement requests from Taxpayers and their representatives for satisfaction of judgments and liens for business taxes due to the City of Philadelphia.
- Review Taxpayer accounts for compliance of all business account filings and returns.
- Prepare settlement agreements of Municipal Court and Court of Common Pleas judgments and code enforcements in regard to business taxes. In addition, I provided settlement of real estate transfer tax liens and demolition liens.
- Execute and prepare law agreements and payments.
- The application of payments to proper tax liabilities and costs per the settlement and agreement with the Taxpayer. This includes the Statement of Litigated Claims in cases where part of the interest or penalty is abated.
- Filing the satisfaction of the judgments with the Court of Common Pleas and Municipal Courts
- Work with title companies, realtors, accountants and other Taxpayer representatives for settlement of their accounts.

Global Military Expert Consulting and Instruction, LLC, Philadelphia, PA 2012-2015

Company Controller

- Oversee daily company operations, including human resources, financial management, IT operations, vendor management, development of policies and procedures for DCAA compliance, creation of tracking systems for financial information and management of human resources

- Develop corporate-level policies and procedures, including human resources employee manual and procedures, code of ethics, travel and expense reimbursements, employment agreements and additional general policies.
- Handle all employee HR issues, including benefit questions, 401k plans, insurance coverage, corrective action policy and development and implementation and a vacation tracking system for 25 employees.
- Manage financial functions with responsibility for overseeing costs, maintaining cash flow, reconciling monthly expenses and creating budget versus actual reporting materials, submission of invoices to our contractors and accounts payable.
- Handle all payroll functions including processing of monthly payroll, establishment of time keeping system that allowed for simple access overseas, ensure withholding taxes were properly established for employees spread across the country in about 20 states, worker compensation and disability programs for multiple states and insurance for overseas employees.

3SISTERS SUSTAINABLE INVESTMENTS, LLC, Philadelphia, PA 2009 – 2012

Operating Officer

- Oversee daily company operations, including IT operations, telecommunications, contract negotiation and vendor management; develop policies and procedures for client account maintenance, in addition to buying and selling client positions within private pooled fund portfolios and verifying the accuracy of client positions with custodial institutions and client cash needs.
- Develop corporate-level policies and procedures, including human resources manual and procedures, investment advisory agreements, code of ethics, proxy voting, privacy and additional general policies.
- Handle all legal filings with the SEC and state regulators and serve as liaison between custodial and financial institutions for clients and internal corporate accounts.
- Manage financial functions, with responsibility for reducing costs, maintaining revenue flows, negotiating best contract pricing, creating budget versus actual reporting materials and maintenance of cash balances. Oversee regulatory compliance encompassing client agreements, loan contracts, and notes and equity positions for companies invested in.
- Developed more efficient and relevant reporting process for clients regarding portfolio positions and performance of private pooled funds.

TEMPLE UNIVERSITY HEALTH SYSTEM, Philadelphia, PA 2005 – 2009

Manager Business and Finance, Temple Transport Team

- Directed all aspects of financial, billing and general business activities. Manage monthly accounting closing, budget process, accounts payable management, capital purchasing, cash management, variance analysis, annual tax return and auditing.
- Coordinate closely with corporate finance department for all financial reporting, planning, auditing and communications; served on financial statement review and leadership committees and budget and planning committee.
- Manage medical transportation billing process, with oversight for clinical record review, management of three clerical staff, development of HIPAA compliance program, vendor management/ billing, collections and accounts receivable.

- Successfully reduced billing days in account receivables and streamlined billing process
- Created revenue calculating system through spreadsheets and negotiated contracts with insurance companies for reimbursement rates.

UNIVERSITY CITY SCIENCE CENTER, Philadelphia, PA 1999 – 2005

Financial Analyst and Manager of Programs, Administration and Facilities

- Fulfilled multiple responsibilities, including cash management, monthly debt payments, bank draws for construction loans and management of annual company budget. Provided assistance with real estate transactions, including closings, refinancing and amendments to loans, accounts receivable maintenance and tenant reimbursements.
- Handled administration of insurance policies, wire transfers, KOZ tax exempt status, accounts payable and management of disbursements and files.
- Successfully increases collection of rental income through tracking and review of the invoice process.
- Directed programs as part of the Laurence A. Baiada Center for Entrepreneurship in Technology and held responsibility for business plan competition, annual venture capitalist event, entrepreneurial workshop series, senior design project and annual venture fair.
- Managed administrative functions, security system, facility operations, budgeting and bookkeeping; led marketing initiatives and definition and implementation of all policies and procedures and oversaw organization and set-up of companies entering center.

EDUCATION

TEMPLE UNIVERSITY, Philadelphia, PA

Master of Business Administration (MBA) in Finance

Bachelor of Science Degree in Secondary Math Education

FY23 Summary & Five-Year Financial Projection Plan

JANUARY 2023

Prepared by: Lawrence Yangalay, Deputy Commissioner of Finance

PHILADELPHIA WATER DEPARTMENT

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PHILADELPHIA WATER DEPARTMENT

FY 2023 Financial Update

FY 2023 Revised Expense Projection Points to Higher Costs

	EXPENSE CATEGORY	FY 2023 PRIOR PROJECTION* ($000s)	FY 2023 CURRENT PROJECTION ($000s)	VARIANCE
40%	Workforce Costs	$303,616	$316,437	+$12,821
23%	Services	185,610	179,813	-(5,797)
3%	Electricity and Gas	19,883	24,927	+5,044
4%	Materials, Equipment & Supplies	31,837	29,399	-(2,438)
5%	Chemicals	29,743	36,926	+7,183
<1%	Indemnities	3,595	4,604	+1,009
25%	Capital Program – Debt Service Payments	196,662	199,582	+2,920
<1%	General Fund Reimbursement	7,154	6,251	-(0,903)
	TOTAL	**$778,100**	**$797,939**	**+$19,839**

**Based upon PWD's Financial Plan Outlook as of 02/2022.*

FY 2023 Revised Rate Stabilization Fund Transfers & Liquidations

Transfers	FY 2023 Prior Projection*	FY 2023 Current Projection	Variance
Rate Stabilization Fund Withdrawal	($5.4M)	($1.2M)	$4.2M

Liquidations	FY 2023 Prior Projection*	FY 2023 Current Projection	Variance
Liquidated Encumbrances	($31.3M)	($33.7M)	$2.4M

**Based upon PWD's Financial Plan Outlook as of 02/2022.*

FY2023 FINANCIAL UPDATE

Cash Balances

Cash Balances	Residual Fund	Rate Stabilization Fund	TOTAL Cash Reserves
FY2023 Current Projection	$15.0M	$137.8M*	**$152.8M**
Target	$15.0M	$135.0M	**$150.0M**

*Includes projection of TAP-R revenues and TAP discounts. The proposed TAP-R reconciliation will reduce TAP-R rates, requiring an approximate $4M withdrawal in FY 2024.

Fiscal Year 2024 Projections

PHILADELPHIA WATER DEPARTMENT

FY2024 PROJECTIONS

Inflationary pressures for critical expenses are increasing revenue needs.

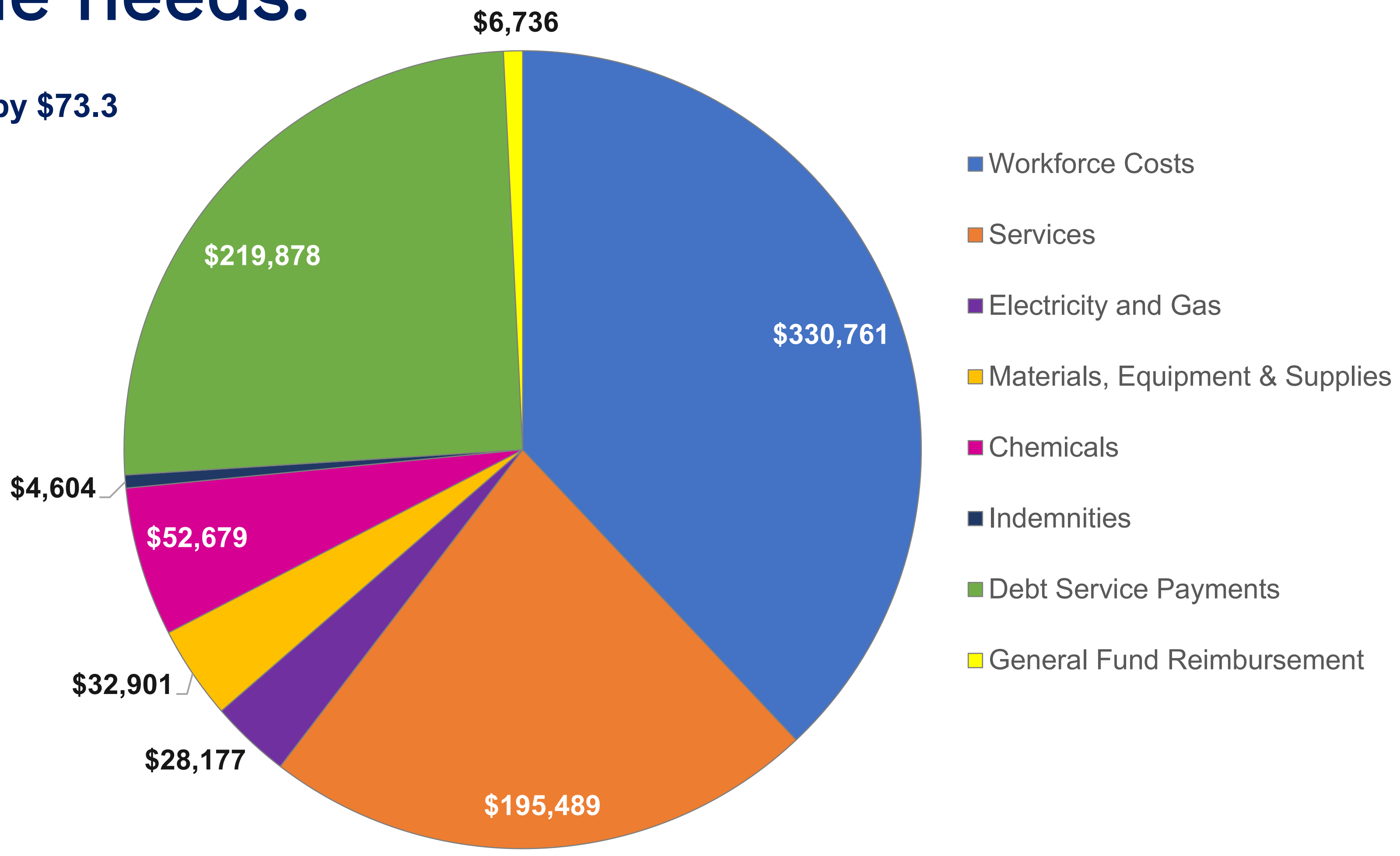
Operating costs are projected to **increase by $73.3 Million** from FY 2023 to FY 2024.

Total Projected Operating Costs
FY 2023 = **$797.9 Million**
FY 2024 = **$871.2 Million**
FY 2025 = **$953.4 Million**

Forecasts show the following:

- Rising chemical costs, materials, equipment, and inflationary pressure
- Increased labor and workforce costs
- New positions required to meet regulatory obligations
- Costs associated with new lead and copper regulations

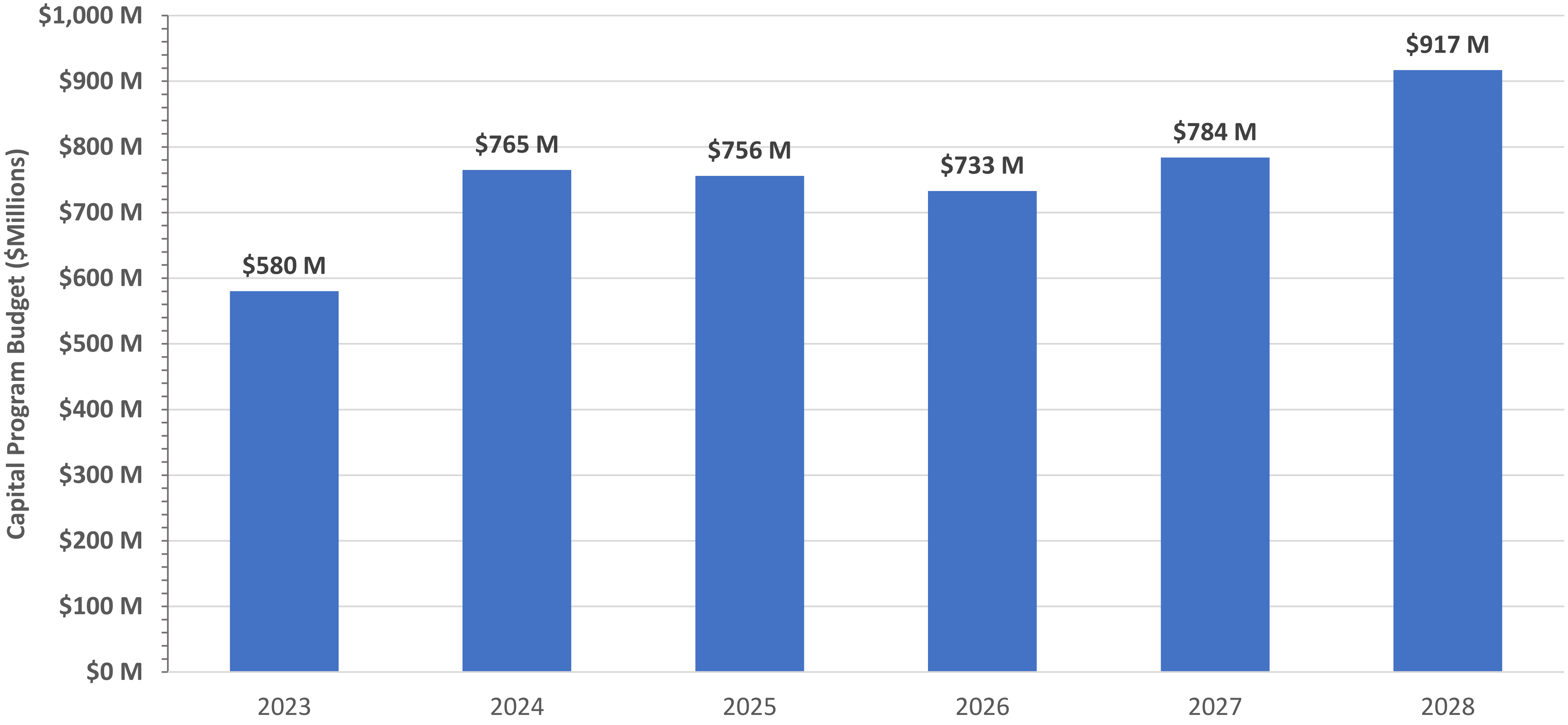
**FY 2023 Based upon PWD's Financial Plan Outlook as of 02/2022.*



FY 2024 Projected Operating Costs ($000s)

Capital Improvement Plan

The FY 2023 to FY 2028 Capital Improvement Program is a **14% higher** than previously estimated $3.98 Billion.

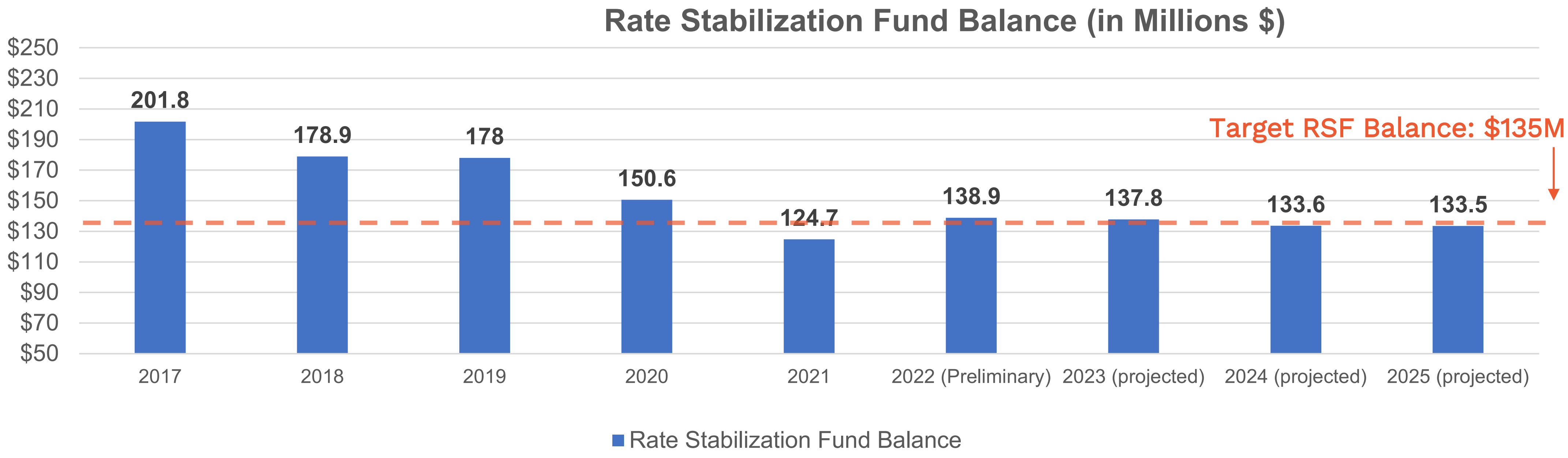


Total Cost

$4.53B

The utility cannot continue to mitigate increases using financial reserves.

Reserves have helped the utility manage revenue adjustments the past. Reserves are now at minimum levels and there is no guarantee they will be adequate to address future challenges without rate relief.

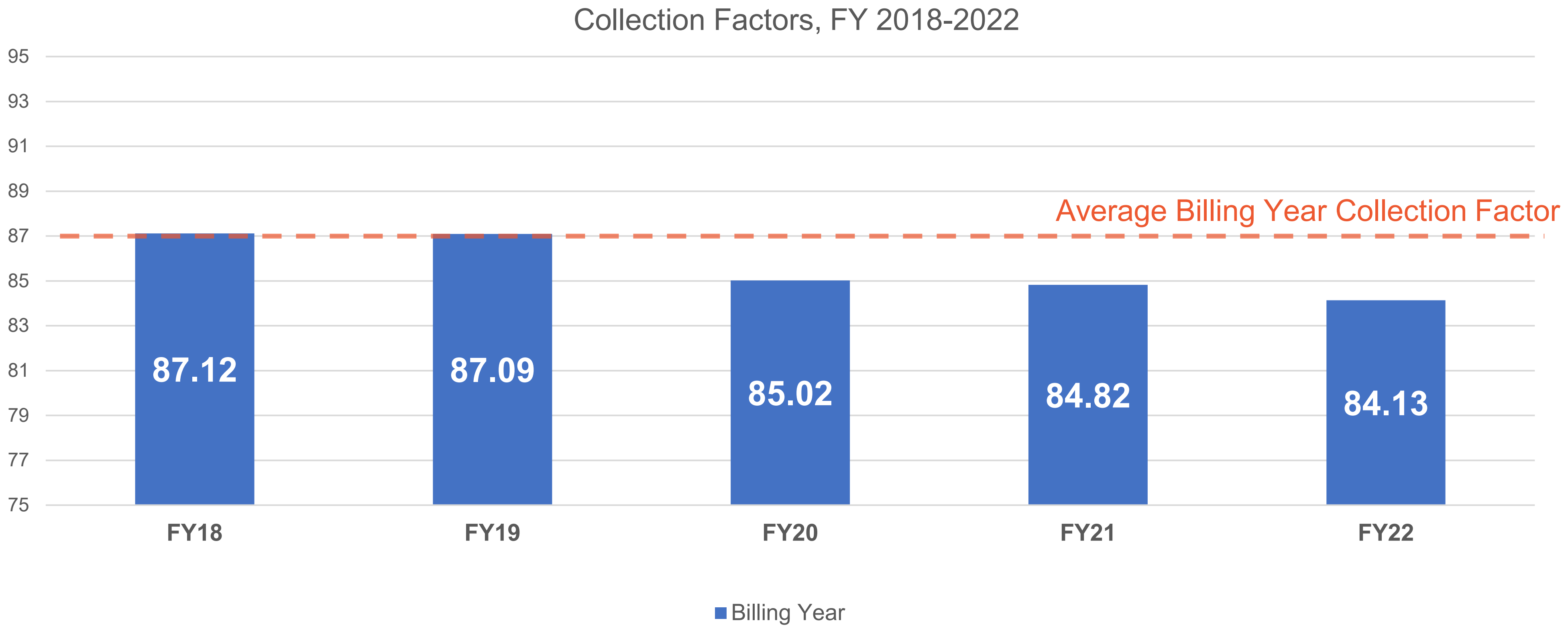


Credit rating agencies have been clear – **pushing Rate Stabilization Fund reserves below $120M will result in a downgrade for the utility**. The FY 2022 estimated Rate Stabilization Balance of $138.9M is just above the target level and will likely be drawn down in FY 2023 ($1.2M withdrawal) due to unanticipated increased costs.

FY2024 PROJECTIONS

First year collection rates remain lower than in the previous 5 years.

Collection rates continue to **trend downward with a 1.2% reduction[1]** in the first year [billing year] collection rate. This lower collection rate (delay in payments) puts pressure on the Department's revenues and rates.



[1] The FY 2020 to FY 2022 billing year collection factors are an average of 1.20% lower than the long-term historical average. Billing Year+1 and Billing Year+2 collection rates are not shown.

FY2024 PROJECTIONS

Rising costs drive the need for revenue adjustments in FY 2024 & FY 2025.

ADDITIONAL BASE RATE REVENUE REQUIRED WATER & WASTEWATER	
FISCAL YEAR	ADDITIONAL INCREMENTAL REVENUE REQUIRED ($000s)
2024	**$80,412 (12.75%)**
2025	**$62,977 (8.80%)**

Source: Schedule BV-1: Table C-1A

Water Customer Assistance Program

The City / WRB and PWD offer a variety of payment assistance options for customers including:

- Tiered Assistance Program ("TAP")

  TAP participants are shielded from proposed rate increases as their bills are based on a percentage of household income.

- Senior Citizen Discount
- Standard payment agreements
- Extended payment agreements
- Water Revenue Assistance Program ("WRAP")
- Charity discounts
- UESF Funding

As of July 2022, the City implemented the following shutoff policies:

- Raised the minimum threshold eligible for shutoff from $150 to $1,000
- Removed all TAP customers and TAP applicants from eligibility for shutoff
- Removed all customers receiving the Senior Citizen Discount from eligibility for shutoff
- Removed all customers the City could determine received Medicaid and/or homelessness prevention services from eligibility for shutoff.

Financial Policies

- Key Financial Policies
- Capital Funding
- Debt Service Coverage
- Outstanding Debt
- Cash Reserves
- Federal Assistance

PHILADELPHIA WATER DEPARTMENT

Key Financial Policies

PWD's financial metrics do not compare favorably with many of its peer utilities (e.g., financial reserves, debt service coverage). To improve its peer comparison, the PWD needs to bolster its financial metrics for the best alignment between debt service coverage and cash reserves.

PWD is focused on achieving **five key financial objectives** related to:

1. **Capital Funding from Current Revenues**: Transition to 20% funding of capital program from current revenues.
2. **Debt Service Coverage**: Maintain 1.30x debt service coverage for senior debt.
3. **Debt Issuance**: Relieve cash flow pressure and better align debt payments, over the lifetime of assets, through strategic debt amortization.
4. **Cash Reserves**: Maintaining and replenishing cash reserves to absorb future costs and offset the level of rate increases.
5. **Federal Assistance** – Secure $100M annually of federal assistance for Capital program

Capital Program Funding Trends

Over the next few years, **PWD is not projected to meet its goal of funding at least 20% of its capital program from current revenues**. Transfers to the Capital Account must increase, over time, to achieve the 20% goal.

	Cash Funded Capital (000s)	Total Expenditures for Capital (000s)	Percentage of Cash Funding (%)
FY2023	39,983	337,627	**11.8%**
FY2024	54,095	513,964	**10.5%**
FY2025	59,642	606,056	**9.8%**
FY2026	84,376	757,393	**11.1%**
FY2027	100,049	791,263	**12.6%**
FY2028	114,412	865,518	**13.2%**

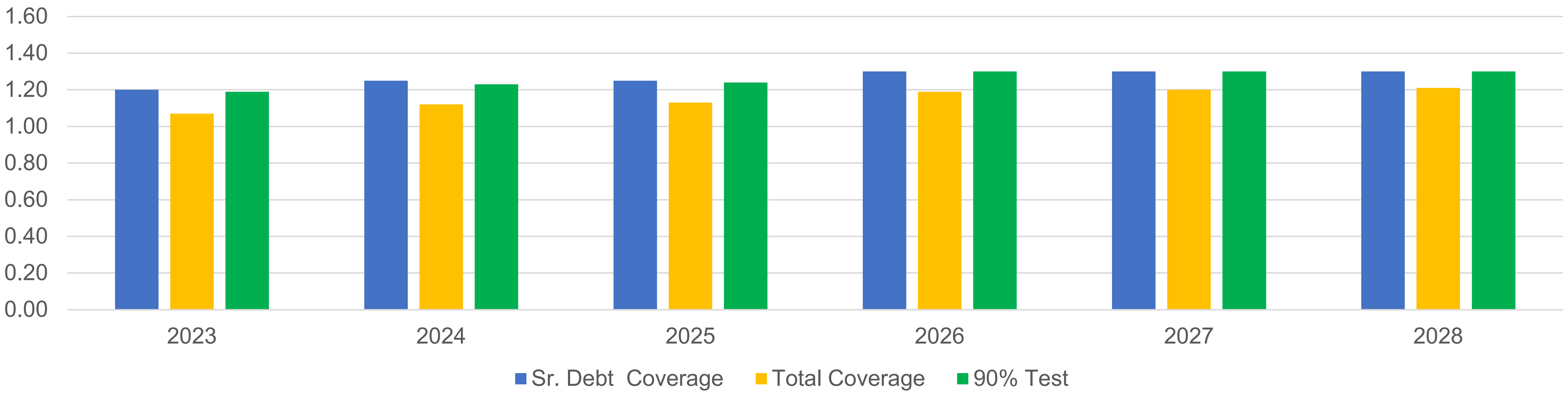
Source: Schedule BV-1: Table C-2

Debt Service Coverage

In FY 2024 and FY 2025 PWD is targeting, on an interim basis, a debt service coverage ratio of 1.25x for revenue bonds. Thereafter (FY2026-2028), PWD will adjust coverage to 1.30x consistent with approved financial metrics.

PROJECTED COVERAGE CALCULATIONS

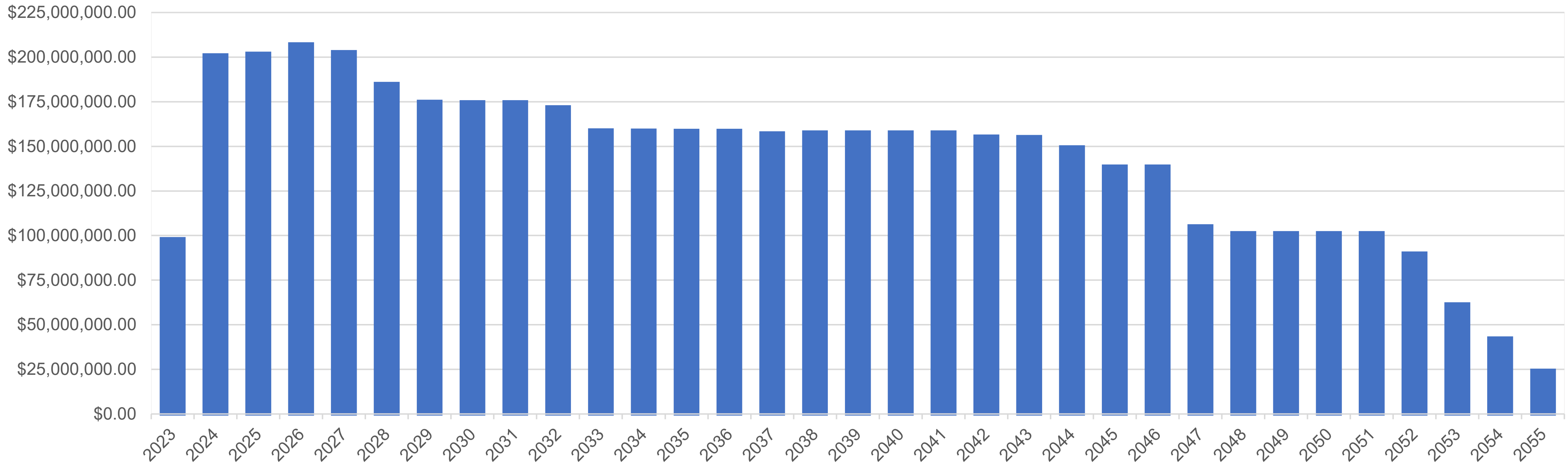
Required Senior Debt Service Coverage of 1.20x



Source: Schedule BV-1: Table C-2

Outstanding Debt

TOTAL DEBT SERVICE



- $2.69 billion of par outstanding (as of December 31, 2022) with a final maturity in November 2054 (FY 2055)
- 100% of the Department's outstanding debt is fixed rate
- In November 2020, the commercial paper program was authorized by City Council ordinance. In July 2021, the City executed its new commercial paper note program with a maximum authorization of $250 million.
- The Department continues to work closely with the Commonwealth in securing low-cost fixed rate loans under the Pennvest Loan Program. PWD is also pursuing federal assistance (through WIFIA).

Cash Reserves

Historically, PWD utilized cash reserves to offset the level of current rate increases. However, reserves are currently at/or projected to be below targets over the next several year.

Fiscal Year	Residual Fund Year-End Balance ($000s)	Goal Met?	Rate Stabilization Fund Year-End Balance ($000s)	Goal Met?	Total Cash Reserves ($000s)
2023	15,095	**Y**	137,760	**Y**	152,855
2024	15,079	**Y**	133,625	**N**	148,704
2025	15,078	**Y**	133,501	**N**	148,579
2026	15,047	**Y**	138,974	**Y**	154,021
2027	15,025	**Y**	146,291	**Y**	161,316
2028	15,002	**Y**	153,800	**Y**	168,802

Source: Schedule BV-1: Table C-1

- PWD aims to keep **$135M in the Rate Stabilization Fund** to cover annual expenditures when the revenues are less than projected. The Rate Stabilization Fund serves as the Water Department's primary source of liquidity and provides protection to ratepayers and bondholders.
- PWD aims to maintain a minimum of **$15M in the Residual Fund**, which contains the remaining revenues after all other payments are made.

FINANCIAL POLICIES

State & Federal Assistance

- PWD is pursuing state and federal assistance in order to support the funding of critical infrastructure upgrades.

- The cost savings from awarded assistance will help the Water Department continue to make needed system investments.

Assistance Program/ Requesting Organization	Date Submitted	Status	Amount Awarded Or Requested	Notes
PennVest	April 2020	Active Construction	$80.8M loan	Rehabilitation of the Torresdale Filtered Water Pump Station
PennVest	January 2021	Active Construction	$106M loan	Construction of the new preliminary treatment building at the Northeast Water Pollution Control Plant
PennVest	August 2021	Active Construction	$16.3M loan	Improvements to the City-owned Flat Rock Dam and introduce flow into the Manayunk Canal
Water Infrastructure Finance and Innovation Act (WIFIA) Letter of Interest	July 2021	Closed January 2023	$600M of capital projects with 49% funded via WIFIA	First Loan of $20M closed Jan. 2023 Suite of Water Master Plan Projects
PennVest	August 2021	Active Construction	$35.9M loan	Water main replacements
PEMA/FEMA Building Resilient Infrastructure and Communities (BRIC)	December 2021	Preliminary Notice of Award	Project Cost $35.7M Grant $25.0M	The Cohocksink Flood Mitigation Project, the final phase of a six-phase flood mitigation project, proposes to double conveyance capacity of the combined sewer system
PennVest	February 2022	Pending	$125M loan	Replacement of an existing clear well basin (“CWB”), constructed in 1904, which is showing sign
PEMA/FEMA Building Resilient Infrastructure and Communities (BRIC)	December 2022	Submitted	Project cost $105M Grant request $50M	Construct a new effluent pumping station (EPS) at the Northeast Water Pollution Control Plant (NEWPCP). This pumping station will reduce the risk of flooding at the NEWPCP by pumping treated flows to the Delaware River during peak wet weather events.
PEMA/FEMA Building Resilient Infrastructure and Communities (BRIC)	December 2022	Submitted	Project cost $7.7M Grant Request $5.4M	Complete the 21st Street Flood Hazard Mitigation Project for storm flood risk reduction within the Wingohocking Watershed
PennVest	February 2023	In Progress	$72M	Water main and sewer replacements

Peer Utility Comparison

- Peer Utilities and Credit Rating
- Peer Utility Financial Metrics
- Affordability Comparison

PHILADELPHIA WATER DEPARTMENT

PEER UTILITY COMPARISON

Rating Distribution of Peer Utilities

PWD's long-term credit standing falls within "A" for all three major credit rating agencies. Most of PWD's peer utilities are ranked in the 'AA' category.

Key: (w): water only, (s): sewer only

PEER UTILITY COMPARISON

PWD Credit Rating Overview

Synopsis of rating agency reports for City of Philadelphia Water and Wastewater Revenue Bonds Bonds in 2022.

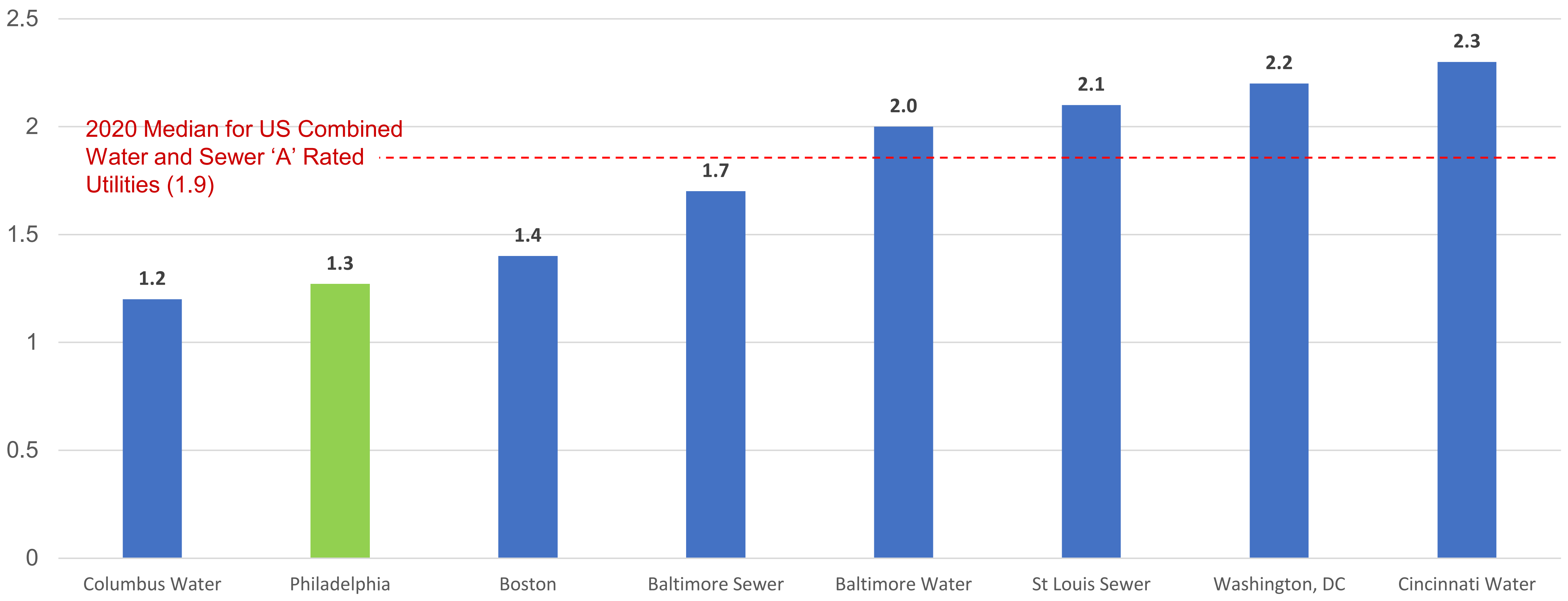
Fitch[1] | A+ Rated: Stable Outlook (2022)	Moody's[2] | A1 Rated: Stable Outlook (2022)	S&P[3] | A+ Rated: Stable Outlook (2022)
STRENGTHS AND OPPORTUNITIES		
• Stable operations and robust system capacity • Low operating risk profile • Essential service provider - diverse service area • Satisfactory financial performance; sound historical finances • Improvements in service area characteristics and rate flexibility	• Satisfactory reserves and reserve policy • Large and diverse service area • Closed-loop legal framework • Declining debt service debt profile • Some flexibility in capital budget	• A diverse and stable customer base • Liquidity remains satisfactory • Ample water supply & treatment capacity
CHALLENGES*		
• **Failure to secure rate increases in timely manner to support financial profile** • Leverage (debt to funds available for debt service) concerns if 'revenue expectations' (i.e. rate increases) are not met	• Current revenue stress due to continued elevated residential delinquencies • Coverage is projected to decline to covenant level (1.2x debt service coverage • Consent Order & Agreement and aging infrastructure necessitate robust Capital Improvement Program and related debt issuance • Continued rate limitations through rate board approval structure; continued rate increases are required to support debt and capital plan	• Uncertainty around Rate Board process and PWD's ability to obtain rate increases • Substantial investment and future debt issuances needed to support the Department's aging infrastructure via CIP • Affordability concerns given the City's elevated poverty rate

*Important Note: The challenges presented include factors that could lead to a rating downgrade.

1.Source: Fitch Ratings. Fitch Rates Philadelphia (PA) Water & Wastewater Revs 'A+'; Outlook Stable – July 28, 2022.
2.Source: Moody's Investor's Report. Philadelphia Water & Sewer Enterprise, PA New Issue Report – July 28, 2022.
3.Source: S&P Global Ratings – Philadelphia Water Sewer Ratings Direct Report –

Annual Debt Service Coverage

PWD’s debt service coverage is below average when compared to other “A” water and sewer rated utilities.

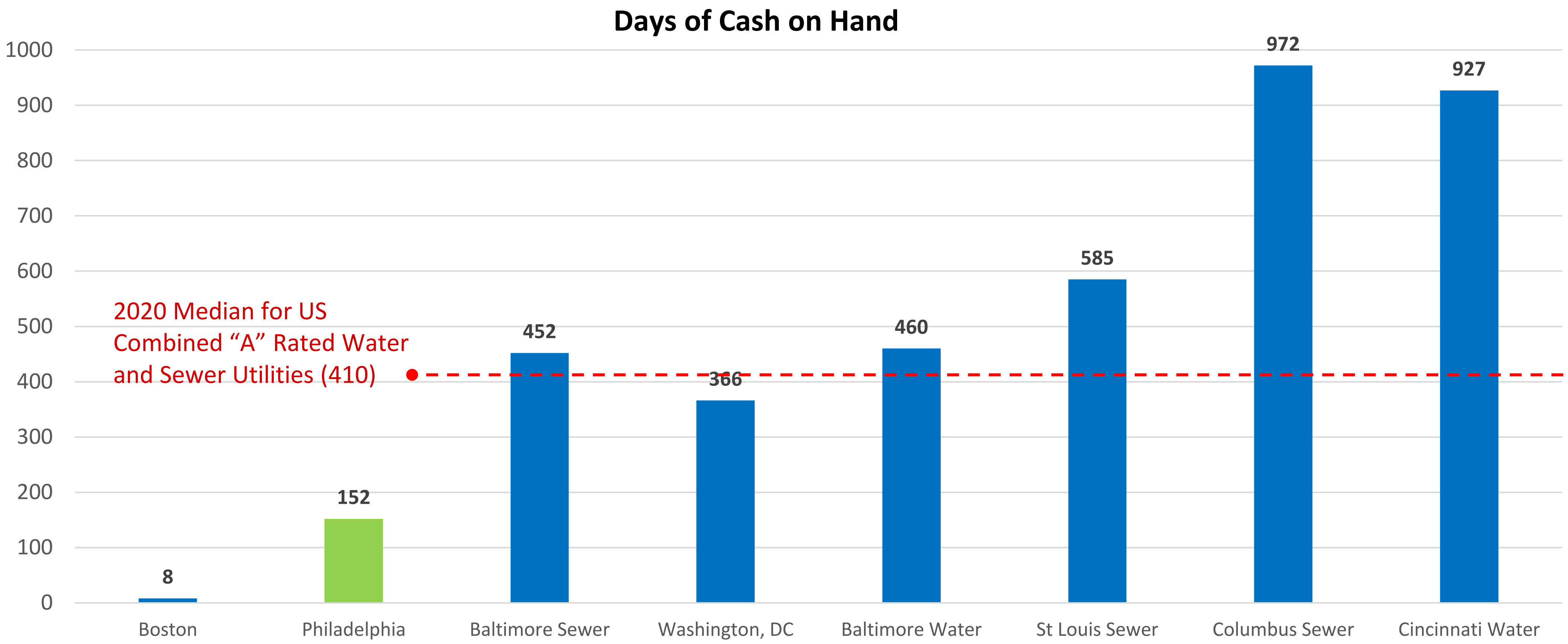


Source: Moody’s Investor Services. Report: “Medians - Liquidity and debt service coverage remained strong in fiscal 2020– May 2022”)
Philadelphia Water Department Financial Statements for FY 2021

PEER UTILITY COMPARISON

PWD Reserve Levels vs. Peer Utilities

PWD has modest reserves compared to peer utilities and falls below the median for “A” rated water and sewer utilities.

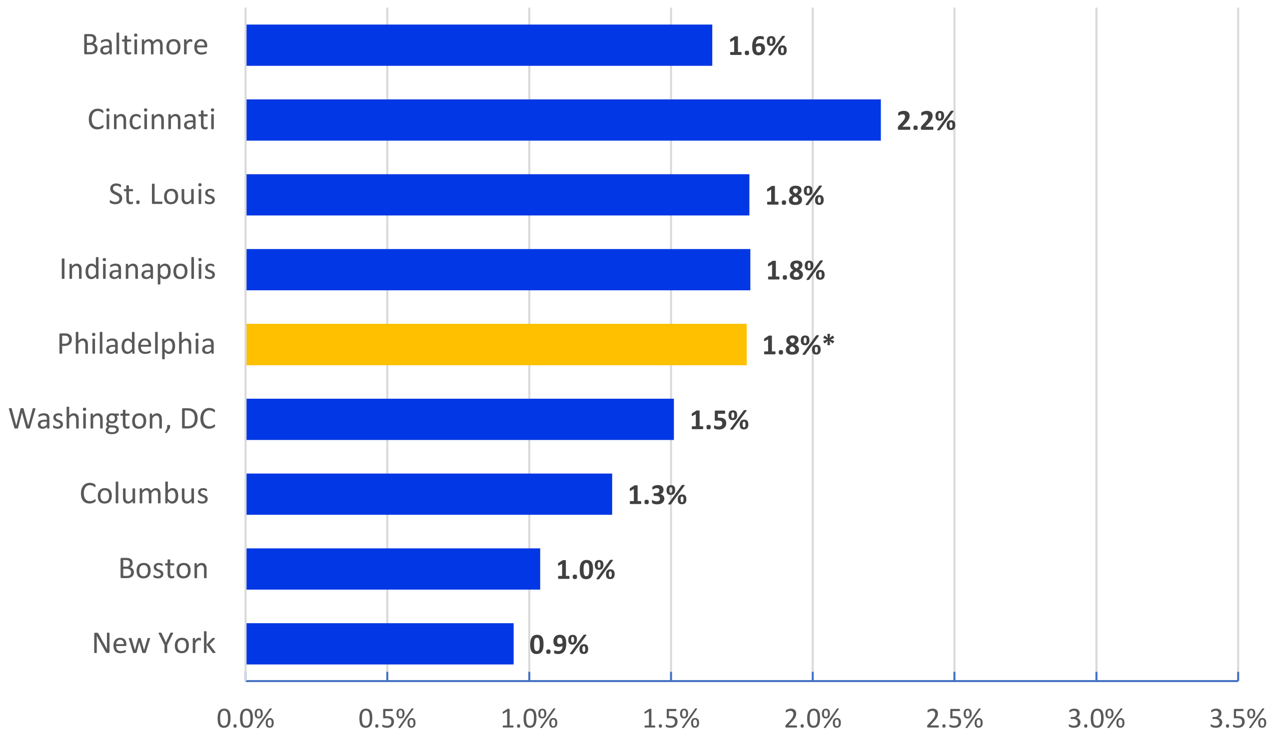


Source: Moody’s Investor Services. Report: “Medians - Liquidity and debt service coverage remained strong in fiscal 2020– May 2022”)
NOTE: Days on cash is defined as the number of days that an organization can continue to pay its operating expenses, given the amount of cash available

PEER UTILITY COMPARISON

Affordability Comparison vs. Peer Utilities

COMBINED BILL AS % OF EACH CITY'S MEDIUM HOUSEHOLD INCOME



COMBINED BILL OF EACH CITY

PEER CITY	MONTHLY BILL
Cincinnati	$84.45
St. Louis	$72.16
Philadelphia	**$77.47****
Indianapolis	$80.55
Baltimore	$112.11
Columbus	$63.07
New York	$55.69
Boston	$70.78
Washington, DC	$117.76

* At 1.8%, Philadelphia falls below the affordability threshold recommended by industry standards.

** This combined monthly bill reflects the proposed rate increase in FY 2024.

Source: Median Household Income data from census.gov library.
Peer utility bill data from each utility's most recent rates and charges.

Summary

- PWD projected revenues and revenue requirements indicate a significant increase in rates for FY24 and FY25 will be required in order to support essential utility services.

- PWD needs additional revenues to counter inflationary pressures and maintain PWD's aging system. The costs for everything from chemicals, materials, services and labor are rising faster than anticipated.

- Chronic maintenance requirements for aging plants in combination with necessary facility additions/replacements also contribute to the need for rate relief.

- PWD cannot continually make withdrawals from financial reserves to support day-to-day operations. Rather, PWD must sustain its operations, maintain liquidity and improve its financial position by requesting additional revenues.in FY 2024 and FY 2025.

- PWD's financial position does not compare favorably with many of its peer utilities (e.g., financial reserves, debt service coverage). To improve its peer comparisons for the long term, the PWD needs to bolster its financial metrics for the best alignment between debt service coverage and reserves.

Appendix I

FY23-FY28 Projections:

Projected Revenue and Revenue Requirements

FY 23 – FY 28:

Overall Projected Revenue and Revenue Requirements

TABLE C-1: PROJECTED REVENUE AND REVENUE REQUIREMENTS
Base and TAP-R Surcharge Rates
(in thousands of dollars)

Line No.	Description	Year	Percent Increase	Months Effective	Fiscal Year Ending June 30, 2023	2024	2025	2026	2027	2028
	OPERATING REVENUE									
1	Water Service - Existing Rates				299,168	301,672	304,366	307,210	306,806	306,047
2	Wastewater Service - Existing Rates				480,288	485,480	488,027	489,953	489,257	479,344
3	Total Service Revenue - Existing Rates				779,455	787,152	792,393	797,163	796,063	785,392
	Additional Service Revenue Required									
4		FY 2024	11.02%	10		72,392	87,966	88,000	87,829	86,507
5		FY 2025	8.77%	10			62,977	77,619	77,512	76,458
6		FY 2026	12.66%	10				99,472	121,709	120,052
7		FY 2027	7.98%	10					70,520	85,228
8		FY 2028	8.98%	10						84,516
9	Total Additional Service Revenue Required				-	72,392	150,942	265,091	357,570	452,760
10	Total Water & Wastewater Service Revenue				779,455	859,544	943,335	1,062,254	1,153,634	1,238,152
	Other Income (a)									
11	Other Operating Revenue				20,247	19,226	26,661	26,719	26,694	26,668
12	Debt Reserve Account Interest Income				-	-	-	-	-	-
13	Operating Fund Interest Income				1,882	1,982	2,023	2,192	2,271	2,331
14	Rate Stabilization Interest Income				1,365	1,339	1,336	1,360	1,423	1,497
15	Total Revenues				802,949	882,092	973,356	1,092,525	1,184,022	1,268,648
	OPERATING EXPENSES									
16	Total Operating Expenses				(564,671)	(611,326)	(654,537)	(690,172)	(720,118)	(752,972)
	NET REVENUES									
17	Transfer From/(To) Rate Stabilization Fund				1,229	4,136	124	(5,473)	(7,318)	(7,509)
18	NET REVENUES AFTER OPERATIONS				239,507	274,902	318,943	396,880	456,586	508,167
	DEBT SERVICE									
	Senior Debt Service									
	Revenue Bonds									
19	Outstanding Bonds				(187,747)	(185,847)	(183,090)	(183,088)	(183,091)	(166,318)
20	PENNVEST Loans				(10,935)	(12,031)	(16,329)	(23,721)	(29,283)	(32,313)
21	Projected Future Bonds				-	(21,083)	(53,880)	(92,771)	(129,341)	(175,213)
22	Commercial Paper				(900)	(900)	(900)	(900)	(900)	(900)
23	WIFIA				-	(17)	(956)	(4,812)	(8,532)	(16,153)
24	Total Senior Debt Service				(199,582)	(219,878)	(255,154)	(305,292)	(351,146)	(390,897)
25	TOTAL SENIOR DEBT SERVICE COVERAGE (L18/L24)				1.20 x	1.25 x	1.25 x	1.30 x	1.30 x	1.30 x
26	Subordinate Debt Service				-	-	-	-	-	-
27	Transfer to Escrow				-	-	-	-	-	-
28	Total Debt Service on Bonds				(199,582)	(219,878)	(255,154)	(305,292)	(351,146)	(390,897)
29	CAPITAL ACCOUNT DEPOSIT				(23,383)	(24,295)	(25,242)	(26,226)	(27,249)	(28,312)
30	TOTAL COVERAGE (L18/(L24+L26+L29))				1.07 x	1.12 x	1.13 x	1.19 x	1.20 x	1.21 x
31	End of Year Revenue Fund Balance				16,542	30,729	38,547	65,361	78,191	88,958

(a) Includes other operating and nonoperating income, including interest income on funds and accounts transferable to the Revenue Fund and reflects projected contra revenue credits for Affordability Program Discounts (TAP Costs).

Source: Schedule BV-1: Table C-1

FY 23 – FY 28:
Projected Base Rate Revenue and Revenue Requirements

TABLE C-1A: PROJECTED REVENUE AND REVENUE REQUIREMENTS
Base Rates Excluding TAP-R Surcharge
(in thousands of dollars)

Line No.	Description	Fiscal Year Ending June 30, 2023	2024	2025	2026	2027	2028
	OPERATING REVENUE						
1	Water Service - Existing Rates	294,038	296,093	298,680	301,466	301,071	300,328
2	Wastewater Service - Existing Rates	472,292	476,637	478,997	480,829	480,147	470,259
3	Total Service Revenue - Existing Rates	766,330	772,731	777,677	782,295	781,218	770,587
	Additional Service Revenue Required						
	Year / Percent Increase / Months Effective						
4	FY 2024 / 12.75% / 10		80,412	99,154	99,743	99,605	98,250
5	FY 2025 / 8.80% / 10			62,977	77,619	77,512	76,458
6	FY 2026 / 12.70% / 10				99,472	121,709	120,052
7	FY 2027 / 8.00% / 10					70,520	85,228
8	FY 2028 / 9.00% / 10						84,516
9	Total Additional Service Revenue Required	-	80,412	162,131	276,834	369,346	464,504
10	Total Water & Wastewater Service Revenue	766,330	853,142	939,807	1,059,129	1,150,564	1,235,091
	Other Income (a)						
11	Other Operating Revenue	29,601	29,664	29,713	29,771	29,746	29,720
12	Debt Reserve Account Interest Income	-	-	-	-	-	-
13	Operating Fund Interest Income	1,882	1,982	2,023	2,192	2,271	2,331
14	Rate Stabilization Interest Income	1,365	1,339	1,336	1,360	1,423	1,497
15	Total Revenues	799,178	886,128	972,880	1,092,452	1,184,004	1,268,639
	OPERATING EXPENSES						
16	Total Operating Expenses	(564,671)	(611,326)	(654,537)	(690,172)	(720,118)	(752,972)
	NET REVENUES						
17	Transfer From/(To) Rate Stabilization Fund	5,000	100	600	(5,400)	(7,300)	(7,500)
18	NET REVENUES AFTER OPERATIONS	239,507	274,902	318,943	396,880	456,586	508,167
	DEBT SERVICE						
	Senior Debt Service						
	Revenue Bonds						
19	Outstanding Bonds	(187,747)	(185,847)	(183,090)	(183,088)	(183,091)	(166,318)
20	PENNVEST Loans	(10,935)	(12,031)	(16,329)	(23,721)	(29,283)	(32,313)
21	Projected Future Bonds	-	(21,083)	(53,880)	(92,771)	(129,341)	(175,213)
22	Commercial Paper	(900)	(900)	(900)	(900)	(900)	(900)
23	WIFIA	-	(17)	(956)	(4,812)	(8,532)	(16,153)
24	Total Senior Debt Service	(199,582)	(219,878)	(255,154)	(305,292)	(351,146)	(390,897)
25	TOTAL SENIOR DEBT SERVICE COVERAGE (L18/L24)	1.20 x	1.25 x	1.25 x	1.30 x	1.30 x	1.30 x
26	Subordinate Debt Service	-	-	-	-	-	-
27	Transfer to Escrow	-	-	-	-	-	-
28	Total Debt Service on Bonds	(199,582)	(219,878)	(255,154)	(305,292)	(351,146)	(390,897)
29	CAPITAL ACCOUNT DEPOSIT	(23,383)	(24,295)	(25,242)	(26,226)	(27,249)	(28,312)
30	TOTAL COVERAGE (L18/(L24+L26+L29))	1.07 x	1.12 x	1.13 x	1.19 x	1.20 x	1.21 x
31	End of Year Revenue Fund Balance	16,542	30,729	38,547	65,361	78,191	88,958

(a) Includes other operating and nonoperating income, including interest income on funds and accounts transferable to the Revenue Fund.

Source: Schedule BV-1: Table C-1A

Appendix II FY2022 Financial Performance

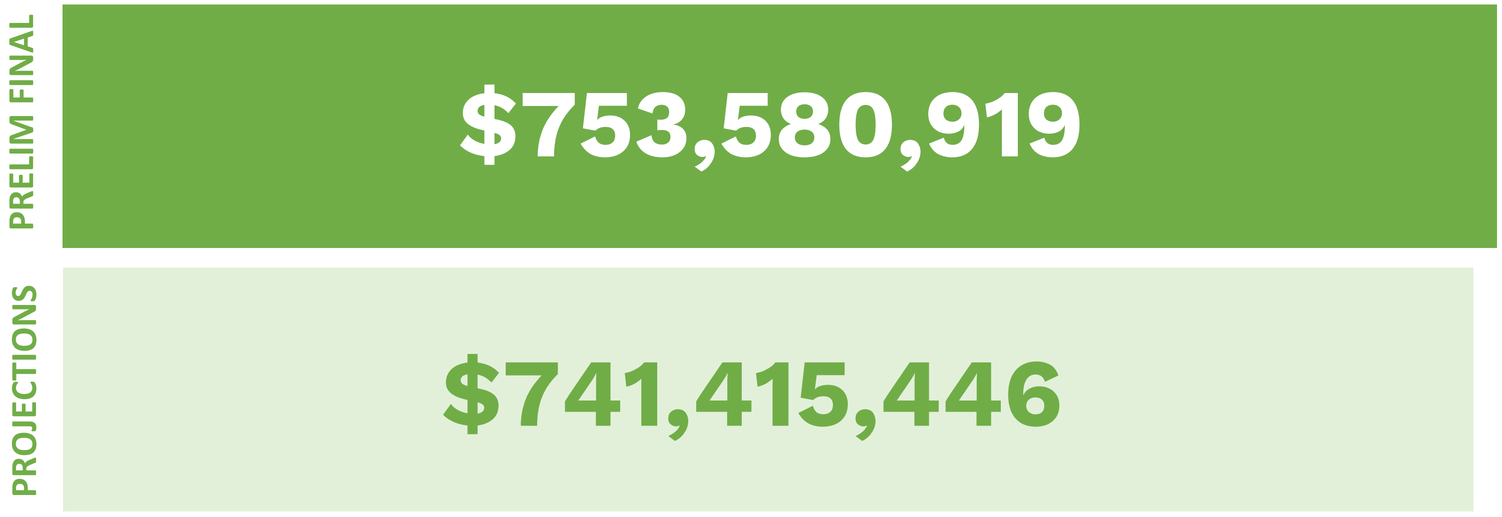
- Revenue and Expense Summary
- Debt Service and Capital Funding
- Cash Balances

FINANCIAL PERFORMANCE

FY 2022 Revenues

Revenue results were **higher than projections, with a 1.64% variance.** The performance reflects the benefit of $6.7 million of revenues from the LIHWAP program and $1.5 million of revenues from the PHDC program.

FY 2022 REVENUES

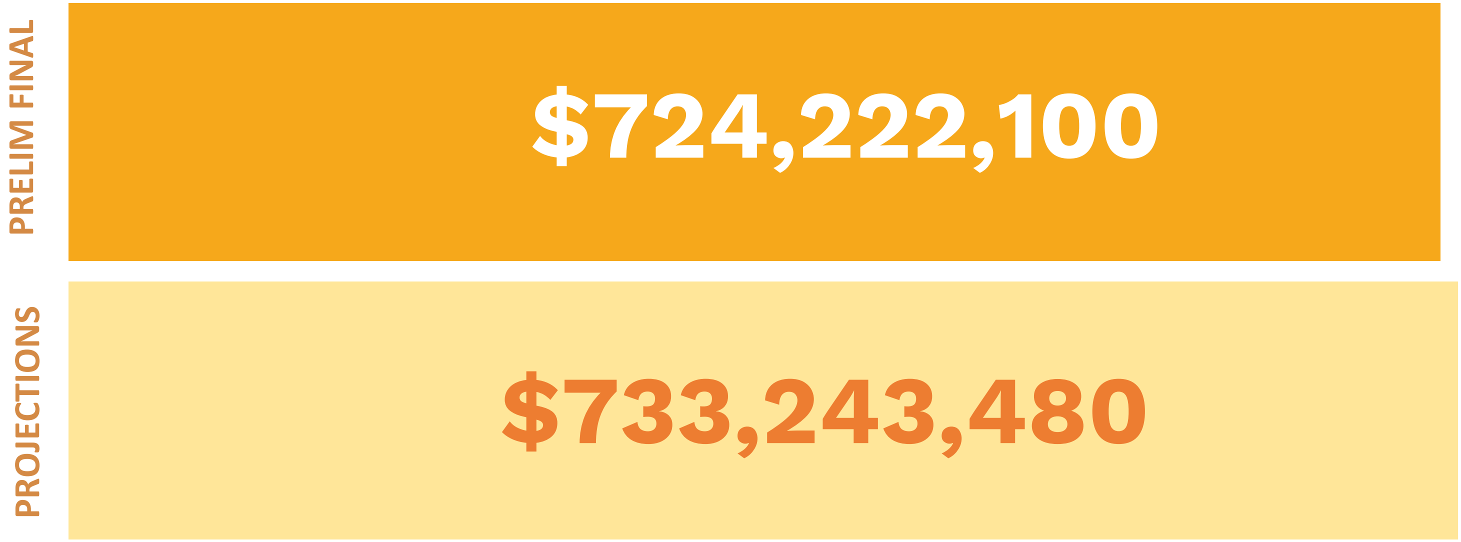


Notes: *Revenue totals presented exclude revenues from the Rate Stabilization Fund.*
Based upon PWD's Financial Plan Outlook as of 02/2022.

FY 2022 Expenses

Expenses were **lower than projections, with a -1.23% variance.** The performance reflects the impact of $7.5 million of maintance contracts which experienced delays.

FY 2022 EXPENSES



***Note**: Obligations exclude transfers to the Rate Stabilization Fund and liquidated encumbrances.*

FINANCIAL PERFORMANCE

FY 2022 Expense Detail Comparison

	EXPENSE CATEGORY	FY 2022 PROJECTION* ($000s)	FY 2022 PRELIMINARY FINAL ($000s)	VARIANCE
40%	Workforce Costs	$293,380	288,970	-$(4,410)
24%	Services	172,131	165,331	-(6,800)
3%	Electricity and Gas	19,524	19,312	-(212)
5%	Materials, Equipment & Supplies	35,922	31,391	-(4,531)
3%	Chemicals	24,786	29,366	+4,580
<1%	Indemnities	3,595	6,369	+2,774
24%	Capital Program – Debt Service Payments	177,134	176,993	-(140)
<1%	General Fund Reimbursement	6,772	6,490	-(282)
	TOTAL	**$733,243**	**$724,222**	**-$9,021**

**Based upon PWD's Financial Plan Outlook as of 02/2022.*

FINANCIAL PERFORMANCE

FY 2022 Debt Service & Capital Funding

Debt Service	FY22 Prelim Final	Minimum Requirement	Target
Revenue Bonds Debt Service Coverage	1.29x	1.20x	1.30X
90% Test Coverage	1.37X	0.90X	1.00X
Total Debt Service Coverage	1.11x	1.10x	NA

Capital Funding	Total Transfer to Capital Account ($000)	Total Expenditures for Capital ($000)	%	20% Goal Met?
FY2022 Projections*	36,747	**287,785**	12.8	**No**
FY2022 Preliminary Final	51,164	**238,335**	21.5	**Yes**

**Based upon PWD's Financial Plan Outlook as of 02/2022.*

FINANCIAL PERFORMANCE

FY 2022 Rate Stabilization Fund Transfers & Liquidations

During FY 2022 PWD made a deposit to the rate stabilization fund of $15 million.

Transfers	FY22 Projection* ($000)	FY22 Prelim Final ($000)	Variance ($000)
Rate Stabilization Fund Withdrawal	$1,366	$15,000	$13,634

Liquidations	FY22 Projection* ($000)	FY22 Prelim Final ($000)	Variance
Liquidated Encumbrances	($28,638)	($36,805)	28%

FY 2022 Cash Balances

Cash Balances	Residual Fund*	Rate Stabilization Fund*	TOTAL Cash Reserves
FY2022 Projection	$15.04M	$126.03M	**$141.07M**
FY2022 Prelim Final	$16.10M	$138.99M	**$155.09M**
Target	$15.0M	$135.0M	**$150.0M**

PHILADELPHIA WATER DEPARTMENT

Ballard Spahr LLP

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www.ballardspahr.com

MEMORANDUM

TO	City of Philadelphia Water Department
FROM	Valarie J. Allen
DATE	December 15, 2022
RE	Flow of capital and operating funds under the City of Philadelphia Restated General Water and Wastewater Revenue Bond Ordinance of 1989, as amended (the “General Bond Ordinance”)

In connection with the rate proceedings currently being undertaken by the City of Philadelphia Water Department (“Water Department”), you have asked us, as bond counsel to the Water Department, to prepare for submission a discussion of the legally permitted applications, including without limitation the operating and capital expenditure, of Project Revenues and other moneys credited to the Water and Wastewater Funds established under the General Bond Ordinance. We have prepared and we attach that discussion, entitled “Flow of Funds and Permitted Expenditures and Other Uses Under the Restated General Water and Wastewater Revenue Bond Ordinance of 1989, as amended,” to this memorandum. The discussion attached supersedes in all respects the discussion entitled “Flow of Funds and Permitted Expenditures and Other Uses Under the Restated General Water and Wastewater Revenue Bond Ordinance of 1989, as amended” dated January 10, 2021.

Ballard Spahr LLP was bond counsel to the Water Department at the time and participated in the drafting of the General Bond Ordinance. Since 1958, Ballard Spahr LLP has been listed continuously as a nationally recognized bond counsel firm in *The Bond Buyer’s Municipal Marketplace* (the Red Book). I have served on Ballard’s bond counsel team for the Water Department since 2007. I am a partner in the firm and co-chair the firm’s public finance practice group. I am resident in our Philadelphia offices, where I practice exclusively in the area of public finance law.

Flow of Funds and Permitted Expenditures and Other Uses Under the Restated General Water and Wastewater Revenue Bond Ordinance of 1989, as amended

Prepared by
Ballard Spahr LLP
Bond Counsel

December 15, 2022

Ballard Spahr LLP

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Section 1. ***INTRODUCTION AND BACKGROUND***

The treatment and application of revenues and other moneys of the City of Philadelphia (the "*City*"), relating to the its water system and wastewater system (together, the "*System*"), are governed by a legal structure created under Pennsylvania law, namely, the statutes and ordinances known as the Philadelphia Home Rule Charter[1] (the "*City Charter*"), the First Class City Revenue Bond Act[2] (the "*Revenue Bond Act*") and the City's Restated General Water and Wastewater Revenue Bond Ordinance of 1989 (as amended and supplemented, the "*General Bond Ordinance*" or "*GBO*"). This paper focuses primarily on the General Bond Ordinance, the provisions of which control, among other things, (1) the flow of funds or moneys generated by and otherwise related to the System, and (2) the City's ability to obtain capital to invest in the infrastructure necessary to keep the System in good working condition.

The City Charter endows the Water Department with the duty and power to, among other things, (1) operate, maintain, repair, construct and improve the City's water supply and sewage disposal systems and facilities, and (2) impose and collect rates and charges sufficient to pay the costs of operating, maintaining, repairing, constructing and improving such systems and facilities.[3] In order for the Water Department to keep the System in good working condition and meet its mandate, it must repair, replace and improve critical infrastructure on a regular basis. As noted in the annotations to the relevant provisions of the City Charter, paying the ongoing costs associated with the repair, construction and improvement of water and sewer infrastructure represent major capital investments by the City, the undertaking of which requires authorization by City Council. The Revenue Bond Act provides the City Council with the authority to finance these capital costs through the issuance of debt payable solely from revenues generated by or otherwise received for the System. City Council authorizes the City to make operating and capital expenditures, incur debt and fund reserves for the System pursuant to the General Bond Ordinance.

The City finances capital expenditures for the System primarily through (1) the incurrence of debt through the issuance of water and wastewater revenue bonds and notes (collectively, "*Bonds*") and (2) the accumulation of revenues generated by the System and deposited to the Capital Account.[4] The General Bond Ordinance facilitates both of these methods for obtaining capital, but not simply by providing the mechanics for issuing bonds and accumulating revenues. The General Bond Ordinance is a contract between the City and its Bondholders concerning how the repayment of debt and other financing activities of the Water Department will be performed and controlled. It originally was enacted during a period when the City was financially distressed. The financial, operational, procedural and other covenants made by the City in the General Bond Ordinance largely reflect what was required by investors, rating agencies, bond insurers and other credit enhancers at that time in order for the City to be able to sell its Bonds in the capital market and achieve an affordable cost of capital for its ratepayers.

On November 19, 2020, the Philadelphia City Council passed the Twenty-Fifth Supplemental Ordinance to the General Bond Ordinance, Bill No. 200599, enacted by signature of the mayor on December 1, 2020 (the "*Twenty-Fifth Supplemental Ordinance*"), to establish a revolving commercial

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[1] Philadelphia Home Rule Charter adopted by the electors of the City of Philadelphia on April 17, 1951, as amended.

[2] The First Class City Revenue Bond Act approved October 18, 1972 (Act No. 234, 53 P.S. § 15901 to 16924) as from time to time amended.

[3] See City Charter §5-800, §5-801.

[4] The City may from time to time receive state or federal grants, but any such amounts are immaterial for purposes of this discussion.

paper program ("*CP Program*") to provide the Water Department a source of an interim, short-term financing to meet immediate capital spending needs between long-term debt issuances. The Twenty-Fifth Supplemental Ordinance provides for the issuance of obligations under the CP Program ("*CP Obligations*"), on a revolving basis, in an aggregate principal amount not greater than $400 million at any time outstanding. When issued, CP Obligations will constitute Bonds outstanding under the General Bond Ordinance, secured and payable with other senior debt under issued or incurred by the City under the General Bond Ordinance.

Capitalized terms not otherwise defined in the narrative have the definitions set forth in the Appendix hereto.

Section 2. ***PURPOSES OF GENERAL BOND ORDINANCE***

The General Bond Ordinance was enacted by the City for the purposes of:

- Authorizing the issuance from time to time by the City of Bonds, payable solely from revenues attributable to the System, to pay capital costs of the System;

- Establishing a contract and security agreement between the City and holders of Bonds (and credit providers for Bonds) under which the City, for so long as any Bond or related obligation is outstanding, (a) covenants, among other things, to pay the Bonds and related obligations and (b) pledges security to holders of the Bonds (and credit providers for Bonds); and

- Establishing a system of funds and accounts with a fiscal agent, for the benefit of the holders of Bonds (and credit providers for Bonds), to facilitate and control the segregation, deposit, holding, investment, transfer and expenditure of all Project Revenues (defined below) and all other moneys related to the System, including for the payment of the Bonds.

Section 3. ***SECURITY INTERESTS IN PROJECT REVENUES AND WATER AND WASTEWATER FUNDS***

This section discusses the sources of payment and security for Bonds, as governed by the General Bond Ordinance. "Revenue bonds" are so called because they are payable only from a particular stream of revenues. In the case of Water and Wastewater Revenue Bonds, they are payable from "Project Revenues," i.e., revenues generated by and collected in respect of the System (as more particularly defined below). Under the General Bond Ordinance, the City has covenanted that it will expend Project Revenues only in support of the System and in a specified order of priority; and the City has granted to U.S. Bank National Association, as fiscal agent under the General Bond Ordinance (together with its successors and assigns, the "*Fiscal Agent*"), for the benefit of all Bondholders (other than holders of

Subordinated Bonds),[5] a first lien on and security interest in all Project Revenues and amounts in the Water and Wastewater Revenue Funds (other than the Rebate Fund).[6]

3.1 Deposit of Project Revenues, Segregation of Water and Wastewater Funds

In order to preserve and protect Bondholders' sole source of payment and security – Project Revenues – the General Bond Ordinance provides for strict controls on the collection, deposit, segregation and disbursement of Project Revenues. The City must cause all Project Revenues received by it to be deposited into the Revenue Fund upon receipt; and the Fiscal Agent must, upon receipt of Project Revenues, deposit them into the Revenue Fund. Under the General Bond Ordinance, "*Project Revenues*" is defined to include:

> all rents, rates, fees and charges imposed or charged for the connection to, or use or product of or services generated by the System to the ultimate users or customers thereof, all payments under bulk contracts with municipalities, governmental instrumentalities or other bulk users, all subsidies or payments payable by Federal, State or local governments or governmental agencies on account of the cost of operation of, or the payment of the principal of or interest on moneys borrowed to finance costs, chargeable to the System, all grants, payments and contributions made in aid or on account of the System exclusive of grants and similar payments and contributions solely in aid of construction and all accounts, contract rights and general intangibles representing the foregoing.
> *(GBO Section 2.01)*

The funds and accounts established under the General Bond Ordinance must be held separate and apart from all other funds and accounts of the City and the Fiscal Agent. The moneys in such funds and accounts may not be commingled with, loaned or transferred among themselves, or with or to any other funds or accounts of the City, except as expressly permitted in the General Bond Ordinance.
(GBO Section 4.05(a))

3.2 Pledge of Project Revenues

The City has pledged and granted a lien on and security interest in all Project Revenues to the Fiscal Agent, for the equal and ratable security and payment of all Bonds (other than Subordinated Bonds). Financing statements have been filed with the Secretary of State of the Commonwealth of

5 The Fiscal Agent must hold and apply such security interests, in trust, for the equal and ratable benefit and security of all present and future Holders of Bonds (other than Subordinated Bonds) issued pursuant to the provisions of the General Bond Ordinance and each Supplemental Ordinance, without preference, priority or distinction of any one Bond over any other Bond (other than Subordinated Bonds); provided however, that the pledge of the General Bond Ordinance may also be for the benefit of a Credit Facility and Qualified Swap, or any other person who undertakes to provide moneys for the account of the City for the payment of principal or redemption price of and interest on any Series of Bonds (other than Subordinated Bonds), on and equal and ratable basis with Bonds, to the extent provided by any Supplemental Ordinance or Determination.

6 The Rebate Fund is established for the purpose of paying to the United States Treasury the amount required to be rebated pursuant to Section 148(f) of the Code. All amounts in the Rebate Fund, including income earned from investment of amounts in the Rebate Fund shall be held free and clear of the lien created by the General Bond Ordinance.

Pennsylvania in respect of such pledge and grant of security interest.
(GBO Section 4.02)

3.3 *Pledge of Funds and Accounts*

The City has pledged and granted a lien on and security interest in all amounts on deposit in or standing to the credit of the funds and accounts (other than the Rebate Fund) established in Section 4.04 of the General Bond Ordinance, together with interest earnings on amounts in such funds and accounts (other than the Rebate Fund) to the Fiscal Agent, for the equal and ratable security and payment of all Bonds (other than Subordinated Bonds). Financing statements have been filed with the Secretary of State of the Commonwealth of Pennsylvania in respect of such pledge and grant of security interest.
(GBO Section 4.02)

The funds and accounts established under Section 4.04 of the General Bond Ordinance and held by the Fiscal Agent include the Revenue Fund; the Sinking Fund, and within the Sinking Fund the Debt Service Account, Debt Reserve Account and Charges Account; the Subordinated Bond Fund; the Rate Stabilization Fund; the Residual Fund; the Construction Fund, and within the Construction Fund the Bond Proceeds Account, Capital Account and Existing Projects Account; and the Rebate Fund. In addition, under certain conditions in connection with the issuance of one or more Series of Bonds, the City may establish additional funds or accounts to be held for the benefit of one or more Series of Bonds, as set forth in Supplemental Ordinances.
(GBO Section 4.04)

Section 4. ***INTRODUCTION TO FUNDS AND ACCOUNTS AND THEIR PURPOSES***

This Section lists the funds and accounts established under the General Bond Ordinance and summarizes the purposes for which moneys in each fund or account may be used.

4.1 *Revenue Fund*

All Project Revenues initially are deposited into the Revenue Fund for payment of Operating Expenses; and then remaining Project Revenues are transferred to the other funds and accounts established under the General Bond Ordinance, as described in ***Section 5*** (*Flow of Funds Under the General Bond Ordinance*), below. Other moneys may be transferred or deposited into the Revenue Fund at the City's direction, as described below.
(*GBO Section 4.06*)

4.2 *Sinking Fund*

The Sinking Fund is a consolidated fund for the equal and proportionate benefit of the holders of all Bonds (other than Subordinated Bonds) Outstanding, including CP Obligations. Money deposited in the Sinking Fund may be used only to pay Debt Service Requirements (i.e., principal, interest and redemption price, as applicable) on such Bonds and other obligations (such as payments under Credit Facilities or Exchange Agreements) related to such Bonds. The Sinking Fund consists of three accounts: the Debt Service Account, the Debt Reserve Account and the Charges Account, which are described

below.
(*GBO Section 4.07*)

Debt Service Account

Money in the Debt Service Account of the Sinking Fund is used to pay debt service and redemption price on Bonds (other than Subordinated Bonds) and related obligations. The Fiscal Agent, as directed by the City, pays (i) by each interest payment date for any such Bonds the amount for the interest payable on such date, (ii) by each principal payment, prepayment or redemption date for any such Bonds the amount payable on such date, and (iii) by the respective due dates the amounts, if any, due under any Swap Agreements or Credit Facilities.
(GBO Section 4.07)

Debt Reserve Account

Money in the Debt Reserve Account of the Sinking Fund is used primarily to cure deficiencies in the Debt Service Account to ensure timely payment of debt service (and other obligations of the City that are payable from the Debt Service Account). If the money in the Debt Service Account is insufficient to pay the debt service or redemption price on any Bond or other obligation payable from the Debt Service Account when due (including under Swap Agreements and Credit Facilities), the Fiscal Agent must transfer from the Debt Reserve Account or, as applicable, any Series Debt Reserve Subaccount, into the Debt Service Account the amount of such deficiency.

The money and investments in the Debt Reserve Account must be held and maintained in an amount equal at all times to the Debt Reserve Requirement, as defined under the General Bond Ordinance. The Debt Reserve Requirement is generally met through the deposit of Bond proceeds each time Bonds (other than Subordinated Bonds) are issued, as needed. The amount of such a deposit, if any, is the amount necessary to ensure that the Debt Reserve Requirement will be met upon the issuance of such Bonds.

Notwithstanding the preceding paragraph, a Supplemental Ordinance may provide for the establishment of a Series Debt Reserve Requirement specific to each Series of Bonds issued under to such Supplemental Ordinance, and a separate Series Debt Reserve Subaccount (if such Series Debt Reserve Requirement is greater than zero dollars) within the Debt Reserve Account in respect of such Series of Bonds. The City may not designate a Series Debt Reserve Requirement for a Series of Bonds unless (i) such Series of Bonds will be refunding Bonds issued pursuant to Section 5.04(g) of the General Bond Ordinance or (ii) the City first obtains written confirmation from any one Rating Agency then rating the Bonds that such action, in and of itself, will not result in a downgrade, suspension or withdrawal of the credit rating on any Bonds Outstanding. The City must deposit in the Series Debt Reserve Subaccount created pursuant to any Supplemental Ordinance, the Series Debt Reserve Requirement for such Series of Bonds. The money and investments in each Series Debt Reserve Subaccount must be held and maintained in an amount equal at all times to the Series Debt Reserve Requirement for such Series secured thereby, as provided in the Supplemental Ordinance authorizing such Series of Bonds. All amounts in each Series Debt Reserve Subaccount must be available solely to secure and pay the Debt Service Requirements of the Bonds for which such subaccount was created pursuant to such Supplemental Ordinance, and the Holders of such Bonds must otherwise have no interests in or rights to amounts in the Debt Reserve Account.

There are two exceptions to the requirement described above to deposit Bond proceeds into the Debt Reserve Account or, if applicable, any Series Debt Reserve Subaccount at the time of issuance. The Supplemental Ordinance under which the Bonds are issued may permit the City, in lieu of making such a deposit at the time of issuance, either (i) to accumulate from Project Revenues a reserve of such amount in respect of such Bonds over a period of not more than three Fiscal Years after the issuance and delivery of such Bonds, in which case the full payment of the annual deposits required under such Supplemental Ordinance will meet the Debt Reserve Requirements of the General Bond Ordinance in respect of such Bonds, or (ii) in lieu of the required deposits into the Debt Reserve Account, the City may cause to be deposited into the Debt Reserve Account or any Series Debt Reserve Subaccount thereof a Debt Reserve Facility in an amount equal to the difference between the Debt Service Requirement or the Series Debt Reserve Requirement and the remaining sums, if any, then on deposit in the Debt Reserve Account or Series Debt Reserve Subaccount.
(GBO Section 4.09)

Charges Account

The Fiscal Agent pays out of the Charges Account to the appropriate payees any fees, expenses and other amounts due under any Credit Facility with respect to Bonds (other than Subordinated Bonds), to the extent such amounts are not paid from the Debt Service Account.
(GBO Section 4.07)

Calculation of Debt Service Requirements; CP Obligations

Amounts Comprising Debt Service Requirements of Bonds Generally. Debt Service Requirements in any period equals the aggregate amount of principal, interest and redemption price paid on Bonds during the period out of amounts derived from Project Revenues and available under the General Bond Ordinance to pay debt service on Bonds. Those amounts are paid out of the Debt Service Account of the Sinking Fund.[7]

Under the General Bond Ordinance, "Debt Service Requirements," with reference to a specified period, means:

A. amounts required to be paid into any mandatory sinking fund[8] established for the benefit of Bonds during the period;

B. amounts needed to pay the principal or redemption price of Bonds maturing during the period ***and not to be redeemed at or prior to maturity through any sinking fund established for the benefit of Bonds*** [emphasis added];

C. interest payable on Bonds during the period, ***with adjustment for capitalized interest or redemption through any sinking fund established for the benefit of Bonds*** [emphasis added]; and

[7] In the event of a deficiency in the Debt Service Account of the Sinking Fund, the General Bond Ordinance provides for transfer of moneys to such account to cure the deficiency rather than for payment of debt service from another fund or account established thereunder.

[8] This represents payments made when due with respect to the scheduled amortization of Bonds.

D. all net amounts, if any, due and payable by the City under a Qualified Swap during such period.
(GBO Section 2.01)

The language emphasized is intended to highlight the exceptions, i.e., the amounts paid or payable that are not includible in the calculation of Debt Service Requirements. These exceptions include amounts paid from sources other than the Debt Service Account of the Sinking Fund such as, for example, proceeds of Bonds issued to pay down prior Bonds or to fund capitalized interest.

Amounts Comprising Debt Service Requirements of CP Obligations. CP Obligations will constitute Bonds outstanding under the General Bond Ordinance. As such, for purposes of determining, from time to time, the Debt Reserve Requirement or Rate Covenant compliance under the General Bond Ordinance, such calculations will be required to include, as Debt Service Requirements on Bonds (other than Subordinated Bonds), principal of or interest on outstanding CP Obligations that is paid or payable (as applicable) from Project Revenues and other amounts deposited or credited to the Debt Service Account of the Sinking Fund,[9] if any, consistent with clauses B and C above. Principal of or interest on CP Obligations paid from other sources, such as proceeds of other Bonds (including other CP Obligations), will not be included in such calculations.

4.3 Subordinated Bond Fund

Any money in the Subordinated Bond Fund will be used to pay the principal of, redemption premium, if any, and interest on Subordinated Bonds and make payments due under any Credit Facilities and Exchange Agreements with respect to Subordinated Bonds. To date, the City has not issued any Subordinated Bonds.
(GBO Section 4.10)

4.4 Rate Stabilization Fund

The purpose of the Rate Stabilization Fund is to maintain liquidity in the Water and Wastewater Funds in satisfaction of financial covenants and otherwise for the financial health and operation of the water and sewer enterprise. The Water Commissioner will determine any transfer to be made between the Revenue Fund and the Rate Stabilization Fund, which transfer occurs as of June 30 of each Fiscal Year.
(GBO Section 4.13)

4.5 Construction Fund

Unless being used to fund a deficiency described in ***5.4*** (*Sources for Payment of Operating Expense in the Event of Revenue Fund Deficiency*) or ***5.5*** (*Sources for Payment of Debt Obligations in Event of Debt Service Account Deficiency*) below, moneys in the Construction Fund may only be used to pay capital expenditures, that is, to pay the costs of acquiring or constructing new assets and replacing or improving existing assets to maintain and expand the System. Please refer to ***5.3*** (*Capital Expenses and*

[9] This includes principal or interest initially paid under a Credit Facility reimbursed by the City out of the Debt Service Account of the Sinking Fund.

Payment from Construction Fund) for additional information concerning qualified (capital) expenditures and limitations on the use of moneys deposited into the Construction Fund.

The Construction Fund consists of three accounts: the Bond Proceeds Account, the Capital Account and the Existing Projects Account. The purposes of the Bond Proceeds Account and the Capital Account are described below. The Existing Projects Account held unexpended proceeds of bonds issued for the System prior to the enactment of the General Bond Ordinance – which have since been expended – and is no longer in use.
(GBO Section 4.11)

Bond Proceeds Account

The Bond Proceeds Account holds proceeds of Bonds issued for "capital purposes" (and not for refunding purposes) under the General Bond Ordinance, for disbursement according to established procedures of the City to pay the costs of new capital projects.

Capital Account

Moneys deposited into the Capital Account must be used for capital expenditures or else to pay debt service in limited circumstances.[10] Specifically, such amounts may be applied to (i) payments for the cost of renewals, replacements and improvements to the System; (ii) payments into the Sinking Fund or into the Subordinated Bond Fund to cure a deficiency in one of the foregoing; or (iii) the purchase of Bonds if a Consulting Engineer first has certified to the City that amounts remaining on deposit in the Capital Account following the proposed purchase of Bonds will be sufficient to pay the cost of renewals, replacements and improvements to the System projected to be payable during such Fiscal Year.

4.6 Residual Fund

As the Water and Wastewater Funds are a closed system, the Residual Fund is the last fund into which Project Revenues are transferred from the Revenue Fund. Money in the Residual Fund may be used to pay Operating Expenses or debt service, or for almost any other purpose in support of the System, as described in ***5.2*** (*Other Deposits to the Revenue Fund*) and ***5.4*** (*Sources for Payment of Operating Expenses in Event of Revenue Fund Deficiency*) below. In addition, money in the Residual Fund may be used to fund a transfer to the City's General Fund limited to the "Net Reserve Earnings"[11] up to a maximum of $4,994,000. This annual transfer is often referred to as the "scoop" by the City.
(GBO Section 4.12)

[10] Such moneys may be used for other very limited purposes only in the event of a deficiency in another Fund. *See* ***5.4*** (*Sources for Payment of Operating Expenses in Event of Revenue Fund Deficiency*) and ***5.5*** (*Sources for Payment of Debt Obligations in Event of Debt Service Account Deficiency*) for an explanation of such other purposes.

[11] "Net Reserve Earnings" means the amount of interest earnings during the Fiscal Year on amounts in the Debt Reserve Account and the Subordinated Bond Fund less the amount of interest earnings during the Fiscal Year on amounts in any such reserve funds and accounts giving rise to a rebate obligation pursuant to Section l48(f) of the Code.

4.7 ***Rebate Fund***

The Rebate Fund is maintained for the purpose of paying to the United States Treasury the amount required to be rebated pursuant to Section 148(f) of the Code. All amounts in the Rebate Fund, including income earned from investment of amounts in the Rebate Fund, must be held by the City free and clear of the lien created by the General Bond Ordinance.

Section 5. ***FLOW OF FUNDS UNDER THE GENERAL BOND ORDINANCE***

The General Bond Ordinance controls the City's and Fiscal Agent's ability to expend, disburse, transfer and invest Project Revenues and other moneys in the Water and Wastewater Funds and their accounts. This Section describes how and for what purposes such moneys flow in and out of those funds and accounts from time to time, in accordance with the provisions of the General Bond Ordinance.

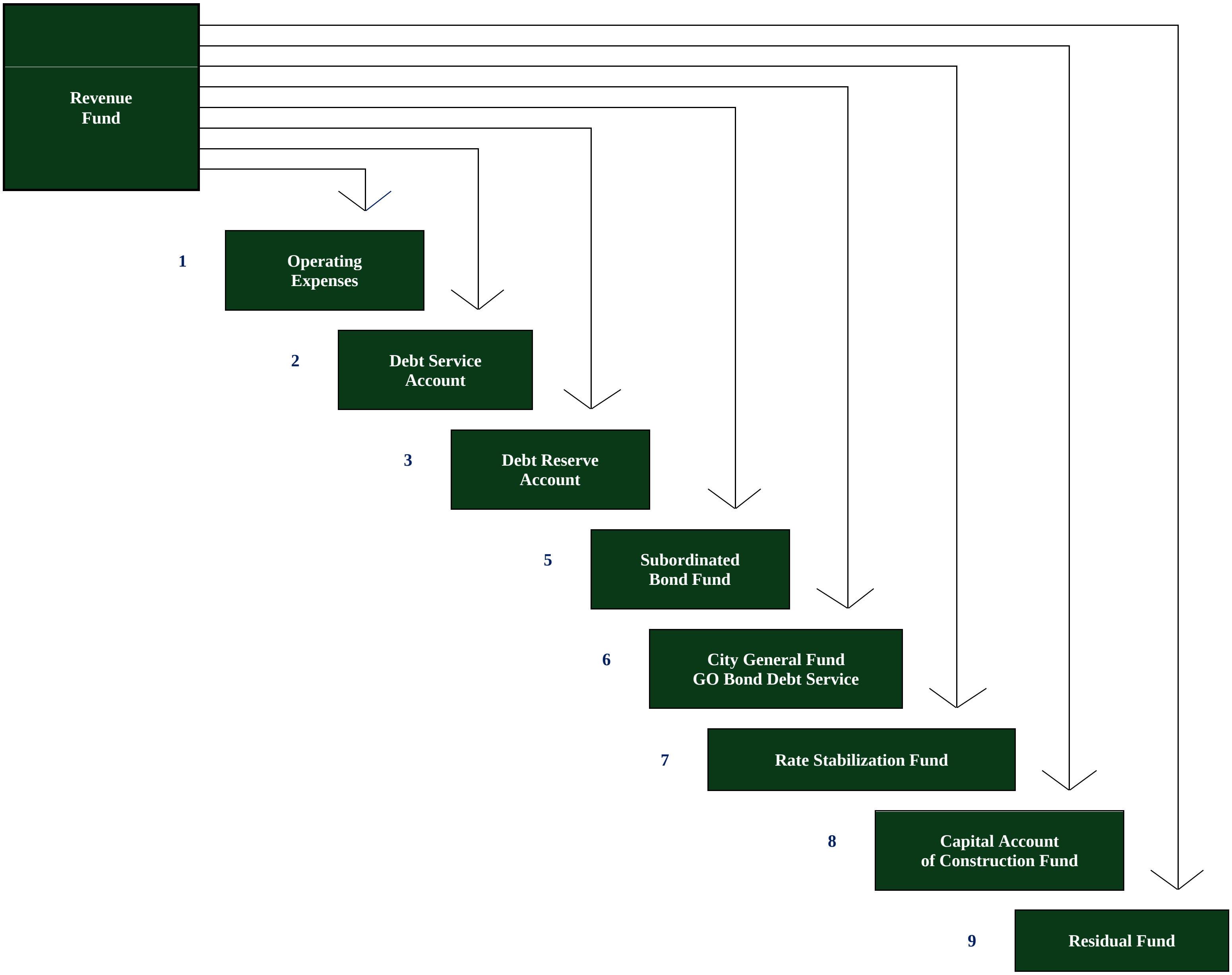
5.1 ***The Waterfall***

Project Revenues and other moneys (other than investment earnings) initially enter the Water and Wastewater Funds when they are deposited into the Revenue Fund. Moneys in the Revenue Fund are disbursed or transferred to the other funds and accounts in order of priority set forth in the General Bond Ordinance. This "flow of funds" often is described as a waterfall. Moneys flow out of the Revenue Fund and down to each fund or account to satisfy the purposes set forth in the General Bond Ordinance for such fund or account (e.g., such as payment of current obligations or replenishment of amounts that were withdrawn). Each of the funds and accounts into which water flows is often referred to as a "bucket" that catches moneys until it is filled, at which point moneys flow over it and down to the next bucket. ***Figure 5.1*** depicts this waterfall; and the number next to each of the boxes corresponds to the funds and accounts, or buckets, and purposes served with the moneys in those buckets.[12]

[*Remainder of page intentionally left blank. Figure 5.1 follows.*]

[12] There is no box numbered 4, as the referenced account, which may be established at the option of the City, has not been established.

Figure. 5.1
Water and Wastewater Revenue Funds "Waterfall"



The General Bond Ordinance requires that amounts in the Revenue Fund must be disbursed and applied in the following manner and order of priority.[13] *(GBO Section 4.06)*

1. Pay ***Operating Expenses*** in a timely manner.

2. Deposit into the ***Debt Service Account*** of the Sinking Fund amounts necessary for the Fiscal Agent to pay debt service and redemption price on Bonds (other than Subordinated Bonds), payments under a Swap Agreement, and payments or reimbursements under a Credit Facility, when due.

3. Deposit into the ***Debt Reserve Account*** the amount, if any, required to eliminate any deficiency therein.

4. Deposit into any debt reserve account established within the Sinking Fund and not held for the equal and ratable benefit of all Bonds (other than Subordinated Bonds) the amount, if any, required to eliminate any deficiency therein.[14]

5. Deposit into the ***Subordinated Bond Fund*** the amount necessary to provide for the timely payment of the principal or redemption price of and interest on Subordinated Bonds, and forward to the paying agent in respect of bond anticipation notes (payable by exchange for, or out of the proceeds of the sale of Subordinated Bonds) the amount necessary to provide for the timely payment of interest thereon (to the extent not capitalized).

6. Pay to the City the amount necessary to provide for the timely payment of the principal or redemption price of and interest on ***General Obligation Bonds*** of the City issued to finance or refinance capital projects of the System.

7. Deposit into the ***Rate Stabilization Fund*** such amount as the Water Commissioner may determine.

8. Deposit into the ***Capital Account*** of the Construction Fund on June 20 of each Fiscal Year an amount equal to the sum of (i) the Capital Account Deposit Amount,[15] (ii) the Debt Service Withdrawal[16] for the preceding Fiscal Year and (iii) the Operating Expense

[13] Notwithstanding the foregoing, nothing in the General Bond Ordinance will prevent the City from directing the transfer of amounts on deposit in in any fund or account established under General Bond Ordinance into the Rebate Fund in the amounts and at the times specified by the General Bond Ordinance.

[14] To date, no such account has been established for any Series of Bonds.

[15] "Capital Account Deposit Amount" means an amount equal to one percent (1.0%) of the depreciated value of property, plant and equipment of the System or such greater amount as shall be annually certified to the City in writing by a Consulting Engineer as sufficient to make renewals, replacements and improvements in order to maintain adequate water and wastewater service to the areas served by the System.

[16] "Debt Service Withdrawal" means the aggregate amount withdrawn from the Capital Account during a Fiscal Year and applied toward the payment of principal or redemption price of or interest on Bonds or toward the elimination of a deficiency in any reserve fund established for the benefit of Bonds.

Withdrawal[17] for the preceding Fiscal Year, less any amounts transferred during the Fiscal Year to such Capital Account from the Residual Fund.

9. Deposit all remaining amounts into the Residual Fund.

5.2 Other Deposits to the Revenue Fund

Project Revenues are the primary but not the sole source of moneys that flow into the Revenue Fund. For example, earnings on the investment of moneys held in certain funds and accounts are transferred to the Revenue Fund, as provided by the General Bond Ordinance. Once in the Revenue Fund, these moneys again flow through the waterfall.

This Section describes the conditions under and purposes for which moneys, other than Project Revenues, are deposited into the Revenue Fund.

Debt Reserve Account Excess

The money and investments in the Debt Reserve Account must be held and maintained in an amount equal at all times to the Debt Reserve Requirement. The Debt Reserve Requirement is generally met through the deposit of Bond proceeds each time Bonds (other than Subordinated Bonds) are issued. The amount of such deposit is the amount necessary to ensure that the Debt Reserve Requirement will be met upon the issuance of such Bonds.

An excess in the Debt Reserve Account may arise when principal on Bonds is paid or prepaid. For example, when refunding Bonds are issued to refinance existing debt, amounts already on deposit in the Debt Reserve Account probably will be sufficient or even in excess of what is needed to meet the Debt Reserve Requirement as recalculated when the new Bonds are issued and the old Bonds paid. The General Bond Ordinance states that any money in the Debt Reserve Account in excess of the Debt Reserve Requirement must be transferred to the Revenue Fund at the written direction of the City. How such excess is subsequently disbursed from the Revenue Fund and applied will be limited to the extent that the transferred excess consists of tax-exempt Bond proceeds.[18]
(GBO Section 4.09)

Investment Earnings from Certain Funds and Accounts

All or a portion of the net earnings on deposit in the following funds and accounts are required under the General Bond Ordinance to be transferred or credited to the Revenue Fund. Such crediting typically occurs when the books are closed as of each Fiscal Year end.
(GBO Section 4.16)

1. Revenue Fund.

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[17] "Operating Expense Withdrawal" means the aggregate amount withdrawn from the Capital Account during a Fiscal Year and applied toward the payment of Operating Expenses.

[18] Under the Code, the use of tax-exempt bond proceeds will be limited to payment of debt service or redemption price on Bonds and will not be eligible to pay Operating Expenses. The City may apply Debt Reserve Account excess directly to the payment of debt service on or redemption of Bonds or, if such excess is not comprised of tax-exempt bond proceeds, to transfer such excess to the Residual Fund.

2. Rate Stabilization Fund.

3. Sinking Fund (except the Debt Reserve Account), to the extent not needed to pay Debt Service Requirements on Bonds (other than Subordinated Bonds).

4. Debt Reserve Account, to the extent that (i) the Debt Reserve Requirement is satisfied and (ii) the scoop in the maximum permitted amount already has been transferred to the City's General Fund.

5. Subordinated Bond Fund, to the extent not needed to pay Debt Service Requirements on Subordinated Bonds.

6. Construction Fund, to the extent any amount is not credited to the appropriate account of the Construction Fund.

Rate Stabilization Fund

As earlier described, as of June 30 or each Fiscal Year, the Water Commissioner may transfer from the Rate Stabilization Fund to the Revenue Fund the amount she determines.

5.3 Capital Expenses and Payments from Construction Fund

Construction Fund moneys are available primarily for payment of capital expenditures in respect of the System. For an expenditure to qualify as capital and payable from the Bond Proceeds Account or the Capital Account of the Construction Fund, it must satisfy the requirements contained in (i) State law, specifically the Revenue Bond Act and the General Bond Ordinance, (ii) the Water Department's standards for defining capital assets, which may be found in the City's Comprehensive Annual Financial Report Fiscal Year Ended June 30, 2019, Note 6 (Capital Assets), and (iii) with respect to tax-exempt Bond proceeds, the Federal tax law (the Code). Essentially, capital expenditures are investments in the System, i.e., payment of costs of the acquisition or construction of new assets, or the replacement or improvement of existing assets, to maintain and expand the System. Except in the very limited circumstances described under ***5.4*** (*Sources for Payment of Operating Expenses in Event of Revenue Fund Deficiency*), operating expenses are not payable from the Construction Fund.

Federal Tax Law Concerning Tax-Exempt Bonds

Tax-exempt bonds generally provide the lowest cost debt for the City to finance capital projects because holders of tax-exempt bonds are permitted under the Code (and Pennsylvania income tax law) to exclude the interest earnings on their bonds from income for tax purposes. Holders then can pass all or a portion of those savings back to the City in the form of a reduced rate of interest as compared to a taxable loan. The exclusion from income and resulting reduced cost of borrowing described above constitute an indirect subsidy from the U.S. Treasury to the City to offset the City's infrastructure costs. As such, of the City's total System debt outstanding, an overwhelming portion is funded from tax-exempt bonds.[19]

This federal subsidy is a scarce resource given for a singular purpose: to support state and local funding of public infrastructure. The distribution of this subsidy is heavily regulated to ensure that that purpose is met. More specifically, the Code restricts the purposes for which proceeds of tax-exempt

[19] Pennvest Loans are funded from tax-exempt bonds issued by Pennvest for the purpose of making such loans.

Bonds and any earnings thereon[20] may be expended to the acquisition, construction, improvement or equipping of facilities that are owned or controlled by the City and fulfill a governmental purpose. So tax-exempt Bond proceeds are used only to fund capital expenditures of the System. They may not be used to pay operating expenses of the Water Department.

Guidance under the Code for determining capital expenditures versus operating expenses is generally given in the context of a taxpayer who seeks a deduction in the current year, rather than a political subdivision not subject to paying federal tax. That said, in general, under the Code a project cost is capitalized if it purchases an asset with a useful life of more than one year or extends the life of an asset for at least an additional year.[21] Expenses that are ordinary and recurring are not capitalized.[22] Some capital expenditures specifically identified in the Code that we expect are applicable to the operation of the System include (without limitation) paying costs of acquisition or construction of new buildings or permanent improvements and equipment having a useful life substantially beyond the current year, as well as the cost of defending or perfecting title to property.[23] Costs of removal or retirement of a depreciable asset in connection with the construction, development, improvement or installation of a replacement asset is not capitalized as part of the cost of the replacement asset.[24] However, costs of demolishing a building must be capitalized into the value of the land on which it was located.[25]

State Law

First Class City Revenue Bond Act. The Revenue Bond Act contains comprehensive statutory authority for the City[26] to finance self-funding infrastructure through the issuance of special obligations of the City (i.e., revenue bonds or notes).[27] Under the Revenue Bond Act, the City may finance "project costs" through the issuance of debt payable solely from revenues generated by such projects. For purposes of the Revenue Bond Act, "project costs" include all costs of construction or acquisition of a project with proper allowance for contingencies determined in accordance with generally accepted municipal accounting principles.[28] "Projects" include buildings, structures, facilities or improvements of a public nature, related estates in land, and related furnishings or equipment, which the City is authorized to

[20] Under the Code, investment earnings on tax-exempt bond proceeds (referred to as "investment proceeds") generally are treated as bond proceeds.

[21] *See INDOPCO Inc. v. Comr,* 503 U.S. 79 (1992).

[22] IRC § 162(a).

[23] *See* IRC § 263; Treas. Regs. §§ 1.263(a)-1 and 1.263(a)-2.

[24] *See* Rev. Rul. 2000-7 relating to IRC § 263.

[25] *See* IRC § 280C.

[26] The City of Philadelphia is the only first class city of the Commonwealth of Pennsylvania. *See* 53 P.S. § 12101 *et seq*.

[27] *See* Section 3 of the Revenue Bond Act.

[28] As defined in the Revenue Bond Act, the term "project costs" may include but is not limited to costs of preliminary studies, surveys, planning, testing and design work; fees and expenses of engineers, architects, financial advisors, attorneys and other experts engaged in connection with the project; financing costs including bond discount, interest on money borrowed to finance the project if capitalized and operating capital during construction and for one year after completion of the project; capitalized reserves, the repayment of temporary loans or the payment of bond anticipation notes made or issued in connection with the project, and any of the foregoing incurred or paid prior to as well as after the issuance of revenue bonds.

own, construct, acquire, improve, lease, operate, maintain or support, and in respect of which the City may reasonably be expected to receive project revenues.

General Bond Ordinance. The City enacted the General Bond Ordinance under authority granted under the Revenue Bond Act.[29] As such, the provisions of the General Bond Ordinance concerning the City's ability to finance and refinance projects with Bonds are entirely consistent with the provisions of the Revenue Bond Act.

The General Bond Ordinance also establishes a Capital Account of the Construction Fund for purposes of accumulating moneys sufficient, at minimum, to pay project costs for renewals, replacements and improvements to the System as needed to maintain adequate water and wastewater service to the areas that the System serves.

Accounting Standards

The City's standards for defining capital assets may be found in Comprehensive Annual. Financial Report Fiscal Year Ended June 30, 2018, Note 6. Briefly summarized, capital assets include property, plant, equipment and infrastructure assets with an initial individual cost in excess of $5,000 and an estimated useful life in excess of three years.

5.4 Sources for Payment of Operating Expenses in Event of Revenue Fund Deficiency

The first priority for the Revenue Fund is timely payment of Operating Expenses. Operating Expenses must be paid first in order to ensure that the System continues to generate Project Revenues to repay debt and for all of the other purposes mandated by the General Bond Ordinance. To this end, to the extent that at any time amounts in the Revenue Fund are insufficient to pay Operating Expenses when due, the General Bond Ordinance provides for the use of moneys in certain other funds and accounts, including the Residual Fund, the Rate Stabilization Fund and the Capital Account of the Construction Fund, for this purpose.

From Residual Fund

Payment of Operating Expenses is the first purpose listed in the General Bond Ordinance for which moneys in the Residual Fund may be used.
(GBO Section 4.12(i))

Temporary Loans

The General Bond Ordinance permits the City to make temporary loans from the Residual Fund, Rate Stabilization Fund and Capital Account of the Construction Fund to the Revenue Fund if, at any time, amounts in the Revenue Fund are insufficient both to pay Operating Expenses and to make the transfers described in ***5.1*** (*The Waterfall*) above. Such loans are limited to the amount of any such deficiency. Such loans must be repaid when or before such loaned amounts are required by the Water Department for the purposes of the Fund making the loan. The terminology "temporary loan" connotes that the amounts transferred under these provisions of the General Bond Ordinance are not re-counted as revenues, and are to be replenished not later than when they are needed for the purposes of the respective

[29] *See* Section 4 of the Revenue Bond Act.

fund or account.
(GBO Section 4.05, 4.11)

5.5 *Sources for Payment of Debt Obligations in Event of Debt Service Account Deficiency*

The second priority for the Revenue Fund is the transfer of moneys to the Sinking Fund to ensure timely payment of debt service and redemption price on Bonds (other than Subordinated Bonds) and related obligations such as credit facility and swap payments. If at any time Project Revenues from the Revenue Fund are insufficient to make the necessary deposit into the Debt Service Account of the Sinking Fund in order to pay all principal or redemption price of and interest on Bonds (other than Subordinated Bonds) and related obligations when due, the General Bond Ordinance provides for the transfer by the Fiscal Agent to the Debt Service Account of amounts in other funds and accounts to pay such debt service and other obligations.

Debt Reserve Account of Sinking Fund

The City has directed the Fiscal Agent that if at any time the moneys in the Debt Service Account are insufficient to pay when due, the principal or redemption price or interest on any Bond or other obligations payable from the Debt Service Account then due (including under Swap Agreements and Credit Facilities), the Fiscal Agent must transfer amounts necessary to cure such deficiency from the Debt Reserve Account to the Debt Service Account.
(GBO Section 4.09)

Residual Fund

The City is permitted, at its discretion, to transfer amounts from the Residual Fund to the Debt Service Account.
(GBO Section 4.12(ii))

Capital Account of Construction Fund

Amounts deposited in the Capital Account may be applied to cure a deficiency in the Sinking Fund, or to purchase Bonds under certain conditions including, among other things, the prior receipt by the City of a certification by a Consulting Engineer that amounts that will remain on deposit in the Capital Account following the proposed purchase of Bonds will be sufficient to pay the cost of renewals, replacements and improvements to the System projected to be payable during such Fiscal Year.
(GBO Section 4.11)

Subordinated Bond Fund

If at any time the amount in Debt Service Account is insufficient and there not on deposit in the Debt Reserve Account, the Capital Account and the Residual Fund available moneys sufficient to cure such deficiency, then the Fiscal Agent must withdraw from the Subordinated Bond Fund and deposit into the Debt Service Account the amount necessary (or all the moneys in the Subordinated Bond Fund, if they are less than the amount necessary) to eliminate such deficiency.
(GBO Section 4.10)

5.6 Other Permitted Transfers

Temporary Loans to the Construction Fund

The General Bond Ordinance permits the City to make temporary loans from the Revenue Fund, Rate Stabilization Fund and Residual Fund to the Construction Fund if, at any time, amounts in the Construction Fund are insufficient to pay capital expenses due and payable. Such loans are limited to the amount of any such deficiency. Such loans must be repaid when or before such loaned amounts are required by the Water Department for the purposes of the Fund making the loan.
(GBO Section 4.05)

Other Purposes of the Residual Fund

As the Residual Fund is the last bucket in the waterfall, moneys on deposit there are permitted to be used or transferred to almost any of the other Water and Wastewater Funds. In addition to paying Operating Expenses as described above, amounts in the Residual Fund may be used as follows: to fund transfers to any fund or account established under the General Bond Ordinance or under a Supplemental Ordinance (other than the Revenue Fund and the Rate Stabilization Fund); to make payments required under any Exchange Agreement; for the payment of debt service or redemption price on any revenue bonds or notes issued under the Act but not under the General Bond Ordinance or on any general obligation debt of the City (the proceeds of which were applied m respect of the System); for the payment of amounts due under capitalized leases or similar obligations relating to the System; and to fund the transfer of the scoop to the City's General Fund as of June 30 of each Fiscal Year. Amounts in the Residual Fund may not be transferred to the Revenue Fund or the Rate Stabilization Fund.
(GBO Section 4.12)

Subordinated Bond Fund Deficiency

As mentioned previously, amounts deposited in the Capital Account may be used to pay the cost of renewals, replacements and improvements to the System and to cure deficiencies in the Sinking Fund and purchase Bonds. In addition, the City may apply moneys in the Capital Account to cure a deficiency, if any, in the Subordinated Bond Fund. To date, the City has never issued Subordinated Bonds.
(GBO Section 4.11)

5.7 Credit of Investment Earnings in Funds and Accounts

The General Bond Ordinance controls how money in the funds and accounts established thereunder may be invested and, more particularly for this discussion, where earnings on such money must be credited. ***5.2*** (*Other Deposits to the Revenue Fund*) above highlights only earnings that flow to the Revenue Fund. More broadly, earnings on amounts on deposit in:

(i) the Revenue Fund must be credited to the Revenue Fund;

(ii) the Sinking Fund (except as provided in (iii) below) (A) must be credited to the Sinking Fund to the extent needed to meet Debt Service Requirements in respect of Bonds (other than Subordinated Bonds) and (B) additional interest earnings must be credited to the Revenue Fund;

(iii) the Debt Reserve Account (A) must be credited to the Debt Reserve Account until such account is fully funded and (B) must then be credited to the Residual Fund up to the scoop, and any amount in excess of the scoop must then be transferred to the Revenue Fund;

(iv) the Subordinated Bond Fund must be credited (A) to the Subordinated Bond Fund to the extent needed to meet Debt Service Requirements in respect of Subordinated Bonds and (B) additional interest earnings must be credited to the Revenue Fund or to such other fund or account established under the General Bond Ordinance as the City may direct pursuant to a Supplemental Ordinance;

(v) the Residual Fund must be credited to the Residual Fund;

(vi) the Rate Stabilization Fund must be credited to the Revenue Fund;

(vii) the Construction Fund must be credited to the appropriate account of the Construction Fund or to the Revenue Fund, as the City directs; and

(viii) the Rebate Fund must be credited to the Rebate Fund.
(GBO Section 4.16)

APPENDIX

GLOSSARY OF CERTAIN TERMS USED IN THE GENERAL BOND ORDINANCE

"Act" means The First Class City Revenue Bond Act approved October 18, 1972 (Act No. 234, 53 P.S. § 15901 to 16924) as from time to time amended.

"Balloon Bonds" means any Series of Bonds, or any portion of a Series of Bonds, designated by a Determination as Balloon Bonds, (a) 25% or more of the principal payments (including mandatory sinking fund payments) of which are due in a single year, or (b) 25% or more of the principal of which may, at the option of the holder or holders thereof, be redeemed at one time; provided, however that a Variable Rate Bond that is able to be redeemed at the option of the Holder shall not constitute a Balloon Bond.

"Bond" or "Bonds" means, upon and after issuance of the first Series of bonds under the General Bond Ordinance, if and to the extent Outstanding at any time, all Series of bonds authorized and issued under one or more supplemental ordinances amending and supplementing the General Bond Ordinance.

"Bond Committee" means the Mayor, City Controller and City Solicitor or a majority thereof.

"Bond Counsel" means a firm of nationally recognized bond counsel selected by the City.

"Bondholder" or "Holder" means any registered owner of Bonds or holder of Bonds issued in coupon form at the time Outstanding.

"Capital Account" means the Capital Account within the Construction Fund established in Section 4.04 of the General Bond Ordinance.

"Capital Account Deposit Amount" means an amount equal to one percent (1.0 %) of the depreciated value of property, plant and equipment of the System or such greater amount as shall be annually certified to the City in writing by a Consulting Engineer as sufficient to make renewals, replacements and improvements in order to maintain adequate water and wastewater service to the areas served by the System.

"Capital Appreciation Bonds" means any Bonds issued under the General Bond Ordinance which do not pay interest either until maturity or until a specified date prior to maturity, but whose Original Value increases periodically by accretion to a final Maturity Value.

"Charges Account" means the Charges Account established within the Sinking Fund to provide for the payment of fees under any Credit Facility to the extent payment of such fees are not otherwise provided.

"City" means the City of Philadelphia, Pennsylvania.

"City Controller" means the head of the City's auditing department as provided by the Philadelphia Home Rule Charter.

"City Solicitor" means the head of the City's law department as provided by the Philadelphia Home Rule Charter.

"Code" or "IRC" means the Internal Revenue Code of 1986, as amended, and the regulations promulgated thereunder. ·

"Construction Fund" means the Construction Fund established in Section 4.04 of the General Bond Ordinance.

"Consulting Engineer" means a nationally recognized Independent registered consulting engineer or a nationally recognized Independent Firm of registered consulting engineers, in either case having experience in the design and analysis of the operation of water and wastewater systems of the magnitude and scope of the System.

"Credit Facility" means any letter of credit, standby bond purchase agreement, line of credit, surety bond, insurance policy or other insurance commitment or similar agreement (other than a Qualified Swap or an Exchange Agreement) that is provided by a commercial bank, insurance company or other institution.

"Debt Reserve Account" means the Debt Reserve Account of the Sinking Fund established in Section 4.04 of the General Bond Ordinance.

"Debt Reserve Facility" means a surety bond or an insurance policy payable to the Fiscal Agent for the account of the Bondholders and any Qualified Swap or an irrevocable letter of Credit to be used for the purposes contemplated under Section 4.09(e) of the General Bond Ordinance.

"Debt Reserve Requirement" means (i) with respect to all Bonds outstanding (regardless whether interest thereon may be excluded from the gross income of the holder thereof for federal income tax purposes) (a) whose Debt Service Requirements are payable from the Sinking Fund (i.e., excluding Subordinated Bonds) and (b) that are of a Series for which the City has not created a Series Debt Reserve Subaccount, an amount equal to the greatest amount of Debt Service Requirements on such Bonds payable in any one Fiscal Year (except that such Debt Service Requirements will be computed as if any Qualified Swap did not exist and the Debt Service Requirements attributable to any Variable Rate Bonds may be based upon the fixed rate of interest as set forth in the Supplemental Ordinance or Determination for such Bonds) determined as of any particular date, and (ii) with respect to the amount to be deposited in the Debt Reserve Account, pursuant to the first paragraph of Section 4.09 the General Bond Ordinance, in connection with the issuance of such a Series of Bonds, the lesser of (x) the amount necessary to comply clause (i) and (y) the maximum amount permitted to be financed with proceeds of Bonds permitted by Section 148(d)(1) the Code (or any successor provision).

"Debt Service Account" means the Debt Service Account of the Sinking Fund established in Section 4.04 of the General Bond Ordinance.

"Debt Service Requirements," with reference to a specified period, means:

A. amounts required to be paid into any mandatory sinking fund established for the benefit of Bonds during the period;

B. amounts needed to pay the principal or redemption price of Bonds maturing during the period and not to be redeemed at or prior to maturity through any sinking fund established for the Bonds;

C. interest payable on Bonds during the period, with adjustments for capitalized interest or redemption through any sinking fund established for the benefit of Bonds; and

D. all net amounts, if any, due and payable by the City under a Qualified Swap during such period.

For purposes of estimating Debt Service Requirements for any future period, (i) any Option Bond outstanding during such period shall be assumed to mature on the stated maturity date thereof, except that the principal amount of any Option Bond tendered for payment and cancellation before its stated maturity date shall be deemed to accrue on the date required for payment pursuant such tender; and (ii) Debt Service Requirements on Bonds for which the City has entered into a Qualified Swap shall be calculated assuming that the interest rate on such Bonds shall equal the stated fixed or variable rate on the Qualified Swap or, if applicable and if greater such stated rate, the applicable rate for any Bonds issued in connection with the Qualified Swap adjusted, the case of a variable rate obligation, as provided in Section 5.01 of the General Bond Ordinance. Calculation of Debt Service Requirements with respect to Variable Rate Bonds and Balloon Bonds shall be subject to adjustment as permitted by Section 5.01(c) of the General Bond Ordinance. .

"Debt Service Withdrawal" means the aggregate amount withdrawn from the Capital Account during a Fiscal Year and applied toward the payment of principal or redemption price of or interest on Bonds or toward the elimination of a deficiency in any reserve fund established for the benefit of Bonds.

"Determination" means a determination by the Bond Committee regarding certain matters relating to the issuance of a Series of Bonds, made pursuant to the General Bond Ordinance or the Supplemental Ordinance providing for the issuance of such Series of Bonds.

"Exchange Agreement" means, to the extent from time to time permitted by applicable law, any interest exchange agreement, interest rate swap agreement, currency swap agreement or other contract or agreement, other than a Qualified Swap, authorized, recognized and approved by a Supplemental Ordinance or Determination as an Exchange Agreement and providing for (i) certain payments by the City from the Residual Fund and (ii) payments by an entity whose senior long term debt obligations, other senior unsecured long term obligations or claims paying ability, or whose obligations under an Exchange Agreement are guaranteed by an entity whose senior long term debt obligations, other senior secured long term obligations or claims paying ability are rated not less than A3 by Moody's, A- by S&P or A- by Fitch, or the equivalent the thereof by any successor thereto as of the date the Exchange Agreement is entered into; which payments by the City and counterparty are calculated by reference to fixed or variable rates and constituting a financial accommodation between the City and such counterparty.

"Fiscal Agent" means a bank or other entity designated as such pursuant to Section 7.01 of the General Bond Ordinance or its successor.

"Fiscal Year" means the fiscal year of the City.

"Fitch" means Fitch Investors Service and any successor thereto.

"General Bond Ordinance" means the Restated General Water and Wastewater Revenue Bonds Ordinance of 1989, as amended from time to time by one or more Supplemental Ordinances in-accordance with Article X of the General Bond Ordinance.

"General Obligation Bonds" means the general obligation bonds of the City issued and outstanding from time to time to finance improvements to the System and adjudged, pursuant to the Constitution and laws of the Commonwealth of Pennsylvania, to be self-sustaining on the basis of expected Project Revenues.

"Interdepartmental Charges" means the proportionate charges for services performed for the Water Department by all officers, departments, boards or commissions of the City which are required by the Philadelphia Home Rule Charter to be included in the computation of operating expenses of the Water Department.

"Operating Expenses" for any period means all costs and expenses of the Water Department necessary and appropriate to operate and maintain the System in good operating condition, and shall include, without limitation, salaries and wages, purchases of services by contract, costs of materials, supplies and expendable equipment, maintenance costs, costs of any property or the replacement thereof or for any work or project, related to the System, which is not properly chargeable to property, plant and equipment, pension and welfare plan and worker's compensation requirements, provisions for claims, refunds and uncollectible receivables and for Interdepartmental Charges, all in accordance with generally accepted accounting principles consistently applied, but Operating Expenses shall exclude depreciation, amortization, interest and sinking fund charges.

"Operating Expense Withdrawal" means the aggregate amount withdrawn from the Capital Account during a Fiscal Year and applied toward the payment of Operating Expenses.

"Outstanding," when used with reference to Bonds, means, as of any date, all Bonds heretofore or thereupon being authenticated and delivered under the Ordinance except (i) any Bonds cancelled by the Fiscal Agent at or prior to such date; (ii) Bonds (or portion of Bonds) for the payment or redemption of which moneys, equal to the principal amount, Accreted Value or redemption price thereof, as the case may be, with interest (except to the extent of any Capital Appreciation Bonds) to the date of maturity or redemption date, shall be held in trust under the Ordinance and set aside for such payment or redemption (whether at or prior to the maturity or redemption date), provided that if such Bonds (or portions of Bonds) are to be redeemed, notice of such redemption shall have been given as provided in Article VI of the Ordinance or provision satisfactory to the Trustee shall have been made for the giving of such notice; (iii) Bonds in lieu of or in substitution for which other Bonds shall have been authenticated and delivered pursuant to Article III or Section 6.06 of the General Bond Ordinance; and (iv) Bonds deemed to have been paid as provided in Section 11.01 of the General Bond Ordinance.

"Philadelphia Home Rule Charter" means the Philadelphia Home Rule Charter, as amended or superseded by any new home rule charter, adopted pursuant to authorization of the First Class City Home Rule Act approved April 21, 1949, P.L. 665 §1 et seq. (53 P.S. §13101 et seq.).

"Prior Ordinance" means the General Water and Sewer Revenue Bond Ordinance of 1974 approved May 16, 1974 as amended and supplemented from time to time.

"Project" shall have the meaning assigned to it in the Act, as the same may be amended from time to time.

"Project Revenues" means all rents, rates, fees and charges imposed or charged for the connection to, or use or product of or services generated by the System to the ultimate users or customers thereof. all payments under bulk contracts with municipalities, governmental instrumentalities or other bulk users, all subsidies or payments payable by Federal, State or local governments or governmental agencies on account of the cost of operation of, or the payment of the principal of or interest on moneys borrowed to finance costs, chargeable to the System, all grants, payments and contributions made in aid or on account of the System exclusive of grants and similar payments and contributions solely in aid of construction and all accounts, contract rights and general intangibles representing the foregoing.

“Qualified Swap” or “Swap Agreement: means, with respect to a Series of Bonds, any financial arrangement that (i) is entered into by the City with an entity that is a Qualified Swap Provider at the time the arrangement is entered into; (ii) provides that (a) the City shall pay to such entity an amount based on the interest accruing at a fixed rate on an amount equal to the principal amount of the Outstanding Bonds of such Series, and that such entity shall pay to the City an amount based on the interest accruing on a principal amount initially equal to the same principal amount as such Bonds, at either a variable rate of interest or a fixed rate of interest computed according to a formula set forth in such arrangement (which needs not be the same as the actual rate of interest borne by the Bonds) or that one shall pay to the other any net amount due under such arrangement or (b) the City shall pay to such entity an amount based on the interest accruing on the principal amount of the Outstanding Bonds of such Series at a variable rate of interest as set forth in the arrangement and that such entity shall pay to the City an amount based on interest accruing on a principal amount equal to the Outstanding Bonds of such Series at an agreed fixed rate (which shall not be the same as the rate on the Bonds) or that one shall pay to the other any net amount due under such agreement; and (iii) which has been designated in writing to the Fiscal Agent by the City as a Qualified Swap with respect to the Bonds.

“Qualified Swap Provider” means, with respect to a Series of Bonds, an entity whose senior long term debt obligations, other senior unsecured long term obligations or claims paying ability, or whose payment obligations under a Qualified Swap are guaranteed by an entity whose senior long term debt obligations, other senior unsecured long term obligations or claims paying ability, are rated (at the time the subject Qualified Swap is entered into) at least as high as Aa by Moody’s, and *AA* by S&P, or the equivalent thereof by any successor thereto.

“Rate Stabilization Fund” means the Rate Stabilization Fund established in Section 4.04 of the General Bond Ordinance.

“Rating Agency” means any rating service that has issued a credit rating on the Bonds which is in effect at the time in question or, upon discontinuance of any of such rating services, such other nationally recognized rating service or services if any such rating service has issued a credit rating on the Bonds at the request of the City and such credit rating is in effect at the time in question.

“Rebate Fund” means the Rebate Fund established in Section 4.04 of the General Bond Ordinance.

“Residual Fund” means the Residual Fund established in Section 4.04 of the General Bond Ordinance.

“Revenue Fund” means the Revenue Fund establish in Section 4.04 of the General Bond Ordinance.

“Series” when applied to Bonds means, collectively, all of the Bonds of a given issue authorized by Supplemental Ordinance, as provided in the General Bond Ordinance, and may also mean, if appropriate, a subseries of any Series if, for any reason, the City should determine to divide any Series into one or more subseries of Bonds.

“Series Debt Reserve Requirement” means, for any Series of Bonds, the amount, if any, required pursuant to a Supplemental Ordinance or Determination to be reserved and (if such amount is greater than zero dollars ($0)) deposited or maintained in the Series Debt Reserve Subaccount established for such Series of Bonds; provided that such amount may equal zero dollars ($0); and provided further that such amount may not exceed the lesser of (i) the greatest amount of Debt Service Requirements payable on such Series of Bonds in any one Fiscal Year and (ii) the maximum amount permitted to be financed with proceeds of such Series of Bonds permitted by Section 148(d)(1) of the Code (or any successor provision).

"Series Debt Reserve Subaccount" means any subaccount of the Debt Reserve Account created, pursuant to a Supplemental Ordinance or Determination for a particular Series of Bonds, which Series of Bonds will not otherwise be secured by the Debt Reserve Account and for which a Series Debt Reserve Requirement applies.

"Subordinated Bond Fund" means the Subordinated Bond Fund established in Section 4.04 of the General Bond Ordinance.

"System" means the entire combined water system and wastewater system of the City, now existing and hereafter acquired by lease, direct control, purchase or otherwise or constructed by the City, including any interest or participation of the City in any facilities in connection with said System, together with all additions, betterments, extensions and improvements to said System or any part thereof hereafter constructed or acquired and together with all lands, easements, licenses and rights of way of the City and all other works, property or structures of the City and contract rights and other property or structures of the City and· eon tract rights and other tangible and intangible assets of the City now or hereafter owned or used in connection with or related to said System.

"Water and Wastewater Funds" means, collectively, the Revenue Fund, the Sinking Fund, the Subordinated Bond Fund, the Rate Stabilization Fund, the Residual Fund and the Construction Fund.

"Water Commissioner" means the head of the Water Department as provided by the Philadelphia Home Rule Charter.

"Water Department" means the Water Department of the City created pursuant to Section 3-100 of the Philadelphia Home Rule Charter.

Schedule FP-3

Rating Agency Reports

- Fitch
- Moody’s
- S&P

FitchRatings

Philadelphia, Pennsylvania

New Issue Summary

Sale Date: August 9, 2022

Series: Water and wastewater revenue bonds, series 2022C

Purpose: Proceeds will be used to fund a portion of the capital improvement program, fund a deposit to the debt reserve account, and pay issuance costs.

Security: A senior lien on combined net revenues of the Philadelphia Water Department's water and sewer system and a debt reserve account funded in the amount of maximum annual debt service.

Fitch's 'A+' rating and 'a+' SCP reflect PWD's leverage profile within the context of its strong revenue defensibility and very strong operating risk assessments. The Stable Rating Outlook incorporates Fitch's expectations that PWD will secure rate adjustments sufficient to maintain leverage consistent with the current financial profile assessment and rating, while continuing to implement its substantial capital improvement plan (CIP).

This will require robust rate adjustments for the next several years in light of foregoing a rate adjustment for fiscal 2021 and lower than initially anticipated rate adjustments for fiscal years 2022 and 2023. In June 2022, PWD's rate board (the board) issued its decision with respect to fiscal 2023 rates, which is expected to generate approximately $3.0 million less in revenue than PWD's original request, but did approve the Tiered Assistance Program (TAP; discussed below) rate surcharge as proposed.

Revenue defensibility reflects the system's role as an essential service provider within a well-defined service territory, historically stable demand characteristics, yet a rate setting process that constrains rate flexibility. The operating risk profile incorporates capital investment needs that are expected to remain elevated for the foreseeable future as the system faces long-term asset rehabilitation needs and continues progress toward addressing combined sewer overflows (CSOs).

The system's financial profile reflects low, albeit increasing leverage, measured by net adjusted debt to adjusted funds available for debt service, that measured 8.8x in fiscal 2021.

Leverage should remain below 10.0x for the majority of the next five years, which continues to support the 'a' financial profile assessment.

Key Rating Drivers

Revenue Defensibility: 'a'; Monopolistic Service Provider, Limited Rate Flexibility: PWD provides essential utility services to a stable service area that serves as the economic hub for the region. The customer base is diverse, and demographic indicators are midrange when considering those areas outside the city limits. The rate approval process has proven arduous and rate affordability and cost recovery remain concerns, currently limiting overall revenue defensibility.

Operating Risk: 'aa'; Very Low Operating Cost Burden, Elevated Capital Needs: The operating cost burden remains very low, approximating $2,365 per million gallons (mg) of water production and sewer flows in fiscal 2021. While expected to rise, the cost burden should remain well within the $6,500 per mg threshold for the current assessment. Rising annual capex trends and sizable long-term capital reinvestment plans should continue to lower PWD's currently elevated life cycle ratio, which was 48% in fiscal 2021.

Financial Profile: 'a'; Strong Financial Profile, Leverage to Rise: The strong financial profile reflects the system's current leverage position, about 8.8x in fiscal 2021, stable from the prior fiscal year, and a liquidity profile that is neutral to the assessment. Over time, leverage is expected to rise but financial metrics are anticipated to remain consistent with the current assessment and rating, should revenue expectations hold.

Ratings

Stand-Alone Credit Profile	a+

New Issue

$315,300,000 Water & Wastewater Revenue Bonds, Series 2022C	A+

Outstanding Debt

Water & Wastewater Revenue Bonds	A+
Water & Wastewater Revenue Refunding Bonds	A+
Water & Wastewater Revenue Refunding Bonds (Taxable)	A+
Water & Wastewater System Revenue Bonds	A+
Water & Wastewater System Revenue Bonds (Federally Taxable - Build America Bonds - Issuer Subsidy)	A+
Water & Wastewater Refunding Revenue Bonds (Forward Delivery)	A+

Rating Outlook

Stable

Applicable Criteria

U.S. Water and Sewer Rating Criteria (March 2021)

Public Sector, Revenue-Supported Entities Rating Criteria (September 2021)

Related Research

Fitch Rates Philadelphia (PA) Water and Wastewater Revs 'A+'; Outlook Stable (July 2022)

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Rating Sensitivities

Factors that could, individually or collectively, lead to positive rating action/upgrade:

- Leverage sustained below 8.0x through Fitch's base and stress cases, in the context of the current revenue defensibility and operating risk assessments.
- Improvement in the revenue defensibility assessment driven by improved assessments of both service area characteristics and rate flexibility.

Factors that could, individually or collectively, lead to negative rating action/downgrade:

- Leverage sustained above 10.0x through Fitch's base and stress cases.
- Failure to secure rate increases in a timely manner to sufficiently support the current financial profile.
- Deterioration in the revenue defensibility assessment, raising the hurdle for leverage at the current rating.

Rating History (IDR)

Rating	Action	Outlook/ Watch	Date
A+	Affirmed	Stable	7/28/22
A+	Revised	Stable	4/30/10
A–	Affirmed	Stable	4/11/05
A–	Upgraded		6/7/00
BBB+	Upgraded		4/18/95
BBB	Assigned		7/14/93

Credit Profile

The Philadelphia Water Department provides potable water to all of the approximately 1.6 million residents of the city as well as a small wholesale customer that serves accounts in neighboring Montgomery and Delaware Counties. PWD also provides wastewater collection and treatment to a service area that includes the city, as well as portions of the surrounding counties through wholesale contracts, serving a larger population estimated at nearly 2.3 million.

Operations are stable and system capacity is robust. Average daily water demand is comfortably below permitted water supply and capacity at all treatment facilities remains well within existing permit limits. Raw water supplies from the Delaware and Schuylkill rivers are sufficient for the foreseeable future.

The city continues to operate under a consent order and agreement (COA) signed in 2011 with the Pennsylvania Department of Environmental Protection (DEP). The COA requires PWD to address CSOs over a 25-year period ending in 2036. Recent total cost estimates of the program, which began in 2012, are approximately $4.5 billion ($3.5 billion capital-related, $1.0 billion O&M).

The city, citing force majeure due to coronavirus disruptions, requested an extension to complete the 10-year COA compliance obligations, which include certain milestones for greened acreage and lower CSO flows. The DEP granted the city an extension to December 2021 for performance standards and until May 30, 2022 for delivery of the 10-year Evaluation and Adoption Plan; the city met these revised dates.

Fitch considers the system to be a related entity to the city for rating purposes given the city's oversight of the system, including its management of operations and approving appointment of board members. The credit quality of the city does not currently constrain the bond rating. However, as a result of being a related entity, the issue rating could be affected by a material decline in the general credit quality of the city as outlined in Fitch's 'U.S. Public Finance Tax-Supported Rating Criteria.'

Coronavirus Considerations

The city imposed a moratorium on shut-offs and disconnections in April 2020 to help offset economic hardships due to the coronavirus and extended the moratorium until June 2022. The number of accounts eligible for shut-off is just over 28,000, as of June 2022, which reflects a revision to the delinquency thresholds to $1,000 from $150. After withdrawing its rate proceeding in February 2020, thereby foregoing a rate increase in fiscal 2021, PWD utilized cost containment measures and rate stabilization funds to maintain system financial metrics in fiscal 2021.

Revenue Defensibility

Revenue defensibility, assessed at 'a', is strong and reflects all of PWD's revenues being derived from monopolistic water delivery and wastewater services to the city and portions of surrounding areas. The customer base is highly diverse, and is predominantly residential users. The 10 largest customers accounted for 10.8% of fiscal 2021 total operating revenue and include the city and the Philadelphia Housing Authority, which together account for about 5.0% of revenue.

Wholesale revenues comprise about 5.7% of total system revenues.

PWD's service territory is generally stable but with weaker median household income and unemployment levels relative to national levels. Fitch uses the city's demographic statistics as a key input to its assessment of the service territory as the vast majority of customers are located within the city limits but also recognizes that PWD provides service to areas with more favorable demographics outside of the city limits.

The city unemployment rate remains significantly above that of the nation, approximating 174% of the nation in 2021. More recent data show an improving trend, and the nominal rate in May 2022 was 5.7% relative to 9.2% in 2021. Median household income improved slightly in 2020 approximating 76% of the nation, compared to 73% in recent years.

Rate Oversight and Structure

Rate-setting includes an arduous and time-consuming process to raise rates, requiring approval by the five-member board, the members of which are appointed by the mayor and must be approved by the city council. In 2018, the Public Advocate appealed the board’s 2018 decision with respect to rates for fiscal years 2019 and 2020 on various grounds. The ultimate outcome is still pending, but could potentially result in an approximately $22.4 million revenue impact relating to fiscal years 2019 and 2020. PWD continues to evaluate its strategy with respect to this litigation.

Rates are deemed affordable for a significant majority of the population (around 70%) and the combined monthly residential customer bill totaled approximately $100 for 7,500 gallons of water consumed and 6,000 gallons of sewer flows in 2021. PWD has implemented various bill reduction programs for a few thousand lower-income residents. The system's recently approved rate case included a rate surcharge to recover a portion of the revenue lost due to the TAP.

Operating Risk

Fitch assesses PWD's operating risk profile as very strong at 'aa', reflecting a very low operating cost burden and strong historical capital re-investment trends. The majority of the system's expense budget comprises well-defined cost drivers, including labor and related costs, utilities and other general and administrative expenses. Elevated investment needs are adequately addressed with sizable historical and projected capital spending. The cost burden has been relatively stable, averaging $2,488 since fiscal 2018, and economies of scale are anticipated to keep the operating cost burden consistent with the current assessment.

The system participates in the city's single-employer, defined contribution pension plan (municipal plan), which had a Fitch-adjusted net pension liability of $464.7 million in fiscal 2021 for PWD. Recent reassessment of PWD's share of allocable pension costs was expected to reduce expenditures by approximately $20 million annually beginning in fiscal 2022, relative to then current projections. With a currently low operating cost burden, Fitch expects the system will be able to absorb future cost increases while maintaining the 'aa' assessment.

Capital planning and management is strong, reflecting elevated investment needs but a solid capital re-investment trend over the past five years. Typical of most large, mature, urban combined utilities facing CSO mitigation and long-term renewal and replacement issues, PWD's capital improvement program is anticipated to remain substantial. Following the completion of an updated water master plan in 2019, projected capital spending for fiscal years 2022-2026 approximates $2.4 billion, which reflects anticipated execution relative to the CIP in excess of $3 billion. The plan is anticipated to be funded primarily with debt (about 90%), including loans through state and federal programs.

Financial Profile

PWD's financial profile is assessed at 'a', reflecting the system's low leverage relative to its business profile. The leverage profile in fiscal 2021 was 8.8x, approximate to the fiscal 2020 level, but up from fiscal 2018 when it measured 6.3x. The increase is primarily driven by additional debt issuances in conjunction with lower sales revenue the last two fiscal years due to challenges related to the pandemic and exacerbated by the absence of a rate increase in fiscal 2021.

The liquidity profile is considered neutral to the assessment. The fiscal 2021 balance in the system's rate stabilization fund (RSF) was about $125 million, which, when combined with additional available liquidity, results in over 260 current days cash on hand. Coverage of full obligations (COFO) measured 1.4x and Fitch calculated all-in debt service coverage (DSC) exceeded 1.6x, as this does not account for the system's net transfers.

Fitch Analytical Stress Test (FAST)

Fitch's FAST considers the potential trend of key ratios in a base case and a stress case. The stress case is designed to impose capital costs 10% above expected levels and evaluate potential variability in projected key ratios. Fitch's base case generally reflects PWD's financial forecast, with adjustments made to smooth the increase from audited fiscal 2021 into fiscal 2022, the first year of the FAST. Projected revenues reflect approval of the most recent rate package for fiscal 2023, with additional revenue increases between 8.5% and 10.4% annually through fiscal 2026, largely driven by planned rate adjustments. Increases in operating costs include the effect of recent labor settlements and increase by an average of 4.1% annually. The FAST also includes PWD's capital spending forecast and planned debt-funding sources.

In the FAST base case, leverage rises to just over 9.9x in fiscal 2023 and gradually declines, falling to 8.7x by fiscal 2026. In the stress case, leverage peaks at 10.1x in fiscal 2023 and then follows the same pattern of decline. The system's liquidity profile is expected to remain neutral to the assessment with COFO of at least 1.3x and solid days cash annually. Management's current projections reflect senior lien DSC of 1.2x, including anticipated transfers from the RSF. Current estimates include the system drawing on the RSF in fiscal 2023 and then making annual deposits to the RSF beginning in fiscal 2024.

The FAST's declining leverage trend in the out years is dependent on substantial rate increases that increase funds available for debt service by over 60% from the fiscal 2021 level as capex continues increasing annually through fiscal 2026. Should projected rate increases fail to receive necessary approvals, Fitch anticipates PWD would adjust operating and/or capital spending and related debt plans to meet internal financial targets and maintain leverage consistent with the current assessment. Failure to make necessary adjustments while remaining compliant with regulatory mandates would pressure the financial profile assessment and rating.

ESG Considerations

Unless otherwise disclosed in this section, the highest level of ESG credit relevance is a score of '3'. This means ESG issues are credit-neutral or have only a minimal credit impact on the entity, either due to their nature or the way in which they are being managed by the entity. For more information on Fitch's ESG Relevance Scores, visit www.fitchratings.com/esg.

Financial Summary

($000, Audited Years Ended Aug. 31)	2017	2018	2019	2020	2021
Revenue Defensibility					
% of Total Revs from Monopolistic Services	**100**	**100**	**100**	**100**	**100**
Service Area Characteristics					
Service Area Population	1,581,699	1,586,422	1,584,439	1,603,797	1,576,251
Total Customer Count	1,319,849	1,319,849	1,330,331	1,328,307	1,336,273
5-Year Total Customer Count CAGR	**0.3**	**0.3**	**1.3**	**0.1**	**0.2**
3-Year Total Customer Count CAGR					
Service Area MHI ($)	40,649	43,744	45,927	49,127	N.A.
Service Area MHI/U.S. MHI (%)	**70.5**	**72.6**	**73.1**	**75.6**	**N.A.**
Service Area Unemployment Rate (%)	6.3	5.8	5.7	12.4	9.2
Service Area Unemployment Rate/U.S. Unemployment Rate (%)	**143.2**	**148.7**	**154.1**	**153.1**	**173.6**
Rate Flexibility					
Total Monthly Bill (7,500 gallons/6,000 gallons)	93.41	97.78	101.72	99.46	99.01
% of Population w/Unaffordable Bill	**30.4**	**29.4**	**29.3**	**27.1**	**0.0**
Operating Risk					
Operating Cost Burden					
Operating Cost Burden ($/mg)	**N.A.**	**2,477**	**2,406**	**2,702**	**2,365**
Capital Planning and Management					
Life Cycle Ratio (%)	**50.0**	**48.9**	**48.8**	**47.6**	**47.6**
CapEx/Depreciation (%)	235.0	227.0	249.0	218.0	200.0
5-Year Average Capital Expenditures/Depreciation (%)	**181.0**	**192.0**	**210.4**	**220.4**	**225.8**
3-Year Average Capital Expenditures/Depreciation (%)					
Financial Profile					
Current Unrestricted Cash/Investments	95,288	103,027	112,814	132,483	170,619
Current Restricted Cash/Invest (Available Liquidity)	202,108	179,403	180,449	151,878	125,117
Current Cash Available	**297,396**	**282,430**	**293,263**	**284,361**	**295,736**
Noncurrent Unrestricted Cash/Investments					
Noncurrent Restricted Cash/Invest (Available Liquidity)					
Available Cash	**297,396**	**282,430**	**293,263**	**284,361**	**295,736**
Current Restricted Cash/Invest (Debt Service or Debt Service Reserve)					
Noncurrent Restricted Cash/Invest (Debt Service or Debt Service Reserve)	219,100	199,833	201,367	194,951	206,024
Funds Restricted for Debt Service	**219,100**	**199,833**	**201,367**	**194,951**	**206,024**
Total Debt	2,152,485	1,824,493	2,175,762	2,360,315	2,500,903
Capitalized Fixed Charges					
Adjusted Net Pension Liability	585,055	575,771	568,743	581,671	464,730
Available Cash	297,396	282,430	293,263	284,361	295,736
Funds Restricted for Debt Service	219,100	199,833	201,367	194,951	206,024
Net Adjusted Debt	**2,221,044**	**1,918,001**	**2,249,875**	**2,462,674**	**2,463,873**
Total Operating Revs	715,949	726,942	746,072	733,318	718,572
Purchased Water/Sewer Services					
Operating Leases					
Other Operating Expenses	413,339	439,972	455,611	466,173	411,065
EBITDA	**302,610**	**286,970**	**290,461**	**267,145**	**307,507**
Investment Income/(Loss)	7,626	10,865	24,054	23,167	1,095
Non-Operating Revenues from Taxes					
Other Cash Revenues/(Expenses)	(16,909)	(17,470)	(31,110)	(31,687)	(20,071)
BAB Subsidy					

Financial Summary

($000, Audited Years Ended Aug. 31)	2017	2018	2019	2020	2021
Capital Contributions					
FADS	**293,327**	**280,365**	**283,405**	**258,625**	**288,531**
Fixed Services Expense					
Operating Leases					
Net Transfers In/(Out)	(28,483)	(33,280)	(39,917)	(34,682)	(37,160)
Pension Expense	58,193	58,590	58,279	53,223	29,860
Adjusted FADS	**323,037**	**305,675**	**301,767**	**277,166**	**281,231**
Net Adjusted Debt to Adjusted FADS (x)	**6.9**	**6.3**	**7.5**	**8.9**	**8.8**
FADS	**293,327**	**280,365**	**283,405**	**258,625**	**288,531**
Fixed Services Expense					
Net Transfers In/(Out)	(28,483)	(33,280)	(39,917)	(34,682)	(37,160)
Adjusted FADS for COFO	**264,844**	**247,085**	**243,488**	**223,943**	**251,371**
Total Annual Debt Service (Automatic Calculation)	204,366	215,598	190,654	206,195	175,697
Fixed Services Expense					
Adjusted Debt Service (Including Fixed Services Expense)	**204,366**	**215,598**	**190,654**	**206,195**	**175,697**
Coverage of Full Obligations (COFO) (x)	**1.30**	**1.15**	**1.28**	**1.09**	**1.43**
COFO exc. Connection Fees (x)	**1.30**	**1.15**	**1.28**	**1.09**	**1.43**
Current Days Cash on Hand	**263**	**234**	**235**	**223**	**263**
Liquidity Cushion Ratio (Days)	**263**	**234**	**235**	**223**	**263**
All-in DSC (x)	1.4	1.3	1.5	1.3	1.6

N.A. – Not Available. Note: Fitch may have reclassified certain financial statement items for analytical purposes.
Source: Fitch Ratings, Fitch Solutions, Philadelphia (PA).

The ratings above were solicited and assigned or maintained at the request of the rated entity/issuer or a related third party. Any exceptions follow below.

MOODY'S
INVESTORS SERVICE

Rating Action: Moody's assigns A1 rating to Philadelphia Water & Sewer Enterprise, PA's Series 2022C; outlook stable

27 Jul 2022

New York, July 27, 2022 -- Moody's Investors Service has assigned an A1 rating to the City of Philadelphia Water & Sewer Enterprise, PA's $310 million Water and Wastewater Revenue Bonds, Series 2022C. Concurrently, Moody's maintains the A1 rating on roughly $2.435 billion of parity debt outstanding as of June 30, 2022. The outlook remains stable.

RATINGS RATIONALE

The A1 rating speaks to Philadelphia Water and Sewer Enterprise, PA's (or Philadelphia Water Department (PWD), or "the department") satisfactory current financial position, with revenues supported by its large and diverse service area - primarily the city of Philadelphia (A2 stable) and its immediate suburbs. The rating also reflects the department's sizeable consent order and the system's aging infrastructure, both of which require significant ongoing capital investment. The A1 rating incorporates our expectation of substantial future rate increases and debt issuance in the coming years to support the department's capital improvement plan.

The Water Department's conservative financial forecasts continue to project moderate revenue pressure due to the continued effects of the coronavirus pandemic and particularly high residential customer delinquencies. Higher than average delinquencies and larger bad debt write-offs have persisted through 2022, as the city's water shut-off moratorium was extended through June of this year. Though actual net operating income for fiscal 2021 outperformed budget expectations by a healthy margin, the department continues to project revenue weakness and a draw down of its rate stabilization fund through fiscal 2023. While the rate board approved a sizeable rate increase for the current fiscal year, further rate increases will be required to rebuild the department's reserves, and the rate board has historically not approved rate increases at the level requested. The department continues to project fairly narrow "legally enacted" debt service coverage through the next two years.

While these financial challenges do not pose an immediate risk to the department's credit profile, prolonged economic stress in the customer base, coupled with increasingly narrowed reserves could present downward rating pressure, particularly if sufficient rate increases are not realized.

RATING OUTLOOK

The outlook is stable given consistent historical results and our expectation that management will continue to act to maintain structural operating balance and meet coverage covenants despite near-term revenue pressures. Annual debt service requirements are currently manageable, with several consecutive years of decline embedded in the current schedule. This should serve to keep costs reasonable, even with annual new money issuances to support the department's sizeable CIP. Third party engineer and financial consultant reports add to operational stability and comprehensive debt planning. Incorporated into the stable outlook is an expectation that the department will use its rate stabilization reserve to meet debt service coverage covenants in fiscal 2022 and 2023. However, we also anticipate that the reserve usage will be modest, temporary, consistent with rate covenants, and still in line with the current rating.

FACTORS THAT COULD LEAD TO AN UPGRADE OF THE RATING

- Considerable improvement in debt service coverage

- Service area expansion / revenue growth beyond expected rate increases

FACTORS THAT COULD LEAD TO A DOWNGRADE OF THE RATING

- Failure to meet bond coverage covenants

- Inability to increase rates commensurate with coverage requirements and in line with the department's internal standards

- Appropriation of reserves beyond current expectations

LEGAL SECURITY

The bonds are special obligations of the City of Philadelphia, secured equally and ratably with the city's outstanding Water and Wastewater Revenue bonds. All Water and Wastewater Revenue bonds are secured by a pledge of and security interest in all Project Revenues derived from the city's water and wastewater systems. The bonds benefit from a debt service reserve, funded in cash and sized for maximum annual debt service.

USE OF PROCEEDS

Proceeds from the Series 2022C bonds will be used to support capital improvements to the system's infrastructure and to fund a deposit to the debt service reserve.

PROFILE

The Philadelphia Water & Sewer Enterprise provides water and sewer treatment service to the city of Philadelphia and some of its surrounding suburbs. PWD's customer base includes approximately 480,000 active water accounts and 545,000 active wastewater accounts.

METHODOLOGY

The principal methodology used in this rating was US Municipal Utility Revenue Debt Methodology published in April 2022 and available at https://ratings.moodys.com/api/rmc-documents/386721 . Alternatively, please see the Rating Methodologies page on https://ratings.moodys.com for a copy of this methodology.

REGULATORY DISCLOSURES

For further specification of Moody's key rating assumptions and sensitivity analysis, see the sections Methodology Assumptions and Sensitivity to Assumptions in the disclosure form. Moody's Rating Symbols and Definitions can be found on https://ratings.moodys.com/rating-definitions.

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MOODY'S
INVESTORS SERVICE

CREDIT OPINION
2 August 2022

Send Your Feedback

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Philadelphia (City of) PA Wtr. & Sew. Ent.

Update to credit opinion

Summary

Philadelphia Water and Sewer Enterprise, PA (or Philadelphia Water Department, "PWD"or "the department") (A1 stable), continues to maintain a satisfactory reserve and liquidity position despite revenue shortfalls in 2020 and 2021 due primarily to coronavirus-related customer delinquencies. The department maintained its service shut off moratorium through June 2022. However, customer delinquencies and bad debt write-offs remain materially elevated compared to prior years. Whether the department is able to recover at least a portion of delinquent revenues and realize a decline in delinquent accounts going forward will be key to future credit reviews. Continued weakness in PWD's rate base at this magnitude will result in negative pressure on its credit profile.

Our current credit view of the department includes its use of rate stabilization reserves through the next four fiscal years, with reserves expected to be drawn down to $117 million by next year from the department's typical $150 million position. Reserve draws beyond current expectations, due to prolonged or worsening customer delinquencies or an inability of the department to raise rates as needed to support its rate covenant without further reserve draws, will pressure the department's current credit profile.

The department's ability to raise rates is materially constrained by its rate board governance structure. Favorably, the rate board approved a sizeable 5.89% rate increase for 2023, following a 1.85% increase in the current year. However, these increases serve to keep PWD operating right at its 1.2x covenant in 2022 and 2023, inclusive of transfers from the rate stabilization fund to supplement revenue. A rate increase of 10.4% in 2024, followed by increases of more than 8% each year thereafter through 2027, are projected to be required to stabilize coverage back to the department's preferred 1.3x threshold and rebuild reserves. While these rates far exceed what the rate board has approved historically, we expect that PWD's budget projections continue to be fairly conservative.

The department's strong management team continues to meet the fiscal and operational challenges of the pandemic with conservative budgeting and a prudent management of its capital plan. The department's very large capital budget provides some operating flexibility, as a slow down of projects can positively impact operating expenditures and help to maintain overall structural balance, though slowing needed capital repairs adds potential stress to an aged infrastructure. Favorably, actual results for 2021 materially outperformed projections provided in the prior year. This speaks to the department's continued strong fiscal management, coupled with revenues coming in somewhat stronger than anticipated despite continued high delinquencies. PWD also benefited last year from a re-amortization of one of

the city's oldest pension plans, which saves the department $20 million annually in pension contributions going forward.

PWD's long term credit profile is moderated by a sizeable consent order and the system's aging infrastructure, both of which will require significant capital investment. PWD has expanded its capital improvement plans to encompass roughly $3.975 billion of spending over the next six years, about 80% of which will be funded with bond proceeds. While this is an extensive capital plan, we expect new money issuance will be accompanied by rate increases sufficient to maintain required coverage and liquidity. Further, PWD's current debt portfolio is structured with material debt service reductions in 2021, 2024 and 2033, and so additional debt can be supported while keeping annual servicing costs relatively level.

Credit strengths

» Some flexibility in the capital budget will help to maintain structural balance in the near term

» Proposed debt increases financially offset by near-term debt service declines

» Satisfactory current cash reserves and formal reserve policy

» Large and diverse service area

» Closed-loop legal framework

Credit challenges

» Current revenue stress due to continued elevated residential delinquencies reflects economic weakness in the service area base

» Coverage is projected to decline to covenant level (1.2x debt service coverage)

» Consent Order & Agreement and aging infrastructure necessitate hefty CIP and related debt issuance; a slow down of projects helps maintain operating flexibility in the near term but contributes to the long term burden

» Continued rate limitations through rate board approval structure; continued rate increases are required to support debt and capital plan

Rating outlook

The outlook is stable given consistent historical results and our expectation that management will continue to act to maintain structural operating balance and meet coverage covenants despite near-term revenue pressures. Third party engineer and financial consultant reports add to operational stability and comprehensive debt planning.

Factors that could lead to an upgrade

» Considerable improvement in debt service coverage

» Service area expansion / revenue growth beyond expected rate increases

Factors that could lead to a downgrade

» Failure to meet bond coverage covenants

» Inability to increase rates commensurate with coverage requirements and in line with the department's internal standards

» Appropriation of reserves beyond current expectations

» Continued material customer delinquencies

Key indicators

Exhibit 1

Philadelphia (City of) PA Wtr. & Sew. Ent.					
System Characteristics					
Asset Condition (Net Fixed Assets / Annual Depreciation)	22 years				
System Size - O&M (in $000s)	$411,065				
Service Area Wealth: MFI % of US median	72.54%				
Legal Provisions					
Rate Covenant (x)	1.2				
Debt Service Reserve Requirement	DSRF funded at MADS (Aaa)				
Management					
Rate Management	A				
Regulatory Compliance and Capital Planning	A				
Financial Strength					
	2017	2018	2019	2020	2021
Operating Revenue ($000)	$715,949	$726,942	$746,072	$733,318	$718,572
System Size - O&M ($000)	$396,264	$429,239	$449,522	$466,173	$411,065
Net Revenues ($000)	$327,311	$310,215	$320,604	$290,862	$308,602
Net Funded Debt ($000)	$2,152,485	$1,824,493	$2,004,200	$2,149,469	$2,279,700
Annual Debt Service ($000)	$191,307	$202,338	$177,296	$192,478	$158,397
Annual Debt Service Coverage (x)	1.7x	1.5x	1.8x	1.5x	2.0x
Cash on Hand	88 days	88 days	92 days	104 days	151 days
Debt to Operating Revenues (x)	3.0x	2.5x	2.7x	2.9x	3.2x

Source: audited financial statements, Moody's Investors Service

Profile

The Philadelphia Water & Sewer Enterprise provides water and sewer treatment service to the city of Philadelphia (A2 stable) and some of its surrounding suburbs. PWD's customer base includes approximately 480,000 active water accounts and 545,000 active wastewater accounts.

Detailed credit considerations

Service area and system characteristics: Large, diverse urban service area

Philadelphia Water and Sewer Enterprise's current credit profile incorporates the benefit of a large urban base, consisting primarily of the city of Philadelphia, coupled with some wholesale accounts in the surrounding suburbs. However, an already challenging economic base within the city has been worsened by the coronavirus crisis. As of June 27, 2022, there were over 28,300 accounts eligible for shut-off, where amounts due are in excess of $1,000, but past due accounts with balances below this dollar threshold well exceed this level. The department expects that delinquencies will moderate now that the shut-off moratorium has ended, however, continued weakness in the rate base will pressure the department in the longer term, necessitating higher rate increases for the base generally. Prolonged weakness in the customer base, particularly continued increases in residential delinquencies or a need to materially expand the department's rate subsidies, could result in negative pressure on the department's credit profile.

The water system serves more than 1.5 million individuals through 480,000 active customer accounts and one wholesale account with Aqua Penn. The system maintains three treatment plants, which pull water from the Delaware (59% of water) and Schuylkill (41% of water) rivers. These plants together have a rated treatment capacity of 546 MGD and a combined maximum source water withdrawal capacity of 680 MGD, well above the system's average and maximum daily water production over the last several years. The system's water meets all standards set by the DEP and EPA.

The wastewater system serves a moderately larger area with 545,000 retail accounts (including 50,000 storm water only accounts) and 10 wholesale accounts with neighboring communities and authorities. These wholesale accounts contributed about 5% of overall revenues for fiscal 2020. The wastewater system infrastructure includes three treatment plants. These plants provide a combined average treatment capacity of 522 MGD and peak capacity of 1,059 MGD, again well above average flow reported for the last several years. The system maintains a long-term contract and lease with Philadelphia Municipal Authority to operate its Biosolids Recycling Center through fiscal 2028.

With a population of more than 1.57 million as of the 2021 census, Philadelphia is the sixth-largest city in the US. The population is growing, albeit slowly, largely due to national demographic trends favoring urban areas, as well as the appeal of the city's substantial mix of universities, hospitals, and other employers.

Debt service coverage and liquidity: consistent debt service coverage, near-term appropriation of reserves

Given two material rate increases in 2022 and 2023, for 1.85% and 5.89%, respectively, the department expects a moderate draw on its rate stabilization fund in 2023, with a rebuild of reserves projected thereafter. While positive, projections include further sizeable rate increases - 10.41% in 2024 and more than 8% in each year thereafter - in order to stabilize operations, resume capital spending as required, and rebuild reserves to pre-pandemic levels. Management's plan is sound, but the department's rate board has historically declined to approve rate increases at management's requested levels. In fact, prior to the 5.89% increase for 2023, the board's largest rate approval was 4.52% in 2017 and 2018. We expect that management will adjust its budget accordingly if requested increases are not approved, though this will likely be at the expense of capital investment and/or strengthening reserves.

Favorably, PWD has worked to build reserves over the past several years, and is approaching the current recessionary environment from a position of relative strength. The department's rate stabilization fund is expected to decline to $117 million, though this is down from a quite strong $180 million at fiscal 2019 year end. Reserve draws will be used to supplement revenue and the transfers are allowable in the calculation of the department's 1.20xs “legally enacted” debt service coverage ratio. The department drew down reserves by $33 million during fiscal 2020 and $27 million in fiscal 2021. Reported 2022 figures show an expectation of operating balance without use of the rate stabilization fund, and the 2023 draw is projected to be a very moderate $9.03 million.

Though the department continues to see revenue weakness as a result of residential customer delinquencies, it was able to produce solid net operating results in 2021 through a reduction in expenditures. Reserves were utilized as intended - to support the department through a period of revenue weakness until operating expenditures could be right-sized. This operating flexibility is a positive, however, continued underspending on the department's capital plan only serves to increase its CIP over time. In 2022 and 2023, we see a return to more normalized expenditures given rate increases, though again, further rate increases will be required in the near term to continue needed capital investments and rebuild reserves.

Moody's calculated debt service coverage is a satisfactory 1.95xs in 2021, favorable to 1.5xs coverage the prior year, again given a material curtailment of spending year over year.

Moody's evaluates coverage based on generally accepted accounting principles with a few adjustments, while the department reports figures on a “legally enacted” basis that is more cash-focused. According to the department's calculation, senior-lien coverage, on a legally enacted basis, declined to 1.20xs for fiscal 2021, well below the 1.33xs level reported pre-pandemic. PWD management consistently outperforms budget projections, and we expect this trend to continue. Nevertheless, coverage is expected to hover, on a legally-enacted basis, at just 1.20x - right at the bond covenant requirement - for the next several years. Moody's expects that management will continue to act aggressively to meet or exceed these budget expectations.

The department's ability to meet coverage targets and rebuild reserves while also pursuing more normalized spending for capital will depend on future rate approvals, which, again are expected to be sizeable. A return to pre-pandemic customer collection rates will also be important. Should future rate increases not be realized, or if reserves are drawn down beyond current expectations, PWD's current credit profile could be pressured.

Liquidity

PWD's Water Sewer and Stormwater Board had adopted a policy to maintain at least $150 million in the Rate Stabilization and Residual Funds. The department will appropriate reserves in the near term below this requirement. Days cash on hand is a fairly narrow

151 days as of fiscal 2021 year end, materially below the median of 409 days cash for A1-rated systems in the US, though generally in-line with PWD's historical norms.

Debt and Legal Covenants

The department's $2.28 billion of outstanding debt at fiscal year-end 2021 remains manageable, but is projected to grow significantly as part of its $3.975 billion, six year, capital plan. Current debt is roughly 3.2 times gross revenue, and net funded debt is a significantly above average 71% of net fixed assets. Favorably, the existing debt structure is front-loaded, and PWD realized debt service savings in 2021 and will again see a debt cliff in 2024 and beyond, though we expect that much of the debt service savings that could be realized given the current debt profile will be eliminated with the issuance of new debt in the near term. Current projections for new money issuance over the next six years (roughly $3.5 billion) show that debt service will remain level to moderately increasing in the coming years.

The department's six-year capital improvement plan, which reflects the consent order as well as major investments to the department's water infrastructure, totals $3.975 billion and will be roughly 90% debt-funded over the next six years. Notably, the capital plan size has increased by more than $300 million year over year, and the percent expected to be funded by debt has grown to 90% from a projected 82%. This is the long-range effect of the pandemic - depressed revenue and reduced spending over the last two years will have lasting impacts for the department and its rate base. Favorably, the department has been successful in securing low-cost PennVest and WIFIA loans as an alternative to bond issuance.

If the capital plan is executed as currently structured, the system's debt burden will continue to grow, though again, we anticipate that the department's bond covenants and formally adopted policies will ensure that new money debt will only be issued in concert with appropriate rate increases.

On July 29, 2021, the department executed a new commercial paper note program with a maximum authorization of $250 million and executed its remaining capacity in June 2022, bringing total maximum capacity to $400 million. There is currently $4.0 million drawn to date.

Legal security

The bonds are special obligations of the city of Philadelphia, secured equally and ratably with the city's outstanding Water and Wastewater Revenue bonds. All Water and Wastewater Revenue bonds are secured by a pledge of and security interest in all Project Revenues derived from the city's water and wastewater systems.

Debt structure

The legal covenants governing the system's senior lien bonds are satisfactory. The senior lien rate covenant is 1.2 times and the total debt service covenant is 1.0 times (although the system currently has no subordinate bond debt). The indenture permits transfers from the rate stabilization fund, meaning the department could use prior-year surpluses to meet its covenant. The additional bonds test is to comply with the rate covenant.

The debt service reserve fund requirement is maximum annual debt service. Additionally, the system, by ordinance, requires that any surety in a debt service reserve fund be rated Aa or higher. A $67 million surety policy with Assured Guaranty Municipal Corp (A2 stable) is not eligible to be included in the reserve requirement. Thus, the department has a debt service reserve fund cash-funded at MADS, plus the surety policy.

As of fiscal 2021, all of the department's debt is fixed rate.

Ordinance No. 171110-A, signed by the Mayor on April 24, 2018, includes certain amendments to the General Ordinance (the "Springing Amendments") that will become effective upon issuance of the department's Water and Wastewater Revenue Bonds Series 2022 C. One important amendment concerns the debt service reserve, and allows the department to establish a separate debt reserve subaccount for a series of Water and Wastewater Revenue Bonds in lieu of a deposit to the debt reserve account, upon receipt of a rating confirmation from any one Rating Agency then rating the Water and Wastewater Revenue Bonds that such action, in and of itself, will not result in a downgrade, suspension or withdrawal of the credit rating on any Water and Wastewater Revenue Bonds the outstanding.

The 2022 Series C bonds will benefit from the parity reserve.

Debt-related derivatives

The department is not party to any derivative agreements.

Pensions and OPEB

The city of Philadelphia operates one defined-benefit plan: the City of Philadelphia Public Employees Retirement System (not including the pension plan for the Philadelphia Gas Works). It is a mature plan that has roughly 66,000 members, 28,000 active employees and 38,000 retirees. As a result of improved employee contributions, and in addition to the city consistently contributing to the plan above the minimum municipal obligation (MMO), Philadelphia has been able to achieve positive net cash flow excluding investment returns in each of the last three fiscal years. This means that contributions into the system are exceeding benefit outflows, enabling the system to accumulate assets more rapidly.

Favorably, the city reduced its assumed rate of return on its pension plan, to 7.45% from 8.75%, and increased employee contributions under current union contracts. The city contributed $788.5 million to pensions in fiscal 2021, exceeding the minimum municipal obligation (MMO) of $674 million.

ESG considerations

Environmental

As a water and sewer utility, environmental concerns are material to the department's operations and are an ongoing credit consideration. The system is subject to an EPA consent order for combined sewer overflow. Fully addressing the consent order and aged infrastructure (also an environmental concern) will require capital investment of roughly $11 billion over the next 25 years.

Social

Social concerns are also material to the department's credit profile. The city of Philadelphia has a high poverty rate and generally weak wealth levels. These economic challenges have been magnified by the coronavirus pandemic, and the impact to the water department has been realized through significantly elevated residential delinquencies.

Governance

The water department's management team has a proven track record of detailed planning and conservative budgeting, and we expect that strong management will serve to navigate the department through the current crisis. While the department's future capital plans are extensive, we expect that plans will be executed methodically over the long term.

The system is one of the city’s ten operating departments. Its operations are accounted for in the Water Fund, which is an enterprise of the City. The system is closed-loop with a cap on General Fund transfers to the lesser of (a) net reserve earnings or (b) $4.994 million. The Water Revenue Bureau is responsible for the billing, metering, and collection of revenues for the system. Favorably, the system maintains five-year projections that run through fiscal 2027. The system’s management has consistently increased rates and maintained a healthy amount of operating cash on hand. Until fiscal 2015, the water commissioner had the authority to set rates, and raised rates consistently, averaging around 5% between 2009 and 2015. Rates are now approved by an independent five-member rate board, whose members are appointed by the mayor and confirmed by city council.

While the decision maker for the system’s rate increases has changed, much of process remains the same, and includes position briefs, a period of discovery between participants to the proceeding and system management, as well as mandated public hearings.

REPORT NUMBER 1337414

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

S&P Global
Ratings

RatingsDirect®

Summary:
Philadelphia; Water/Sewer

Primary Credit Analyst:
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Jenny Poree, San Francisco + 1 (415) 371 5044; jenny.poree@spglobal.com

Table Of Contents

Summary:

Philadelphia; Water/Sewer

Credit Profile		
US$315.3 mil wtr and wastewtr rev bnds ser 2022C due 06/01/2052		
Long Term Rating	A+/Stable	New
Philadelphia wtr & swr		
Long Term Rating	A+/Stable	Affirmed

Rating Action Overview

- S&P Global Ratings assigned its 'A+' long-term rating to Philadelphia's series 2022C water and wastewater revenue bonds.
- At the same time, we affirmed our 'A+' long-term ratings and underlying ratings (SPURs) on the city's existing $2.3 billion of water and wastewater revenue bonds.
- The outlook is stable.

Security

Securing debt service are net revenues of the water and sewer fund, which include (net of operating expenses) rates and charges of the system, transfers from the rate stabilization fund (RSF), and interest earnings; bonds are further secured by a debt service reserve account funded at maximum annual debt service (MADS). Rates must be set to generate revenues and charges plus transfers from the RSF that represent at least 1.2x annual debt service on senior revenue bonds and 1.0x coverage when including all subordinate debt (if outstanding, which currently they are not) and certain other transfers. The city can issue additional debt as long as it is complying with the rate covenant at the time of issuance and net revenue projections are sufficient to provide for rate covenant compliance for the two fiscal years following the debt issuance. There is an additional provision for both the rate covenant and additional bonds test that requires that the city maintain net system revenues (excluding transfers from the RSF) totaling at least 90% of operating requirements (90% test). While this sets a limit on how much the system can rely on draws from the RSF, we generally view reliance on accumulated cash to meet covenants as permissive. Philadelphia Water Board (PWD) has historically met its 1.2x and 1.0x coverage tests without reliance on the 90% test, but if it needed to rely on it to maintain covenant compliance, then the rating would likely be lowered.

Credit overview

Our 'A+' rating reflects our view that the service territory benefits from its location in a large metropolitan center that serves as an anchor for employment throughout the region, despite facing ongoing headwinds due to challenges keeping its utility rates affordable for all its ratepayers. While the city's Rate Board has historically supported rate increases to maintain ample capacity for PWD's operations and capital needs, we foresee future challenges that could place downward pressure on PWD's financial position, most notably funding of a large capital improvement program (CIP) while concentrating on rate affordability. However, we believe that the city has flexibility in dealing with future revenue pressures, and because of this, the rating outlook is stable. Examples of this flexibility include the following:

- The ability to reprioritize its CIP, as it demonstrated during 2020 and 2021 due to the COVID-19 pandemic, which it could continue doing due to inflationary and supply-chain pressures.
- About 20% of the six-year CIP (2023-2028) is related to regulatory mandates of its Consent Order and Agreement (COA) with the Pennsylvania Dept. of Environmental Protection (PADEP). In addition, we have observed a good degree of cooperation between state and local officials regarding COA implementation, which we would expect to continue.
- Significant legally unrestricted balances that generally hover around or exceed $300 million, including a RSF, that should help to support PWD's liquidity needs. The city plans to use about $175 million of cash generated from net operating revenues over the 2023-2027 period to support its $3.9 billion CIP, but the funding will come from the residual generated from the 1.2x in annual debt service coverage (DSC) that PWD's projections indicate it will be at or higher through the 2027 forecast period.
- Management's demonstrated strengths at mitigating environmental, social, and governmental (ESG) risks through assistance programs, commitment to a significant amount of green infrastructure, and consistent communications of financial trends with the Rate Board.

To meet the 1.2x DSC covenant, PWD relies on approval of future rate increases that generate a range of about 6%-10% of additional revenues annually, not accounting for any positive variances that could occur to offset this revenue requirement. Setting rates to the legal minimum leaves very little cushion for future revenue deviations, which could threaten compliance in any given year without additional unplanned use of the RSF.

We also note that while PWD has a certain degree of flexibility in how much funding it dedicates toward capital projects in any one year, the CIP is large. A component of the plan is the 25-year $4.5 billion COA project cost, involving about $3.5 billion of capital expenditures and $1.0 billion in operating & maintenance costs. Deferral of capital could result in infrastructure under-investment, creating additional risks.

Environmental, social, and governance

We note that because of the ongoing corrective action plan measures and the attention that must be paid to affordability metrics, both environmental and social factors carry outsized risk. But addressing these risks are key components of PWD's operating profile.

Social risks are being addressed with an industry-recognized, multifaceted customer bill-pay assistance program for qualifying customers, including payment programs, bill reductions, and a dedicated surcharge on usage to provide dedicated funding for a portion of the program, which we view as credit supportive. The average monthly residential water and sewer bill is about $74, which we view as affordable.

Environmental risks are significant and include maintaining compliance with its COA, maintaining a watershed for a large service area population, and lead service line replacement. Mitigating these risks are key aspects of management's overall planning, community outreach, and compliance goals, but balancing these proactive efforts with capital and operating costs will remain a critical component of our rating analysis. We note that the CIP, while large, is supported by operational and financial management that is highly aligned, establishing prioritization among non-mandated projects and to the extent reasonably possible, includes resilience measures toward climate change and overall risk management that we view as comparable with peer very large systems.

Governance risks are currently a neutral factor in the rating, but could become elevated if future rate increases start to generate lower revenue than management's current projections indicate they will. Combined water and sewer rates are about 2.0% of local incomes (including the stormwater fee), but we believe requests for increases may be pressured given current recessionary conditions and social risks stemming from the elevated county poverty rate. Rate Board approval is required for all rate increases.

Outlook

The stable outlook is predicated on the city being able to generate margins that are generally in line with current financial projections, which show steadily improving DSC after consideration of both operating expenses and transfers for capital projects. While the outlook also incorporates some planned spend-down in the RSF as indicated in PWD's current projections, we would also expect that along with the improving DSC, the RSF reductions will be no less than what current projections show. Our assessment that the financial projections are attainable is based on PWD's historical willingness to adjust rates to meet its financial targets while maintaining compliance with all required covenants.

Downside scenario

If PWD's appetite for rate adjustments wanes and current projections for DSC and liquidity are not met, then we could lower the rating. We could also do so if there is a willingness to permanently reduce liquidity because of unforeseen capital costs or in lieu of rate increases.

Upside scenario

Because of the inflationary headwinds and ongoing, significant capital needs, we do not foresee an upgrade in at least the next several years. Over the longer term, if the city's financial performance significantly and consistently exceeds current projections, we could raise the rating.

Related Research

- Through The ESG Lens 3.0: The Intersection Of ESG Credit Factors And U.S. Public Finance Credit Factors, March 2, 2022

Ratings Detail (As Of July 28, 2022)		
Philadelphia wtr and wastewtr rev rfdg bnds (Federally Taxable)		
Long Term Rating	A+/Stable	Affirmed
Philadelphia wtr & swr (AGM)		
Unenhanced Rating	A+(SPUR)/Stable	Affirmed
Philadelphia wtr & swr (BAM) (SECMKT)		
Unenhanced Rating	A+(SPUR)/Stable	Affirmed
Philadelphia wtr (BAM) (SECMKT)		
Unenhanced Rating	A+(SPUR)/Stable	Affirmed

Ratings Detail (As Of July 28, 2022) (cont.)		
Philadelphia W/S (BAM)		
Unenhanced Rating	A+(SPUR)/Stable	Affirmed

Many issues are enhanced by bond insurance.

Schedule FinancePanel-4
Table 1

City of Philadelphia

Water Operating Fund
Fund Balance Summary

Category	FY'22 Year-End Prelim Final	FY'22 B&V Projected	FY'23 B&V Projected	FY'24 B&V Projected	FY'25 B&V Projected	FY'26 B&V Projected	FY'27 B&V Projected	FY'28 B&V Projected
REVENUES								
Locally Generated Non - Tax Revenues	722,532,393	740,651,066	802,382,751	881,525,487	972,789,373	1,091,958,293	1,183,455,222	1,268,081,511
Other Governments	464,078	764,380	566,582	566,582	566,582	566,582	566,582	566,582
Revenue from Other Funds of City - General Fund	30,584,448							
Revenue from Other Funds of City - Rate Stabilization Fund	0	0	1,228,640	4,135,896	124,013	0	0	0
Total Revenues and Other Sources	**753,580,919**	**741,415,446**	**804,177,972**	**886,227,965**	**973,479,968**	**1,092,524,875**	**1,184,021,804**	**1,268,648,093**
Category	**FY'22 Year-End Prelim Final**	**FY'22 B&V Projected**	**FY'23 B&V Projected**	**FY'24 B&V Projected**	**FY'25 B&V Projected**	**FY'26 B&V Projected**	**FY'27 B&V Projected**	**FY'28 B&V Projected**
OBLIGATIONS / APPROPRIATIONS								
Personal Services	158,297,211	163,560,719	172,675,168	181,130,519	193,552,400	202,479,707	210,588,426	219,668,641
Personal Services - Pension	67,511,495	64,237,142	71,962,113	74,242,584	76,796,045	78,002,362	78,637,764	79,436,870
Personal Services - Other Employee Benefits	63,161,241	65,582,257	71,799,993	75,388,284	81,386,064	85,926,674	90,002,632	94,584,170
Sub-Total Employee Compensation	288,969,947	293,380,118	316,437,274	330,761,387	351,734,508	366,408,744	379,228,822	393,689,680
Purchase of Services	165,330,778	172,130,913	179,812,718	195,488,511	206,029,809	219,610,283	228,590,698	237,989,770
Purchases of Services - Electricity	14,948,470	15,117,528	17,993,083	19,926,560	19,926,560	20,225,458	20,528,840	20,836,773
Purchases of Services - Gas	4,363,923	4,406,778	6,934,016	8,250,182	8,250,182	8,373,934	8,499,544	8,627,037
Sub-Total Purchase of Services	184,643,171	191,655,218	204,739,817	223,665,253	234,206,551	248,209,676	257,619,082	267,453,579
Materials, Supplies Equipment	31,390,928	35,921,800	29,399,432	32,900,710	35,263,382	37,041,239	38,910,699	40,876,604
Materials - Chemicals	29,366,350	24,786,183	36,925,830	52,678,695	65,226,760	72,682,179	80,989,752	90,246,881
Sub Total -Materials, Supplies and Equipment	60,757,278	60,707,983	66,325,262	85,579,405	100,490,142	109,723,418	119,900,451	131,123,484
Contributions, Indemnities and Taxes	6,368,596	3,595,000	4,603,721	4,603,721	4,603,721	4,603,721	4,603,721	4,603,721
UESF	500,000							
Indemnities	5,868,596							
Debt Service	176,993,378	177,133,572	199,582,354	219,878,086	255,154,063	305,291,897	351,146,420	390,897,086
Transfer to Escrow / Abritrage Payments								
Sub Total Debt Service	176,993,378	177,133,572	199,582,354	219,878,086	255,154,063	305,291,897	351,146,420	390,897,086
Advances and Miscellaneous Payments	-	-	-	-	-	-	-	-
Payment to Other Funds - Net of Payment to Rate Stabilization Fund	57,653,873	42,216,031	46,175,332	61,760,142	70,976,856	99,112,549	113,317,394	125,516,640
Payments to Other Funds - Rate Stabilization Fund	15,000,000	1,365,508	-	-	-	5,473,020	7,317,631	7,509,137
Total Obligations / Appropriations	**790,386,243**	**770,053,432**	**837,863,760**	**926,247,994**	**1,017,165,842**	**1,138,823,024**	**1,233,133,520**	**1,320,793,327**
Operating Surplus / (Deficit)	**(36,805,324)**	**(28,637,986)**	**(33,685,788)**	**(40,020,029)**	**(43,685,874)**	**(46,298,149)**	**(49,111,716)**	**(52,145,234)**
OPERATIONS IN RESPECT TO PRIOR FISCAL YEARS								
Net Adjustments - Prior Year (Liquidated Encumbrance)	36,805,325	28,637,985	33,685,788	40,020,029	43,685,874	46,298,149	49,111,716	52,145,234
Total Net Adjustments	**36,805,325**	**28,637,985**	**33,685,788**	**40,020,029**	**43,685,874**	**46,298,149**	**49,111,716**	**52,145,234**
Year End Balance	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Category **PAYMENTS TO OTHER FUNDS**	**FY'22 Year-End Prelim Final**	**FY'22 B&V Projected**	**FY'23 B&V Projected**	**FY'24 B&V Projected**	**FY'25 B&V Projected**	**FY'26 B&V Projected**	**FY'27 B&V Projected**	**FY'28 B&V Projected**
Payment to Other Funds - Net of Payment to Rate Stabilization Fund								
Capital Account Deposit	29,170,350	29,447,060	23,382,591	24,294,512	25,241,998	26,226,436	27,249,267	28,311,988
Residual Fund Transfer to Capital	21,993,793	5,997,386	16,542,163	30,729,383	38,547,283	65,361,440	78,190,547	88,957,613
Transfer to GF for Services	6,489,730	6,771,585	6,250,578	6,736,248	7,187,576	7,524,673	7,877,581	8,247,039
Total	57,653,873	42,216,031	46,175,332	61,760,142	70,976,856	99,112,549	113,317,394	125,516,640

Philadelphia Water Department
Schedule FP-5

Ratemaking And Financial Requirements
Ratemaking Methodology
Development of Revenue Requirements

RATE-MAKING AND FINANCIAL REQUIREMENTS

Philadelphia Home Rule Charter

The Philadelphia Home Rule Charter ("Charter") was amended in 2012 to allow City Council to establish, by ordinance, an independent ratemaking body responsible for fixing and regulating rates and charges for water and wastewater services (referred to in this testimony as the "Rate Board"), and open and transparent processes and procedures for fixing and regulating those rates and charges, including ratemaking standards (hereinafter, the "Rate Ordinance").

The Charter requires that the Rate Board fix and regulate rates and charges for supplying water, wastewater, and stormwater services in accordance with standards established by City Council. Such standards must enable the City to yield from rates and charges an amount at least equal to operating expense and debt service requirements on any debt incurred or about to be incurred for water supply, sewage and sewage disposal purposes. It further provides that in computing operating expenses, there shall be a proportionate charge for all services performed for the Department by all officers, departments, boards or commissions of the City. (See Charter, Section 5-801.)

Rate Ordinance

The Rate Ordinance was enacted and became effective on January 20, 2014, and its substantive provisions are set forth as part of Section 13-101 of the Philadelphia Code. Section 13-101(2) of the Philadelphia Code requires the Department to develop a comprehensive plan ("Financial Stability Plan" or "Financial Plan") in which the Department forecasts capital and operating costs and expenses and corresponding revenue requirements.

The Financial Stability Plan must: (i) forecast capital and operating costs and expenses and corresponding revenue requirements; (ii) identify the strengths and challenges to the Department's overall financial status including the Water Department's credit ratings, planned and actual debt service coverage, capital and operating reserves and utility service benchmarks; and (iii) compare PWD to similar agencies in peer cities in the United States. The Department must submit an updated Financial Stability Plan to City Council every four years and update the plan prior to proposing revisions in rates and charges.

The Department updated its Financial Plan prior to initiating this rate proceeding. The updated Financial Plan is attached as Schedule FP-1.

Section 13-101(4) of the Philadelphia Code, entitled "Standards for Rates and Charges," contains the ratemaking standards established by City Council and applicable to this rate proceeding. This provision, among other things, requires the Rate Board to establish rates and charges sufficient to fund budgeted operating expense and annual debt service obligations from current revenues and to comply with rate covenants and the debt service reserve requirement. It further requires that the rates and charges be developed in accordance with sound utility rate making practices and consistent with industry standards for water, wastewater and stormwater utilities (including standards published by the American Water Works Association and the Water Environmental Federation). Paragraphs (e) and (f) of Section 13-101(4) require special rates and charges to be established for certain categories of customers.

As explained in the direct testimony of Black & Veatch, the proposed rates comply with these requirements. (See PWD Statement 7).

In addition, Section 13-101(4)(b)(i) of the Philadelphia Code requires the Rate Board to: (i) fully consider the Department's Financial Plan, (ii) determine the extent to which current revenue should fund capital expenditures and the minimum level of reserves to be maintained during the rate period based on all relevant information presented including, but not limited to, peer utility practices, best management practices and projected impacts on customer rates, and (iii) set forth such determinations in the Rate Board's written report.

Additional Requirements Applicable to Rate Setting

In the 1989 General Bond Ordinance, the City covenanted with the bondholders that it will impose, charge and collect rates and charges in each fiscal year sufficient to produce annual net revenues which are at least 1.20 times the debt service requirements, excluding the amounts required for subordinated bonds (as defined in the 1989 General Bond Ordinance). In addition, the City's covenants to its bondholders require that net revenues in each fiscal year must be equal to 1.00 times (A) annual debt service requirements for such fiscal year, including the amounts required for subordinated bonds, (B) annual amounts required to be deposited in the debt reserve account, (C) the annual principal or redemption price of interest on General Obligation Bonds payable, (D) the annual debt service requirements on interim debt, and (E) the annual amount of the deposit to the Capital Account (less amounts transferred from the Residual Fund to the Capital Account).

Further, pursuant to the 1989 General Bond Ordinance, the City will, at a minimum, impose, charge and collect in each fiscal year such water and wastewater rents, rates, fees and charges and shall yield Net Revenues (defined for purposes of this covenant particularly, calculated to exclude any amounts transferred from the Rate Stabilization Fund to the Revenue Fund in, or as of the end of, such fiscal year) which will be equal to at least 0.90 times Debt Service Requirements for such fiscal year (excluding principal and interest payments in respect of Subordinated Bonds and transfers from the Rate Stabilization Fund). In this testimony, the above covenants are referred to collectively as the “Rate Covenants.”

A failure by the Department (City) to comply with any provision of its revenue bonds or with any Bond Covenant constitutes an event of default as defined under the 1989 General Bond Ordinance (a “Covenant Default”). In the event of a Covenant Default, a bondholder of any of the Department’s revenue bonds will be entitled to all the remedies provided under the First Class City Revenue Bond Act (the “Act”). Upon such event, the holders of 25% in aggregate principal amount of the affected series of the Department’s revenue bonds may appoint a trustee to represent such bondholders to exercise remedies. Such trustee may, and upon the written request of the holders of 25% in aggregate principal amount of such revenue bonds must, sue the City at law or in equity to enforce the rights of the aforesaid bondholders including, among others, their right to require the City to impose and collect sufficient rates, as required under the 1989 General Bond Ordinance, if the City has failed to do so.

Additional information on the Bond Covenants is provided in the Bond Counsel Memorandum, which is attached as Schedule FP-2. In addition, further discussion of rate setting, the Rate Board and the Rate Ordinance can be found in the “RATES” Section of PWD Exhibit 5.

RATE-MAKING METHODOLOGY

The Department’s rates are set using the cash basis of accounting. Under this basis, revenues are recorded on a receipt basis, except revenues from other governments and interest. Expenditures are recognized and recorded as expenses at the time they are paid or encumbered, except debt service which are recorded when paid.

The Department is one of the operating departments of the City and is a “government-owned utility” as defined in AWWA’s M1 Manual.” For government-owned utilities, the initial measure of whether revenues under existing rates are adequate is made to determine whether such revenues are sufficient to meet the utility’s cash requirements for the study period. The Department has no shareholders and does not pay a dividend or rate of return to the City as the owner of the water and wastewater systems. Virtually all the funds needed to run the operations of the Department come from ratepayers or from proceeds of debt borrowing.

The cost of borrowing must be paid by ratepayers. Therefore, the rates and charges are set by determining the appropriate levels of cash, debt service coverage and other financial metrics necessary to enable the Department to pay its bills and maintain efficient access to the capital markets at reasonable rates.

Cash-on-hand is the total amount of any accessible cash that a business has available at a certain time. As a "cash flow" entity, the Department's operations are entirely funded from rates, either indirectly as a result of short-term or long-term borrowing (which then must be paid back by ratepayers) or directly through charges to customers. So, one of the Department's most important financial metrics are end of year days cash on hand; and, separately, liquidity balance.

Cash is vital so that the Department can meet unforeseen financial challenges and financial requirements. The Engineering Report, which is part of PWD Exhibit 5, echoes that point. It states that the "Department needs to continue to carefully monitor its revenue and collections and manage its business operations to ensure that it appropriately meets projected payments and achieves the Rate Covenant requirements of the General Ordinance."

Without adequate cash, the Department will not be able to pay its bills when they are due. That could result in failing to satisfy financial metrics or a violation of the covenants. To avoid those results, the Department would need to adjust its spending to coordinate with the available cash. Doing so, however, would jeopardize the Department's ability to appropriately invest in infrastructure improvements that are needed to maintain system reliability and customer service levels, as further explained in PWD Statements 3 and 4.

DEVELOPMENT OF REVENUE REQUIREMENTS

Projected Revenue Requirements

The Department initially develops projected revenue requirements for future fiscal years in the same manner as in the two previous general rate proceedings before the Rate Board. The Department's approved operating budget for FY 2023 is used as a starting point for developing projected revenues and expenses anticipated as of FY 2024 and FY 2025. The Department's rate consultant, Black & Veatch, then used the budget data with specific adjustments as inputs to its financial cost-of-service model it developed to determine appropriate rates and charges for the Department.

Various City departments and agencies provide operational support to the Department, for which they receive a direct appropriation at the beginning of each fiscal year ("Direct Appropriation") or interfund transfer during the fiscal year from the Water Department's operating budget. These departments include: the Revenue Department (Water Revenue Bureau or "WRB") for meter reading, billing and collection services; the Law Department for legal services; the Department of Public Property for the rental of office space and parking; the Office of Fleet Management for vehicle acquisition, fuel, and vehicle maintenance; the Office of Innovation and Technology for communications and computer support services; the Procurement Department for services related to the acquisition of goods and services; the Office of the Director of Finance for fringe benefits, indemnities and support services; the Sinking Fund Commission for the payment of debt service; the Philadelphia Fire Department for inspection and testing of City fire hydrants and inspection of industrial facilities required under the City's Municipal Separate Storm Sewer System (MS4) Permit from the Pennsylvania Department of Environmental Protection; the Office of

Sustainability for energy procurement services; the Office of Transportation and Infrastructure; and the Rate Board.

Operating Budget

The Department, like all other City departments, submits a proposed budget for the following year to the Office of the Director of Finance Budget Bureau and the City's Managing Director's Office for consideration and inclusion in the Mayor's proposed annual operating budget. The Department began preparation of its operating budget for FY 2023 in September 2022, when each of the Department's divisions and the Water Revenue Bureau submitted their budget proposals setting forth their estimated obligations for FY 2023. Revenue estimates were prepared by the Water Revenue Bureau, with support of the Water Department, under the direction of the City's Office of the Director of Finance and the Department.

The Department's Chief Financial Officer, with the assistance of the Financial Planning, Budget and Rates team and with the support of the Water Commissioner, reviewed all the budget proposals of the various Water Department divisions and the Water Revenue Bureau.

On March 31, 2022, Mayor Kenney presented the FY 2023 and Five Year Plan Five Year Financial Plan to City Council. It included expectations for continued economic growth in Philadelphia, with additional revenues available to make investments to tackle Philadelphia's biggest challenges: intergenerational poverty, the need for an improving education system, and violence and public safety crises that threaten lives and disrupt our cherished communities. The Mayor then submitted the Department's proposed budget as part of the City's proposed revised operating budget for FY 2023, which was submitted to City Council. The City's FY 2023 annual operating budget was approved by City Council on June 23, 2022 and was signed by the Mayor.

Capital Improvement Program and Capital Budget

The Water Department updates its Capital Improvement Program and capital budget annually as part of its annual budget process. The Department began preparing its capital budget request for FY 2023 in September 2022. The capital budget was approved by the City Planning Commission and the Mayor's Office and included in the City's capital budget for FY 2023 and Six-Year Capital Program for FY 2023-2028, all of which were submitted to City Council for adoption. The City's capital budget for FY 2023 and its Six-Year Capital Program were approved by City Council on June 23, 2022 and were signed by the Mayor.

Water Fund

The Water Fund is an accounting convention established pursuant to the General Bond Ordinance for accounting for the assets, liabilities, revenues, expenses, and Rate Covenant compliance for the City's water and wastewater systems. The operations of the Water Department are accounted for in the Water Fund, which is an enterprise fund of the City.

For purposes of rate setting, calculating compliance with the Rate Covenant and debt service coverage and budgeting, the Water Fund accounts are maintained on a cash basis of accounting, also referred to as the "Legally Enacted Basis." Under this basis, revenues are recorded on a receipts basis, except revenues from other governments and interest, which are accrued as earned.

Schedule FP-4 is the Water Fund Projection Summary for the Water Operating Fund. The column labeled "FY'19 Year-End Final" summarizes the Department's final revenues, obligations/appropriations, adjustments and balances for Fiscal Year 2019. The column labeled "FY'20 Year-End Prelim" contains the same preliminary (unaudited) information for Fiscal Year 2020. The column labeled "FY'21 B&V Projected Budget" summarizes the same information as budgeted for the Department in the City's Fiscal Year 2021 annual operating budget, updated as part of the cost of service study reflecting various spend factors and other adjustments.

As explained by the testimony of Black & Veatch (PWD Statement 7), for purposes of developing projections for the Rate Period, further adjustments were made to the budgeted data, where necessary, to ensure that the projections are representative of the amounts that the Department expects to experience during the Rate Period.

Schedule FP-4 bridges the presentation differences between Black & Veatch schedules and the City's Water Fund budgetary schedules.

Schedule FP-6

Proposed Language and Other Changes

Section and Title in Rates and Charges	Proposed Change

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Philadelphia Water Department
Schedule FP-7

Summary Of Prior Rate Proceedings
Before the Philadelphia Water, Sewer, And Storm Water Rate Board

2022 TAP Rate Adjustment

In 2022, the Rate Board conducted a TAP-R (Tiered Assistance Program Rate Rider Surcharge Rate) Reconciliation Proceeding to implement an annual adjustment to TAP-R. The rates charged in Fiscal Year 2022 were increased as a result of the annual adjustment approved by the Rate Board in the 2022 TAP-R Reconciliation Proceeding.

2022 Special Rate Proceeding

This Special Rate Proceeding was filed regarding the reconciliation and potential downward adjustment of water, sewer and stormwater rates and charges previously approved to take effect in Fiscal Year 2023. Formal notice was filed on February 25, 2022, and the Rate Determination was issued on June 15, 2022. In the Special Rate Proceeding, the Rate Board determined that additional revenues of $34.110 million as approved in the 2021 General Rate Determination for Fiscal Year 2023, should be reduced by $3.00 million from $34.110 million to $31.110 million (5.89% to 5.37%).

On July 14, 2022, one of the pro se participants filed a challenge to that Rate Determination in the Court of Common Pleas (July Term, 2022 No. 01091; Case ID 220701091).

2021 General Rate Proceeding

The 2021 Rate Case was filed to determine water, sewer, and storm water rates for the 2022 and 2023 fiscal years. Formal notice was given February 16, 2021, and the Rate Determination was announced on June 16, 2021. In the 2021 Rate Case, the Rate Board approved a Settlement. Consistent with the Settlement, the Rate Board approved a rate increase necessary to recover an additional $10.411 million in revenues (1.85%) in Fiscal Year 2022. The Rate Board also approved an increase necessary to recover an additional $34.110 million in revenues (5.89%) in Fiscal Year 2023. The rate increase for Fiscal Year was subject to potential downward adjustment in a separate later proceeding.

2020 Rate Adjustment

In 2020, the Rate Board conducted a TAP-R (Tiered Assistance Program Rate Rider Surcharge Rate) Reconciliation Proceeding to implement an annual adjustment to TAP-R. The rates charged in Fiscal Year 2021 were reduced slightly as a result of the annual adjustment approved by the Rate Board in the 2020 TAP-R Reconciliation Proceeding.

2020 General Rate Proceeding

The 2020 Rate Case was filed to determine water, sewer, and storm water rates for the 2021 and 2022 fiscal years. Formal notice was given March 13 2020. The Rate Board granted, on June 18, 2020, the Department's request to withdraw the 2020 Rate Case without prejudice to any participant in that or any other proceedings before the Rate Board.

2019 Rate Adjustment

In 2019, the Rate Board conducted a TAP-R (Tiered Assistance Program Rate Rider Surcharge Rate) Reconciliation Proceeding to implement an annual adjustment to TAP-R. The increase for Fiscal Year 2020 was reduced slightly as a result of the annual adjustment approved by the Rate Board in the 2019 TAP-R Reconciliation Proceeding**.**

2018 General Rate Proceeding

The 2018 Rate Case determined water, sewer, and storm water rates for the 2019 and 2020 fiscal years. Formal notice was given March 14, 2018, and the Rate Determination was announced on July 12, 2018. In the 2018 Rate Case, the Rate Board approved rate increases necessary to recover an additional $24.5 million in revenues in Fiscal Years 2019 and 2020, reflecting annual revenue increases of 1.33% for Fiscal Year 2019 and 1.20% additional increase for Fiscal Year 2020. This proceeding also approved a reconciliation procedure for TAP-R (Tiered Assistance Program Rate Rider Surcharge Rate).

On August 9, 2018, the Public Advocate filed a challenge to Rate Board's 2018 Rate Determination in the Court of Common Pleas (August Term, 2018 No. 00527; Case ID 180800527). That Court affirmed the Rate Board's decision, and the Public Advocate filed an appeal with the Commonwealth Court (1070 CD 2019). The Commonwealth Court's unreported decision is at *Pub. Advocate v. Phila. Water, Sewer & Storm Water Rate Bd.*, 264 A.3d 832 (Table), 2021 Pa. Commw. Unpub. LEXIS 517, 2021 WL 4347216 (Pa. Cmwlth. September 24, 2021), appeal denied by 276 A.3d 199 (Pa. April 5, 2022) and 276 A.3d 200 (Pa. April 5, 2022). Upon remand to the Court of Common Pleas, a settlement was reached to resolve the appeal.

2016 Special Rate Proceeding

The Rate Board also conducted a special rate proceeding from October to December of 2016 as a result of an ordinance adopted on June 28, 2016, which required the Rate Board to establish special discounted rates for eligible community gardens.

2016 General Rate Proceeding

The 2016 Rate Case determined water, sewer, and storm water rates for the 2017 and 2018 fiscal years. Formal notice was given February 8, 2016, and the Rate Determination was announced on June 8, 2016. The Rate Board approved rate increases necessary to recover an additional $89 million in revenues in Fiscal Years 2017 and 2018, reflecting annual revenue increases of 5.1% for Fiscal Year 2017 and 4.5% additional increase for Fiscal Year 2018.