Pittsburgh Water and Sewer Authority

Single Audit

2021

PITTSBURGH WATER AND SEWER AUTHORITY

YEARS ENDED DECEMBER 31, 2021 AND 2020

TABLE OF CONTENTS

PITTSBURGH WATER AND SEWER AUTHORITY

YEARS ENDED DECEMBER 31, 2021 AND 2020

TABLE OF CONTENTS

(Continued)

MaherDuessel

Independent Auditor's Report

Board of Directors
Pittsburgh Water and Sewer Authority

Report on the Audit of the Financial Statements

Opinion

We have audited the accompanying financial statements of the business-type activities of the Pittsburgh Water and Sewer Authority (Authority), a component unit of the City of Pittsburgh (City), Pennsylvania, as of and for the years ended December 31, 2021 and 2020, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements as listed in the table of contents.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the business-type activities of the Authority, as of December 31, 2021 and 2020, and the changes in financial position and cash flows thereof for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS) and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the Authority and to meet our other ethical responsibilities in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Authority's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with generally accepted auditing standards and *Government Auditing Standards* will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS and *Government Auditing Standards*, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Authority's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the required supplementary information listed in the table of contents be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audits of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audits were conducted for the purpose of forming opinions on the financial statements that collectively comprise the Authority's basic financial statements. The supplementary information listed in the table of contents and the schedule of expenditures of federal awards, as required by Title 2 U.S. *Code of Federal Regulations* (CFR) Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supplementary information is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated April 20, 2022 on our consideration of the Authority's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Authority's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Authority's internal control over financial reporting and compliance.

Maher Duessel

Pittsburgh, Pennsylvania
April 20, 2022

PITTSBURGH WATER AND SEWER AUTHORITY
2021 Financial Statements
Management's Discussion and Analysis

The Pittsburgh Water and Sewer Authority's (Authority) comparative 2021 and 2020 fiscal year financial statements enclosed have been conformed to meet the requirements of Governmental Accounting Standards Board (GASB) Statement No. 34, *"Basic Financial Statements – and Management's Discussion and Analysis – for State and Local Governments."* The financial statements incorporate three basic statements: The Statements of Net Position, the Statements of Revenues, Expenses, and Changes in Net Position, and the Statements of Cash Flows.

This Management's Discussion and Analysis (MD&A) is based upon facts, decisions, and conditions known as of the date of the audit report. Please note that the historical information provided in the financial statements and MD&A reflects the results of past operations and is not necessarily indicative of results of future operations. Future operations will be affected by various factors, including, but not limited to, regulatory mandates, rate changes, weather, labor contracts, population changes, business environment and other matters, the nature and effect of which cannot now be determined.

Using This Financial Report – Overview of Reporting Changes

The Statements of Net Position present information about the resources which are available to the Authority and claims against these resources. Both assets and liabilities are classified in a format which segregates current from noncurrent. In addition, assets available for special purposes – labeled "restricted assets" - are segregated from those assets available for operations. The Authority's restricted assets represent money on deposit with the bond trustee to meet indenture, debt service, and construction program requirements. Liabilities have a similar classification segregating claims on restricted assets from claims on assets available for operations. The net position section of the Statements of Net Position classifies the total net position as net investment in capital assets, restricted, and unrestricted.

The Statements of Revenues, Expenses, and Changes in Net Position summarize operating and non-operating activity for the fiscal year and the resulting impact on the Authority's net position.

The Statements of Revenues, Expenses, and Changes in Net Position include wastewater treatment revenues and expenses for services provided by the Allegheny County Sanitary Authority (ALCOSAN). There are no outstanding bond issues associated directly or indirectly with wastewater treatment revenue streams.

The Statements of Cash Flows have been prepared using the direct method. The statements provide an analysis of the Authority's cash by operating, investing, and capital and related financing activities over the respective fiscal year.

Financial Highlights 2021 and 2020

In 2021, operating income increased by 27.6% or $14.0 million to $64.8 million. The Authority realized an overall net gain of $24.3 million, a result of greater increases in operating revenues than increases in expenses. 2021 financial growth showed recovery from 2020, when revenues where down, and operating expenses were minimized with non-essential work reduced for different periods because of the pandemic.

Below are the 2021 financial highlights:

Total operating revenues in 2021 were up $27.1 million or 11.2% to $269.1 million when compared to 2020. Wastewater treatment revenues increased by $4.9 million, attributable to ALCOSAN's rate increase. Water and wastewater conveyance revenues increased $19.2 million from 2020, a result of PWSA's rate increase. Other operating income increased by $3.1 million from 2020, attributable to the sum of various miscellaneous payments.

Total net non-operating revenues (expenses) changed by $5.7 million from 2020 to a net expense of $38.1 million in 2021 compared to a net expense of $32.3 million in 2020. This increase in expenses is attributable to higher interest and amortization, $1.3 million in grant revenue in 2021 compared to $7.0 million 2020, somewhat offset by no bond issuance costs in 2021 compared to $2.1 million in bond issuance costs in 2020.

Total operating expenses increased in 2021 to $204.3 million compared to $191.2 million in 2020. Significant operating expenses included the following factors:

- Salary and employee benefit expenses were up $1.9 million or 5.9%. The increase is attributed to salary rate increases of 2-3% and increased employee headcount in 2021.

  A portion of Authority employees are represented by one of three labor unions. The Pittsburgh Joint Collective Bargaining Committee (PJCBC) represents blue-collar employees. The PJCBC Agreement is effective June 16, 2021 and shall remain in full force and effect until 12:00 midnight, December 31, 2024 and from year to year thereafter unless either party shall notify the other in writing on or before June 1, 2024, or June 1 of any succeeding year that it desires to modify the Agreement. The American Federation of State, County, and Municipal Employees (AFSCME) represents Local 2719 employees and Local 2037. The AFSCME 2037 Memorandum of Understanding is effective November 22, 2021, and shall remain in full force and effect until 12:00 midnight, December 31, 2024, and from year to year thereafter unless either party shall notify the other in writing on or before June 1 of 2024 or June 1 of any succeeding year that it desires to modify the Memorandum. The AFSCME 2719 is in negotiations with the Authority and is operating under the one-year extension of their previous contract.

- Wastewater Treatment expense (paid to ALCOSAN) increased by $4.1 million to $76.8 million in 2021 from $72.7 million in 2020. This is attributable to ALCOSAN'S rate increase.

- Overall, non-salary and benefit direct operating costs increased from 2020 to 2021, in most cases resulting from a return to normal work levels, compared to a minimization of non-essential work during certain periods of 2020. A breakdown by category is as follows:

  - Chemical expenses decreased 9.1% or $0.4 million from 2020 to $3.7 million in 2021, attributable to decreases in usage of some chemical types and decreased purchasing in 2021 due to supplies already in stock.
  - Equipment expenses increased 16.9% or $0.1 million from 2020 to $0.9 million in 2021, attributable to greater computer, furniture, machinery, lab equipment, and vehicle related purchases under capitalization thresholds than in the prior year.
  - Material expenses increased 8.4% or $0.04 million from 2020 to $0.5 million in 2021.
  - Operating Contract expenses increased by 5.6% or $1.0 million from 2020 to $18.5 million in 2021, attributable to overall increased work compared to 2020, and increased sewer repairs and inspections.
  - Repair and Maintenance expenses increased by 25.1% or $2.4 million from 2020 to $11.9 million in 2021, attributable to increased surface restoration, software support, and overall maintenance at the Water Treatment Plant.
  - Miscellaneous Direct Operating expenses increased by 66.1% or $0.3 million from 2020 to $0.6 million in 2021, attributable to increased testing.
  - Inventory expense increased by 50.3% or $0.7 million from 2020 to $2.2 million in 2021, a function of overall increased activity compared to 2020, when for periods of time non-essential work was minimized due to the pandemic.
  - Administrative Fee expenses increased by 122.3% or $2.0 million from 2020 to $3.6 million in 2021, mainly attributable to permit fees, which are now being paid to the City of Pittsburgh as a result of the new Cooperation Agreement.
  - Freight and Postage expenses decreased by 10.9% or $0.06 million from 2020 to $0.46 million in 2021.
  - Lease and Rent expenses decreased by 13.6%, or $0.2 million to $1.1 million in 2021, attributable to a decrease in equipment rental compared to 2020, as well as a decrease in office rent, due to a lease operating expense true-up payment that occurred in 2020.

- Professional Service expenses increased by 9.9% or $1.5 million from 2020 to $16.9 million in 2021, attributable to increased spending for legal services, lien filing fees, miscellaneous engineering services, and various other miscellaneous professional services.
- Supply expenses increased by 6.7% or $0.07 million from 2020 to $1.1 million in 2021, mainly attributable to the increased fuel, and lab supply purchasing.
- Travel and Training expenses increased by 71.3% or $0.05 million from 2020 to $0.13 million in 2021, attributable to increased employee training.
- Utility expenses increased by 15.2% or $0.7 million from 2020 to $5.5 million in 2021, mostly driven by increased electricity costs.
- Miscellaneous Administrative expenses decreased by 156.7% or $3.0 million from 2020 to $(1.1) million in 2021, mainly attributable to a credit to bad debt expense. Various aged Accounts Receivable balances were adjusted in 2021, resulting in a lower reserve for uncollectible accounts.

- Reimbursements for City of Pittsburgh services decreased 11.0% or $0.5 million from $4.3 million in 2020 to $3.8 million in 2021, the decrease attributable to transactional calculations stabilizing after catchup costs incurred in 2020. The expense of water provided by other entities, mainly comprised of subsidy payments to Pennsylvania American Water Company (PAWC) prior to 2020, decreased by 68.9% or $0.3 million to $0.1 million in 2021 compared to $.4 million in 2020, a result of the Authority no longer covering public fire hydrant charges for the City.

Interest expense increased 5.3% or $1.9 million to $39.4 million in 2021 compared to $37.5 million in 2020. This change is attributable to increased bond interest, ultimately a result of increased borrowing to fund increased capital improvements.

In 2021, the Authority expended $3.1 million replacing private lead lines.

In 2021, cash collections increased by $24.7 million, with $258.1 million collected from billings compared to $233.4 million in 2020, due to PWSA and ALCOSAN rate increases, in conjunction with improved collection activity as pandemic recovery continues.

Other 2021 highlights include:

- Accounts Receivable for Billed Wastewater Treatment increased by $1.2 million from $3.7 million in 2020 to $4.9 million in 2021. Contributing factors to this change include ALCOSAN's rate increase, and an overall Accounts Receivable growth due to moratoriums in place during the pandemic. The Authority did start to see pandemic recovery during 2021, which is expected to continue in 2022.

- Total debt service coverage was 1.44 in 2021 and 1.23 in 2020. These coverage factors exceed the required coverages ratios required under the bond indenture.

- The Authority expended $130.7 million on capital projects and purchases in 2021, an increase of $3.4 million, or approximately 2.7% over the $127.3 million expended in 2020. $9.0 million of the capital expenditures spent in 2021 were funded by operating funds, $75.8 million by the revolving line of credit, and $38.8 million were funded by PENNVEST as part of the 2020 Small Diameter Water Main Replacement award and the 2020 Small Diameter Sewer Rehabilitation award. The $38.8 million funded by PENNVEST was in the form of a low interest loan. It is anticipated that the Authority will spend the remaining amount of the PENNVEST funding award in 2022.

- The Authority utilizes a drawdown, revolving line of credit provided by PNC Bank, National Association to finance capital projects. The facility expires in June 2023 and the maximum amount that can be drawn and outstanding at any one time is $150.0 million. As of December 31, 2021, the Authority has drawn $95.8 million on this facility.

- In May 2021, the Authority closed on a funding award from PENNVEST for the purpose of financing the 2020 Small Diameter Sewer Rehabilitation Project. The funding offered to the Authority consists of a $5.3 million loan with an interest rate of 1.443% in years 1-5 and 2.029% in years 6-20. The award will fund 7.4 miles of sewer rehabilitation work.

- The City of Pittsburgh is the largest of the 83 municipalities that convey sanitary and combined sewage to ALCOSAN for treatment. On January 29, 2004, the Pittsburgh Water and Sewer Authority and the City of Pittsburgh executed a Consent Order and Agreement (Order) regarding sanitary and combined sewer overflows within the City of Pittsburgh. The other signatories to the Order are the Pennsylvania Department of Environmental Protection (DEP) and the Allegheny County Health Department, which executed the Order on April 21, 2004. The Wet Weather Feasibility Study required by the Order was submitted on July 31, 2013. On January 21, 2016, the U.S. Environmental Protection Agency (EPA) issued a Clean Water Act Section 308 Information Request (308 Request) to the Authority. The Authority responded to the first portion of the 308 Request, the assessment and modeling of the sewer system, by the due date of March 31, 2016. The Authority responded to the second phase of the 308 Request by submitting a source reduction study to EPA on December 1, 2016, and by submitting project performance evaluations for certain green infrastructure (GI) demonstration projects on December 1, 2017. The Authority continues to implement neighborhood GI-based based stormwater abatement projects to mitigate Combined Sewer Overflows. The 308 Request does not contain fines or penalties for past non-compliance but does require the Authority to submit information on an ongoing, rolling basis.

  The Authority has begun negotiations with EPA, the U.S. Department of Justice (DOJ), and DEP over the terms of a consent decree that will address the control of sanitary and combined sewer overflows within the City of Pittsburgh. Such a decree will likely set out an enforceable framework for bringing the Authority's sanitary and combined sewer systems into compliance with applicable requirements of the federal Clean Water Act and Pennsylvania Clean Streams Law. See Note 14 – Consent Agreement for additional details.

Financial Highlights 2020 and 2019

In 2020, operating income decreased by 22.8% or $14.9 million to $50.8 million. The Authority realized an overall net loss of $0.3 million, a result of decreases in operating revenues driven by lower consumption due to the pandemic. These decreases in revenue were offset by decreases in non-operating expenses. Management worked to minimize operating expenses compared to budgeted expenses during 2020, knowing that consumption was down. There were also periods during 2020 where all non-essential work was on hold, which contributed to direct operating expenses only increasing by 2.9% from 2019.

Below are the 2020 financial highlights:

Total operating revenues in 2020 were down $7.0 million or 2.8% to $242.0 million when compared to 2019. Wastewater treatment revenues increased by $0.9 million, attributable to ALCOSAN's rate increase being offset by decreased consumption. Water and sewer conveyance revenues decreased $9.0 million from 2019, a result of decreased consumption. There was no rate increase in 2020 for water or sewer conveyance. Other operating income increased by $1.0 million from 2019, attributable to the sum of various miscellaneous payments.

Total net non-operating revenues (expenses) changed by $5.4 million from 2019 to a net expense of $32.3 million in 2020 compared to a net expense of $37.7 million in 2019. This decrease in expenses is attributable to lower interest and amortization, $2.1 million in bond issuance costs in 2020 compared to $2.4 million in bond issuance cost in 2019, and no investment loss in 2020 compared to an investment loss of $4.2 million in 2019 from the change in swap fair market value.

Total operating expenses increased in 2020 to $191.2 million compared to $183.2 million in 2019. Significant operating expenses included the following factors:

- Salary and employee benefit expenses were up $3.3 million or 11.5%. The increase is attributed to an average salary rate increase of 3% and increased employee headcount in 2020.

  The majority of Authority employees are represented by one of three labor unions. The Pittsburgh Joint Collective Bargaining Committee (PJCBC) represents blue-collar employees. The American Federation of State, County and Municipal Employees (AFSCME) represents Local 2719 employees and Local 2037. A four-year agreement with AFSCME 2719 became effective January 1, 2017 and was set to expire December 31, 2020. A one-year extension of the existing agreement with AFSCME shall remain in full force and effect until December 31, 2021. AFSCME 2037 is in negotiations with the Authority and is operating under their old contract. A four-year agreement with the PJCBC became effective January 1, 2017 and was set to expire December 31, 2020. PJCBC is in negotiations with the Authority and is operating under their old contract.

- Sewage Treatment expense (paid to ALCOSAN) increased by $0.3 million to $72.7 million in 2020 from $72.4 million in 2019. This is attributable to ALCOSAN'S rate increase offset by decreased consumption.

- Most non-salary and benefit direct operating cost categories decreased from 2019 to 2020, in most cases as a result of management working to minimize non-essential work during certain periods of 2020. A breakdown by category is as follows:

  - Chemical expenses decreased 9.3% or $0.4 million from 2019 to $4.1 million in 2020, attributable to decreases in usage of some chemical types and decreased purchasing in 2020 due to supplies already in stock.
  - Equipment expenses decreased 51.3% or $0.8 million from 2019 to $0.8 million in 2020, attributable to fewer computer, furniture, and lab equipment purchases under capitalization thresholds than in the prior year.
  - Material expenses decreased 13.5% or $0.07 million from 2019 to $0.4 million in 2020.
  - Operating Contract expenses increased by 48.6% or $5.7 million from 2019 to $17.5 million in 2020, attributable to increased sewer repairs, inspection, manhole and point repairs, CSO flow monitoring, line locating, and security.
  - Repair and Maintenance expenses decreased by 2.5% or $0.2 million from 2019 to $9.5 million in 2020.
  - Miscellaneous Direct Operating expenses decreased by 63.3% or $0.7 million from 2019 to $0.4 million in 2020, attributable to less required testing, as a result of meeting lead service line replacement criteria.
  - Inventory expense decreased by 29.3% or $0.6 million from 2019 to $1.4 million in 2020, a function of overall decreased activity resulting from the pandemic.
  - Administrative Fee expenses increased by 69.8% or $0.7 million from 2019 to $1.6 million in 2020, mainly attributable to permit fees, which are now being paid to the City of Pittsburgh as a result of the new Cooperation Agreement.
  - Freight and Postage expenses decreased by 23.1% or $0.2 million from 2019 to $0.5 million in 2020, attributable to a lower number of certified mailings than the prior year.
  - Lease and Rent expenses decreased by 0.3%, staying consistent with 2019 costs.
  - Professional Service expenses decreased by 12.7% or $2.2 million from 2019 to $15.4 million in 2020, attributable mainly to decreased non-capital engineering spending.
  - Supply expenses increased by 82.6% or $0.5 million from 2019 to $1.0 million in 2020, mainly attributable to the increased fuel, ground, and maintenance supply purchasing.

- Travel and Training expenses decreased by 62.6% or $0.1 million from 2019 to $0.1 million in 2020, attributable to decreased travel due to the pandemic.
- Utility expenses decreased by 2.9% or $0.1 million from 2019 to $4.8 million in 2020.
- Miscellaneous Administrative expenses decreased by 55% or $2.3 million from 2019 to $1.9 million in 2020, mainly attributable to a decrease in bad debt expense from the prior year. Various aged Accounts Receivable balances were adjusted in 2020, resulting in a lower reserve for uncollectible accounts. The decrease in bad debt expense was partially offset by an increase in legal claims.

- Reimbursements for City of Pittsburgh services increased 115.5% or $2.3 million from $2.0 million in 2019 to $4.3 million in 2020, the increase attributable to catch-up credits related to the City receiving State Pension Aid for all enrolled Authority employees which occurred in 2019, as well as permit and street sweeping reimbursements to the City paid in 2020. The expense of water provided to other entities, mainly comprised of subsidy payments to Pennsylvania American Water Company (PAWC) prior to 2020, decreased by 71.2% or $0.9 million to $0.4 million in 2020 compared to $1.3 million in 2019, a result of the Authority no longer subsidizing PAWC customers.

Interest expense decreased 3.3% or $1.2 million to $37.5 million in 2020 compared to $38.7 million in 2019. This change is attributable to lower cost of capital as a result of financing activities.

In 2020, the Authority expended $18.8 million replacing private lead lines.

In 2020, cash collections decreased by $11.3 million, with $233.4 million collected from billings compared to $244.7 million in 2019 due to decreased consumption as a result of the pandemic.

Other 2020 highlights include:

- Accounts Receivable for Billed Wastewater Treatment increased by $1.5 million from $2.1 million in 2019 to $3.6 million in 2020. Contributing factors to this change include ALCOSAN's rate increase, and an overall Accounts Receivable growth due to moratoriums in place during the pandemic.

- Total debt service coverage was 1.23 in 2020 and 1.58 in 2019. These coverage factors exceed the 1.00 coverage ratio required under the bond indenture.

- The Authority expended $127.3 million on capital projects in 2020, an increase of $19.4 million, or approximately 18.0% over the $107.9 million expended in 2019. $9.2 million of the capital expenditures spent in 2020 were funded by PAYGO, $72.1 million by the revolving line of credit, and $45.9 million were funded by PENNVEST as part of the 2019 Lead Service Line Replacement funding award and the 2020 Small Diameter Water Main Replacement award. Of the $45.9 million funded by PENNVEST, $39.1 million was a loan, and $6.8 million was a grant. It is anticipated that the Authority will spend the remaining amount of the PENNVEST funding award in 2021.

- In June 2020, the Authority replaced its drawdown, revolving line of credit with JPMorgan Chase Bank N.A. with a new drawdown, revolving line of credit provided by PNC Bank, National Association. It has a term of three years and the maximum amount that can be drawn and outstanding at any one time is $150.0 million. The Authority utilizes funds borrowed under this vehicle to finance capital projects. As of December 31, 2020, the Authority has drawn $26.7 million on this facility.

- In May 2020, the Authority closed on a funding award from PENNVEST for the purpose of financing the 2020 Small Diameter Water Main Replacement Program. The funding offered to the Authority consists of a $65.2 million loan with an interest rate of 1.00%. The award will fund the replacement of approximately 80,000 feet of water mains and associated connections, including the replacement of public and private lead service lines.

- In December 2020, the Authority remarketed the $218,805,000 2017C First Lien Water and Sewer Revenue Bonds ("2017C Remarketing") that were in a LIBOR Index Rate. In addition, the Authority issued $890,000 (fixed-rate) Federally Taxable Series A First Lien Water and Sewer Revenue Bonds ("2020A Bonds") and $91,520,000 (fixed-rate) Series B First Lien Water and Sewer Revenue Bonds ("2020B Bonds").

  The 2017C Remarketing was sold with a SIFMA Index Rate prior to the mandatory tender on December 1, 2023 at SIFMA plus 65 basis points. The 2017C Remarketing can be called at par at June 1, 2023. In addition, the Authority entered into a basis swap with Merrill Lynch Capital Services, Inc. where the Authority receives SIFMA and pays 70% of 1-month LIBOR to manage variable rate interest payments associated with the 2017C Remarketing. The proceeds from the 2020A Bonds were used to pay for issuance costs related to the 2017C Remarketing. The proceeds from the 2020B Bonds were used to pay down the drawdown, revolving line of credit used to finance capital projects.

- The City of Pittsburgh is the largest of the 83 municipalities that convey sanitary and combined sewage to ALCOSAN for treatment. On January 29, 2004, the Authority and the City of Pittsburgh executed a Consent Order and Agreement (Order) regarding sanitary and combined sewer overflows within the City of Pittsburgh. The other signatories to the Order are the Pennsylvania Department of Environmental Protection (DEP) and the Allegheny County Health Department, which executed the Order on April 21, 2004. The Wet Weather Feasibility Study required by the Order was submitted on July 31, 2013. On January 21, 2016, the U.S. Environmental Protection Agency (EPA) issued a Clean Water Act Section 308 Information Request (308 Request) to the Authority. The Authority responded to the first portion of the 308 Request, the assessment and modeling of the sewer system, by the due date of March 31, 2016. The Authority responded to the second phase of the 308 Request by submitting a source reduction study to EPA on December 1, 2016, and by submitting project performance evaluations for certain green infrastructure (GI) demonstration projects on December 1, 2017. The Authority continues to implement neighborhood GI-based based stormwater abatement projects to mitigate Combined Sewer Overflows. The 308 Request does not contain fines or penalties for past non-compliance but does require the Authority to submit information on an ongoing, rolling basis.

  The Authority has begun negotiations with EPA, the U.S. Department of Justice (DOJ), and DEP over the terms of a consent decree that will address the control of sanitary and combined sewer overflows within the City of Pittsburgh. Such a decree will likely set out an enforceable framework for bringing the Authority's sanitary and combined sewer systems into compliance with applicable requirements of the federal Clean Water Act and Pennsylvania Clean Streams Law. See Note 14 – Consent Agreement for additional details.

CONDENSED FINANCIAL STATEMENTS

CONDENSED STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

	December 31,		Variance	
	2021	2020	Dollars	%
Capital assets:				
Producing assets	$ 857,243	$ 766,600	$ 90,643	11.82%
Construction in progress	158,128	155,050	3,078	1.99%
Restricted assets	25,884	25,906	(22)	-0.08%
Current assets	106,765	88,434	18,331	20.73%
Total Assets	**1,148,020**	**1,035,990**	**112,030**	10.81%
Deferred Outflows of Resources	106,109	125,690	(19,581)	-15.58%
Liabilities:				
Current liabilities	94,447	87,507	6,940	7.93%
Long-term liabilities	1,134,154	1,072,899	61,255	5.71%
Total Liabilities	1,228,601	1,160,406	68,195	5.88%
Deferred Inflows of Resources	-	-	-	0.00%
Net Position:				
Net investment in capital assets	(5,776)	(15,188)	9,412	-61.97%
Restricted	19,466	19,461	5	0.03%
Unrestricted	11,838	(2,999)	14,837	-494.73%
Total Net Position	**$ 25,528**	**$ 1,274**	**$ 24,254**	**1903.77%**

CONDENSED STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION
(Dollars expressed in thousands)

	Year Ended December 31,		Variance	
	2021	2020	Dollars	%
			Increase (Decrease)	
Operating revenues	$ 269,121	$ 241,997	$ 27,124	11.21%
Operating expenses:				
Direct operating	99,160	92,134	7,026	7.63%
Wastewater treatment	76,802	72,698	4,104	5.65%
Reimbursement for City of Pittsburgh services	3,818	4,289	(471)	-10.98%
Expense of water provided by other entities	120	386	(266)	-68.91%
Depreciation	24,386	21,659	2,727	12.59%
Total Operating Expenses	**204,286**	**191,166**	**13,120**	**6.86%**
Operating income	64,835	50,831	14,004	27.55%
Non-operating revenues (expenses):				
Federal and private grants	1,347	7,001	(5,654)	80.76%
Interest revenue	24	201	(177)	-88.06%
Interest expense and other	(39,431)	(39,538)	107	-0.27%
Total Non-operating Revenues (Expenses)	(38,060)	(32,336)	(5,724)	17.70%
Special item: private lead line replacement	(3,088)	(18,832)	15,744	-83.60%
Donated property	567	76	491	646.05%
Net Income/(Loss)	$ 24,254	$ (261)	$ 24,515	-9392.72%

Financial Condition 2021 and 2020

The Authority's financial condition in 2021 remained stable for a nineteenth consecutive year. Utility revenues increased to $181.9 million from $162.7 million. Total cash and cash equivalents stood at $76.4 million at year-end 2021. Investment interest rates remain near historic lows, impacting the return on reserves invested.

CONDENSED FINANCIAL STATEMENTS

CONDENSED STATEMENTS OF NET POSITION
(Dollars expressed in thousands)

	December 31,		Variance	
	2020	2019	Dollars	%
Capital assets:				
Producing assets	$ 766,600	$ 695,291	$ 71,309	10.26%
Construction in progress	155,050	135,287	19,763	14.61%
Hedging derivative - interest rate swap	-	-	-	0.00%
Restricted assets	25,906	25,964	(58)	-0.22%
Current assets	88,434	91,392	(2,958)	-3.24%
Total Assets	**1,035,990**	**947,934**	**88,056**	9.29%
Deferred Outflows of Resources	125,690	112,363	13,327	11.86%
Liabilities:				
Current liabilities	87,507	79,366	8,141	10.26%
Long-term liabilities	1,072,899	979,396	93,503	9.55%
Total Liabilities	1,160,406	1,058,762	101,644	9.60%
Deferred Inflows of Resources	-	-	-	0.00%
Net Position:				
Net investment in capital assets	(15,188)	(26,979) *	11,791	-43.70%
Restricted	19,461	19,320	141	0.73%
Unrestricted	(2,999)	9,194 *	(12,193)	-132.62%
Total Net Position	**$ 1,274**	**$ 1,535**	**$ (261)**	**-17.00%**

* - reclassfied from prior year audit

CONDENSED STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION
(Dollars expressed in thousands)

	Year Ended December 31,		Variance	
	2020	2019	Dollars	%
			Increase (Decrease)	
Operating revenues	$ 241,997	$ 249,049	$ (7,052)	-2.83%
Operating expenses:				
Direct operating	92,134	89,512	2,622	2.93%
Wastewater treatment	72,698	72,389	309	0.43%
Reimbursement for City of Pittsburgh services	4,289	1,991	2,298	115.42%
Expense of water provided by other entities	386	1,338	(952)	-71.15%
Depreciation	21,659	18,011	3,648	20.25%
Total Operating Expenses	**191,166**	**183,241**	**7,925**	**4.32%**
Operating income	50,831	65,808	(14,977)	-22.76%
Non-operating revenues (expenses):				
Federal and private grants	7,001	6,922	79	-1.14%
Interest revenue	201	719	(518)	-72.04%
Interest expense and other	(39,538)	(45,382)	5,844	-12.88%
Total Non-operating Revenues (Expenses)	(32,336)	(37,741)	5,405	-14.32%
Special item: private lead line replacement	(18,832)	(22,283)	3,451	-15.49%
Donated property	76	110	(34)	-30.91%
Net Income/(Loss)	$ (261)	$ 5,894	$ (6,155)	-104.43%

Financial Condition 2020 and 2019

The Authority's financial condition in 2020 remained stable for an eighteenth consecutive year, even with water utility revenues decreasing to $162.7 million from $171.7 million. Total cash and cash equivalents stood at $60.2 million at year-end 2020. Investment interest rates remain near historic lows, impacting the return on reserves invested.

Requests for Information

This financial report is designed to provide a general overview of the Authority's finances for all those with an interest in its finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the Chief Executive Officer, Penn Liberty Plaza I, 1200 Penn Ave., Pittsburgh, PA 15222.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 2021 AND 2020

Assets	2021	2020
Current assets:		
Cash and cash equivalents	$ 76,422	$ 60,210
Accounts receivable, net:		
Water:		
Billed	8,332	7,400
Unbilled	8,576	7,955
Total water	16,908	15,355
Wastewater treatment:		
Billed	4,886	3,676
Unbilled	4,219	3,457
Total wastewater treatment	9,105	7,133
Other receivables	555	1,924
Total accounts receivable, net	26,568	24,412
Prepaid expenses	1,747	1,737
Inventory	2,028	2,075
Total current assets	106,765	88,434
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents	16,785	16,201
Investments	9,099	9,705
Total restricted assets	25,884	25,906
Capital assets, not being depreciated	158,128	155,050
Capital assets, net of accumulated depreciation	857,243	766,600
Total noncurrent assets	1,041,255	947,556
Total Assets	1,148,020	1,035,990
Deferred Outflows of Resources		
Deferred charge on refunding	84,644	91,827
Accumulated decrease in fair value of hedging derivatives	21,465	33,863
Total Deferred Outflows of Resources	106,109	125,690

(Continued)

The notes to financial statements are an integral part of this statement.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 2021 AND 2020

(Continued)

	2021	2020
Liabilities		
Current liabilities:		
Bonds and loans payable	34,442	28,376
Accrued payroll and related obligations	911	1,093
Accounts payable wastewater treatment	21,459	18,705
Accounts payable and other accrued expenses	26,744	29,535
Accrued interest payable from restricted assets	10,891	9,798
Total current liabilities	94,447	87,507
Noncurrent liabilities:		
Unearned revenue	121	121
Accrued payroll and related obligations	739	1,065
Swap liability	21,465	33,863
Bonds and loans payable, net	1,111,829	1,037,850
Total noncurrent liabilities	1,134,154	1,072,899
Total Liabilities	1,228,601	1,160,406
Net Position		
Net investment in capital assets	(5,776)	(15,188)
Restricted	19,466	19,461
Unrestricted	11,838	(2,999)
Total Net Position	$ 25,528	$ 1,274

(Concluded)

The notes to financial statements are an integral part of this statement.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND
CHANGES IN NET POSITION

(Dollars expressed in thousands)

YEARS ENDED DECEMBER 31, 2021 AND 2020

	2021	2020
Operating Revenues:		
Residential, commercial, and industrial water sales	$ 181,870	$ 162,676
Wastewater treatment	76,774	71,899
Other	10,477	7,422
Total operating revenues	269,121	241,997
Operating Expenses:		
Direct operating expenses	99,160	92,134
Wastewater treatment	76,802	72,698
Reimbursement for City of Pittsburgh indirect services	3,818	4,289
Expense of water provided by other entities	120	386
Depreciation	24,386	21,659
Total operating expenses	204,286	191,166
Operating Income	64,835	50,831
Non-operating Revenues (Expenses):		
Federal and private grants	1,347	7,001
Interest revenue	24	201
Interest and amortization	(39,431)	(37,463)
Bond issuance costs	-	(2,075)
Total non-operating revenues (expenses)	(38,060)	(32,336)
Net Income before Capital Contribution and Special Item	26,775	18,495
Capital Contribution:		
Donated property	567	76
Special Item:		
Private lead line replacement	(3,088)	(18,832)
Net Income (Loss)	24,254	(261)
Net Position:		
Beginning of year	1,274	1,535
End of year	$ 25,528	$ 1,274

The notes to financial statements are an integral part of this statement.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF CASH FLOWS

(Dollars expressed in thousands)

YEARS ENDED DECEMBER 31, 2021 AND 2020

	2021	2020
Cash Flows From Operating Activities:		
Cash received from customers	$ 268,071	$ 241,545
Cash paid to suppliers and employees and customer refunds	(104,037)	(86,314)
Cash paid to City of Pittsburgh for reimbursement of services	(3,818)	(4,289)
Cash paid to other water companies for subsidy of customers located in the City of Pittsburgh	(120)	(386)
Cash paid to ALCOSAN for wastewater treatment	(74,048)	(73,010)
Net cash provided by (used in) operating activities	86,048	77,546
Cash Flows From Investing Activities:		
Purchase of investment securities	(48,813)	(97,625)
Proceeds from sale and maturities of investment securities	49,395	97,323
Interest income	24	201
Net cash provided by (used in) investing activities	606	(101)
Cash Flows From Capital and Related Financing Activities:		
Purchase/construction of property, plant, and equipment	(117,540)	(112,655)
Grant proceeds	1,856	7,484
Private lead line replacements	(3,088)	(18,832)
Proceeds from issuance of bonds	-	109,075
Proceeds from revolving line of credit	69,127	133,665
Proceeds from Pennvest Loans	44,695	32,973
Payment made for bond issuance costs	-	(2,075)
Principal payments on debt	(27,879)	(26,842)
Principal payments on revolving line of credit	-	(169,500)
Principal payments on capital lease	(486)	(469)
SWAP receipts	155	1,134
SWAP payments	(6,907)	(6,808)
Interest paid on borrowings	(29,791)	(29,224)
Net cash provided by (used in) capital and related financing activities	(69,858)	(82,074)
Increase (Decrease) in Cash and Cash Equivalents	16,796	(4,629)
Cash and Cash Equivalents:		
Beginning of year	76,411	81,040
End of year	$ 93,207	$ 76,411
Consists of:		
Restricted cash and cash equivalents	$ 16,785	$ 16,201
Unrestricted cash and cash equivalents	76,422	60,210
	$ 93,207	$ 76,411
Reconciliation of Operating Income to Net Cash Provided by (Used in) Operating Activities:		
Operating income	$ 64,835	$ 50,831
Adjustments to reconcile operating income to net cash provided by (used in) operating activities:		
Depreciation	24,386	21,659
Reserve for uncollectible amounts	(1,615)	(35)
Change in:		
Accounts receivable - water and wastewater	(1,910)	(495)
Other accounts receivable	860	43
Prepaid expenses	(10)	(1,030)
Inventory	47	(478)
Accounts payable wastewater treatment	2,754	(312)
Accounts payable and other accrued expenses	(2,791)	6,815
Accrued payroll and related obligations	(508)	548
Unearned revenue	-	-
Net cash provided by (used in) operating activities	$ 86,048	$ 77,546
Schedule of Non-Cash Capital and Related Financing Activities:		
Donated property	$ 567	$ 76

The notes to financial statements are an integral part of this statement.

1. Organization

The Pittsburgh Water and Sewer Authority (Authority) provides water to approximately 80,000 residential, commercial, and industrial customers located in the City of Pittsburgh (City), Pennsylvania, and collects wastewater throughout the City.

A Board of Directors (Board) recommended by a nominating committee, appointed by the Mayor of the City, and approved by City Council, governs the Authority.

The Authority is a body politic and corporate, organized and existing under the Pennsylvania Municipalities Authorities Act. The Authority was established by the City in 1984 to assume responsibility from the City for management, operation, maintenance, and improvement of virtually the entire City water supply, distribution, and wastewater collection systems (the "Water and Wastewater System" or "System"). The Authority’s articles of incorporation were amended during 2020 to include stormwater systems and to extend the Authority’s term of existence to 2070. The Authority is authorized to issue bonds and notes payable solely from the Authority's revenues.

Prior to April 1, 2018, the Authority had the right to establish user fees and charges without being subject to the approval of any department, board, or agency of Pennsylvania or the City. Effective April 1, 2018, the Public Utility Commission (PUC) began oversight of the Authority. PUC oversight requires compliance and conformity with their established regulations regarding administration, finances, operations, reporting, capital expenditures, and customer service for water and wastewater utilities. The PUC now approves all Authority rates and fees through tariff filings.

2. Summary of Significant Accounting Policies

Reporting Entity

These financial statements present the financial position, changes in net position, and cash flows of the Authority. The Authority is a component unit of the City in accordance with applicable guidance. The Authority's financial statements are not intended to present the financial position or results of operations of the City taken as a whole.

Basis of Accounting and Measurement Focus

The accompanying financial statements have been prepared using the economic resources measurement focus and the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America, as prescribed by the Governmental Accounting Standards Board (GASB). Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows.

The Authority functions as a Business-Type Activity, as defined by GASB.

Classification of Net Position

The Authority’s net position is classified into three components – net investment in capital assets; restricted; and unrestricted. These classifications are defined as follows:

- Net investment in capital assets – This component of net position consists of capital assets, net of accumulated depreciation, reduced by the outstanding balances of bonds, mortgages, notes, or other borrowings that are attributable to the acquisition, construction, or improvement of those assets. Deferred outflows of resources and deferred inflows of resources that are attributable to the acquisition, construction, or improvement of those assets or related debt are also included in this component of net position. If there are significant unspent related debt proceeds or deferred inflows of resources at the end of the reporting period, the portion of the debt or deferred inflows of resources attributable to the unspent amount is not included in the calculation of net investment in capital assets. Instead, that portion of the debt or deferred inflow of resources is included in the same net position component (restricted or unrestricted) as the unspent amount.

- Restricted – This component of net position consists of restricted assets reduced by liabilities and deferred inflows of resources related to those assets. Generally, a liability relates to restricted assets if the asset results from a resource flow that also results in the recognition of a liability or if the liability will be liquidated with the restricted assets reported.

- Unrestricted – This component of net position is the net amount of the assets, deferred outflows of resources, liabilities, and deferred inflows of resources that are not included in the determination of net investment in capital assets or the restricted components of net position.

When an expense is incurred that can be paid using either restricted or unrestricted resources, the Authority's policy is to first apply the expense towards restricted resources and then towards unrestricted resources.

Deposits and Investments

The Authority's cash and cash equivalents are considered to be cash on hand, demand deposits, and all highly liquid investments, both restricted and unrestricted, with maturity of three months or less at date of purchase.

Investments are recorded at fair value. Accordingly, the change in fair value of investments is recognized as an increase or decrease to investment assets and investment income.

Fair Value Measurements

The Authority categorizes its fair value measurements within the fair value hierarchy established by accounting principles generally accepted in the United States of America. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

Premiums and Discounts

Original issue bond premiums and discounts are amortized over the life of the related bonds using the straight-line method of amortization, which is materially comparable to the effective interest method. The unamortized balance of premiums and discounts is presented net on the statements of net position as a decrease or increase to bonds payable.

Deferred Charge on Refunding

In accordance with applicable guidance, the excess of the reacquisition price over the net carrying amount of refunded debt is recorded as a deferred outflow of resources on the statements of net position and amortized as a component of interest expense over the shorter of the term of the refunding issue or refunded bonds.

Capital Assets

Capital assets owned by the Authority are recorded at cost. Depreciation of capital assets owned by the Authority is provided on the straight-line method based on the estimated useful lives of the various classes of assets. Utility assets have estimated useful lives ranging from 30 to 70 years. Non-utility assets have estimated useful lives ranging from five to 10 years.

The Authority also receives donated property relating mostly to dedicated water and sewer lines. These assets are capitalized at acquisition value at the date of the donation and depreciated in accordance with the estimated useful lives noted above.

The water and sewer system represents assets leased from the City. Amortization of capital lease assets is provided on the straight-line basis applying an estimated average remaining useful life from the inception of the lease.

Maintenance and repairs are charged to expense as incurred.

Deferred Outflows/Inflows of Resources

In addition to assets, the statement of financial position reports a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represents a consumption of net position that applies to a future period(s) and so will not be recognized as an outflow of resources (expense) until then.

In addition to liabilities, the statement of financial position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflow of resources, represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. The Authority has no deferred inflows of resources at December 31, 2021 or 2020.

Classification of Revenues

The Authority has classified its revenues as either operating or non-operating revenues according to the following criteria:

- Operating revenues – Operating revenues include activities that have the characteristics of exchange transactions, such as residential, commercial, and industrial water sales and wastewater treatment.

- Non-operating revenues – Non-operating revenues include activities that have the characteristics of non-exchange transactions, such as grants, interest income and other revenue sources.

Compensated Absences

A liability for vacation, personal, and sick days is accrued when related benefits are attributable to services rendered and to the extent it is probable that the Authority will ultimately compensate employees.

Inventory

Inventory is stated at cost, on a moving average price basis.

Accounts Payable Wastewater Treatment

The Authority has adopted a methodology for recording estimated wastewater treatment accounts payable that assumes a uniform meter reading date for all customers in each cycle. The estimate is based on the portion of wastewater treatment invoices paid after year-end with usage estimated to have occurred during the previous fiscal year.

Special Item

The Authority has recorded a special item for private line lead replacements. In accordance with GASB Statement No. 34, a special item is defined as an expenditure within control of management and either unusual or infrequent in occurrence. The Authority has determined that private lead line replacements qualify as a special item.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets, deferred outflows of resources, liabilities, deferred inflows of resources, and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results may differ from those estimates.

Adoption of Accounting Standards

The following GASB statements were adopted for the year ended December 31, 2021: Statement Nos. 89 (Accounting for Interest Cost) and 93 (Interbank Offered Rates). These statements had no significant impact on the Authority’s financial statements for the year ended December 31, 2021.

Pending Standards

GASB has issued statements that will become effective in future years, including Statement Nos. 87 (Leases), 91 (Conduit Debt Obligations), 92 (Omnibus 2020), 94 (Public-Private and Public-Public Partnerships), 96 (Information Technology Arrangements), and 97 (Deferred Compensation Plans). Management has not yet determined the impact of these statements on the financial statements.

3. Transactions with the City of Pittsburgh

During July 1995, the City and the Authority entered into a Capital Lease Agreement and a Cooperation Agreement (collectively referred to as the "Agreements"). The Cooperation Agreement was subsequently renegotiated by the Authority’s Board of Directors and the City Mayor’s Office as described below.

Cooperation Agreement

Under the terms of the original Cooperation Agreement, City Water Department employees became employees of the Authority. As a result, the Authority assumed various obligations from the City. The City and the Authority provided various services to each other in accordance with the Cooperation Agreement, and the Authority reimbursed the City for direct and indirect costs attributed by the City to the operation and maintenance of the System.

Under the original Cooperation Agreement, the Authority provided up to 600 million gallons of water annually for the City's use without charge. Also, the Authority assumed the City’s obligation for the cost of subsidizing water service to residents of the City situated beyond the Authority's service area so that those water users pay charges that mirror the rates of the Authority.

On February 4, 2019, the Authority’s Board issued a resolution that the existing Cooperation Agreement shall be terminated in accordance with the terms of the agreement, 90 days after the approval of the resolution. City and Authority officials have collaborated on a New Cooperation Agreement to further implement efficiencies and improvements, including: requiring the Authority to reimburse the City for pension costs for Authority employees covered by the City’s pension plans, allowing the City to charge the Authority the usual rates that other utilities pay for permit fees, and charging the City for water, wastewater, and ALCOSAN usage, with a five-year phase-in starting in 2020 for water and wastewater charges only. The Board implemented the new Cooperation Agreement as of October 3, 2019. This agreement has been filed with the Pennsylvania Public Utility Commission (Commission) according to Title 66, § 507 of the Public Utility Code, and can be modified by order of the Commission. On July 23, 2020, Pennsylvania Act 70 (Act 70) was signed into law. Act 70 provides that the Cooperation Agreement shall have the force and effect of law until January 1, 2025, or an earlier termination date to which the City and the Authority mutually agree.

System Leases

The Capital Lease Agreement stipulates minimum lease payments of approximately $101 million, all of which were satisfied during the initial three years of the capital lease.

The Capital Lease Agreement has a term of thirty years and provides the Authority with the option to purchase the System for one dollar in 2025.

Pension

Most Authority employees participate in the City's Municipal Pension Fund Plan (Plan). Employees who became members of the Plan prior to January 1, 1988 are required to contribute 5% of pre-tax pay. Those joining thereafter are required to contribute 4%. Participation in the Plan is closed to non-union employees hired after March 1, 2019. The Authority's 2021 and 2020 payroll covered by the Plan was approximately $16,151 and $19,478, respectively. Employee contributions for approximately 300 active employees for the years 2021 and 2020 amounted to $759 and $769, respectively.

The City is responsible for the funding of the retirement benefits for the Plan. The extent of the Authority's participation in funding the Plan with respect to those former City employees whose membership continued upon becoming employees of the Authority, as well as new members, is determined by the Cooperation Agreement.

For the years ended December 31, 2021 and 2020, the City and the Authority determined upon a payment of approximately $4,639 and $5,632, respectively, for the Authority’s share of the City’s pension costs, prior to adjustment for the Authority’s portion of the state aid received by the City for pension costs. The Authority’s payment was calculated based on a percentage of its covered payroll to the total covered payroll, which approximates 17.1% and 20.9% for 2021 and 2020, respectively.

Normal retirement benefits are available upon attainment of age sixty and completion of twenty service years. Early retirement benefits are available upon attainment of age fifty and completion of eight service years. Early retirement benefits may be deferred until age sixty or may be obtained upon retirement at a reduced level. A member who terminates employment after attaining age forty and completing eight service years can sustain eligibility for benefits by continuing contributions through age fifty.

Retirement benefits for employees who were members of the Plan are based upon a percentage of either three-year or four-year average pay, depending on date of hire, subject to certain specified minimum monthly benefit amounts. Special membership and benefit rules apply to those experiencing disability.

The "net pension liability" is an actuarial present value of credited projected benefits (a standardized measure for financial statement disclosure of the present value of pension benefits, adjusted for the effects of projected salary increases, estimated to be payable in the future by the Plan as a result of members' service to date) less the pension plan’s net position available for paying such benefits. The measure is intended to help users assess the Plan's funding status on a going concern basis, assess progress made in accumulating sufficient assets to pay benefits when due, and make comparisons among public employee retirement systems. The Plan has not reported or attributed measurements of assets or the net pension liability on the basis of the group of members who are Authority employees. The City’s net pension liability at December 31, 2020 (the date of the most recent available information) is $195,489. As of December 31, 2021, the Authority and the City have not determined the ultimate amount to be paid (the Authority's proportion of the City's net position liability) by the Authority pending completion of an actuarial study and therefore, has not been recorded on the statement of net position. The Authority is estimating their proportion of the net pension liability to be between $20 and $30 million.

Additional information about the Plan and required supplementary information showing the Plan's progress in accumulating sufficient assets to pay benefits when due is presented in the City's Annual Comprehensive Financial Report.

4. Revenue and Accounts Receivable

Water

Water sales revenue is recognized as earned during the period when water is supplied to customers. Customers are billed on a monthly billing cycle by the Authority based on actual or estimated meter readings. The Authority recognizes unbilled accounts receivable for water service provided prior to year-end that is billed during the following year.

Water accounts receivable are presented net of a reserve for uncollectible amounts. This reserve, based on an analytical review of outstanding accounts and historical collection data, is recognized coincident with recognition of revenue. At December 31, 2021 and 2020, the reserve for uncollectible water accounts was approximately $20.03 million and $21.09 million, respectively. The Authority has rights to utilize collection agencies, service terminations, liens, and real property sales to protect its interests, limit further losses, and motivate payments from delinquent customers.

Wastewater Treatment

Although the Authority does not provide wastewater treatment, it assumed responsibility for certain wastewater treatment revenue and expenses beginning in 1996. Effective May 2004, the Authority began direct billing City residents for current and delinquent wastewater treatment charges and remitting to ALCOSAN the aggregate amount of service charges billed. Wastewater treatment activity and the related assets and liabilities appear on the statements of revenue, expenses and changes in net position and the statements of net position, respectively. The related estimated amount of unbilled accounts receivable at year-end has been recorded on the statement of net position. At December 31, 2021 and 2020, the reserve for uncollectible wastewater accounts was approximately $10.78 million and $11.33 million, respectively.

Bad Debt Recovery/Expense

For the years ended December 31, 2021 and 2020, bad debt recoveries of $1,615 and $35, respectively, are netted with direct operating expenses on the statement of revenues, expenses, and changes in net position. Bad debt recoveries primarily relate to resolution of large outstanding balances from other local government entities.

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

5. Capital Assets

Capital assets consisted of the following at December 31, 2021 and 2020:

	Balance at January 1, 2021	Additions	Deletions/ Reclassification	Balance at December 31, 2021
Capital assets, not being depreciated:				
Construction in progress	$ 155,050	$ 118,107	$ (115,029)	$ 158,128
Capital assets, being depreciated:				
Utility assets	1,089,954	114,784	(4,202)	1,200,536
Non-utility assets	11,978	245	(1,164)	11,059
Total capital assets, being depreciated	1,101,932	115,029	(5,366)	1,211,595
Less accumulated depreciation	(335,332)	(24,386)	5,366	(354,352)
Total capital assets, being depreciated, net	766,600	90,643	-	857,243
Total capital assets	$ 921,650	$ 208,750	$ (115,029)	$ 1,015,371

	Balance at January 1, 2020	Additions	Deletions/ Reclassification	Balance at December 31, 2020
Capital assets, not being depreciated:				
Construction in progress	$ 135,287	$ 112,731	$ (92,968)	$ 155,050
Capital assets, being depreciated:				
Utility assets	998,895	92,968	(1,909)	1,089,954
Non-utility assets	12,181	-	(203)	11,978
Total capital assets, being depreciated	1,011,076	92,968	(2,112)	1,101,932
Less accumulated depreciation	(315,785)	(21,659)	2,112	(335,332)
Total capital assets, being depreciated, net	695,291	71,309	-	766,600
Total capital assets	$ 830,578	$ 184,040	$ (92,968)	$ 921,650

During 2021 and 2020, the Authority received donated utility assets of $567 and $76, respectively, related to various development projects.

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

6. Payroll and Related Obligations

Payroll and related obligations presented on the statements of net position are comprised of:

	Balance at December 31, 2020	Change	Balance at December 31, 2021	Current Portion
Compensated absences	$ 1,045	$ (432)	$ 613	$ 2
Workers' compensation	168	(40)	128	-
Payroll, withholdings, and taxes	945	(36)	909	909
	$ 2,158	$ (508)	$ 1,650	$ 911

	Balance at December 31, 2019	Change	Balance at December 31, 2020	Current Portion
Compensated absences	$ 579	$ 466	$ 1,045	$ 148
Workers' compensation	123	45	168	-
Payroll, withholdings, and taxes	908	37	945	945
	$ 1,610	$ 548	$ 2,158	$ 1,093

7. Defined Contribution Plan

During 2019, the Authority established a 401(a) profit-sharing plan available to all full-time employees and part-time employees with over 1,000 hours of service who do not participate in the City's Plan. As part of its fiduciary role, the Authority has an obligation of due care in selecting the third-party administrator. The Authority does not control the assets of the 401(a) profit-sharing plan, and thus the plan is not considered a fiduciary fund of the Authority.

Benefit terms are established and amended by the Authority. Employee contributions are made after-tax and the Authority offers a single match rate up to 5%. Employees become vested after three years. For the years ended December 31, 2021 and 2020, the Authority contributed $170 and $95, respectively, to the 401(a) profit-sharing plan. The 401(a) profit-sharing plan had 63 members at December 31, 2021 and 33 members at December 31, 2020.

8. Bonds and Loans Payable

Series 1998

In March 1998, the Authority issued $36,440 Series B First Lien Revenue Bonds (“1998 Series B Bonds”), the proceeds of which are dedicated to a capital improvements program.

The 1998 Series B Bonds are capital appreciation bonds with an original issuance amount of $36,440. During 2017, $12,406 (par) of the 1998 Series B Bonds with an accreted value of $34,625 were refunded with the Series 2017 A bonds. The remaining 1998 Series B Bonds have maturity values ranging from $26,930 to $14,660 from 2027 to 2030. The bonds were issued to yield rates from 5.18% to 5.3%. The 1998 Series B Bonds accrue and compound interest on a semi-annual basis and are carried at cost plus accrued interest. Total maturity value of the 1998 Series B Bonds is $95,450.

Series 2013

During December 2013, the Authority issued $130,215 Series A First Lien Revenue Refunding Bonds ("2013 Series A Bonds"), the proceeds of which were used to defease through current refunding the entire balance of the Series 2003, Series 2007 B-1, and Series 2007 B-2 Bonds and pay certain amounts in respect of termination of certain interest rate swap agreement related to the Series 2007 B-1 and B-2 bonds; and the $86,695 Series B First Lien Revenue Bonds ("2013 Series B Bonds"), the proceeds of which were used to fund certain water and sewer system capital improvement projects.

The 2013 Bonds were issued at a bond premium of $14,828, which is being amortized as an adjustment to interest expense over the life of the bonds.

During 2017, $42,340 of Series 2013 B bonds outstanding were currently refunded with Series 2017 A bonds.

Series 2017

During December 2017, the Authority issued $165,390 First Lien Revenue Refunding Bonds composed of Series A (159,795) and Series B (taxable) ($5,595). The proceeds of the bonds were used to fund the costs of the refunding of all or a portion of the Authority's outstanding Series of 1998B, 2008A, 2008D-1, and 2013B water and sewer system revenue bonds.

The 2017 A and B Bonds were issued at a bond premium of $23,374, which is being amortized as an adjustment to interest expense over the life of the bonds. The 2017 B Bonds were paid off during 2018.

During December 2017, the Authority issued $218,805 Series C First Lien Revenue Refunding Bonds, the proceeds of which were used to fund the costs of refunding the Authority's outstanding Series 2008 B-1, B-2, and D-2 water and sewer system revenue bonds. The Bonds bear interest at the LIBOR index rate. As noted below, the 2017 C Bonds were remarketed with the issuance of the 2020 A Bonds to convert the cash flows of the Authority's outstanding fixed payer swap portfolio from 70% 1-month LIBOR to the Weekly SIFMA Index (plus a third payment leg that includes a fixed rate component of the Authority paying 0.118%) between the Overlay Swap's effective date of December 1, 2020 and termination date of December 1, 2023. When LIBOR is no longer published, the interest rate will be replaced by the Federal Funds Rate if not renegotiated.

Series 2019

During June 2019, the Authority issued $109,855 Series A First Lien Revenue Bonds, the proceeds of which were used to refund interim debt incurred by the Authority to fund costs of capital projects; and $104,290 Series B Subordinate Revenue Refunding Bonds, the proceeds of which were used to currently refund all of the Authority's outstanding Series of 2008 C-1 and C-2 bonds, including swap termination payments on interest rate swaps associated with the refunded bonds.

The 2019 A and B Bonds were issued at a bond premium of $45,090, which is being amortized as an adjustment to interest expense over the life of the bonds.

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

Series 2020

During December 2020, the Authority issued $890 Series A First Lien Revenue Bonds (Federally Taxable), the proceeds of which were used to remarket the 2017 C Bonds; and $91,520 Series B First Lien Revenue Bonds, the proceeds of which were used to refinance the capital revolving line of credit described below.

The 2020 B Bonds were issued at a bond premium of $16,665, which is being amortized as an adjustment to interest expense over the life of the bonds.

Deferred Charge on Refunding

In conjunction with the debt refundings described above, the Authority has recorded a deferred charge on refunding, which is shown as a deferred outflow of resources on the statements of net position. The deferred charge on refunding at December 31, 2021 and 2020 is as follows:

	Balance at December 31, 2020	Additions	Amortization	Balance at December 31, 2021
Deferred charge on refunding	$ 91,827	$ -	$ 7,183	$ 84,644

	Balance at December 31, 2019	Additions	Amortization	Balance at December 31, 2020
Deferred charge on refunding	$ 99,012	$ -	$ 7,185	$ 91,827

Capital Revolving Line of Credit – Direct Borrowing

In July 2016, the Authority obtained an $80,000 revolving line of credit to finance certain capital projects. In October 2018, the capital revolving line of credit was amended to increase the maximum amount that can be drawn and outstanding at any one time to $150,000. The capital revolving line of credit is secured by the revenues of the Authority. The Authority had until July 1, 2020 to request revolving advances on the line of credit. The capital revolving line of credit contains a provision that in the event of a default, the outstanding amounts under this line of credit become immediately due; and the commitment amount be reduced to $0; Each revolving advance bears interest at the LIBOR

Index Rate, which ranged from 0.45% to 2.85% for the year ended December 31, 2020. The balance was paid off during 2020 and the line of credit was closed.

In June 2020, the Authority obtained a $150,000 revolving line of credit to finance certain capital projects. The capital revolving line of credit is secured by the receipts and revenues of the Authority's water and sewer system on a subordinate basis. The Authority has until June 23, 2023 to request revolving advances on the line of credit, at which time the Authority has the option to convert the unpaid principal balance to a term loan. The capital revolving line of credit contains a provision that in the event of default, the lender shall be under no further obligation to make loans to the Authority and the outstanding amount under this line of credit becomes immediately due. Each revolving advance bears interest per annum equal to the sum of 79% of the daily LIBOR rate plus the applicable margin (1.61% to 1.78%). The agreement includes a LIBOR replacement rider for determining an alternative rate of interest in the event LIBOR is no longer available. At December 31, 2021 and 2020, the interest rate was 2% and 2.005%, respectively. At December 31, 2021 and 2020, the Authority had $95,792 and $26,665, respectively, in outstanding revolving advances.

State Loans – Direct Borrowing

The Authority has several loans outstanding from PENNVEST for various capital projects and water and sewer improvement projects, with carrying amounts of $110,450 and $69,379 at December 31, 2021 and 2020, respectively. Interest rates vary from 1.00% to 3.25%. The State Loans are secured by the project collateral related to each loan. In an event of default on the State Loans, the entire unpaid principal, plus accrued interest, plus all other amounts due and payable to PENNVEST shall at the option of PENNVEST become due and payable immediately upon request.

Capital Lease

During 2015, the Authority entered into a lease agreement as lessee for financing the acquisition of a utility asset valued at $7,445. The utility asset has a ten-year estimated useful life. Depreciation on the utility asset began in 2016, with accumulated depreciation totaling $4,469 and $3,724 for the years ended December 31, 2021 and 2020, respectively. This lease agreement qualifies as a capital lease for accounting purposes and, therefore, has been recorded at the value of future minimum lease payments as of the inception date. At

December 31, 2021 and 2020, the outstanding balance of the capital lease was $4,484 and $4,970, respectively.

Swap Borrowing – Direct Borrowing

During December 2017, the Authority terminated the original 2008 Series B-1, B-2, and D swaps and reissued and restructured the swaps to bear interest based upon 70% of one-month LIBOR. Upon the phase out of LIBOR, the interest rate will be replaced by the Federal Funds Rate if not renegotiated prior to the phase out. At termination, those derivative instruments had an aggregate fair value of ($70,869), which is considered a swap borrowing from the counterparty. The swap borrowing is being amortized over the remaining life of the bonds. At December 31, 2021 and 2020, the unamortized balance is $59,002 and $61,955, respectively.

Bonds, state loans payable, revolving line of credit, capital lease, and swap borrowing consisted of the following at December 31, 2021 and 2020:

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

	Balance at December 31, 2020	Additions	Accretion	Reductions	Balance at December 31, 2021	Due Within One Year
Bonds and loans payable:						
Revenue bonds:						
1998 Series B	$ 63,078	$ -	$ 3,376	$ -	$ 66,454	$ -
2013 Series A	67,420	-	-	(8,190)	59,230	8,530
2013 Series B	38,760	-	-	-	38,760	-
2017 Series A	129,610	-	-	(13,650)	115,960	14,360
2017 Series C	218,805	-	-	-	218,805	-
2019 Series A	107,560	-	-	(2,415)	105,145	2,540
2019 Series B	104,290	-	-	-	104,290	-
2020 Series A	890	-	-	-	890	890
2020 Series B	91,520	-	-	-	91,520	795
	821,933	-	3,376	(24,255)	801,054	27,115
Direct borrowings:						
State loans (PENNVEST)	69,379	44,695	-	(3,624)	110,450	6,825
Revolving lines of credit	26,665	69,127	-	-	95,792	-
Swap borrowing	61,955	-	-	(2,953)	59,002	-
Capital lease	4,970	-	-	(486)	4,484	502
	984,902	113,822	3,376	(31,318)	1,070,782	34,442
Unamortized bond (discount) premium	81,324	12	-	(5,847)	75,489	-
Total bonds and loans, net	$ 1,066,226	$ 113,834	$ 3,376	$ (37,165)	$ 1,146,271	$ 34,442

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

	Balance at December 31, 2019	Additions	Accretion	Reductions	Balance at December 31, 2020	Due Within One Year
Bonds and loans payable:						
Revenue bonds:						
1998 Series B	$ 59,870	$ -	$ 3,208	$ -	$ 63,078	$ -
2013 Series A	75,430	-	-	(8,010)	67,420	8,190
2013 Series B	38,760	-	-	-	38,760	-
2017 Series A	142,605	-	-	(12,995)	129,610	13,650
2017 Series C	218,805	-	-	-	218,805	-
2019 Series A	109,855	-	-	(2,295)	107,560	2,415
2019 Series B	104,290	-	-	-	104,290	-
2020 Series A	-	890	-	-	890	-
2020 Series B	-	91,520	-	-	91,520	-
	749,615	92,410	3,208	(23,300)	821,933	24,255
Direct borrowings:						
State loans (PENNVEST)	39,948	32,973	-	(3,542)	69,379	3,635
Revolving lines of credit	62,500	133,665	-	(169,500)	26,665	-
Swap borrowing	64,837	-	-	(2,882)	61,955	-
Capital lease	5,439	-	-	(469)	4,970	486
	922,339	259,048	3,208	(199,693)	984,902	28,376
Unamortized bond (discount) premium	69,986	16,665	-	(5,327)	81,324	-
Total bonds and loans, net	$ 992,325	$ 275,713	$ 3,208	$ (205,020)	$ 1,066,226	$ 28,376

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

Debt service payments on the Revenue Bonds at December 31, 2021 are as follows:

	Revenue Bonds		
	Principal	Interest	Total
2022	$ 27,115	$ 32,674	$ 59,789
2023	28,485	31,368	59,853
2024	29,150	29,979	59,129
2025	31,170	28,534	59,704
2026	33,890	27,088	60,978
2027-2031	105,305	197,923	303,228
2032-2036	217,070	86,708	303,778
2037-2041	219,585	37,479	257,064
2042-2046	42,085	8,704	50,789
2047-2050	19,890	2,028	21,918
	753,745	482,485	1,236,230
Accretion	47,309	(47,309)	-
Total	$ 801,054	$ 435,176	$ 1,236,230

Debt service payments of the State Loans at December 31, 2021 are as follows:

	State Loans		
	Principal	Interest	Total
2022	$ 6,825	$ 1,271	$ 8,096
2023	6,716	1,182	7,898
2024	6,625	1,095	7,720
2025	6,286	1,010	7,296
2026	6,276	928	7,204
2027-2031	31,910	3,353	35,263
2032-2036	26,456	1,655	28,111
2037-2041	14,010	535	14,545
2042-2045	5,346	91	5,437
	$ 110,450	$ 11,120	$ 121,570

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

Repayment of the revolving line of credit will begin once the Authority has drawn all available advances from the line, but no later than June 2023.

Minimum lease payments of the capital lease at December 31, 2021 are as follows:

	Capital Lease		
	Principal	Interest	Total
2022	$ 502	$ 145	$ 647
2023	519	127	646
2024	538	109	647
2025	556	91	647
2026	575	72	647
2027-2029	1,794	93	1,887
	$ 4,484	$ 637	$ 5,121

Amortization on the swap borrowing is as follows:

Year Ending December 31,	Principal	Interest
2022	$ 3,027	$ 1,437
2023	3,102	1,362
2024	3,179	1,285
2025	3,258	1,206
2026	3,339	1,125
2037-2031	17,977	4,342
2032-2036	18,899	2,015
2037-2040	6,221	246
	$ 59,002	$ 13,018

Interest payments were calculated for the Variable Rate Bonds using the synthetic fixed rate interest rates as described in Note 9.

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

Interest and amortization expense for the years ended December 31 is as follows:

	2021	2020
Bond, loan and swap interest	$ 33,080	$ 30,933
Accretion	3,376	3,208
Amortization of deferred refunding loss, discounts and premiums	1,348	1,858
Other	1,627	1,464
	$ 39,431	$ 37,463

In accordance with the provisions of the trust indentures for the 1998, 2013, 2017, 2019, and 2020 Bonds, the Authority has created a number of funds that are restricted for specific purposes. The complement of these restricted funds, collectively referred to on the statements of net position as "Restricted Assets," at December 31, 2021 and 2020 was:

	2021	2020
Capital project funds	$ 1	$ 1
Debt service and reserve funds	6,417	6,444
Operating reserve account	18,856	18,851
Other funds	610	610
	$ 25,884	$ 25,906

Among the Authority's debt covenants is one which requires that rates charged by the Authority will be sufficient to satisfy a formula which is intended to ensure that the Authority will be able to satisfy debt service requirements. If the Authority fails to comply with the rate covenant, the Authority shall request a Qualified Independent Consultant (QPI) to submit a written report and recommendations with respect to increases in the Authority's rates, fees and other charges and improvements in the operations and the services rendered and the Authority's accounting and billing procedures necessary to bring the Authority into compliance. Any failure to meet the rate covenant will not result in an event of default if within 180 days after the tested year end, the Authority files the report of the QPI and the Authority revises its rates, fees and charges and alter its operations and services to conform to the report of the QPI to the extent permitted by law.

The trust indenture also requires that revenue collections be deposited into a Revenue Fund and disbursed therefrom as provided for in the trust indenture. This Revenue Fund constitutes the vast majority of unrestricted funds cash and cash equivalents. At December 31, 2021 and 2020, the Authority was in compliance with these covenants.

9. Interest Rate Swaps

Interest rate swaps disclosures (not in thousands) as of December 31, 2021 and 2020 are presented below.

Interest rate swaps at December 31, 2021:

Current Notional Amount	Effective Date	Maturity Date	Interest Rate Paid	Interest Rate Received	Counterparty Credit Rating	Underlying Bonds	
Hedging Derivatives, Cash Flow Hedges, Receive Variable - Pay Fixed, Interest Rate Swaps:							
$ 72,747,500	12/28/2017	9/1/2039	1.732%	70% 1mo LIBOR	A-	Series 2017 C	*
72,747,500	12/28/2017	9/1/2039	1.732%	70% 1mo LIBOR	A+	Series 2017 C	*
71,225,000	12/28/2017	9/1/2040	1.735%	70% 1mo LIBOR	A+	Series 2017 C	*
Hedging Derivative, Cash Flow Hedge, Receive Variable - Pay Variable, Interest Rate Swap (Overlay Swap):							
216,720,000	12/1/2020	12/1/2023	70% 1mo LIBOR & 0.118%	SIFMA	A-	Series 2017 C	

* - Represents a hybrid instrument comprised of an on-market swap and a borrowing. The information above reflects the on-market rate as of the date on which the swap was associated with the underlying bonds.

When LIBOR is no longer published, the interest rate will be replaced by the Federal Funds Rate if not renegotiated. One-week and two-month LIBOR ceased being published at the end of 2021, while overnight, 1-month, 3-month, 6-month, and 12-month maturities will continue to be published through June 2023.

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

Interest Rate Swap – Fair Value Information:

Notional Amount	12/31/2019 Fair Value *	Change in Fair Value	12/31/2020 Fair Value *	Change in Fair Value	12/31/2021 Fair Value *	Underlying Bonds
Hedging Derivatives, Cash Flow Hedges, Receive Variable - Pay Fixed, Interest Rate Swaps:						
$ 72,747,500	$ (4,375,365)	$ (6,552,580)	$ (10,927,945) **	$ 4,123,769	$ (6,804,176) **	Series 2017 C
72,747,500	(4,375,365)	(6,552,580)	(10,927,945) **	4,123,769	(6,804,176) **	Series 2017 C
71,225,000	(4,600,631)	(6,949,298)	(11,549,929) **	4,242,030	(7,307,899) **	Series 2017 C
Hedging Derivatives, Cash Flow Hedges, Receive Variable - Pay Variable, Interest Rate Swap (Overlay Swap):						
216,720,000	-	(457,111)	(457,111)	(91,503)	(548,614) **	Series 2017 C
Total	$ (13,351,361)	$ (20,511,569)	$ (33,862,930)	$ 12,398,065	$ (21,464,865)	

* The fair value is an estimated net present value of the expected cash flows calculated using relevant mid-market data inputs and based on the assumption of no unusual market conditions or forced liquidation.

** Reported as hedging derivative - interest rate swap and swap liability on the Statement of Net Position.

Description of 2017 C Swaps

During fiscal year 2017, the Authority restructured three pay-fixed, receive-variable interest rate swap contracts. The original interest rate swaps were effective June 12, 2008. Beginning December 28, 2017, the Authority will make semi-annual interest payments on the 1st of each March and September through September 1, 2039 (two swaps); and, September 1, 2040 (for one swap), respectively. The Counterparties make monthly interest payments on the 1st of each calendar month, which begin February 2018 through September 1, 2039 for two of the swaps; and, September 1, 2040 for one swap.

The intention of the 2017 swaps restructuring is to effectively change the Authority's variable interest rate on the $216,720,000, Water and Sewer System First Lien Revenue Refunding Bonds Series C of 2017 with notional amounts of $71,225,000, $72,747,500, and $72,747,500 to fixed rates of 3.8255%, 3.770%, and 3.7835%, respectively.

The bonds will accrue interest at a weekly rate that is determined by a remarketing agent on each effective rate date. The interest rate on the bonds may not exceed 12%. Per the interest rate swap agreements, the Authority will receive 70% of one-month LIBOR.

The interest payments on the interest rate swaps are calculated based on notional amounts, all of which reduce beginning on September 2032, so that the notional amounts approximate the principal outstanding on the respective bonds. The interest rate swaps expire consistent with the final maturity of the respective bonds.

On November 12, 2020, the Authority entered into a new swap transaction (the "Overlay Swap") associated with the 2017 Series C variable rate bonds (the "Bonds" or the "2017C Bonds"). The Overlay Swap's purpose was to convert the cash flows of the Authority's outstanding fixed payer swap portfolio from 70% one-month LIBOR to the Weekly SIFMA Index (plus a third payment leg that includes a fixed rate component of the Authority paying 0.118%) between the Overlay Swap's effective date of December 1, 2020 and termination date of December 1, 2023. The notional amount of the Overlay Swap is $216,720,000 matching 100% of the aggregate notional amount of the Authority's outstanding fixed payer swap portfolio. The Overlay Swap was entered into in alignment with the Authority's successful remarketing of the Bonds on December 1, 2020 from a 70% one-month LIBOR mode into a Weekly SIFMA Index mode.

<u>Accounting and Risk Disclosures</u>

During the years ended December 31, 2021 and 2020, the Authority paid $6,907 and $6,808, respectively, fixed and received $155 and $1,134, respectively, variable related to their outstanding swap agreements.

As noted in the tables above, current period changes in fair value for the interest rate swaps that are accounted for as hedges are recorded on the statements of net position as an adjustment to hedging derivative – interest rate swap, deferred outflows or deferred inflows. Additionally, current period changes in fair value for the interest rate swap accounted for as an investment is recorded on the statements of revenues, expenses, and changes in net position as a component of investment income. The fair value of the outstanding interest rate swaps as of December 31, 2021 and 2020 is reported on the statements of net position as a swap liability. The swaps are valued using significant other observable inputs (Level 2 inputs).

The Authority has the ability to early terminate the interest rate swaps and to cash settle the transaction on any business day by providing at least two business days' written notice to the counterparty. Evidence that the Authority has sufficient funds available to pay any amount payable to the counterparty must be provided at the time notice is given. At early termination, the Authority will be required to pay or receive a settlement amount which is comprised of the fair value of the terminated transaction(s) based on market quotations and any amounts accrued under the contract(s).

Through the use of derivative instruments such as interest rate swaps, the Authority is exposed to a variety of risks, including credit risk, interest rate risk, termination risk, basis risk, and rollover risk.

- Credit risk is the risk that a counterparty will not fulfill its obligations. The credit ratings by S&P Global Ratings, a nationally recognized statistical rating organization for the respective counterparties are listed in the table above. If a counterparty failed to perform according to the terms of the interest rate swap agreement, there is some risk of loss to the Authority, up to the fair value of the swaps.

  The Authority currently does not enter into master netting arrangements with its counterparties. As such, each derivative instrument should be evaluated on an individual basis for credit risk. As of December 31, 2021, the Series 2017 C derivative instruments currently have a negative fair value position to the Authority; therefore, the Authority is not exposed to credit risk.

  <u>Concentration of credit risk:</u> The Authority's outstanding market value as of December 31, 2021 and 2020, respectively, is ($14,112) and ($22,478) with one counterparty and ($7,353) and ($11,385) with the second counterparty. Both counterparties operate in the same markets and could be similarly impacted by changes in economic or other conditions.

  It is the Authority's policy to require counterparty collateral posting provisions in its non-exchange traded derivative instruments. Their terms require collateral to be posted if the respective counterparty's credit rating falls below BBB- by S&P Global Ratings and the swap insurer becomes bankrupt. The amount of collateral to be posted is calculated based on derivatives in asset positions to the Authority. As of year-end, the counterparties had not and were not required to post collateral for these transactions.

- Termination risk is the risk that a derivative's unscheduled end will affect the Authority's asset/liability strategy or will present the Authority with potentially significant unscheduled termination payments to the counterparty. The counterparties to the interest rate swaps do not have the ability to voluntarily terminate the interest rate swap; however, the Authority is exposed to termination risk in the event that one or more of the counterparties default. The Authority has the ability to voluntarily terminate the swaps with prior written consent of the insurer by providing between 2 and 20 business days' notice to the counterparty. The Authority must demonstrate the ability to pay all amounts due to the counterparty on the termination date.

- Interest rate risk is the risk that changes in interest rates will adversely affect the fair values of a government's financial instruments or cash flows. The interest rate swaps are highly sensitive to changes in interest rates; changes in the variable rate will have a material effect on the swap's fair value.

- Basis risk is the risk that arises when variable interest rates on a derivative and an associated bond or other interest-paying financial instrument are based on different indexes. The Authority is subject to basis risk on the overlay swap to the extent SIFMA differs from 70% of 1mo. LIBOR or the federal funds rate. Although expected to correlate, the relationships between different indexes vary and that variance could adversely affect the Authority's calculated payments, and as a result cost savings or synthetic interest rates may not be realized.

  The Authority is further subject to basis risk in the event that the underlying bonds become fixed rate Bank Bonds or that the maturity of the underlying bonds is accelerated.

- Rollover risk is the risk that a derivative associated with the Authority's debt does not extend to the maturity of that debt. When the derivative terminates, the associated debt will no longer have the benefit of the derivative. The Authority is not exposed to rollover risk as the swap agreements terminate on the same day the last payment is due on the respective bonds.

Contingencies

All of the Authority's derivative instruments include provisions that require the Authority to post collateral in the event that the credit ratings of its credit support provider's senior long term, unsecured debt credit rating falls below BBB- by S&P Global Ratings and FSA, the swap insurer, becomes bankrupt. The collateral is to be posted in the form of cash, U.S.

Treasuries, or other approved securities. As of year-end, the Authority was not required to post collateral for these transactions.

10. Deposits and Investments with Financial Institutions

The Authority is authorized to invest in: obligations of the U.S. Government and government-sponsored agencies and instrumentalities; fully insured or collateralized certificates of deposits; commercial paper of the highest rating; repurchase agreements collateralized by government obligations or securities; highly rated bank promissory notes or investment funds or trusts; and, as to trusteed assets, as otherwise permitted by the trust indenture as supplemented and amended in 2020. Throughout the years ended December 31, 2021 and 2020, the Authority invested its funds in such authorized investments. The Authority has a formal investment policy which addresses custodial credit risk, interest rate risk, credit risk, and concentration of credit risk.

GASB Statement No. 40, *"Deposit and Investment Risk Disclosures,"* requires disclosures related to the following deposit and investment risks: credit risk (including custodial credit risk and concentration of credit risk), interest rate risk, and foreign currency risk. The following is a description of the Authority's deposit and investment risks:

Custodial Credit Risk – Custodial credit risk is the risk that in the event of a bank failure, the Authority's deposits may not be returned to it. As of December 31, 2021 and 2020, \$81,979 and \$67,512, respectively, of the Authority's bank balance of \$82,229 and \$67,762, respectively, was exposed to custodial credit risk; the amounts exposed to custodial credit risk are collateralized in accordance with Act 72 of the Pennsylvania state legislature, which requires the institution to pool collateral for all governmental deposits and have the collateral held by an approved custodian in the institution's name. These deposits have carrying amounts of \$76,422 and \$60,210 as of December 31, 2021 and 2020, respectively, all of which is reported as current assets in the statements of net position.

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

At December 31, 2021, the Authority held the following restricted asset investment balances:

	Carrying value	Maturity in years: Less than 1 year
PA INVEST	$ 9,099	$ 9,099
Money market	16,785	16,785
U.S. Treasury bills	-	-
Total Investments	$ 25,884	$ 25,884

At December 31, 2020, the Authority held the following restricted asset investment balances:

	Carrying value	Maturity in years: Less than 1 year
PA INVEST	$ 9,096	$ 9,096
Money market	16,201	16,201
U.S. Treasury bills	609	609
Total Investments	$ 25,906	$ 25,906

Money market funds are included in cash and cash equivalents as non-current restricted assets on the statements of net position.

The carrying value of the Authority's investments is the same as their fair value amount. U.S. Treasury bills are valued using quoted market prices (Level 1 inputs).

The Authority's investments in money markets and PA INVEST (external investment pool) are the same as the value of the pool shares and are reported at amortized cost, which approximates market. All investments in an external investment pool that are not SEC-registered are subject to oversight by the Commonwealth. The Authority can withdraw funds from INVEST without limitations or fees.

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

Interest Rate Risk – Interest rate risk is the risk that changes in the interest rates will adversely affect the fair value of the Authority's investments. The Authority is not subject to interest rate risk, as all of its investments at December 31, 2021 and 2020 had maturities of less than one year.

Credit Risk – Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligation. As of December 31, 2021, the Authority's investments in PA INVEST were rated AAAm by S&P Global Ratings.

Concentration of Credit Risk – Concentration of credit risk is the risk of loss attributed to the magnitude of a government's investments in a single issuer. The Authority has the following limits, applicable at the time or purchase:

Security Type	Maximum Allocation	Maximum Issuer
U.S. Government Securities	100%	N/A
U.S. Government Agencies & Instruments:		
Guaranteed by the full faith and credit of the United States	100%	N/A
Not guaranteed by the full faith and credit of the United States	60%	40%
Bank Certificates of Deposit	30%	20%
Negotiable Certificates of Deposit	30%	10%
Bank Acceptances	15%	3%
Commercial Paper	20%	3%
Money Market Funds	100%	N/A
Local Government Investment Pools	100%	N/A
Savings or demand deposits	100%	N/A
Repurchase Agreements	25%	10%

The Authority was in compliance with the established limits at December 31, 2021 and 2020.

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

11. Net Position

Net position represents the difference between assets, deferred outflows of resources, and liabilities. An analysis of net position amounts is as follows:

	December 31, 2021	December 31, 2020
Net investment in capital assets:		
Net property, plant, and equipment	$ 1,015,371	$ 921,650
Debt subject to capital improvements	(1,039,959)	(960,337)
Swap borrowing	(59,002)	(61,955)
Deferred charge on refunding	84,644	91,827
Accounts payable for capital items	(13,248)	(12,818)
Restricted for capital activity and debt service:		
Capital projects	1	1
Debt service and reserve funds	6,417	6,444
	(5,776)	(15,188)
Restricted assets:		
Operating reserve account	18,856	18,851
Other funds	610	610
	19,466	19,461
Unrestricted	11,838	(2,999)
Total net position	$ 25,528	$ 1,274

12. Operating Lease

Operating Lease

The Authority leases office space. The term of the lease is for twenty years commencing on August 1, 2007 and ending on July 31, 2027. The lease is subject to an automatic roll-over for five years, if the Authority does not communicate in writing one year prior to expiration that is desires not to extend the lease. The general terms of the lease require the lessor to provide for utilities, building repairs, maintenance, and real estate taxes.

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

The total minimum future commitments under the lease as of December 31, 2021 are as follows:

2022	$ 823
2023	844
2024	844
2025	844
2026	844
2027	633
	$ 4,832

The total annual rental for office space was approximately $901 and $971 for 2021 and 2020, respectively.

13. Commitments and Contingencies

The Authority is proceeding with a capital improvement program which the Authority's independent engineer has estimated will entail expenditure of the existing construction funds and potential future bond issues.

The Authority was insured for general liability coverage through 2001; however, effective January 1, 2002, it became self-insured. In previous years, the Authority established a fund to pay for deductibles, small claims, and other litigation costs. At year-end, the balance in this fund was approximately $610. This fund is grouped with "Restricted Assets" on the statements of net position. During 2021 and 2020, the Authority paid $0 from this fund for claims.

In addition to the matters discussed below and in Note 14, Consent Agreement, various other claims and lawsuits are pending against the Authority.

Attorney General Criminal Complaint

In June 2016 the Authority exceeded the drinking water lead action level established under the Pennsylvania Safe Drinking Water Act. As the Authority attempted to meet federal Environmental Protection Agency (EPA) and Pennsylvania Department of Environmental Protection (DEP) service line replacement requirements, the Authority violated the Safe

Water Drinking Act in 2016 and 2017 by failing to provide 45-day advanced notice of partial service lead line replacement to customers at some homes, and failing to provide post-construction test kits. In November 2017, the Authority entered into a consent order agreement with DEP related to these violations that included a civil penalty of $2.4 million. The portion of the Attorney General misdemeanor counts described in the subsequent paragraph that relate to partial lead line replacements and lack of customer notices are duplicative to the violations that resulted in the aforementioned consent order agreement with the DEP.

On April 17, 2019 the Pennsylvania Office of the Attorney General completed a filing in the Allegheny County Court of Common Pleas, Docket CP-02-CR-0002636-2019, alleging 161 third-degree misdemeanor counts under the Pennsylvania Safe Drinking Water Act, which were later reduced to 152 counts. The misdemeanors addressed the Authority's violations relating to the Authority's unauthorized changes to its corrosion control treatment and its public water system by substituting corrosion control treatment chemicals without first obtaining the appropriate permit from the Pennsylvania Department of Environmental Protection. Also, the Authority performed partial lead service line replacements, which can result in an increase in lead contamination for the residence, without providing its customers with the advance notice and follow-up sampling required under the state and federal safe drinking water regulations.

The Authority entered into a form of probation agreement, a Pre-Disposition Remediation Agreement ("PDR") with the Office of the Attorney General, which was approved by the Court on July 16, 2020. The PDR provides a 24-month probationary period, and further requires: (1) appointment of a Compliance Monitor during the probationary period with comprehensive compliance oversight and reporting responsibilities, (2) a donation of $500 to organizations and programs that protect Pittsburgh residents from lead contamination, and (3) public apology from the Authority.

Lead Mitigation

The Authority continued its critical initiatives to comply with the Consent Order and Agreement, and other requirements mandated by the Pennsylvania Department of Environmental Protection (PADEP) and the Pennsylvania Public Utilities Commission (PUC). These initiatives include: (1) a water treatment program to mitigate lead corrosion so as to comply with current water quality standards, (2) a lead service line replacement program, and (3) a lead service line identification program to be completed by 2020 for residential service line connections and a 2022 update to include all service line connections. These requirements are stipulated in the PADEP Consent Order and Agreement with the Authority dated November 2017.

Water Treatment: Chemical treatment testing of orthophosphate application to the Authority's finished water demonstrated rapid mitigation of lead and copper corrosion to levels well below any current federal drinking water standard. The Authority fully implemented the introduction of orthophosphate to the drinking water system in April 2019, and since then has had two consecutive 6-month rounds of lead monitoring results below Federal action level of 15.0 parts per billion (ppb), along with a recently completed third round of lead monitoring. [Action levels are the EPA's established standard for water system compliance with the Federal Lead and Copper Rule.] The results were 10.0 ppb in the monitoring that ended in December 2019, 5.1 ppb for the monitoring that ended in June 2020, and 7.1 ppb for the round that ended in December 2021. These levels put the Authority's lead program in compliance with the Lead and Copper Rule for the first time since 2016. The second round of results below the action level removed the mandated requirement to replace lead service lines.

Lead Service Line Replacement: The Authority was ordered by PADEP to replace 1,341 public owned lead service lines by June 30, 2018 and an additional 7 percent of the public owned lead service lines by December 31, 2018 (a total of about 2,200). By the end of 2018 a total of 2,765 public lead service lines had been replaced. In addition, the Authority was required to continue to replace 7 percent of the initial number of lead service lines in the system (revised to 855 based upon PWSA data) until two consecutive 6-month monitoring period sampling events were below the lead action level (where this replacement requirement ended in June 2020 as described above). As of the date of this report, over 8,850 public, along with over 5,380 private lead service lines have been replaced.

In October 2020, the Authority completed work on the 2019 Neighborhood LSLR project with $49.1 million in funding through PENNVEST, of which $35.4 million was a loan and $13.7 million was a grant. This program replaced over 4,738 public and 3,008 private lead service lines (as of March 18, 2022), well above the anticipated amounts of 3,400 public and 2,800 private replacements. In June 2020, the Authority transitioned into the next phase of the LSLR program by replacing lead service lines in concert with a water main replacement program. In this manner, the Authority minimizes the overall cost for water main and service line replacements. Most of the remaining lead service lines are connected to the oldest water mains in the system, most subject to breakage and failure. The Authority will strive to implement this program at the lowest possible cost to the Authority, while addressing those water mains that have the highest likelihood of failure. The Authority's investment in water main replacement will continue unabated to ensure that the Authority can mitigate the amount of annual pipe breaks and minimize the risk of service disruption to its customers. The Authority's program intends to achieve an average water main life more in line with national standards. In summary, as of March 18, 2022, the Authority has replaced a total of 8,850 public and 5,830 private lead service lines under all programs involving the removal of lead service lines, including the Lead Service Line Replacement Program (2016 through 2019 Contracts) and Small Diameter Water Main Replacement Program.

Small Diameter Water Main Replacement Program: The ongoing Small Diameter Water Main Replacement (SDWMR) Program consists of a series of annual projects designed to replace aging and undersized water mains in neighborhoods with a high likelihood of having lead service lines.

The 2020 SDWMR projects consisted of three individual construction contracts totaling nearly 15 miles of new water main. These projects were completed in December 2021 and, inclusive of design and construction, cost approximately $56 million.

Construction for the next phase of SDWMR projects, awarded as two individual construction contracts under the 2021 SDWMR Program, is expected to begin in late March 2022 and be completed by April 2023. This work consists of the construction of over 6 miles (33,500 LF) of new water mains and associated work. Contracts for both projects were awarded to a single contractor at a cost of just under $25 Million.

The third phase of SDWMR projects (2022 SDWMR) are currently in the design phase with anticipation of bidding in July 2022 and an expected construction start date in late 2022 (September). These projects are expected to replace nearly 9 miles (46,700 LF) of water main at an estimated cost of $50 Million.

The 2023, 2024, 2025, and 2026 contracts are currently in the 2022 CIP with a total cumulative value of $231 Million, which equates to approximately 64 miles of small diameter water main to be replaced.

Lead Service Line Identification Program: The lead service line identification program determines the materials of manufacture for each existing water service line in the Authority's system. The first phase of that program was completed with the digitization of existing records. The second phase, which has evolved since the signing of the consent order, consists of a combination of verification inspections and replacement records of ongoing infrastructure programs, video inspection of accessible residential service lines to evaluate the materials of manufacture, identification of private service lines while replacing meters, the development of a machine-learning predictive model in conjunction with the University of Pittsburgh and further records-mining with the Authority, City of Pittsburgh and Allegheny County Plumbing Department. This phase was completed in December 2020 and submitted to the PADEP, in compliance with the Consent Order and Agreement. The third phase includes identifying service line materials for non-residential customers and providing an update for all locations. This effort is due to PADEP in December 2022.

The Identification Program will culminate in a complete digital file and mapping of all service lines within the Authority's service territory. All updated records are made publicly available on the Authority's website within one month of the data being collected.

Environmental Protection Agency

The Authority has been cooperating with the Environmental Protection Agency's ("EPA") investigation of the Authority's Aspinwall Water Treatment Plant ("Water Treatment Plant") for nearly three years. The Authority and EPA have negotiated a resolution that addresses the violations alleged by EPA. On January 15, 2021, pursuant to a plea agreement, the Court entered the Authority's plea of guilty to two counts of violations of the Clean Water Act. The terms of the settlement are contained in a plea letter dated December 30, 2020 and executed by the Authority on January 12, 2021. The terms of the Plea Agreement included:

- Three Year Probation Period
- $500,000 Compliance Fund
- Environmental Compliance Program
- Environmental Compliance Manual for Water Production
- Reporting of Allegations
- Training (New Hire and Refresher)
- Independent Environmental Audit
- Establishing Position of Environmental Compliance Manager reporting to CEO

- Ethics & Deterrence of Criminal Conduct
- Annual Audits & Reports on the Compliance Program

Sentencing occurred on September 14, 2021 and included seven standard conditions of supervision and reference to the requirements established in the Plea Agreement. A U.S. Probation Officer has been assigned to the Authority and the Authority is required to provide monthly updates to the probation officer.

EPA's Suspension and Debarment Division placed the Authority on its Suspension and Debarment list upon the Authority's guilty plea on September 14, 2021. EPA and the Authority entered into an Administrative Agreement, which allowed the Authority to be promptly removed from the list on the same day. The Administrative Agreement includes the following provisions:

- Four Year Term
- Compliance with current State and Federal Plea Agreements
- Completion of Current Projects
- Establish a Chief Ethics and Compliance Officer ("CCECO")
- Establish Ethics and Compliance Program, including:
- Code of Ethics
- Code of Conduct
- Non-Retaliation Policy
- Whistleblower System
- Development of a Training Policy and Training Tracking
- Expansion of Environmental Compliance Program to all of PWSA
- Retain an Independent Monitor to oversee the Administrative Agreement
- Submittal of Regular Reports and Certifications

14. Consent Agreement

The Pittsburgh Water and Sewer Authority (Authority) is subject to federal regulation under the Clean Water Act (1977) and regulations adopted under that Act. Among the specific requirements applicable to the Authority's system are those imposed by the United States Environmental Protection Agency's Combined Sewer Overflow (CSO) Policy (1994). On January 29, 2004, the Authority and the City of Pittsburgh executed a Consent Order and

Agreement (COA) regarding wet weather sewer overflows within the City. The other signatories to the COA are the Pennsylvania Department of Environmental Protection (DEP) and the Allegheny County Health Department (ACHD).

Generally, the COA required the Authority and the City to assess the City sewers to develop a plan with ALCOSAN to address wet weather sewer overflows within the City. The COA is part of a sewer assessment program for all municipalities served by ALCOSAN. To date, assessment activities have been completed for all accessible critical sewers and separate sanitary sewers with the exception of any additional sewers discovered through continued research and investigation. Critical sewers were defined in the COA as: trunk sewers that are a final conveyance to the ALCOSAN Sewer System, sewers associated with areas of chronic basement flooding, sewers associated with areas of chronic maintenance, sewers associated with areas of chronic surcharge, sewers downstream of diversion structures, sewers where additional information is necessary for model development, and sewers deemed a priority for inspection by a professional engineer. Ongoing pipe and manhole repairs are being completed to provide CCTV access to remaining inaccessible critical/sanitary sewer pipes. Assessment activities for non-critical sewers are to be completed on a longer schedule. The majority of accessible non-critical manholes have been inspected with ongoing efforts to complete any remaining or newly identified accessible non-critical manholes. The required Wet Weather Feasibility Study (WWFS) was submitted to the DEP and ACHD on time in July of 2013. This long-term control plan outlined system-wide improvements, including Green Infrastructure (GI) that the Authority would implement over the next 20 years.

As this COA with the DEP expired in March 2015, the U.S. Environmental Protection Agency (USEPA) became the main regulatory body to which the Authority is responsible. On January 21, 2016 the USEPA issued a Clean Water Act Section 308 Information Request to the Authority. The USEPA 308 request required the Authority to submit detailed information on past CSO performance and activities. It also required the Authority to conduct a source reduction analysis for the entire service area, followed by GI demonstration projects.

The Authority hired two engineering firms to assess and model the sewer system, responding to the first phase of the USEPA 308 request by the due of March 31, 2016. The second phase of the request was responded to by the submission of a source reduction study by the due date of December 1, 2016, and the submission of project performance evaluations for certain construction GI demonstration projects by the due date of December

1, 2017. An additional 308 request from the USEPA was received in October 2016 seeking more detailed information and further actions regarding the assessment of the Authority's sewer system. The response to the October 2016 request from the USEPA was delivered in January 2017.

In addition to the assessment, the USEPA 308 request also required the Authority and the City to continue implementing the Nine Minimum Controls to reduce combined sewer overflows, and to perform repairs and maintenance of deficiencies revealed by the assessment. The Authority maintains an expedited response to significant structural failures of the sewer system where imminent structural failures are determined by a professional engineer and prioritized for repair. Ongoing sewer line replacement, point repair, and trenchless rehabilitation projects have been implemented to address structural deficiencies. The USEPA 308 request also required the submission of information on an ongoing, rolling basis, updating the progress of the evaluations and improvements, as well as water quality impacts. These reports are submitted monthly.

The Authority has begun negotiations with EPA, the U.S. Department of Justice (DOJ), and DEP over the terms of a consent decree (CD) that will address the control of sanitary and combined sewer overflows within the City of Pittsburgh. Such a decree will likely set out an enforceable framework for bringing the Authority's sanitary and combined sewer systems into compliance with applicable requirements of the federal Clean Water Act and Pennsylvania Clean Streams Law.

Given the broad scope of a potential CD, the size of the sewer system in the City, and the various conditions and/or deficiencies that may be discovered by the assessment, it is difficult to predict the total cost of compliance with the CD. Moreover, it is difficult to predict what, if any, largescale and/or regional capital improvements may be required after the completion of the assessment to address wet weather sewer overflows in the City and in the ALCOSAN service area. Costs associated with CD and COA compliance will be reflected in the capital improvement program and funded by proceeds of potential future bond issuances.

SUPPLEMENTARY INFORMATION

PITTSBURGH WATER AND SEWER AUTHORITY

COMBINING STATEMENT OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 2021

	Water	Sewer	Sewer Treatment	Total
Assets				
Current assets	$ 71,533	$ 35,232	$ -	$ 106,765
Noncurrent assets	697,641	343,614	-	1,041,255
Total Assets	769,174	378,846	-	1,148,020
Deferred Outflows of Resources				
Deferred charge on refunding	56,711	27,933	-	84,644
Accumulated decrease in fair value of hedging derivatives	14,382	7,083	-	21,465
Total Deferred Outflows of Resources	71,093	35,016	-	106,109
Liabilities				
Current liabilities	63,279	31,168	-	94,447
Noncurrent liabilities	810,534	310,641	12,979	1,134,154
Total Liabilities	873,813	341,809	12,979	1,228,601
Net Position				
Net investment in capital assets	(3,870)	(1,906)	-	(5,776)
Restricted	13,042	6,424	-	19,466
Unrestricted	(42,718)	67,535	(12,979)	11,838
Total Net Position	$ (33,546)	$ 72,053	$ (12,979)	$ 25,528

PITTSBURGH WATER AND SEWER AUTHORITY

COMBINING STATEMENT OF REVENUES, EXPENSES, AND
CHANGES IN NET POSITION

(Dollars expressed in thousands)

YEAR ENDED DECEMBER 31, 2021

	Water	Sewer	Sewer Treatment	Total
Operating Revenues	$ 123,178	$ 69,169	$ 76,774	$ 269,121
Operating Expenses:				
Direct operating expenses	66,437	32,723	-	99,160
Wastewater treatment	-	-	76,802	76,802
Reimbursement for City of Pittsburgh indirect services	3,818	-	-	3,818
Expense of water provided by other entities	120	-	-	120
Depreciation	16,339	8,047	-	24,386
Total operating expenses	86,714	40,770	76,802	204,286
Operating Income (Loss)	36,464	28,399	(28)	64,835
Non-operating Revenues (Expenses):				
Federal and private grants	902	445	-	1,347
Interest revenue	16	8	-	24
Interest and amortization	(26,419)	(13,012)	-	(39,431)
Total non-operating revenues (expenses)	(25,501)	(12,559)	-	(38,060)
Net Income (Loss) before Capital Contribution and Special Iten	10,963	15,840	(28)	26,775
Capital Contribution:				
Donated property	380	187	-	567
Special Item:				
Private lead line replacement	(3,088)	-	-	(3,088)
Net Income (Loss)	8,255	16,027	(28)	24,254
Net Position:				
Beginning of year	(41,801)	56,026	(12,951)	1,274
End of year	$ (33,546)	$ 72,053	$ (12,979)	$ 25,528

PITTSBURGH WATER AND SEWER AUTHORITY

SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS

YEAR ENDED DECEMBER 31, 2021

Federal Grantor/Pass-Through Grantor/Program Title	Federal ALN	Pass through Grantor's Number	Cash Receipts	Expenditures	Amounts Provided to Subrecipients
United States Environmental Protection Agency:					
Passed through the Pennsylvania Department of Environmental Protection:					
Clean Water State Revolving Fund Cluster:					
Capitalization Grants for Clean Water State Revolving Funds	66.458	75373	$ 2,162,289	$ 2,694,877	$ -
Drinking Water State Revolving Fund Cluster:					
Capitalization Grants for Drinking Water State Revolving Funds	66.468	85175	41,231,206	34,666,191	-
Total Expenditures of Federal Awards			$ 43,393,495	$ 37,361,068	$ -

See accompanying notes to schedule of expenditures of federal awards.

1. Basis of Presentation

The accompanying schedule of expenditures of federal awards (schedule) of the Pittsburgh Water and Sewer Authority (Authority) is presented on the accrual basis of accounting. The information in this schedule is presented in accordance with the requirements of Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Because the schedule presents only a selected portion of the operations of the Authority, it is not intended to and does not present the net position, changes in net position, or cash flows of the Authority.

2. Summary of Significant Accounting Policies

Expenditures reported on the schedule are reported on the accrual basis of accounting. Such expenditures are recognized following the cost principles contained in the Uniform Guidance, wherein certain types of expenditures are not allowable or are limited as to reimbursement. The Authority has elected to not use the 10-percent de minimis indirect cost rate allowed under the Uniform Guidance.

3. Determination of Federal Expenditures

The amount of federal expenditures for the United States Environmental Protection Agency programs listed on the schedule represent the expenditures incurred under certain loans during the year ended December 31, 2021. The United States Environmental Protection Agency requires that the current year expenditures incurred under the loans be reported on the schedule rather than the beginning balance of the loans.

Pittsburgh Water and Sewer Authority

Independent Auditor's Reports
Required by the Uniform Guidance

Year Ended December 31, 2021

Independent Auditor's Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

Board of Directors
Pittsburgh Water and Sewer Authority

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the business-type activities of Pittsburgh Water and Sewer Authority (Authority), a component unit of the City of Pittsburgh (City), Pennsylvania, as of and for the year ended December 31, 2021, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements, and have issued our report thereon dated April 20, 2022.

Report on Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Authority's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, we do not express an opinion on the effectiveness of the Authority's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses or significant deficiencies may exist that have not been identified.

Report on Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Authority's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Maher Duessel

Pittsburgh, Pennsylvania
April 20, 2022

Independent Auditor's Report on Compliance for Each Major Program and on Internal Control over Compliance Required by the Uniform Guidance

Board of Directors
Pittsburgh Water and Sewer Authority

Report on Compliance for Each Major Federal Program

Opinion on Each Major Federal Program

We have audited the Pittsburgh Water and Sewer Authority's (Authority), a component unit of the City of Pittsburgh (City), Pennsylvania, compliance with the types of compliance requirements identified as subject to audit in the OMB Compliance Supplement that could have a direct and material effect on each of the Authority's major federal programs for the year ended December 31, 2021. The Authority's major federal programs are identified in the summary of auditor's results section of the accompanying schedule of findings and questioned costs.

In our opinion, the Authority complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on each of its major federal programs for the year ended December 31, 2021.

Basis for Opinion on Each Major Federal Program

We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the audit requirements of Title 2 U.S. *Code of Federal Regulations Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Our responsibilities under those standards and the Uniform Guidance are further described in the Auditor's Responsibilities for the Audit of Compliance section of our report.

We are required to be independent of the Authority and to meet our other ethical responsibilities, in accordance with relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion on compliance for each major federal program. Our audit does not provide a legal determination of the Authority's compliance with the compliance requirements referred to above.

Responsibilities of Management for Compliance

Management is responsible for compliance with the requirements referred to above and for the design, implementation, and maintenance of effective internal control over compliance with the requirements of laws, statutes, regulations, rules, and provisions of contracts or grant agreements applicable to the Authority's federal programs.

Auditor's Responsibilities for the Audit of Compliance

Our objectives are to obtain reasonable assurance about whether material noncompliance with the compliance requirements referred to above occurred, whether due to fraud or error, and express an opinion on the Authority's compliance based on our audit. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with generally accepted auditing standards, *Government Auditing Standards*, and the Uniform Guidance will always detect material noncompliance when it exists. The risk of not detecting material noncompliance resulting from fraud is higher than for that resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Noncompliance with the compliance requirements referred to above is considered material if there is a substantial likelihood that, individually or in the aggregate, it would influence the judgment made by a reasonable user of the report on compliance about the Authority's compliance with the requirements of each major federal program as a whole.

In performing an audit in accordance with generally accepted auditing standards, *Government Auditing Standards*, and the Uniform Guidance, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material noncompliance, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the Authority's compliance with the compliance requirements referred to above and performing such other procedures as we considered necessary in the circumstances.
- Obtain an understanding of the Authority's internal control over compliance relevant to the audit in order to design audit procedures that are appropriate in the circumstances and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control over compliance. Accordingly, no such opinion is expressed.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and any significant deficiencies and material weaknesses in internal control over compliance that we identified during the audit.

Report on Internal Control over Compliance

A *deficiency in internal control over compliance* exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis. A *material weakness in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis. A *significant deficiency in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over compliance was for the limited purpose described in the Auditor's Responsibilities for the Audit of Compliance section above and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies in internal control over compliance. Given these limitations, during our audit we did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses, as defined above. However, material weaknesses or significant deficiencies in internal control over compliance may exist that were not identified.

Our audit was not designed for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, no such opinion is expressed.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance. Accordingly, this report is not suitable for any other purpose.

Maher Duessel

Pittsburgh, Pennsylvania
April 20, 2022

PITTSBURGH WATER AND SEWER AUTHORITY

SCHEDULE OF FINDINGS AND QUESTIONED COSTS

YEAR ENDED DECEMBER 31, 2021

I. Summary of Audit Results

1. Type of auditor's report issued: Unmodified, prepared in accordance with Generally Accepted Accounting Principles

2. Internal control over financial reporting:

   Material weakness(es) identified? ☐ yes ☒ no
   Significant deficiencies identified that are not considered to be material weakness(es)?
   ☐ yes ☒ none reported

3. Noncompliance material to financial statements noted? ☐ yes ☒ no

4. Internal control over major programs:

   Material weakness(es) identified? ☐ yes ☒ no
   Significant deficiencies identified that are not considered to be material weakness(es)?
   ☐ yes ☒ none reported

5. Type of auditor's report issued on compliance for major programs: Unmodified

6. Any audit findings disclosed that are required to be reported in accordance with 2 CFR Section 200.516(a)? ☐ yes ☒ no

7. Major Programs:

Assistance Listing Number(s)	Name of Federal Program or Cluster
66.458	CWSRF Cluster: Capitalization Grants for Clean Water State Revolving Funds
66.468	DWSRF Cluster: Capitalization Grants for Drinking Water State Revolving Funds

8. Dollar threshold used to distinguish between type A and type B programs: $1,120,832

9. Auditee qualified as low-risk auditee? ☒ yes ☐ no

II. Findings related to the financial statements which are required to be reported in accordance with GAGAS.

No matters were reported.

III. Findings and questioned costs for federal awards

No matters were reported.

PITTSBURGH WATER AND SEWER AUTHORITY

SUMMARY SCHEDULE OF PRIOR AUDIT FINDINGS

YEAR ENDED DECEMBER 31, 2021

NO FINDINGS NOTED