

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

VOLUME I
(PART 2 OF 2)

RESPONSES TO FILING REQUIREMENTS

PITTSBURGH WATER & SEWER AUTHORITY
INITIAL TARIFF FILINGS AND RATE REQUESTS

DOCKET Nos. R-2018-3002645 and R-2018-3002647

JULY 2018

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.12. Submit details on company or parent common stock offerings for the past 5 years to present, as follows:

- a. Date of prospectus.
- b. Date of offering.
- c. Record date.
- d. Offering period including dates and number of days.
- e. Amount and number of shares of offering.
- f. Offering ratio, if rights offering.
- g. Percent subscribed.
- h. Offering price.
- i. Gross proceeds per share.
- j. Expenses per share.
- k. Net proceeds per share in (12.) i and j.
- l. Market price per share.
 - (1) At record date.
 - (2) At offering date.
 - (3) One month after close of offering.
- m. Average market price during offering.
 - (1) Price per share.
 - (2) Rights per share-average value of rights.
- n. Latest reported earnings per share at time of offering.
- o. Latest reported dividends at time of offering.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

RESPONSE:

Not applicable.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.13. Attach a chart explaining company's corporate relationship to its affiliates showing system structure.

RESPONSE:

Not applicable.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.14. If the utility plans to make a formal claim for a specified allowable rate of return, provide the following data in statement or exhibit form:

- a. Claimed capitalization and capitalization ratios with supporting data.
- b. Claimed cost of long-term debt with supporting data.
- c. Claimed cost of short-term debt with supporting data.
- d. Claimed cost of total debt with supporting data.
- e. Claimed cost of preferred stock with supporting data.
- f. Claimed cost of common equity with supporting data.

RESPONSE:

Not applicable.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.15. Supply copies of the following documents for the company and, if applicable, its parent:

- a. Most recent annual report to shareholders including any statistical supplements.
- b. Most recent SEC form 10K.
- c. All SEC form 10Q reports issued within the preceding 12 months of the date of submittal of the rate increase request.

RESPONSE:

The following document is attached:

- Financial Statements and Required Supplementary and Supplementary Information:
Years Ended December 31, 2017 and 2016 with Independent Auditor's Report

**Pittsburgh Water and
Sewer Authority**

**Financial Statements
and Required Supplementary
and Supplementary Information**

**Years Ended December 31, 2017 and 2016
with Independent Auditor's Report**

MaherDuessel

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PITTSBURGH WATER AND SEWER AUTHORITY

FR-VII.15

YEARS ENDED DECEMBER 31, 2017 AND 2016

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Independent Auditor's Report

Board of Directors Pittsburgh Water and Sewer Authority

We have audited the accompanying financial statements 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, 2017 and 2016, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes 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.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements 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 entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Authority as of December 31, 2017 and 2016, 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.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis on pages i through x be presented to supplement the basic financial statements. Such information, 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 audit 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 an opinion on the financial statements that collectively comprise the Authority's basic financial statements. The combining statements of net position and revenue, expenses, and changes in net position (combining statements) are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The combining statements are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such 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 combining statements are fairly stated in all material respects, in relation to the basic financial statements as a whole.

Mahe Duessel

Pittsburgh, Pennsylvania
April 20, 2018

PITTSBURGH WATER AND SEWER AUTHORITY
2017 Financial Statements
Management's Discussion and Analysis

The Pittsburgh Water and Sewer Authority (Authority) comparative 2017 and 2016 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 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 2017 and 2016

In 2017, operating income decreased by 7.9% or \$2.5 million to \$29.6 million. The Authority experienced an overall net loss of \$6.3 million due to increases in operating expenses and in non-operating expenses, down from a \$1.8 million net loss in 2016.

Below are the 2017 financial highlights:

Total operating revenues in 2017 were up \$22.3 million or 12.3% to \$203.0 million when compared to 2016. Wastewater treatment revenues increased by \$6.8 million. Water and sewer conveyance revenues increased \$14.7 million from 2016. Both of these increases are attributable to rate increases by the Authority and ALCOSAN. Other operating income increased by \$0.8 million from 2016, attributable to the sum of various miscellaneous payments.

Total non-operating revenues (expenses) increased by \$2.0 million from 2016, largely impacted by \$3.9 million in bond issuance costs offset by a \$2.0 million decrease in interest and amortization, from \$36.9 million in 2016 to \$34.9 million in 2017.

Total operating expenses increased in 2017 to \$173.4 million compared to \$148.6 million in 2016. Significant operating expenses included the following factors:

- Salary and employee benefit expenses were up \$0.7 million or 3.6%. The increase is attributed to an average salary rate increase of 2%, and increased employee headcount in 2017.

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 new four-year agreement with AFSCME became effective January 1, 2017 and will expire December 31, 2020. A new four-year agreement with the PJCBC became effective January 1, 2017 and expires December 31, 2020.

- Overall direct operating expenses, excluding salaries and benefits, increased by \$15.9 million or 19.4% to \$97.9 million in 2017 from \$82.0 million in 2016. Operating contracts increased by \$13.9 million; the bulk of this increase is attributable to the wastewater treatment expense, which increased by \$13.0 million or 20.9% to \$75.1 million when compared to \$62.1 million in 2016, due to a combination of ALCOSAN's rate increase and timing. Other significant changes in operating contracts include temporary help decreasing by \$1.3 million, to \$1.2 million in 2017 compared to \$2.5 million in 2016 (increased temporary employees were required to support billing issues that arose in 2015), water and sewer repairs and maintenance increased by \$2.1 million in total, due to an overall increase in line repair. Chemicals expenses decreased by \$0.04 million from 2016. Equipment expenses decreased from 2016 by \$0.8 million, to \$0.4 million in 2017. Repairs and maintenance increased by \$1.4 million from 2016, the main driver being surface restoration costs. Testing increased by \$0.8 million from 2016 due to increased lead testing.
- Overall general and administrative expenses increased 29.0% or \$3.9 million, to \$24.8 million in 2017 from \$20.9 million in 2016. Fees increased by \$0.2 million from 2016, largely driven by increased credit card fee. Freight and postage increased by \$0.1 million from 2016. Lease and rents increased by \$0.7 million from 2016 due to increased heavy equipment rental. Professional services increased overall by \$1.4 million; contributing factors include a \$0.4 million increase in consultant costs, a \$0.4 million increase in legal costs, and various smaller increases in other categories. Utility expense increased by \$0.1 million from 2016. Miscellaneous administrative costs increased by \$3.6 million from the previous year, the biggest factor being a \$3.4 million increase to bad debt reserve after a conservative review of customer accounts.
- Overall other expenses decreased 3.9% or \$2.5 million to \$60.3 million in 2017 from \$62.8 million in 2016. Non-city water subsidy to Pennsylvania American Water Company (PAWC) increased by 183% or \$3.6 million to \$5.6 million in 2017 compared to \$2.0 million in 2016. Interest expense decreased 10.2% or \$3.8 million to \$33.2 million in 2017 compared to \$37.0 million in 2016. Interest on long-term debt decreased by \$4.5 million from 2016, attributable to bond refunding activity which was slightly offset by smaller increases in counter-party payments, liquidity, and remarketing fees, Pennvest interest, and revolver interest.
- In 2017, cash collections increased by \$15.8 million, with \$190.1 million collected from billings compared to \$174.3 million in 2016 due to rate increases by both the Authority and ALCOSAN.

Other 2017 highlights include:

- The Authority continued its relationship with Jordan Tax Service, Inc. (JTS) as its Collector and the law firm of Goehring, Rutter & Boehm, P.C. as Special Legal Counsel

for the collection of delinquent water, sewer, and sewage treatment charges. The agreement calls for a collection commission, plus other administrative and legal proceeding costs, to be added to all Authority delinquent claims not paid within 90 days of the initial billing date. If fully collected, the Authority stands to collect 100% of delinquent balances without incurring a collection agency fee. JTS collected for the Authority \$1.6 million during 2017.

- Debt service coverage was 1.29 in 2017 and 1.21 in 2016. These coverage factors exceed the 1.2 coverage ratio required under the bond indenture.
- The Authority expended \$32.0 million on capital projects in 2017, a decrease of \$0.3 million over the \$32.3 million expended in 2016. Of \$50.4 million budgeted in Pennvest loans, \$38.1 million was spent in prior years, \$0.2 million was spent in 2017, and \$10.75 million of approved funding remained available. The balance of capital expenditures in 2017 was funded by the revolving line of credit, which was put in place in July 2016.
- In July 2016, the Authority entered into a drawdown, revolving line of credit financing with JPMorgan Chase Bank N.A. The maximum amount that can be drawn and outstanding at any one time is \$80,000,000 and has an initial term of four years. The Authority will use funds borrowed under this vehicle to finance capital projects. As of December 31, 2017, the Authority has drawn \$43.8 million on this facility.
- In December of 2017, the Authority closed on three different revenue refunding bond series: \$159,795,000 Tax-Exempt Series A of 2017, \$5,595,000 Taxable Series B of 2017 and \$218,805,000 Tax-Exempt Series C of 2017. Series A and B of 2017 are fixed rate tax-exempt bonds that were issued to refund all of Series A of 2008 and Series D1 of 2008, as well as a portion of Series B of 1998, and a portion of Series B of 2013. Series C of 2017 are floating rate notes that were issued to refund Series B1 of 2008, Series B2 of 2008 and Series D2 of 2008, all variable-rate debt. In addition to providing savings to the Authority, these issuances resulted in the Authority achieving 67.32% total bondholder consent to the installation of a new, modernized indenture which sprung into effect on December 28, 2017. The new indenture establishes an improved rate covenant calculation applicable to the 2019 financials, which will be viewed more favorably by rating agencies and credit providers. The modernized indenture and rate covenant will allow the Authority additional financing opportunities and a lower cost of capital, supporting a larger capital spending plan. The issuance of the Series A and B of 2017 bonds resulted in a \$5,534,870 NPV savings to the Authority and the issuance of the Series C of 2017 notes resulted in a \$7,858,340 NPV savings to the Authority.
- HB 1490 was passed into law in December 2017. HB 1490 establishes the Authority as a "Utility" as defined by the Public Utility Code, resulting in regulation of the Authority's rate making, its operating effectiveness, debt issuances, and other aspects of conducting its business similar to the way the PUC regulates investor-owned utilities. HB 1490 includes provisions that allow the Authority to impose, charge, or collect rates or charges as necessary to permit the Authority to comply with its covenants with the holders of any bonds or other financial obligations of the Authority, and prohibits the PUC from requiring the Authority to take any action that would cause the interest on the Authority's financial obligations to be includible in gross income of the holders of such obligations for federal income tax purposes. HB 1490 also requires the Authority to file a compliance plan related to information technology, accounting, billing, collections, and other operating systems and procedures as well as a long-term infrastructure improvement plan. The Authority is pursuing development of rate actions and performance compliance plans to meet the requirements of HB 1490.
- The City of Pittsburgh is the largest of the 83 municipalities that convey raw sewage to ALCOSAN for treatment. In January 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 Allegheny County Health Department, which executed the Order on April 21, 2004. The Long-Term Control Plan to address combined and sanitary sewer overflows required under the order was submitted on schedule on July 31, 2013. Due to the complexities of regional governance, the Authority's regulatory body was switched from the DEP to the US Environmental Protection Agency (EPA). On January 21, 2016, the EPA issued a Clean Water Act Section 308 Information Request (308 Request) to the Authority. We understand the nature of the request is to provide a jurisdictional basis for EPA to engage the Authority and the City of Pittsburgh in an enforcement action by consent. We intend that through such an action, we can more fully participate in the implementation of interim regional wet weather activities, controls, and improvements. We further understand that such an action will also permit the Authority and the City of Pittsburgh to participate more fully in the identification and implementation of any final wet weather control measures for the region. We have fulfilled the first portion of the 308 Request, which was due on March 31, 2016. The second phase of the 308 Request supplied a source reduction study, which was submitted December 1, 2016 and GI Demonstration projects must be constructed and performance evaluations completed by December 1, 2017. The demonstration project evaluations were submitted on time on December 1, 2017.

The 308 Request does not contain fines or penalties for past non-compliance, but does propose binding obligations for work on a going forward basis. The Authority continues to meet the requirements of the 308 Request. The Final Consent Order will be adjudicated between the City, the Authority, and the USEPA to establish the extent of improvements that will be required to be complete within a specified time frame. Based upon initial discussions with the regulators, the Authority anticipates that the final recommendations implementation plan will be modified to assure its affordability to the Authority's rate payers. See Note 13 – Consent Agreement for additional details.

Financial Highlights 2016 and 2015

In 2016, operating income decreased by 24.3% or \$10.3 million to \$32.1 million. The Authority experienced an overall net loss of \$1.8 million due to increases in operating expenses and decreases in non-operating revenues, down from a \$23.4 million net gain in 2015.

Below are the 2016 financial highlights:

Total operating revenues in 2016 were up \$6.6 million or 3.7% to \$180.7 million when compared to 2015. Wastewater treatment revenues increased \$2.2 million. Water and sewer conveyance revenues increased \$3.3 million from 2015. Both of these increases are attributable to rate increases by the Authority and ALCOSAN. Other operating income increased by \$1.1 million from 2015, as overall development in the City of Pittsburgh resulted in more tap fees and other permitting related items.

Total non-operating revenues (expenses) increased by \$14.8 million from 2015, mostly driven by the drop in donated property revenue from the previous year, which decreased by \$17.1 million from \$18.1 million in 2015 to \$1 million in 2016. Interest and amortization cost in 2016 stayed consistent with 2015, at \$36.9 million.

Total operating expenses increased in 2016 to \$148.6 million compared to \$131.7 million in 2015. Significant operating expenses included the following factors:

- Salary and employee benefit expenses were up \$0.3 million or 1.3%. The increase is attributed to an average salary rate increase of 3%, offset by a lower overall employee headcount in 2016.

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. The AFSCME and PJCBC agreements expired on December 31, 2016. The Authority continues to operate

under the terms of those agreements. Negotiations are ongoing and no agreement has been reached as of March 16, 2017.

- Overall direct operating expenses, excluding salaries and benefits, increased by \$9.2 million or 12.6% to \$82.0 million in 2016 from \$72.8 million in 2015. Operating contracts increased by \$8.6 million, this difference was driven by three items. Firstly, because of the wastewater treatment expense, which increased by \$2.2 million or 3.6% to \$62.1 million when compared to \$60.0 million in 2015, due to a combination of ALCOSAN's rate increase and the timing of credit meter adjustments. Secondly, temporary help increased by \$2.2 million, to \$2.5 million in 2016 compared to \$0.3 million in 2015. Increased temporary employees were required to support billing issues that arose in 2015. Lastly, water and sewer repairs increased by \$3.9 million in total, due to a more conservative approach to capitalization. Chemicals expense increased by \$0.7 million from 2016. Equipment expenses remained consistent with 2015, at just under \$0.5 million each year. Repairs and maintenance decreased by \$0.5 million from 2015. Overall Inventory increased by \$0.2 million from 2015.
- Overall general and administrative expenses increased 41.2% or \$6.1 million, to \$20.9 million in 2016 from \$14.8 million in 2015. Professional services increased overall by \$3.3 million; this is due to a \$5.6 million increase in non-capital engineering services, offset by a \$2.7 million decrease in consultant costs. The non-capital engineering services increase is attributable to a more conservative approach to capitalization. The decrease in consulting costs is attributable to Veolia no longer managing the Authority in 2016. Utility expense decreased by \$0.3 million from 2015. Miscellaneous administrative costs increased by \$2.8 million from the previous year, the biggest factor being a \$1.1 million increase to bad debt reserve after a full review of customer accounts.
- Overall other expenses increased 3.6% or \$2.2 million to \$62.8 million in 2016 from \$60.6 million in 2015. Non-city water subsidy to Pennsylvania American Water Company (PAWC) increased by 10.5% or \$0.2 million to \$2.0 million in 2016 compared to \$1.8 million in 2015. Interest expense increased 0.3% or \$0.1 million to \$37.0 million in 2016 compared to \$36.9 million in 2015. Interest on long-term debt decreased by \$0.5 million from 2015, which was mostly offset by smaller increases in counter-party payments, liquidity, and remarketing fees, Pennvest interest, and revolver interest.
- In 2016, cash collections increased by \$9.4 million, with \$174.3 million collected from billings compared to \$164.9 million in 2015 due to rate increases by both the Authority and ALCOSAN, in addition to the collection percentage increasing from 2015, when billing issues were impacting collections.

Other 2016 highlights include:

- The Authority continued its relationship with Jordan Tax Service, Inc. (JTS) as its Collector and the law firm of Goehring, Rutter & Boehm, P.C. as Special Legal Counsel for the collection of delinquent water, sewer, and sewage treatment charges. The agreement calls for a collection commission, plus other administrative and legal proceeding costs, to be added to all Authority delinquent claims not paid within 90 days of the initial billing date. If fully collected, the Authority stands to collect 100% of delinquent balances without incurring a collection agency fee. JTS collected for the Authority \$1.1 million during 2016.
- In January of 2010, the Authority began assessing a 5% Distribution Infrastructure System Charge (DISC) on all bills, increasing to 7% in 2011. This charge is applied to the water and sewer conveyance components of the invoice and is dedicated to system improvements and capital needs. 2016 DISC revenues were \$7.1 million. The \$5.6 million in DISC expenditures for 2016 included water and sewer relays, catch basin replacement, and manhole, catch basin, and sewer line point repair.

Debt service coverage was 1.45 in 2016 and 1.43 in 2015. These coverage factors exceed the 1.2 coverage ratio required under the bond indenture.

- The Authority expended \$32.3 million on capital projects in 2016, a decrease of \$11.8 million over the \$44.1 million expended in 2015. Of \$50.4 million budgeted in Pennvest loans, \$38.1 million was spent in prior years, \$1.6 million was spent in 2016, and \$10.7 million of approved funding remained available. The Authority increased its capital project proceeds with the \$75 million 2013 bond issue, spending \$41.5 million in 2015 and \$21.4 million in 2016, depleting the fund. In anticipation of this depletion, the Authority reviewed the projects funded by bond proceeds to ensure that capital funds were used appropriately. The balance of capital expenditures in 2016 was funded by the revolving line of credit, which was put in place in July 2016.
- In July, the Authority entered into a drawdown, revolving line of credit financing with JPMorgan Chase Bank N.A. The maximum amount that can be drawn and outstanding at any one time is \$80,000,000 and has an initial term of four years. The Authority will use funds borrowed under this vehicle to finance capital projects. As of December 31, 2016, the Authority has drawn \$11.8 million on this facility.
- The series 2008B2 bonds were remarketed in October to terminate the expiring letter of credit provided by Royal Bank of Canada, replacing it with a letter of credit provided by PNC Bank N.A. There were not any changes to the swaps at that time.
- It has been reported that the City of Pittsburgh has issued a request for proposals to identify an advisory team to manage evaluations of a possible restructuring of the Authority. It is unknown what the outcome of these evaluations will be.
- The City of Pittsburgh is the largest of the 83 municipalities that convey raw sewage to ALCOSAN for treatment. In January 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 Allegheny County Health Department, which executed the Order on April 21, 2004. The Long-Term Control Plan to address combined and sanitary sewer overflows required under the order was submitted on schedule on July 31, 2013. Due to the complexities of regional governance, the Authority's regulatory body was switched from the DEP to the US Environmental Protection Agency (EPA). On January 21, 2016, the EPA issued a Clean Water Act Section 308 Information Request (308 Request) to the Authority. We understand the nature of the 308 Request is to provide a jurisdictional basis for EPA to engage the Authority and the City of Pittsburgh in an enforcement action by consent. We intend that through such an action, we can more fully participate in the implementation of interim regional wet weather activities, controls, and improvements. We further understand that such an action will also permit the Authority and the City of Pittsburgh to participate more fully in the identification and implementation of any final wet weather control measures for the region. We have fulfilled the first portion of the 308 Request, which was due on March 31, 2016. The second phase of the 308 Request supplied a source reduction study, which was submitted December 1, 2016 and GI Demonstration projects must be constructed and performance evaluations completed by December 1, 2017.

The 308 Request does not contain fines or penalties for past non-compliance, but does propose binding obligations for work on a going forward basis. The Authority continues to meet the requirements of the 308 Request. The Final Consent Order will be adjudicated between the City, the Authority, and the USEPA to establish the extent of improvements that will be required to be complete within a specified time frame. Based upon initial discussions with the regulators, the Authority anticipates that the final recommendations implementation plan will be modified to assure its affordability to the Authority's rate payers. See Note 13 – Consent Agreement for additional details.

CONDENSED FINANCIAL STATEMENTS
CONDENSED STATEMENTS OF NET POSITION
(Dollars expressed in thousands)

	December 31,		Variance	
	2017	2016	Dollars	%
Capital assets:				
Producing assets	\$ 589,567	\$ 587,937	\$ 1,630	0.28%
Construction in progress	100,240	88,861	11,379	12.81%
Restricted assets	29,948	26,337	3,611	13.71%
Current assets	46,417	51,537	(5,120)	-9.93%
Total Assets	766,172	754,672	11,500	1.52%
Deferred Outflows of Resources	113,605	95,905	17,700	18.46%
Liabilities:				
Current liabilities	62,962	67,285	(4,323)	-6.42%
Long-term liabilities	860,651	820,815	39,836	4.85%
Total Liabilities	923,613	888,100	35,513	4.00%
Net Position:				
Net investment in capital assets	(29,609)	(5,395)	(24,214)	448.82%
Restricted	13,240	9,999	3,241	32.41%
Unrestricted	(27,467)	(42,127)	14,660	-34.80%
Total Net Position	\$ (43,836)	\$ (37,523)	\$ (6,313)	16.82%

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

	Year Ended December 31,		Variance	
	2017	2016	Dollars	%
	Increase (Decrease)			
Operating revenues	\$ 202,996	\$ 180,727	\$ 22,269	12.32%
Operating expenses:				
Direct operating	71,156	60,687	10,469	17.25%
Wastewater treatment	75,107	62,125	12,982	20.90%
Cooperation agreement	5,363	7,150	(1,787)	-24.99%
Subsidy of non-customer City residents	5,594	1,974	3,620	183.38%
Depreciation	16,172	16,657	(485)	-2.91%
Total Operating Expenses	173,392	148,593	24,799	16.69%
Operating income	29,604	32,134	(2,530)	-7.87%
Non-operating revenues (expenses):				
Donated property	1,595	981	614	62.59%
Interest revenue	460	383	77	20.10%
Interest expense and other	(37,972)	(35,276)	(2,696)	7.64%
Total Non-operating Revenues (Expenses)	(35,917)	(33,912)	(2,005)	5.91%
Net Income/(Loss)	\$ (6,313)	\$ (1,778)	\$ (4,535)	255.06%

Financial Condition 2017 and 2016

The Authority's financial condition in 2017 remained stable for a fifteenth consecutive year. Water utility revenues increased to \$128.5 million from \$113.8 million. The rate increase effective January 2018 as implemented in 2017 should have a positive impact on utility revenue and unrestricted cash. Total cash and cash equivalents stood at \$11.1 million at year-end 2017. Investment interest rates remain historically low, impacting return on reserves invested.

CONDENSED FINANCIAL STATEMENTS

CONDENSED STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

	December 31,		Variance	
	2016	2015	Dollars	%
Capital assets:				
Producing assets	\$ 587,937	\$ 583,344	\$ 4,593	0.79%
Construction in progress	88,861	70,204	18,657	26.58%
Restricted assets	26,337	44,734	(18,397)	-41.13%
Current assets	51,537	61,866	(10,329)	-16.70%
Total Assets	754,672	760,148	(5,476)	-0.72%
Deferred Outflows of Resources	95,905	106,228	(10,323)	-9.72%
Liabilities:				
Current liabilities	67,285	63,912	3,373	5.28%
Long-term liabilities	820,815	838,209	(17,394)	-2.08%
Total Liabilities	888,100	902,121	(14,021)	-1.55%
Net Position:				
Net investment in capital assets	(5,395)	(25,097)	19,702	-78.50%
Restricted	9,999	9,134	865	9.47%
Unrestricted	(42,127)	(19,782)	(22,345)	112.96%
Total Net Position	\$ (37,523)	\$ (35,745)	\$ (1,778)	4.97%

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

	Year Ended December 31,		Variance	
	2016	2015	Dollars	%
			Increase (Decrease)	
Operating revenues	\$ 180,727	\$ 174,164	\$ 6,563	3.77%
Operating expenses:				
Direct operating	60,687	48,009	12,678	26.41%
Wastewater treatment	62,125	59,963	2,162	3.61%
Cooperation agreement	7,150	7,150	-	0.00%
Subsidy of non-customer City residents	1,974	1,786	188	10.53%
Depreciation	16,657	14,786	1,871	12.65%
Total Operating Expenses	148,593	131,694	16,899	12.83%
Operating income	32,134	42,470	(10,336)	-24.34%
Non-operating revenues (expenses):				
Donated property	981	18,129	(17,148)	-94.59%
Interest revenue	383	199	184	92.46%
Interest expense and other	(35,276)	(37,413)	2,137	-5.71%
Total Non-operating Revenues (Expenses)	(33,912)	(19,085)	(14,827)	77.69%
Net Income/(Loss)	\$ (1,778)	\$ 23,385	\$ (25,163)	-107.60%

Financial Condition 2016 and 2015

The Authority's financial condition in 2016 remained stable for a fourteenth consecutive year. Water utility revenues increased to \$113.8 million from \$110.5 million. The rate increase effective January 2017 as implemented in 2016 should have a positive impact on utility revenue and unrestricted cash. Total cash and cash equivalents stood at \$21.6 million at year-end 2016. Investment interest rates remain historically low, impacting 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 Executive Director, Penn Liberty Plaza I, 1200 Penn Ave., Pittsburgh, PA 15222.

PITTSBURGH WATER AND SEWER AUTHORITY

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STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 2017 AND 2016

Assets	2017	2016
Current assets:		
Cash and cash equivalents	\$ 11,076	\$ 21,620
Accounts receivable, net:		
Water:		
Billed	9,335	6,388
Unbilled	6,760	5,886
Total water	16,095	12,274
Wastewater treatment:		
Billed	9,975	10,844
Unbilled	3,746	3,719
Total wastewater treatment	13,721	14,563
Other receivables	1,074	797
Total accounts receivable, net	30,890	27,634
Prepaid expenses	674	65
Inventory	3,777	2,218
Total current assets	46,417	51,537
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents	18,264	11,900
Investments	11,684	14,437
Total restricted assets	29,948	26,337
Capital assets, not being depreciated	100,240	88,861
Capital assets, net of accumulated depreciation	589,567	587,937
Total noncurrent assets	719,755	703,135
Total Assets	766,172	754,672
Deferred Outflows of Resources		
Deferred charge on refunding	110,326	25,008
Accumulated decrease in fair value of hedging derivatives	3,279	70,897
Total Deferred Outflows of Resources	113,605	95,905

(Continued)

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

PITTSBURGH WATER AND SEWER AUTHORITY

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STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 2017 AND 2016

(Continued)

	2017	2016
Liabilities		
<hr/>		
Current liabilities:		
Bonds and loans payable	24,603	22,492
Accrued payroll and related obligations	1,217	924
Accounts payable wastewater treatment	17,863	15,283
Accounts payable and other accrued expenses	15,506	17,936
Accrued interest payable from restricted assets	3,773	10,650
	62,962	67,285
Noncurrent liabilities:		
Unearned revenue	164	185
Accrued payroll and related obligations	594	575
Swap liability	18,319	86,772
Bonds and loans payable, net	841,574	733,283
	860,651	820,815
Total Liabilities	923,613	888,100
Net Position		
<hr/>		
Net investment in capital assets	(29,609)	(5,395)
Restricted	13,240	9,999
Unrestricted	(27,467)	(42,127)
Total Net Position	\$ (43,836)	\$ (37,523)

(Concluded)

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

PITTSBURGH WATER AND SEWER AUTHORITY

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STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

(Dollars expressed in thousands)

YEARS ENDED DECEMBER 31, 2017 AND 2016

	2017	2016
Operating Revenues:		
Residential, commercial, and industrial water sales	\$ 128,488	\$ 113,818
Wastewater treatment	68,935	62,125
Other	5,573	4,784
Total operating revenues	202,996	180,727
Operating Expenses:		
Direct operating expenses	71,156	60,687
Wastewater treatment	75,107	62,125
Cooperation agreement operating expenses:		
Indirect cost allocation - sewer conveyance	2,250	2,846
Indirect cost allocation - water	3,113	4,304
Expense of water provided by other entities:		
Subsidy of customers located in the City	5,594	1,974
Depreciation	16,172	16,657
Total operating expenses	173,392	148,593
Operating Income	29,604	32,134
Non-operating Revenues (Expenses):		
Donated property	1,595	981
Interest revenue	460	383
Investment income (loss) - change in fair value of swap	835	1,690
Interest and amortization	(34,913)	(36,966)
Bond issuance costs	(3,894)	-
Total non-operating revenues (expenses)	(35,917)	(33,912)
Net Income (Loss)	(6,313)	(1,778)
Net Position:		
Beginning of year	(37,523)	(35,745)
End of year	\$ (43,836)	\$ (37,523)

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

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STATEMENTS OF CASH FLOWS

(Dollars expressed in thousands)

YEARS ENDED DECEMBER 31, 2017 AND 2016

	2017	2016
Cash Flows From Operating Activities:		
Cash received from customers	\$ 195,504	\$ 183,336
Cash paid to suppliers and employees and customer refunds	(71,227)	(58,420)
Cash paid to City of Pittsburgh under the Cooperation Agreement	(5,363)	(7,150)
Cash paid to other water companies for subsidy of customers located in the City of Pittsburgh	(5,594)	(1,974)
Cash paid to ALCOSAN for wastewater treatment	(72,527)	(66,630)
Net cash provided by (used in) operating activities	<u>40,793</u>	<u>49,162</u>
Cash Flows From Investing Activities:		
Purchase of investment securities	(96,126)	(71,774)
Proceeds from sale and maturities of investment securities	93,117	70,952
Interest income	460	383
Net cash provided by (used in) investing activities	<u>(2,549)</u>	<u>(439)</u>
Cash Flows From Capital and Related Financing Activities:		
Purchase/construction of property, plant, and equipment	(27,586)	(34,982)
Proceeds from issuance of revenue bonds	407,569	-
Proceeds from revolving line of credit	32,000	11,800
Proceeds from Pennvest Loans	988	769
Payment to refunding bond escrow agent	(397,742)	-
Payment made for bond issuance costs	(3,894)	-
Principal payments on debt	(22,481)	(22,004)
Principal payments on capital lease	(424)	(410)
SWAP receipts	2,467	1,227
SWAP payments	(12,512)	(13,418)
Liquidity and remarketing fees	(1,456)	(1,438)
Interest paid on borrowings	(19,353)	(18,569)
Net cash provided by (used in) capital and related financing activities	<u>(42,424)</u>	<u>(77,025)</u>
Increase (Decrease) in Cash and Cash Equivalents	<u>(4,180)</u>	<u>(28,302)</u>
Cash and Cash Equivalents:		
Beginning of year	33,520	61,822
End of year	<u>\$ 29,340</u>	<u>\$ 33,520</u>
Consists of:		
Restricted cash and cash equivalents	\$ 18,264	\$ 11,900
Unrestricted cash and cash equivalents	11,076	21,620
	<u>\$ 29,340</u>	<u>\$ 33,520</u>
Reconciliation of Operating Income to Net Cash Provided by (Used in) Operating Activities:		
Operating income	\$ 29,604	\$ 32,134
Adjustments to reconcile operating income to net cash provided by (used in) operating activities		
Depreciation	16,172	16,657
Reserve for uncollectible amounts	(4,236)	855
Change in:		
Accounts receivable - water and wastewater	1,257	1,856
Other accounts receivable	(277)	(102)
Prepaid expenses	(609)	115
Inventory	(1,559)	956
Accounts payable wastewater treatment	2,580	(4,505)
Accounts payable and other accrued expenses	(2,430)	1,233
Accrued payroll and related obligations	312	(15)
Unearned revenue	(21)	(22)
Net cash provided by (used in) operating activities	<u>\$ 40,793</u>	<u>\$ 49,162</u>
Schedule of Non-cash Capital and Related Financing Activities		
Donated property	\$ 1,595	\$ 981

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

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NOTES TO FINANCIAL STATEMENTS

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

YEARS ENDED DECEMBER 31, 2017 AND 2016

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) appointed by the Mayor of the City 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 term of existence is through 2045. At inception, the City contributed \$5.3 million to the Authority in the form of customer accounts receivable.

The Authority has 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. The Authority is also authorized to issue bonds and notes payable solely from the Authority's revenues.

During 2017, it was announced that the Public Utility Commission (PUC) will begin oversight of PWSA on April 1, 2018.

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

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NOTES TO FINANCIAL STATEMENTS

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

YEARS ENDED DECEMBER 31, 2017 AND 2016

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.

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NOTES TO FINANCIAL STATEMENTS

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

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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.

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NOTES TO FINANCIAL STATEMENTS

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

YEARS ENDED DECEMBER 31, 2017 AND 2016

Remarketing, Liquidity, and Letter of Credit Fees

Associated with the Authority's variable rate bonds, the Authority pays various fees to periodically remarket the bonds and to third parties to provide liquidity in the event that the Authority is unable to remarket the variable rate bonds and needs to repurchase the bonds on a temporary basis until they can be later remarketed. These fees are generally paid quarterly and are calculated as a percentage of the outstanding par amount of the variable rate bonds.

Capital Assets

Capital assets owned by the Authority are recorded at cost including that portion of deferred interest that is ultimately capitalized. 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

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NOTES TO FINANCIAL STATEMENTS

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

YEARS ENDED DECEMBER 31, 2017 AND 2016

future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. The Authority's financial statements currently do not include that element.

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 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.

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, and liabilities 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 could differ from those estimates.

NOTES TO FINANCIAL STATEMENTS

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

YEARS ENDED DECEMBER 31, 2017 AND 2016

Adoption of Accounting Pronouncements

The requirements of the following GASB Statements were adopted for the Authority's 2017 financial statements. The adoption of these pronouncements did not have a significant impact to the Authority's financial statements.

GASB Statement No. 80, *"Blending Requirements for Certain Component Units – an amendment of GASB Statement No. 14,"* clarifies the financial statement presentation requirements for the blending of a component unit incorporated as a not-for-profit corporation in which the primary government is the sole corporate member.

GASB Statement No. 81, *"Irrevocable Split-Interest Agreements,"* improves accounting and financial reporting for irrevocable split-interest agreements by providing recognition and measurement guidance for situations in which a government is a beneficiary of the agreement.

Pending Pronouncements

GASB has issued statements that will become effective in future years including Statements Nos. 75 (OPEB Employer), 82 (Pension Issues), 83 (Certain Asset Retirement Obligations), 84 (Fiduciary Activities), 85 (Omnibus 2017), 86 (Certain Debt Extinguishment Issues), 87 (Leases), and 88 (Certain Disclosures Related to Debt). 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").

Cooperation Agreement

Under the terms of the Cooperation Agreement, City water department employees became employees of the Authority. As a result, the Authority assumed various personnel-related obligations from the City's water department. Other direct costs of the System's water operations are now generally paid directly by the Authority under the Cooperation Agreement, rather than paid by the City and reimbursed by the Authority. The City provides

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NOTES TO FINANCIAL STATEMENTS

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

YEARS ENDED DECEMBER 31, 2017 AND 2016

the Authority with various services in accordance with the Cooperation Agreement and the Authority reimburses the City for direct and indirect costs attributed by the City to the operation and maintenance of the System.

Under the Agreements, the Authority provides up to 600 million gallons of water annually for the City's use without charge. Also, the Authority assumes 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.

The Authority is currently in the process of renegotiating the Cooperation Agreement and, as such, has only made and recognized as expense three of the four quarterly payments to the City for 2017.

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

Employees of the Authority 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%. The Authority's 2017 and 2016 payroll covered by the Plan was approximately \$13,800 and \$13,400, respectively. Employee contributions for the years 2017 and 2016 amounted to \$543 and \$533, respectively.

The City's obligations relative to the Plan are determined in accordance with various Pennsylvania statutes. The extent of the Authority's participation in such obligations with respect to those former City employees whose membership continued upon becoming employees of the Authority is determined by the shared interpretation of the City and Authority of the intent of the Cooperation Agreement.

NOTES TO FINANCIAL STATEMENTS

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

YEARS ENDED DECEMBER 31, 2017 AND 2016

The 2017 Minimum Municipal Obligation calculated for the City's Plan indicated a 2017 normal cost of \$975 associated with Authority employees that participate in the City's Plan. The Authority estimates that the normal cost for 2017, together with other elements of expense for employee service during 2017, would not exceed the sum of the 2017 contributions made by the Authority and employees.

Uncertainty exists about the future obligation of the Authority and its employees to make contributions to the Plan. Such contributions are contingent upon the continuing eligibility of the Authority's employees to participate in the City's Plan. Eligibility for ongoing employee participation in the City's Plan could end if the Authority were to introduce another pension plan. At this time, the Authority and City have no definite plans to establish another pension plan for the Authority, other than an agreement in principle that the Authority should have its own plan in the future. Future obligations of the Authority to make contributions to the Plan may also be subject to other amendments of the existing arrangement agreed-upon by the Authority and the City.

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. A member who terminates employment after attaining fifteen service years, but has been a member since before January 1, 1975, can be vested 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

PITTSBURGH WATER AND SEWER AUTHORITY

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NOTES TO FINANCIAL STATEMENTS

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

YEARS ENDED DECEMBER 31, 2017 AND 2016

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.

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 Comprehensive Annual 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, 2017 and 2016, the reserve for uncollectible water accounts was approximately \$22.01 million and \$14.77 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, 2017 and 2016, the reserve for uncollectible wastewater accounts was approximately \$11.85 million and \$7.86 million, respectively.

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NOTES TO FINANCIAL STATEMENTS

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

YEARS ENDED DECEMBER 31, 2017 AND 2016

5. Capital Assets

Capital assets consisted of the following at December 31, 2017 and 2016:

	Balance at January 1, 2017	Additions	Reclassifications/ Transfers	Balance at December 31, 2017
Capital assets, not being depreciated:				
Construction in progress	\$ 88,861	\$ 29,181	\$ (17,802)	\$ 100,240
Capital assets, being depreciated:				
Utility assets	858,169	17,428	-	875,597
Non-utility assets	22,343	374	-	22,717
Total capital assets, being depreciated	880,512	17,802	-	898,314
Less accumulated depreciation	(292,575)	(16,172)	-	(308,747)
Total capital assets, being depreciated, net	587,937	1,630	-	589,567
Total capital assets	<u>\$ 676,798</u>	<u>\$ 30,811</u>	<u>\$ (17,802)</u>	<u>\$ 689,807</u>
	Balance at January 1, 2016	Additions	Reclassifications/ Transfers	Balance at December 31, 2016
Capital assets, not being depreciated:				
Construction in progress	\$ 70,204	\$ 39,907	\$ (21,250)	\$ 88,861
Capital assets, being depreciated:				
Utility assets	837,067	21,102	-	858,169
Non-utility assets	22,195	148	-	22,343
Total capital assets, being depreciated	859,262	21,250	-	880,512
Less accumulated depreciation	(275,918)	(16,657)	-	(292,575)
Total capital assets, being depreciated, net	583,344	4,593	-	587,937
Total capital assets	<u>\$ 653,548</u>	<u>\$ 44,500</u>	<u>\$ (21,250)</u>	<u>\$ 676,798</u>

During 2017 and 2016, the Authority received donated utility assets of \$1,595 and \$981, respectively, related to various development projects.

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NOTES TO FINANCIAL STATEMENTS

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

YEARS ENDED DECEMBER 31, 2017 AND 2016

6. Payroll and Related Obligations

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

	Balance at December 31, 2016	Change	Balance at December 31, 2017	Current Portion
Compensated absences	\$ 429	\$ 33	\$ 462	\$ 58
Workers' compensation	219	(19)	200	10
Payroll, withholdings, and taxes	851	298	1,149	1,149
	<u>\$ 1,499</u>	<u>\$ 312</u>	<u>\$ 1,811</u>	<u>\$ 1,217</u>

	Balance at December 31, 2015	Change	Balance at December 31, 2016	Current Portion
Compensated absences	\$ 544	\$ (115)	\$ 429	\$ 63
Workers' compensation	254	(35)	219	10
Payroll, withholdings, and taxes	716	135	851	851
	<u>\$ 1,514</u>	<u>\$ (15)</u>	<u>\$ 1,499</u>	<u>\$ 924</u>

7. 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

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have maturity values ranging from \$14.6 million to \$26.9 million 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 \$95.45 million.

The 1998B Bonds at December 31, 2017 and 2016 have carrying amounts of approximately \$53.9 million and \$86 million, respectively.

Series 2007

During March 2007, the Authority issued \$158,895 Series 2007 First Lien Water and Sewer Revenue Bonds ("2007 Bonds"): \$43,720 Series A of 2007 (fixed rate), \$57,585 Series B-1 of 2007 (variable rate demand), and \$57,590 Series B-2 of 2007 (variable rate demand). The purpose of this bond issue was to refund the Series 2002 and Series 2005 Bonds. The Series 2007 B-1 and B-2 were currently refunded during 2013.

The 2007 Series A Bonds were paid off during 2017. At December 31, 2016, the 2007 Series A Bonds had carrying amounts of approximately \$5.5 million.

Series 2008

During May 2008, the Authority issued \$93,635 Series 2008 Water and Sewer System First Lien Revenue Bonds ("2008 Fixed Rate Bonds"): \$68,970 Series A of 2008 (fixed rate, taxable) and \$24,665 Series D-1 of 2008 (fixed rate). The purpose of this bond issue was to advance refund portions of certain maturities of the Series 1993A and Series 2003 Bonds, to fund the costs of certain capital additions, to fund the premium for the Bond Insurance Policy securing payments on 2008 Fixed Rate Bonds, and to fund termination payments on certain interest rate swaps.

During June 2008, the Authority issued \$320,515 Series 2008 Water and Sewer System First Lien Revenue Bonds ("2008 Variable Rate Demand Bonds"): \$145,495 Series B of 2008 (variable rate demand), \$51,910 Series C-1 of 2008 (variable rate demand), \$51,885 Series C-2 of 2008 (variable rate demand), and \$71,225 Series D-2 of 2008 (variable rate demand). The purpose of this bond issue was to currently refund the Series 1998A and Series 1998C, to currently refund certain maturities of the Series 2007 B-1 and Series 2007 B-2 Bonds, to advance refund certain maturities of the Series 1998B Bonds, to fund approximately \$98 million of certain capital additions, to fund the premium for the Bond Insurance Policy

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securing payments on 2008 Variable Rate Demand Bonds, and to fund termination payments on certain interest rate swaps.

In connection with these advance refundings, portions of the proceeds of the 2008 Bonds were deposited into irrevocable trusts with an escrow agent to provide for certain debt service payments on the refunded bonds.

The maturity value of defeased 1998B compound interest bonds outstanding at December 31, 2017 and 2016 was \$19,800.

The 2008 Series C Bonds (2008 Variable Rate Bonds) as originally offered bear interest at a variable rate with interest payments due on the first business day of each month. Interest rates are reset weekly; the fluctuating rate per annum to be determined by the respective remarketing agents. The weekly rate is subject to a cap of 12% per annum.

As of September 1, 2015, the C-1-D bonds were converted to the LIBOR-based interest rate mode. At December 31, 2017 and 2016, the interest rate was 1.56% and 1.122%, respectively. Liquidity facilities provided by Bank of America Merrill Lynch on the 2008 C1-D Series bond were renewed as of November 3, 2014 and expire on September 1, 2018.

During September 2013, the 2008 Series C-1A, B and C bonds were converted and reoffered. The bonds were converted to index interest rate mode. The reoffered bonds are as follows: Series C1-A \$10,000,000; Series C1-B \$10,000,000; and Series C1-C \$5,000,000.

During November 2014, the 2008 Series C-1A, B, C, and C-2 were reissued and restructured to bear interest based upon 70% of one-month LIBOR. The fixed rate paid on the swaps by the Authority was amended from 3.998% to 3.50%. Liquidity facilities provided by Bank of America Merrill Lynch (C-1A, 1B, 1C) and JP Morgan Chase (C-2) were also renewed as of November 3, 2014 and expire on September 1, 2020 and November 3, 2018, respectively.

Variable Rate Bonds are subject to optional redemption, in whole or in part, on any date, at the option of the Authority. The 2008 Series C Bonds that mature on September 1 of 2035 are subject to mandatory sinking fund redemption.

The 2008 Series Bonds are subject to extraordinary redemption prior to maturity at the option of the Authority in the event of a condemnation, damage, or destruction of the water and sewer system.

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During 2017, the 2008 Series A, B, and D-2 Bonds were currently refunded, and the 2008 Series D-1 Bonds were advance refunded, with Series 2017 A, B, and C Bonds.

The 2008 Bonds at December 31, 2017 and 2016 have carrying amounts of approximately \$104 million and \$414 million, respectively.

Variable rate bonds require a liquidity facility and/or a letter of credit. The Authority is subject to the risk that the bank does not renew the credit facility and/or that the pricing changes throughout the life of the bonds. Additionally, the Authority purchased insurance as a credit enhancement on the variable rate bonds. Trading spreads on the bonds and the preservation of the liquidity facility may be largely linked to the credit quality of the insurance provider. Therefore, if there is an event that would adversely affect the investor's perception of the credit quality of the insurer, the Authority could be subject to paying higher credit spreads on the bonds and risk losing the liquidity facility.

In conjunction with the issuance of the 2008 Variable Rate Bonds, the Authority entered into various pay fixed/receive variable interest rate swaps to effectively change the Bonds' variable interest rates to synthetic fixed rates. These swap transactions are discussed in Note 8: Interest Rate Swaps.

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 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; \$86,695 Series B First Lien Revenue Bonds ("2013 Series B Bonds"), the proceeds of which are to fund certain water and sewer system capital improvement projects and reimburse the Authority for certain capital expenditures paid for by the Authority.

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.

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The 2013 Bonds at December 31, 2017 and 2016 have carrying amounts of approximately \$133 million and \$178 million, respectively.

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 refunding was completed to reduce the Authority's debt service payments over the next 15 years by approximately \$6,275 and to obtain an economic gain (difference between present values of old and new debt service payments) of \$5,311.

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 A and B Bonds at December 31, 2017 have carrying amounts of approximately \$160 million and \$5 million, respectively. The maturity value of defeased 2008-D1 bonds outstanding at December 31, 2017 was \$24,665.

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 refunding was completed to reduce the Authority's debt service payments over the next 23 years by approximately \$9,782 and to obtain an economic gain (difference between present values of old and new debt service payments) of \$7,852.

The 2017 C Bonds at December 31, 2017 have a carrying amount of approximately \$219 million.

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, 2017 and 2016 is as follows:

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	Balance at December 31, 2016	Additions	Amortization	Balance at December 31, 2017
Deferred charge on refunding	\$ 25,008	\$ 98,931	\$ 13,613	\$ 110,326

	Balance at December 31, 2015	Additions	Amortization	Balance at December 31, 2016
Deferred charge on refunding	\$ 27,728	\$ -	\$ 2,720	\$ 25,008

Revolving Line of Credit

In July 2016, the Authority obtained an \$80 million revolving line of credit to finance certain capital projects. The revolving line of credit is secured by the revenues of the Authority. The Authority has until July 1, 2020 to request revolving advances on the line of credit, at which time the Authority has the option to convert the unpaid principal amount of the outstanding revolving advances to a term loan advance. Each revolving advance bears interest at the LIBOR Index Rate, which ranged from 1.4958% to 2.04% and 1.3016% to 1.4958% for the years ended December 31, 2017 and 2016, respectively. At December 31, 2017 and 2016, the Authority had drawn \$43.8 million and \$11.8 million, respectively, in revolving advances.

State Loans

The Authority has several loans outstanding from PENNVEST for various capital projects and water and sewer improvement projects, with carrying amounts of approximately \$31 million and \$34 million at December 31, 2017 and 2016. Interest rates vary from 1.00% to 3.25%.

Capital Lease

During 2015, the Authority entered into a lease agreement as lessee for financing the acquisition of a utility assets valued at \$7,445. The utility assets have a ten-year estimated useful life. Depreciation on the utility assets began in 2016, with accumulated depreciation totaling \$1,489 and \$745 for the years ended December 31, 2017 and 2016, 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

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December 31, 2017 and 2016, the outstanding balance of the capital lease was \$6,331 and \$6,755, respectively.

Swap Borrowing

During November 2014, the Authority terminated the original 2008 Series 2008 C-1A, C-1B, C-1C, and C-2 swaps and reissued and restructured the swaps to bear interest based upon 70% of one-month LIBOR. At termination, those derivative instruments had an aggregate fair value of (\$9,471), which is considered a swap borrowing from the counterparty. The swap borrowing is being amortized over the remaining life of the bond. At December 31, 2017, the unamortized balance is \$8,038.

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. 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 bond. At December 31, 2017, the unamortized balance is \$70,393.

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Bonds, state loans payable, revolving line of credit, capital lease, and swap borrowing consisted of the following at December 31, 2017 and 2016:

	Balance at December 31, 2016	Additions	Accretion	Reductions	Balance at December 31, 2017
Bonds and loans payable:					
Revenue bonds:					
1998 Series B	\$ 85,513	\$ -	\$ 4,150	\$ (35,752)	\$ 53,911
2007 Series A	5,480	-	-	(5,480)	-
2008 Series A	68,970	-	-	(68,970)	-
2008 Series B-1	72,750	-	-	(72,750)	-
2008 Series B-2	72,745	-	-	(72,745)	-
2008 Series D-1	24,665	-	-	(24,665)	-
2008 Series D-2	71,225	-	-	(71,225)	-
2008 Series C-2	51,820	-	-	-	51,820
2008 Series C-1A	10,000	-	-	-	10,000
2008 Series C-1B	10,000	-	-	-	10,000
2008 Series C-1C	5,000	-	-	-	5,000
2008 Series C-1D	26,840	-	-	-	26,840
2013 Series A	95,285	-	-	(1,460)	93,825
2013 Series B	83,020	-	-	(44,260)	38,760
2017 Series A	-	159,795	-	-	159,795
2017 Series B	-	5,595	-	-	5,595
2017 Series C	-	218,805	-	-	218,805
	<u>683,313</u>	<u>384,195</u>	<u>4,150</u>	<u>(397,307)</u>	<u>674,351</u>
State loans (PENNVEST)	33,516	988	-	(3,316)	31,188
Revolving line of credit	11,800	32,000	-	-	43,800
Capital lease	6,755	-	-	(424)	6,331
Swap borrowing	8,479	70,869	-	(917)	78,431
	<u>743,863</u>	<u>488,052</u>	<u>4,150</u>	<u>(401,964)</u>	<u>834,101</u>
Unamortized bond (discount) premium	11,912	23,374	-	(3,210)	32,076
Total bonds and loans, net	<u>\$ 755,775</u>	<u>\$ 511,426</u>	<u>\$ 4,150</u>	<u>\$ (405,174)</u>	<u>\$ 866,177</u>

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	Balance at December 31, 2015	Additions	Accretion	Reductions	Balance at December 31, 2016
Bonds and loans payable:					
Revenue bonds:					
1998 Series B	\$ 81,136	\$ -	\$ 4,377	\$ -	\$ 85,513
2007 Series A	10,700	-	-	(5,220)	5,480
2008 Series A	68,970	-	-	-	68,970
2008 Series B-1	72,750	-	-	-	72,750
2008 Series B-2	72,745	-	-	-	72,745
2008 Series D-1	24,665	-	-	-	24,665
2008 Series D-2	71,225	-	-	-	71,225
2008 Series C-2	51,820	-	-	-	51,820
2008 Series C-1A	10,000	-	-	-	10,000
2008 Series C-1B	10,000	-	-	-	10,000
2008 Series C-1C	5,000	-	-	-	5,000
2008 Series C-1D	26,840	-	-	-	26,840
2013 Series A	106,905	-	-	(11,620)	95,285
2013 Series B	84,880	-	-	(1,860)	83,020
	<u>697,636</u>	<u>-</u>	<u>4,377</u>	<u>(18,700)</u>	<u>683,313</u>
State loans (PENNVEST)	36,051	769	-	(3,304)	33,516
Revolving line of credit	-	11,800	-	-	11,800
Capital lease	7,165	-	-	(410)	6,755
Swap borrowing	8,911	-	-	(432)	8,479
	<u>749,763</u>	<u>12,569</u>	<u>4,377</u>	<u>(22,846)</u>	<u>743,863</u>
Unamortized bond (discount) premium	13,523	23	-	(1,634)	11,912
Total bonds and loans, net	<u>\$ 763,286</u>	<u>\$ 12,592</u>	<u>\$ 4,377</u>	<u>\$ (24,480)</u>	<u>\$ 755,775</u>

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Debt service payments on the Revenue Bonds at December 31, 2017 are as follows:

	Revenue Bonds		Total
	Principal	Interest	
2018	\$ 21,225	\$ 24,977	\$ 46,202
2019	19,955	26,471	46,426
2020	21,005	25,507	46,512
2021	21,840	24,455	46,295
2022	22,890	23,358	46,248
2023-2027	113,114	119,903	233,017
2028-2032	99,915	134,911	234,826
2033-2037	187,020	49,052	236,072
2038-2040	132,621	10,743	143,364
	639,585	\$ 439,377	\$ 1,078,962
Accretion	34,766		
Total	\$ 674,351		

Debt service payments of the State Loans at December 31, 2017 are as follows:

	State Loans		Total
	Principal	Interest	
2018	\$ 3,378	\$ 579	\$ 3,957
2019	3,443	514	3,957
2020	3,509	447	3,956
2021	3,578	379	3,957
2022	3,607	309	3,916
2023-2027	9,959	832	10,791
2028-2032	3,680	132	3,812
2033	34	-	34
	\$ 31,188	\$ 3,192	\$ 34,380

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Repayment of the revolving line of credit will begin once the Authority has drawn all available advances from the line.

Minimum lease payments of the capital lease at December 31, 2017 are as follows:

	Capital Lease		Total
	Principal	Interest	
2018	\$ 438	\$ 208	\$ 646
2019	454	193	647
2020	469	178	647
2021	485	162	647
2022	502	145	647
2023-2027	2,784	451	3,235
2028-2029	1,199	41	1,240
	<u>\$ 6,331</u>	<u>\$ 1,378</u>	<u>\$ 7,709</u>

Amortization on the swap borrowing is as follows:

Year Ending December 31,	Principal	Interest
2018	\$ 3,195	\$ 1,891
2019	3,273	1,813
2020	3,353	1,733
2021	3,434	1,652
2022	3,518	1,568
2023-2027	18,920	6,510
2028-2032	21,078	4,090
2033-2037	18,074	1,563
2038-2040	3,586	110
	<u>\$ 78,431</u>	<u>\$ 20,930</u>

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Interest payments were calculated for the Variable Rate Bonds using the synthetic fixed rate interest rates as described in Note 8.

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

	<u>2017</u>	<u>2016</u>
Bond, loan and swap interest	\$ 27,243	\$ 29,262
Accretion	4,150	4,377
Amortization of deferred refunding loss, discounts and premiums	1,065	1,109
Liquidity and remarketing fees	1,483	1,406
Other	972	812
	<u>\$ 34,913</u>	<u>\$ 36,966</u>

In accordance with the provisions of the trust indentures for the 1998, 2007A, 2008, 2013, and 2017 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, 2017 and 2016 was:

	<u>2017</u>	<u>2016</u>
Capital project funds	\$ 1	\$ 1
Debt service and reserve funds	16,707	16,337
Operating reserve account	12,654	9,418
Other funds	586	581
	<u>\$ 29,948</u>	<u>\$ 26,337</u>

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. 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, 2017, the Authority was in compliance with these covenants.

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8. Interest Rate Swaps

Interest rate swaps disclosures (not in thousands) as of December 31, 2017 and 2016 are presented below.

Interest rate swaps at December 31, 2017:

Current Notional Amount	Effective Date	Maturity Date	Interest Rate Paid	Interest Rate Received	Counterparty Credit Rating	Underlying Bonds
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Hedging derivatives, Cash flow hedges, Receive variable - pay fixed, Interest rate swaps:

\$ 72,747,500	12/28/2017	09/01/2039	1.732%	70% 1mo LIBOR	A-	Series 2017 C *
41,464,000	11/03/2014	09/01/2035	2.000%	70% 1mo LIBOR	A-	Series 2008 C *
72,747,500	12/28/2017	09/01/2039	1.732%	70% 1mo LIBOR	A+	Series 2017 C *
71,225,000	12/28/2017	09/01/2040	1.735%	70% 1mo LIBOR	A+	Series 2017 C *

Investment derivatives, Receive variable - pay fixed, Interest rate swap:

62,196,000	11/03/2014	09/01/2035	3.500%	70% 1mo LIBOR	A+	Series 2008 C
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* - 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.

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Interest Rate Swap – Fair Value Information:

Notional Amount	12/31/2015 Fair Value *	Change in Fair Value	12/31/2016 Fair Value *	Change in Fair Value	Swap Termination Loss	12/31/2017 Fair Value *	Underlying Bonds
Hedging derivatives, Cash flow hedges, Receive variable - pay fixed, Interest rate swaps:							
\$ 72,747,500	\$ (24,805,143)	\$ 2,407,018	\$ (22,398,125)	\$ (586,521)	\$ (22,984,646)	\$ -	Series 2008 B-1
72,747,500	-	-	-	(484,501)	-	(484,501)	Series 2017 C
41,464,000	(2,562,866)	627,794	(1,935,072)	100,932	-	(1,834,140)	Series 2008 C
72,747,500	(24,805,143)	2,407,018	(22,398,125)	(435,294)	(22,833,419)	-	Series 2008 B-2
72,747,500	-	-	-	(484,501)	-	(484,501)	Series 2017 C
71,225,000	(26,326,835)	2,161,420	(24,165,415)	(885,464)	(25,050,879)	-	Series 2008 D
71,225,000	-	-	-	(475,904)	-	(475,904)	Series 2017 C
	(78,499,987)	7,603,250	(70,896,737)	(3,251,253)	(70,868,944)	(3,279,046)	
Investment derivatives, Receive variable - pay fixed, Interest rate swap:							
62,196,000	(17,565,351)	1,690,469	(15,874,882)	835,346	-	(15,039,536)	Series 2008 C
Total	\$ (96,065,338)	\$ 9,293,719	\$ (86,771,619)	\$ (2,415,907)	\$ (70,868,944)	\$ (18,318,582)	

* 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.

The aggregate change in fair value during the year for hedging derivatives is reported on the statement of net position as a deferred outflow and swap borrowing and the investment derivative is considered an ineffective hedging derivative, whereby the change in fair value will be reported as a change in fair value of swap on the statement of revenues, expenses and changes in net position. The swaps are valued using significant other observable inputs (Level 2 inputs).

Description of the Swaps

During fiscal year 2008, the Authority entered into five pay-fixed, receive-variable interest rate swap contracts. The 2008 C interest rate swaps were effective June 12, 2008. Beginning September 1, 2008, the Authority began to make semi-annual interest payments on the 1st of each March and September through September 1, 2035 (two swaps); 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

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began July 1, 2008 through September 1, 2035 for two of the swaps; September 1, 2039 for two of the swaps; and September 1, 2040 for one swap.

The intention of the 2008 swaps was to effectively change the Authority's variable interest rate on the \$145,495 Water and Sewer System (Variable Rate Demand) First Lien Revenue Refunding Bonds Series B of 2008, on the \$71,225 Water and Sewer System (Variable Rate Demand) First Lien Revenue Bonds Series D-2 of 2008, and on the \$103,795 Water and Sewer System (Variable Rate Demand) Subordinate Revenue Refunding Bonds Series C of 2008 (the bonds) to synthetic fixed rates of 4.038%, 4.103%, and 3.998%, respectively.

During November 2014, the 2008 Series C Bonds were reissued and restructured to bear interest based upon 70% of one-month LIBOR. In conjunction with this reissuance/restructuring, the floating rate on the Series 2008 C swaps was converted from SIFMA to 70% of one-month LIBOR and the fixed rate was amended from 3.998% to 3.50%. With respect to the Series 2008 C swap treated as an effective hedge, this "off-market" swap is considered to be a hybrid instrument consisting of an on-market swap and a borrowing. The on-market swap rate is calculated as of the date of reissuance. The borrowing will be amortized over the remaining life of the swap and is included in bonds and loans payable on the statement of net position. See Note 7: Bonds and Loans Payable for detail on the borrowing.

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 SIFMA Municipal Swap Index while paying fixed rates as noted in the chart above.

The interest payments on the 2008 interest rate swaps are calculated based on notional amounts, all of which reduce, beginning on September 1, 2012 for the 2008 C Bonds, September 1, 2032 for the 2008 D2 Bonds and September 1, 2035 for the 2008 B Bonds, 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.

During December 2017, the swaps that were previously associated with the 2008 B-1, 2008 B-2 and 2008D bonds were newly associated with the 2017C refunding Bonds.

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NOTES TO FINANCIAL STATEMENTS

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

YEARS ENDED DECEMBER 31, 2017 AND 2016

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.

Accounting and Risk Disclosures

During the years ended December 31, 2017 and 2016, the Authority paid \$12,512 and \$13,418, respectively, fixed and received \$2,467 and \$1,227, 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 deferred outflows. 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.

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The fair value of the outstanding interest rate swaps as of December 31, 2017 and 2016 is reported on the statements of net position as a swap liability.

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 Moody's Investors Service, Inc., 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 the Authority's derivative instruments currently have a negative fair value position to the Authority at year-end, the Authority is not exposed to credit risk at December 31, 2017.

Concentration of credit risk: The Authority currently has two counterparties, with three and two outstanding interest rate swaps, respectively. The Authority's outstanding market value as of December 31, 2017 and 2016, respectively, is \$(15,999,941) and \$(62,438,422) with one counterparty and \$(2,318,641) and \$(24,333,197) with the second counterparty. Both counterparties operate in the same markets and could be similarly impacted by changes in economic or other conditions.

NOTES TO FINANCIAL STATEMENTS

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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 Standard & Poor's 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. During 2014, 2008 C swaps were terminated and reissued. During 2017, the 2008 B-1, B-2, and D swaps were terminated and reissued.
- 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 swap that is accounted for as an investment exposes the Authority to interest rate risk. The interest rate swap is highly sensitive to changes in interest rates; changes in the variable rate will have a material effect on the swap's fair value. The interest rate swap will terminate on September 4, 2035.
- 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 2008 C swaps as the interest index on the variable rate arm of the swaps is based on the 70% of one-month LIBOR and the variable interest rate on the bonds is based on a different index, a weekly rate that is determined by a remarketing agent. 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 as discussed in Note 7: Bonds and Loans Payable.

NOTES TO FINANCIAL STATEMENTS

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- 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 Standard & Poor's and FSA, the swap insurer, becomes bankrupt. The amount of collateral to be posted is calculated based on derivatives in negative fair value positions to the Authority. The collateral is to be posted in the form of cash, U.S. Treasuries or other approved securities. As of year-end, the Authority had not and was not required to post collateral for these transactions.

9. 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 trustee assets, as otherwise permitted by the trust indenture as supplemented and amended in 1998. Throughout the years ended December 31, 2017 and 2016, the Authority invested its funds in such authorized investments. The Authority does not have a formal investment policy which addresses custodial credit risk, interest rate risk, credit risk, or 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, 2017 and 2016, \$17,874 and \$23,605, respectively, of the Authority's bank balance of \$18,124 and

PITTSBURGH WATER AND SEWER AUTHORITY

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\$23,855, respectively, was exposed to custodial credit risk; \$17,874 and \$23,605 of these 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 \$11,076 and \$21,620 as of December 31, 2017 and 2016, respectively, all of which is reported as current assets in the statements of net position.

At December 31, 2017, the Authority held the following investment balances:

	<u>Carrying value</u>	<u>Maturity in years Less than 1 year</u>
PA INVEST	\$ 8,649	\$ 8,649
Money market	18,264	18,264
U.S. Treasury bills	3,035	3,035
Total Investments	<u>\$ 29,948</u>	<u>\$ 29,948</u>

At December 31, 2016, the Authority held the following investment balances:

	<u>Carrying value</u>	<u>Maturity in years Less than 1 year</u>
PA INVEST	\$ 8,573	\$ 8,573
Money market	11,900	11,900
U.S. Treasury bills	5,864	5,864
Total Investments	<u>\$ 26,337</u>	<u>\$ 26,337</u>

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).

NOTES TO FINANCIAL STATEMENTS

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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.

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, 2017 and 2016 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, 2017, the Authority's investments in PA INVEST were rated AAAM by Standard & Poor's. The Authority's investments in U.S. Treasury bills at December 31, 2017 were rated A-1+ by Standard & Poor's.

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 places no limit on the amount it may invest in any one issuer. The Authority has no investments of greater than 5% with one issuer.

As further described in Note 8, the Authority has a derivative instrument that is accounted for as an investment. Credit and interest rate risks related to this investment are described in Note 8.

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NOTES TO FINANCIAL STATEMENTS

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

YEARS ENDED DECEMBER 31, 2017 AND 2016

10. 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,	
	2017	2016
Net investment in capital assets:		
Net property, plant, and equipment	\$ 689,807	\$ 676,798
Debt subject to capital improvements	(752,979)	(699,185)
Swap liability net of deferred outflow	(15,040)	(15,875)
Swap borrowing	(78,431)	(8,479)
Deferred charge on refunding	110,326	25,008
Restricted for capital activity and debt service:		
Capital projects	1	1
Debt service and reserve funds	16,707	16,337
	<u>(29,609)</u>	<u>(5,395)</u>
Restricted assets:		
Operating reserve account	12,654	9,418
Other funds	586	581
	<u>13,240</u>	<u>9,999</u>
Unrestricted	<u>(27,467)</u>	<u>(42,127)</u>
Total net position	<u>\$ (43,836)</u>	<u>\$ (37,523)</u>

11. 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 it 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.

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The total minimum future commitments under the lease for year ended December 31, 2017 are as follows:

2018	\$	661
2019		661
2020		661
2021		661
2022		667
2023-2027		<u>3,252</u>
	\$	<u>6,563</u>

The total annual rental for office space was approximately \$660 and \$676 for 2017 and 2016, respectively.

12. 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.

In addition to the matters discussed below and in Note 13, Consent Agreement, various other claims and lawsuits are pending against the Authority. The ultimate outcome of these claims and lawsuits cannot presently be determined and, accordingly, no provision for amounts arising from settlements has been made in these financial statements. In the opinion of management, the effect on the financial statements of potential losses associated with any such claim and/or lawsuit should not be material.

During 2016, the Authority initiated an arbitration proceeding against Veolia Water North America (Veolia), the previous management company of the Authority. Veolia subsequently asserted counterclaims against the Authority. This matter was settled during 2017 with no material effect on the Authority's financial statements.

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 \$586. This fund is grouped with "Restricted Assets" on the

NOTES TO FINANCIAL STATEMENTS

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

YEARS ENDED DECEMBER 31, 2017 AND 2016

statements of net position. During 2017 and 2016, the Authority paid \$0 from this fund for claims.

Lead Mitigation

The Authority has implemented a number of critical initiatives to comply with the lead service line replacement consent order, and other requirements mandated by the Pennsylvania Department of Environmental Protection (PADEP). These initiatives include: (1) a lead service line identification program to be completed by 2020 for residential properties and 2022 for commercial properties, (2) a water treatment program to mitigate lead corrosion so as to comply with current water quality standards, and (3) a lead service line replacement program. These requirements are stipulated in the PADEP consent order with the city of Pittsburgh and the Authority dated November 2017.

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, which will be available to the public via website in the next month. The second phase has been a video inspection of accessible service lines to confirm the materials of manufacture. This phase requires intensive field inspections which are catalogued and stored in a geographical information system. These records will be made publicly available as soon as possible. The third phase includes the excavation of any service line locations that were unable to be confidently determined using the above methods. The identification program will culminate in a complete digital file and mapping of all service lines within the Authority's service territory.

Chemical treatment testing of orthophosphate application to the Authority's finished water demonstrates rapid mitigation of lead and copper corrosion to levels well below any current federal drinking water standard. This chemical treatment proposal has been submitted for final approval to the PADEP; this same chemical treatment has been approved for use in numerous other public water supplies in the United States. The Authority intends to initiate treatment as soon as possible after the state approval is granted. The Authority anticipates that the lead corrosion control treatment will be fully effective in 3 to 6 months, so as to lower lead levels in the Authority's customer lead service lines to acceptable drinking water standards.

The Authority has also been ordered by the PADEP to replace approximately 2,700 total public owned lead service lines by December 31, 2018. At present, the Authority has

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(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

YEARS ENDED DECEMBER 31, 2017 AND 2016

completed approximately 750 service line replacements, more than 2100 additional replacements will be completed by year-end. The Authority has accepted responsibility during 2018 to replace the public service line as well as that owned by the private or individual building owners. As a result of recent state legislation, the Authority has the ability though not the obligation to replace existing lead service lines on private property. To satisfy both city Council and Authority board resolutions, the Authority will replace private lead service lines to avoid any "partial" line replacements, which are generally believed to increase the household risks from lead. Future private line replacement will be assessed upon completion of the 2018 lead service line replacement program. The Authority has budgeted a total of \$44 million to implement the 2018 lead service line replacement program.

The Authority estimates that there are as many as 12,000 to 15,000 lead service lines remaining in its water system. Once the chemical treatment has become fully effective, the Authority will begin replacing lead service lines in concert with a water main replacement program. In this manner, the Authority can minimize 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. The Authority intends to implement a small diameter water main program throughout the city to replace the oldest pipes and services at the same time. 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.

13. Consent Agreement

The 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).

NOTES TO FINANCIAL STATEMENTS

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

YEARS ENDED DECEMBER 31, 2017 AND 2016

Generally, the COA requires 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. 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. 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 nature of the request is to provide a jurisdictional basis for USEPA to engage the Authority/City in an enforcement action by consent, or a Consent Decree (CD). The Authority intends that through such an action, it can more fully participate in the implementation of interim regional wet weather activities, controls, and improvements. The Authority further understands that such an action will also permit the Authority/City to participate more fully in the identification and implementation of any final wet weather control measures for the region. The USEPA 308 request requires the Authority to submit detailed information on past CSO performance and activities. It also requires the Authority to conduct a source reduction analysis for the entire service area, followed by GI demonstration projects completed in December 2017. The results of the analysis and demonstration projects will be used to determine the details in the final consent decree.

In addition to the assessment, the USEPA 308 request requires 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, lining, point lining, and gunite projects have been implemented to address structural deficiencies. The USEPA 308

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NOTES TO FINANCIAL STATEMENTS

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

YEARS ENDED DECEMBER 31, 2017 AND 2016

request also requires the submission of monthly reports updating the progress of the evaluations and improvements, as well as water quality impacts.

Given the broad scope of a potential CD, the size of the City sewer system, 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. The Authority hired two engineering firms to assess and model the sewer system, and has fulfilled the first portion of the USEPA 308 request due by March 31, 2016. The second phase of the request supplied a source reduction study which was submitted December 1, 2016 and GI Demonstration projects must be constructed and performance evaluations completed by December 1, 2017. An additional 308 request from EPA was received in October of 2016 seeking more detailed information and further actions regarding the assessment of the Authority's sewer system. This response was delivered on time in January 2017 and continues to require additional monthly reporting. The demonstration project evaluations were submitted on time on December 1, 2017.

The Authority, along with the other impacted local municipalities, is awaiting a response from the USEPA and the DEP on its proposed regional plan. 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

FR-VII.15

COMBINING STATEMENT OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 2017

	Water	Sewer	Sewer Treatment	Total
Assets				
Current assets	\$ 31,099	\$ 15,318	\$ -	\$ 46,417
Noncurrent assets	482,236	237,519	-	719,755
Total Assets	513,335	252,837	-	766,172
Deferred Outflows of Resources				
Deferred charge on refunding	73,918	36,408	-	110,326
Accumulated decrease in fair value of hedging derivatives	2,197	1,082	-	3,279
Total Deferred Outflows of Resources	76,115	37,490	-	113,605
Liabilities				
Current liabilities	40,178	16,612	6,172	62,962
Noncurrent liabilities	576,636	284,015	-	860,651
Total Liabilities	616,814	300,627	6,172	923,613
Net Position				
Net investment in capital assets	(19,838)	(9,771)	-	(29,609)
Restricted	8,871	4,369	-	13,240
Unrestricted	(16,396)	(4,899)	(6,172)	(27,467)
Total Net Position	\$ (27,363)	\$ (10,301)	\$ (6,172)	\$ (43,836)

PITTSBURGH WATER AND SEWER AUTHORITY

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

(Dollars expressed in thousands)

YEAR ENDED DECEMBER 31, 2017

	Water	Sewer	Sewer Treatment	Total
Operating Revenues	\$ 85,166	\$ 48,895	\$ 68,935	\$ 202,996
Operating Expenses:				
Direct operating expenses	47,676	23,481	-	71,156
Wastewater treatment	-	-	75,107	75,107
Cooperation agreement operating expenses:				
Indirect cost allocation - sewer conveyance	-	2,250	-	2,250
Indirect cost allocation - water	3,113	-	-	3,113
Expense of water provided by other entities:				
Subsidy of customers located in the City	5,594	-	-	5,594
Depreciation	10,835	5,337	-	16,172
Total operating expenses	67,217	31,068	75,107	173,392
Operating Income (Loss)	17,949	17,827	(6,172)	29,604
Non-operating Revenues (Expenses):				
Donated property	1,069	526	-	1,595
Interest revenue	308	152	-	460
Investment income - change in fair value of swap	559	276	-	835
Interest and amortization	(23,392)	(11,521)	-	(34,913)
Bond issuance costs	(2,609)	(1,285)	-	(3,894)
Total non-operating revenues (expenses)	(24,065)	(11,852)	-	(35,917)
Net Income (Loss)	(6,116)	5,975	(6,172)	(6,313)
Net Position:				
Beginning of year	(21,247)	(16,276)	-	(37,523)
End of year	\$ (27,363)	\$ (10,301)	\$ (6,172)	\$ (43,836)

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.16. Supply copies of the company's balance sheets for each month for the last 2 years.

RESPONSE:

Please see the response to FR XI.1.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.17. Provide the bond rating history for the company and, if applicable, its parent from the major credit rating agencies for the last five years.

RESPONSE:

Written response.

The long-term debt issuer ratings, and their effective dates, for PWSA for the last five years are as follows:

<i>Moody's Underlying Rate</i>		<i>S&P Underlying Rate</i>	
Rate	Date	Rate	Date
A2	1/17/2018	A	11/20/2017
A2	9/18/2017	A	12/12/2013
A2	11/20/2013		
A2	9/10/2013		
A2	2/1/2012		

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.18. Provide copies of all bond rating reports relating to the company and, if applicable, its parent for the past 2 years.

RESPONSE:

Please see attached.

CREDIT OPINION

1 December 2017

New Issue

Rate this Research >>

Contacts

Nicole Serrano +1,212.553.4143
 VP-Senior Analyst
 nicole.serrano@moodys.com

Christopher Coviello +1,212.553.0575
 VP-Senior Analyst
 christopher.coviello@moodys.com

Orlie Prince +1,212.553.7738
 VP-Sr Credit Officer/
 Manager
 orlie.prince@moodys.com

CLIENT SERVICES

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

Pittsburgh Water and Sewer Authority, PA

New Issue - Moody's Assigns A2 Rating to PWSA's (PA) \$217M Series C of 2017 Rev. Ref. Bonds, Outlook Remains Negative

Summary Rating Rationale

Moody's Investors Service has assigned an A2 rating to Pittsburgh Water and Sewer Authority, PA's \$217 Million Water and Sewer System First Lien Revenue Refunding Bonds Series C of 2017. Moody's affirms the A2 rating on approximately \$606 million of first lien revenue bonds currently outstanding. The outlook is negative.

The A2 rating reflects the Authority's large size with considerable assets, serving more than 80% of the city of Pittsburgh (A1 stable), a major metropolitan area. The A2 rating also considers the Authority's history of operating and maintenance deficiencies, its high debt burden, and the expectation of future debt issuances to address the Authority's substantial capital needs, including improvement of a significantly aged and inadequately maintained infrastructure.

Credit Strengths

- » Considerable size; system assets include water conveyance and treatment, and sewer conveyance that ties to ALCOSAN
- » Significant rate increase just implemented; historical willingness to raise rates

Credit Challenges

- » Substantial debt burden; debt ratio is 105%
- » Narrowing coverage and liquidity
- » Long term inadequate maintenance of infrastructure has led to severe inefficiencies and has contributed to a projected \$2.3 billion in capital improvement needs; plan to be implemented over ten years
- » Projected doubling (roughly) of the capital budget within one year's time presents further challenges to planning and administration
- » Exposure to a large regional consent decree through ALCOSAN

Rating Outlook

The negative outlook reflects our concern that historical operating and maintenance inefficiencies will persist, posing a challenge to full implementation of a much needed capital improvement plan. While PUC regulation is likely, and a major rate increase was recently

implemented, PWSA is still in the beginning stages of addressing its major capital needs and operating deficiencies.

In the absence of substantially improved maintenance of the Authority's infrastructure, the negative outlook reflects our expectation of downward rating pressure.

Factors that Could Lead to an Upgrade

- » Meaningful reduction of debt

Factors that Could Lead to a Downgrade

- » Further narrowing of debt service coverage
- » New revenues not deployed effectively to address near term infrastructure and operating needs
- » Escalation of environmental concerns, particularly lead levels in treated drinking water

Key Indicators

Exhibit 1

Pittsburgh Water and Sewer Authority, PA					
System Characteristics					
Asset Condition (Net Fixed Assets/ Annual Depreciation)	41 years				
System Size - O&M (in \$000s)	131,936				
Service Area Wealth: MFI % of US median	85.40%				
Legal Provisions					
Rate Covenant (x)	1.00x				
Debt Service Reserve Requirement	DSRF funded at MADS (Aaa)				
Management					
Rate Management	A				
Regulatory Compliance and Capital Planning	A				
Financial Strength					
	2012	2013	2014	2015	2016
Operating Revenue (\$000)	144,138	142,657	164,255	174,164	180,727
System Size - O&M (in \$000s)	93,305	95,823	111,454	116,908	131,936
Net Funded Debt (\$000)	649,962	761,001	756,321	747,615	727,526
Annual Debt Service Coverage (x)	1.22x	1.08x	1.12x	0.98x	0.83x
Cash on Hand	154 days	129 days	102 days	88 days	60 days
Debt to Operating Revenues (x)	4.5x	5.3x	4.6x	4.3x	4.0x

Source: Moody's Investors Service and Pittsburgh Water and Sewer Authority audited financial statements

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Recent Developments

Apart from the effects of this issuance, an anticipated change to PWSA governance, and a substantial rate increase (detailed directly below), the financial condition of the Authority has not materially changed from [our previous report](#).

In June 2017, House Bill 1490 was introduced to the PA legislature to place the Authority under the jurisdiction of the PA Public Utility Commission (PUC) per the PA Public Utility Code. The House voted on November 20, 2017 to approve the bill; pending Governor Wolf's signature, PUC oversight of the Authority will be implemented effective April 2018. The PUC regulates private, investor owned utilities in the commonwealth as well as Philadelphia Gas Works. We expect this additional governance will be a credit positive for the Authority, as it will require PWSA to operate in-line with industry regulations and norms.

PWSA implemented a considerable rate increase on November 8, 2017. With the new rates in place, the authority expects water revenue to increase 29% and for sewer conveyance revenue to increase 47% for fiscal 2018 versus the prior year's budget. Authority management expects that new rates will not be materially changed once PUC governance takes effect. Increased rates are a strong positive for the authority as these additional revenues are sorely needed, not only to begin implementation of PWSA's substantial CIP, but also to shore up its current cash position and debt service coverage metrics.

Detailed Rating Considerations

Service Area and System Characteristics: Large and Stable Pittsburgh Service Area; Considerable Aged Infrastructure Concerns

The authority provides water distribution and wastewater collection and conveyance for the City of Pittsburgh (A1 stable) and neighboring municipalities. The city's healthy and growing economy, as well as its exposure to the stabilizing "eds & meds" presence from healthcare and higher education, are positives for the authority.

The authority's 10 largest customers (33% of revenues) include Riverbend Properties (formerly Bay Valley Foods), Fox Chapel Authority (Aa3 no outlook), University of Pittsburgh (Aa1 stable), Carnegie Mellon University, Allegheny County (A1 positive), the city's public housing authority, and a state prison. All of the authority's five largest customers have been in the city for at least 75 years.

The authority continues to maintain an ample water supply. The authority provides water to a population of approximately 306,000. The system is permitted to draw up to 100 million gallons per day (MGD) from the Allegheny River, its sole water source, though average demand for water is well below that level, at 70 MGD. The authority treats drinking water at one plant located on the river, as well as a microfiltration plant at one of its reservoirs. The authority has capacity to store approximately 3 days' worth of finished water for uninterrupted supply to its customers.

The authority does not treat wastewater. It transmits all of its sewage to the Allegheny County Sanitary Authority (ALCOSAN, revenue bonds rated A1). There is no contractual limit to the amount of sewage that can be conveyed, however, during wet weather events, the existing system frequently overflows.

The system currently experiences unusually large water loss. The authority estimates that it loses close to 50% of its pumped water annually due to its aged infrastructure and insufficient maintenance. This is perhaps an over-estimate, but definitive loss is not currently calculable, as key points of the system is not metered. A modernization of the metering system with mapping is a crucial part of the authority's latest five year Capital Improvement Plan (CIP). Other important improvements include engaging enough personnel to carry out maintenance of the system's general infrastructure up to current industry standards. These kinds of ordinary updates and infrastructure improvements are sorely lacking today, adding to cost inefficiencies, and exacerbating the natural wear and tear on an already aged system.

In April of 2016, the authority was ordered by the Pennsylvania Department of Environmental Protection (PADEP) to test for lead in the drinking water treated by PWSA, related to an unauthorized use of alternative corrosion control chemicals. Samples from 100 homes in June 2016 found lead of 22 parts per billion (ppb) at the 90th percentile. The EPA action level for lead at the 90th percentile is 15ppb, at which level additional testing in terms of frequency and number of samples is required and mitigation efforts are needed. About 83% of sample results were below the action level and some were non-detect. The Authority believes these lead readings are due to lead in the pipes bringing water to individual homes, rather than lead in system mains. The largely random dispersion of where high lead levels have been found seems to support this hypothesis.

The authority is required to continue to test system lead levels, and to replace 7% of authority-controlled lead service lines per year. A second set of samples were taken in December 2016, and 90th percentile lead levels showed 18ppb. However, a third set of samples from June 2017 showed 90th percentile of 15ppb. The requirement to change 7% of lines per year will end if the next set of tests (Dec 2017) are below 15ppb.

The authority and PADEP are negotiating a consent decree to resolve alleged violations relating to lead and corrosion control. The order will include reporting mandates, requirements to replace lead service lines, and a possible civil penalty.

Debt Service Coverage and Liquidity: Rate Increase To Strengthen Debt Service Coverage

Liquidity and reserve levels have been historically narrow, but relatively stable. The past two years, however, have shown a worsening financial trend, with days' cash on hand declining to 60 days in 2016 from 102 days in 2014, and total debt service coverage falling to less than 1xs, compared to 1.12xs two years ago. Clearly the trend here is negative. A material rate increase has recently been approved by the authority's board to shore up finances and, subsequently, to begin on significant infrastructure investments.

The Authority ended 2016 with a net loss of (\$1.78 million) and a negative fund balance of (\$37 million). Total debt service, including ordinary swap payments, is considerable, at \$53.2 million, or 36% of total operating expenses. Debt service is the second largest expense the Authority has after its "direct operating expense" of \$61 million. This level of fixed costs is problematic, as it reduces financial flexibility and crowds out other spending. The authority has been unable to support sufficient investment in infrastructure assets and maintenance in the past.

The authority intends to increase its debt burden beginning in 2018 to implement the first stages of its \$2.3 billion CIP. While this additional debt will be a further burden on the system financially, we anticipate that recently implemented rate increases will bolster reserves in the near term. As the authority moves forward with its CIP, it will need to meet its rate covenants before further debt is issued. The rate covenant has been strengthened with a new 2017 indenture (see details below).

Total debt service coverage was just less than 1xs (0.97xs) in 2016. However, this includes a net swap payment of \$12 million. When we exclude the swap, total debt service coverage improves to 1.19xs, though is still relatively narrow. The authority's own rate covenant calculation, pursuant to current indenture definitions, is stronger than Moody's result given inclusion of free cash in the numerator.

Given the magnitude of the recent rate increase, management now expects to end 2017 with a slight surplus, compared to the originally projected shortfall, despite the fact that rates will only be in effect for one month of the fiscal year. PWSA anticipates a fiscal 2017 year-end cash balance of \$18.9 million (unaudited), or roughly 9% of revenues.

LIQUIDITY

Days' cash on hand is sufficient at 60 days as of 2016 year end. Liquidity is supported by an \$80 million revolving credit facility with JP Morgan Chase Bank, NA (Aa2 (cr)).

Debt and Legal Covenants

The authority has introduced a new indenture for this issuance, which will replace the existing 1993 senior indenture and all relevant supplements. The new indenture requires consent of registered owners of 66 and 2/3rds percent of bond outstanding. The authority does not intend to solicit bondholders for consent, but rather expects to obtain the balance of required consent through the refunding of outstanding bonds through this current issuance and a subsequent refunding of some variable rate debt in the coming weeks.

By purchasing the 2017 C First Lien Revenue Refunding Bonds, bondholders are effectively approving the new indenture.

The 2017 Springing Indenture will strengthen the rate covenant by removing the authority's ability to test at a 120% covenant or a 100% covenant. Instead, the new requirement will be a fixed 125% of senior debt service coverage plus 110% of subordinate debt service coverage. Further, free cash will no longer be used to increase coverage under the new indenture. The authority will have one year to comply with the new test, which will commence with the fiscal year beginning January 1, 2019.

DEBT STRUCTURE

The additional borrowing implied by the authority's capital needs will increase an already elevated debt burden. The authority's total debt is equal to 105% of fixed assets, well above similarly sized peers. The outstanding debt amortizes slowly, with only 36% of principal scheduled to be repaid in the next 10 years.

Moody's notes that the authority maintains pronounced risks associated with its debt profile in the face of already-narrow coverage levels. The authority's \$710 million of debt after this sale includes \$606 million of senior-lien bonds, and \$104 million of privately placed subordinate-lien bonds. The authority also maintains \$33 million outstanding in PennVest loans and an \$80 million revolving credit facility, of which \$33 million is currently drawn. With the 2017 indenture, the PennVest loans and JPM revolving credit facility, previously third lien debt, will now be allowable as parity to the subordinate bonds.

All of the subordinate-lien bonds and roughly \$217 million of senior-lien bonds are variable rate (approximately 45% of total bonds outstanding). The 45% rate is down from a high of 55%.

Assured Guaranty Municipal Holdings Inc. (Baa2 stable) insures much of the authority's variable rate bonds and all of the authority's swaps, and provides the surety policy for all debt service reserve funds. This counterparty concentration may adversely impact the authority should AGM's credit quality deteriorate. In addition, the authority's VRDO debt requiring liquidity and credit support is provided by Bank of America, N.A. (23%, A1 (cr)), and PNC Bank, N.A. (45%, A1 (cr)). The remaining variable rate debt is privately placed.

DEBT-RELATED DERIVATIVES

The authority has entered into floating-to-fixed rate swaps in connection with all of its variable rate debt (\$320 million) under ISDA Master Agreements with JPMorgan (64%) and Merrill Lynch and Co., Inc. (36%, Baa1 RUR), whereby the authority pays a fixed interest rate semi-annually (4% on average) and receives SIFMA monthly. Though the base variable rate is changing from SIFMA to LIBOR with the 2017 Series C issuance, and the existing bonds will be refunded, the swaps will remain outstanding. Swap rates will change as well to continue to provide a hedge to the variable rate bonds.

AGM provides swap insurance for all swaps and, despite a negative \$91 million aggregate mark-to-market as of October 2017, no collateral is required to be posted unless an Insurer Event occurs. The amortization schedule for each swap mirrors that of the corresponding bonds and the swaps terminate at bond maturity. For all of the swaps, per the 2017 indenture, regularly scheduled swap payments are subordinate to subordinate bond debt service. Early termination is optional for the authority only, and termination by the counterparty depends upon specified termination events, including the downgrade of PWSA's underlying rating below investment grade. An authority termination payment would be subordinate to first and second lien debt service payments.

PENSIONS AND OPEB

The authority's employees participate in the city's pension program. However, the authority itself is under no obligation to the city to fund any portion of the city pension plan.

Management and Governance

The authority's permanent management team is relatively new, but seems to have a solid handle on the system's substantial capital and operational needs. However, much of the authority's executive team is interim, with extensive top management upheavals in the two years since Veolia was replaced with an in-house team.

This amount of management volatility is concerning, since the system has overwhelming needs, not only in its infrastructure, but also in its technology systems. Strong leadership will be critical given the proposed plan. In order to achieve the improvements set out in the CIP, even if only near term projects are considered, the authority will require consultants, extensive planning, and sizeable staff increases. Without strong governance, continued unresolved inefficiencies are a major concern.

The authority is currently managed by a seven member board, with at least six members appointed by the mayor and one by the city council. The authority provides water at no cost to city-owned buildings and public areas. The city and authority are in the process of renegotiating their cooperation agreement to more accurately reflect the exchange of services provided. Currently, the authority makes an annual payment of \$7.15 million to the city under the cooperation agreement.

Legal Security

The 2017 Series C bonds are limited obligations of the authority, payable from pledged water and sewer system revenues.

Use of Proceeds

Proceeds from the 2017 C bonds will be used to refund the authority's existing variable rate debt, Series 2008 B1, Series 2008 B2, and Series 2008 D2. The net present value of savings is estimated to be 8.88% of refunded bonds.

Obligor Profile

This is an authority of the city of Pittsburgh, providing water treatment and conveyance to 84% of the city's population and sewer conveyance for the entire city.

Methodology

The principal methodology used in this rating was US Municipal Utility Revenue Debt published in October 2017. Please see the Rating Methodologies page on www.moodys.com for a copy of this methodology.

Ratings

Exhibit 2

Pittsburgh Water & Sewer Authority, PA

Issue	Rating
Water and Sewer System First Lien Revenue	A2
Refunding Bonds, Series C of 2017	
Rating Type	Underlying LT
Sale Amount	\$217,345,000
Expected Sale Date	12/05/2017
Rating Description	Revenue: Government Enterprise

Source: Moody's Investors Service

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Summary:

Pittsburgh Water and Sewer Authority; Water/Sewer

Primary Credit Analyst:

Theodore A Chapman, Dallas (1) 214-871-1401; theodore.chapman@spglobal.com

Secondary Contact:

Erin Boeke Burke, New York 212-438-1515; Erin.Boeke-Burke@spglobal.com

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Rationale

Outlook

Summary:**Pittsburgh Water and Sewer Authority;
Water/Sewer****Credit Profile**

US\$217.345 mil fltg rate note rfdg of first ln synthetic rate debt ser 2017C dtd 12/05/2017 due 09/01/2040

Long Term Rating

A/Stable

New

Rationale

S&P Global Ratings assigned its 'A' rating to the Pittsburgh Water and Sewer Authority (PWSA), Pa.'s series 2017C floating rate first-lien revenue bonds. The outlook is stable.

We have applied our primary utility revenue bond criteria to determine the authority's general creditworthiness and have applied this rating to its senior-lien issues. We rate PWSA's subordinate lien one notch lower based on the application of our criteria "Assigning Issue Credit Ratings Of Operating Entities" (published May 20, 2015, on RatingsDirect) given the open status of the senior lien and the likelihood that PWSA will continue to use the senior lien from time to time. Our view of PWSA's general creditworthiness is based on its very strong enterprise risk profile and its strong financial profile.

The authority has been subject to scrutiny from local and state elected officials who voiced concerns over authority operations, subsequently asking the state to perform an audit of PWSA. The results of the audit, released in November 2017, outlined a number of findings that in the Auditor General's opinion include "aging and deteriorating infrastructure issues and financial and operational long-term viability issues..." and were an important factor in HB 1490, which would place PWSA under the state Public Utility Commission's (PUC) oversight as of April 1, 2018. The bill, approved by the General Assembly and awaiting Governor Wolf's signature, would authorize the PUC to regulate the authority's rates and fees. We understand that this would only apply to future rate cases, not the aggregate 49% increases recently approved for fiscal years 2018, 2019 and 2020. While rate regulation of municipal owned systems is less common in Pennsylvania and the exact details of the scope of regulatory oversight is not yet finalized, we view this as currently neutral to credit quality. We have noted that generally rate regulation in Pennsylvania is supportive of credit quality, although we would first look primarily to a history of the magnitude of what is awarded versus what is requested in rate cases, as well as the timing, and how much of the substantial capital improvement plan (CIP) can be put into the rate base with each review; the PUC is compelled to respond within 180 days. In our view, while serious, the legislation is indicative of the identified need for infrastructure investments to which we have observed all parties seem to agree are necessary. The CIP contains projects that are both based on PWSA's prioritization as well as those reflecting consent decrees; much of the existing infrastructure was also built to serve a much larger population and a workforce much different from today's. We understand that PWSA remains cooperative and in fact continues to work with all parties toward a long-term solution. There also has not been resolution between PWSA and the vendor for the now-expired management and operations agreement. PWSA alleged concerns primarily with water treatment

Summary: Pittsburgh Water and Sewer Authority; Water/Sewer

techniques and meter replacements and the vendor countered with allegations of its own. We can predict neither the timing nor outcome and are not factoring this into our credit analysis.

The enterprise risk profile reflects our view of Pittsburgh's:

- Role as the anchor and economic engine for western Pennsylvania, based on an employment base that has reinvented itself from one which once relied heavily on manufacturing and industrial jobs;
- Rates for service that remain affordable, but have been pressured over the last decade by the unfunded mandates; and,
- Operational management assessment (OMA) that we view as "good" even despite the aforementioned challenges.

The financial risk profile reflects our view of the system's:

- Adequate all-in debt service coverage (DSC) and liquidity, and while both appear to be on the cusp of steady improvement, a five-year CIP of \$1.17 billion through fiscal 2022--roughly 90% of which is intended to be funded with additional debt--will pressure the overall financial risk profile;
- Decreasing exposure to interest rate risk and contingent liabilities. Just over half of PWSA's \$645 million in total outstanding long-term debt is variable rate, including \$104 million in direct-purchase agreements with various financial institutions. In recent years, however, PWSA has been able to not only negotiate a more favorable cost of borrowing but also eliminated language in the continuing covenant agreements that could expose it to remote but, potentially material, contingent risks. All of the variable-rate debt is synthetically fixed-rate, although the current positions of the interest-rate swaps remain unfavorable; and,
- Good financial management practices and policies.

The first-lien bonds are secured by a senior-lien pledge on the net revenues of the authority's waterworks and sanitary sewer system. A fully funded reserve in the amount of maximum annual debt service (MADS) provides additional liquidity on the senior-lien bonds. Under the current master trust indenture, certain cash reserves are permitted to be applied toward compliance with the rate covenant of either sufficiency (1x) across all liens from net revenues alone, or 1.2x from net revenues plus available reserves in the revenue fund, although the amended indenture proposes to strengthen these covenants. PWSA has only very rarely had to rely on those reserves to satisfy the rate covenant in recent years, and by our calculation not at all since 2010.

We understand that the proceeds of the series 2017C bonds will be used to advance refund a portion of the authority's series 2008B-1, 2008B-2 and 2008D-2 bonds. The bonds will be issued initially at 70% of the LIBOR rate, with a maximum interest rate at any time of 12%. The bond purchase date is Dec. 1, 2020, although they are callable six months prior to that. This feature, in our view, along with a soft put, preclude the introduction of any contingent liquidity risk. Once the series 2017C transaction closes, PWSA expects to have achieved the required consent of two-thirds of bondholders such that new covenants will take effect on Jan. 19, 2019. Primarily, PWSA intends to bolster its rate covenant to achieve at least 1.25x annual DSC of its senior-lien obligations plus 1.1x on its subordinate-lien debt service and that net revenues alone (excluding any rate stabilization fund transfers) must be at least sufficient to cover all annual debt service. We have noted in the past that the existing legal provisions are permissive, and would view the new covenants as adequately removing this weakness.

Following the series 2017C transaction, PWSA will have approximately \$519.5 million in outstanding senior-lien obligations, \$103.6 million in subordinate-lien debt, and \$31.4 million in state PENNVEST loans. As of November

Summary: Pittsburgh Water and Sewer Authority; Water/Sewer

2017, PWSA has also drawn \$27.9 million on an \$80 million committed line of credit with JPMorgan Chase Bank NA.

Enterprise risk

Pittsburgh Water and Sewer Authority provides drinking water and sewer collection to over 82,000 metered accounts to most, but not all, of the city, as well as eight neighboring municipalities and one wholesale customer for needs ranging from emergency interconnections and peaking to full requirements. It also provides sewer collection to the entire city. While median household effective buying income (MHHEBI) is only 77% that of the U.S., the local economy has long since transitioned from its historic manufacturing base. Although those sectors are still part of the employment base, financial services, health care, and a booming technology sector are all important contributors to the metropolitan statistical area (MSA). The Pittsburgh MSA has seen \$1.8 billion in venture capital invested in the telecommunications and high-technology sectors in the last decade, and also saw a major energy sector boom--one which has since waned--from activity in the Marcellus and Utica shales. The stability of the regional economy is reflected in an unemployment rate of 4.1% as of September 2017. We do not view there to be any dependence on the authority's principal customers, given they include another water authority and the University of Pittsburgh.

Based on our OMA, we view PWSA to be a '3' on a scale of 1-6, with '1' being the strongest. An assessment of "standard," in our opinion, implies that overall alignment between the system's operational characteristics and its management is sufficient but not comprehensive. While we note, for example, that the city has an essentially unlimited raw-water supply from the Allegheny River and overall system capacity that could support a population several times the size of the current one, it is also the case that the authority's main focus remains the renewal and replacement of its aging underground infrastructure. PWSA is also dealing--directly and indirectly--with mandates from environmental regulators to address combined sewer overflows and wastewater treatment requirements. For example, Allegheny County Sanitary Authority's (ALCOSAN) 2008 consent decree is expected to cost \$3.6 billion by the final 2026 deadline; PWSA represents about 35% of ALCOSAN's total operating revenues based on the 2017 budget. PWSA has also been working its way through its own consent decree since 2004. Most of the projects in scope for PWSA's consent decree have already reached substantial completion, and some of the remaining projects have been proposed to environmental authorities to be addressed using green infrastructure. Although management has been separating the sewer system in the areas of growth and redevelopment, 77% of the collection system is still a combined storm and sanitary infrastructure. The water distribution system is also an identified area of opportunity given the relatively high nonrevenue water percentage, although this includes free service to the city that PWSA is compelled to provide. The city also entered into a consent decree in November 2017 for corrective actions related to federal lead and copper rule requirements in its drinking water system. To support the CIP, the authority's board has adopted a practice of multiyear rate adjustments, most recently base-rate adjustments of 28%, 10% and 11% in fiscal years 2018, 2019 and 2020, respectively. PWSA also passes through all costs from ALCOSAN, although it is uncertain if the state PUC will provide management the ability to continue to pass through administratively any cost increase from ALCOSAN or if it will require some kind of regulatory approval. Based on S&P Global Ratings' universal assumption of 6,000 gallons of both water and sewer service, a monthly residential bill as of fiscal 2018 will be nearly \$100, or over 3.0% of MHHEBI.

Financial risk

Annual DSC for PWSA has consistently been 1.3x or better, even when treating transfers and subsidy payments as an operating expense. In addition to making a transfer payment to the city's general fund, PWSA also provides the city

Summary: Pittsburgh Water and Sewer Authority; Water/Sewer

free service. It also provides a legacy payment that ultimately subsidizes the cost of water to a portion of the Pittsburgh area not served by PWSA, although it is possible PWSA could gain relief from that payment once under PUC oversight. All-in DSC by our calculation has been closer to 1.1x; all-in coverage is our adjusted debt service calculation that includes all utility system obligations regardless of lien or accounting treatment.

The system's liquidity remains an area of consistency and credit strength. Total available reserves also include the line of credit, in place through July 2020. All told, liquidity remains sound, usually equivalent to four-to-six months of operating expenses. Given the goal of setting rates to achieve DSC of 1.3x or better and funding the CIP using 10% to 15% pay-as-you-go sources, the authority's financial forecast is one that, in our view, could realistically generate the requisite CIP funding to boost operational performance and lead to stronger and more consistent financial performance, all of which could, in turn, lead to a higher rating, even if beyond our two-year outlook horizon. We would approach upward rating potential cautiously, however, until there is greater detail to--and a record of--PUC oversight.

Based on our financial management assessment (FMA), we view the authority to be a '2' on a scale of 1-6, with '1' being the strongest. An FMA of "good" indicates that we consider practices currently good, but not comprehensive. The authority maintains many best practices we believe are critical to supporting credit quality, particularly in the finance department. These practices, however, may not be institutionalized or formalized in policy, or may not be as robust as comparable utilities with an FMA of "strong." The FMA of "good" includes a well-detailed long-term financial plan that management intends to implement to support its identified capital commitments. The authority also has implemented new, more comprehensive and conservative budgeting assumptions that better capture annual revenue requirements. We understand that the authority's management team regularly tracks budget-to-actual performance and that the new management team is instituting a number of additional best practices to target consistently higher levels of financial performance, minimizing the need to meet a rate covenant of either sufficiency (1x) across all liens from net revenues alone, or 1.2x from net revenues plus unrestricted cash and investments in the authority's revenue fund.

Outlook

The stable outlook reflects S&P Global Ratings' expectation that the authority's demonstrated willingness to raise rates, including its practice of multiyear rate increases, will minimize any reliance on available cash balances just to meet its rate covenant in coming years and allow that cash to be deployed for utility purposes. Even though management has unwound nearly all of the contingent risks associated with its long-term debt structure, its capital structure remains complex. It is also predicated in part on rating stability, which is why we are assuming management will try to resolve some of the ongoing concerns regarding operations and governance as soon as practicable. We will also likely keep in place the one-notch rating distinction between the first- and subordinate-lien debt.

Upside scenario

As the potential financial risks continue to become more remote over time and reliance on cash reserves remains infrequent, a higher rating could still be warranted, even if beyond our outlook horizon and even from a stable outlook. We assume that PUC oversight will eventually be supportive of credit quality, but we would first look at the scope of

Summary: Pittsburgh Water and Sewer Authority; Water/Sewer

regulation, then the record of the timing and magnitude of rate relief, and how the myriad of capital expenditures will be financed before considering an 'A+' rating.

Downside scenario

Conversely, should the size and scope of the capital program cause the financial profile to weaken, we could lower the rating.

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CREDIT OPINION

18 September 2017

New Issue

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Contacts

Nicole Serrano 212-553-4143
 VP-Senior Analyst
 nicole.serrano@moodys.com

Christopher Coviello 212-553-0575
 VP-Senior Analyst
 christopher.coviello@moodys.com

Orlie Prince 212-553-7738
 VP-Sr Credit Officer/
 Manager
 orlie.prince@moodys.com

CLIENT SERVICES

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

Pittsburgh Water and Sewer Authority, PA

New Issue - Moody's Assigns A2 Rating to PWSA's (PA) \$162M 2017 Rev. Ref. Bonds, Outlook Negative

Summary Rating Rationale

Moody's Investors Service has assigned an A2 rating to Pittsburgh Water and Sewer Authority, PA's \$162 Million Water and Sewer System First Lien Revenue Refunding Bonds Series A of 2017 & Series B of 2017 (Taxable). Concurrently, Moody's affirms its A2 rating on approximately \$606 million of first lien revenue bonds currently outstanding. The outlook has been revised to negative from stable.

The A2 rating speaks to the Authority's large size with considerable assets, serving more than 80% of the city of Pittsburgh (A1 stable), a major metropolitan area. The A2 rating also considers the Authority's history of operating and maintenance deficiencies, its high debt burden, and our expectation of further debt issuance going forward to address the Authority's substantial capital needs, including improvement of a significantly aged and inadequately maintained infrastructure.

Credit Strengths

- » Considerable size; system assets include water conveyance and treatment, and sewer conveyance that ties to ALCOSAN
- » Plans for an immediate and significant rate increase; historical willingness to raise rates

Credit Challenges

- » Substantial debt burden; debt ratio is 105%
- » Narrowing coverage and liquidity
- » Long term inadequate maintenance of infrastructure has led to severe inefficiencies and has contributed to a projected \$2.3 billion in capital improvement needs; plan to be implemented over ten years
- » Political uncertainty regarding possible regulation by the Pennsylvania Utility Commission or private-partnership solution yet to be fully resolved
- » Projected doubling (roughly) of the capital budget within one year's time presents further challenges to planning and administration
- » Exposure to a large regional consent decree through ALCOSAN

Rating Outlook

The negative outlook reflects our concern that historical operating and maintenance inefficiencies will persist, posing a challenge to full implementation of a much needed capital improvement plan. While PUC regulation, a major rate increase, and a proactive approach to infrastructure and operational improvements would all be credit positives, none of these planned actions are definitive at this time.

In the absence of a near-term rate increase and substantially improved maintenance of the Authority's infrastructure, the negative outlook reflects our expectation of downward rating pressure.

Factors that Could Lead to an Upgrade

- » Meaningful reduction of debt

Factors that Could Lead to a Downgrade

- » Planned rate increase not achieved resulting in narrowing debt service coverage
- » Rate increase approved, but additional revenues not deployed effectively to address near term infrastructure and operating needs
- » Escalation of environmental concerns, particularly lead levels in treated drinking water

Key Indicators

Exhibit 1

Pittsburgh Water and Sewer Authority, PA					
System Characteristics					
Asset Condition (Net Fixed Assets/ Annual Depreciation)	41 years				
System Size - O&M (in \$000s)	131,936				
Service Area Wealth: MFI % of USmedian	85.40%				
Legal Provisions					
Rate Covenant (x)	1.00x				
Debt Service Reserve Requirement	DSRF funded at MADS (Aaa)				
Management					
Rate Management	A				
Regulatory Compliance and Capital Planning	A				
Financial Strength					
	2012	2013	2014	2015	2016
Operating Revenue (\$000)	144,138	142,657	164,255	174,164	180,727
System Size - O&M (in \$000s)	93,305	95,823	111,454	116,908	131,936
Net Funded Debt (\$000)	649,962	761,001	756,321	747,615	727,526
Annual Debt Service Coverage (x)	1.22x	1.08x	1.12x	0.98x	0.83x
Cash on Hand	154 days	129 days	102 days	88 days	60 days
Debt to Operating Revenues (x)	4.5x	5.3x	4.6x	4.3x	4.0x

Data above reflects existing 1993 Trust Indenture

Source: Moody's Investors Service and Pittsburgh Water and Sewer Authority audited financial statements

Recent Developments

In June of 2017, House Bill 1490 was introduced to the Pennsylvania legislature, with a recommendation to place the authority under the jurisdiction of the PA Public Utility Commission (PUC) per the PA Public Utility Code. The proposal passed in the House

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with a unanimous vote. The bill is now subject to a state senate vote. The PUC regulates private, investor owned utilities in the commonwealth as well as Philadelphia Gas Works.

In April of 2016, the authority was ordered by the Pennsylvania Department of Environmental Protection (PADEP) to test for lead in the drinking water treated by PWSA, related to an unauthorized use of alternative corrosion control chemicals. Samples from 100 homes in June 2016 found lead of 22 parts per billion (ppb) at the 90th percentile. The EPA action level for lead at the 90th percentile is 15ppb, at which level additional testing in terms of frequency and number of samples is required and mitigation efforts are needed. About 83% of sample results were below the action level and some were non-detect. The Authority believes these lead readings are due to lead in the pipes bringing water to individual homes, rather than lead in system mains. The largely random dispersion of where high lead levels have been found seems to support this hypothesis.

The authority is required to continue to test system lead levels, and to replace 7% of authority-controlled lead service lines per year. A second set of samples were taken in December 2016, and 90th percentile lead levels showed 18ppb. However, a third set of samples from June 2017 showed 90th percentile of 15ppb. The requirement to change 7% of lines per year will end if the next set of tests (Dec 2017) are below 15ppb.

The authority and PADEP are negotiating a consent decree to resolve alleged violations relating to lead and corrosion control. The order will include reporting mandates, requirements to replace lead service lines, and a possible civil penalty.

Detailed Rating Considerations

LARGE AND STABLE PITTSBURGH SERVICE AREA WITH DIVERSE ECONOMY; CONSIDERABLE AGED INFRASTRUCTURE CONCERNS

The authority provides water distribution and wastewater collection and conveyance for the City of Pittsburgh (A1 stable) and neighboring municipalities. The city's healthy and growing economy, as well as its exposure to the stabilizing "eds & meds" presence from healthcare and higher education, are positives for the authority.

The authority's 10 largest customers (33% of revenues) include Bay Valley Foods, Fox Chapel Authority (Aa3 no outlook), University of Pittsburgh (Aa1 stable), Carnegie Mellon University, Allegheny County (A1 positive), the city's public housing authority, and a state prison. All of the authority's five largest customers have been in the city for at least 75 years.

The authority continues to maintain an ample water supply. The authority provides water to a population of approximately 306,000. The system is permitted to draw up to 100 million gallons per day (MGD) from the Allegheny River, its sole water source, though average demand for water is well below that level, at 70 MGD. The authority treats drinking water at one plant located on the river, as well as a microfiltration plant at one of its reservoirs. The authority has capacity to store approximately 3 days' worth of finished water for uninterrupted supply to its customers.

The authority does not treat wastewater. It transmits all of its sewage to the Allegheny County Sanitary Authority (ALCOSAN, revenue bonds rated A1). There is no contractual limit to the amount of sewage that can be conveyed, however, during wet weather events, the existing system frequently overflows.

The system currently experiences unusually large water loss. The authority estimates that it loses close to 50% of its pumped water annually due to its aged infrastructure and insufficient maintenance. This is perhaps an over-estimate, but definitive loss is not currently calculable, as key points of the system is not metered. A modernization of the metering system with mapping is a crucial part of the authority's latest five year Capital Improvement Plan (CIP). Other important improvements include engaging enough personnel to carry out maintenance of the system's general infrastructure up to current industry standards. These kinds of ordinary updates and infrastructure improvements are sorely lacking today, adding to cost inefficiencies, and exacerbating the natural wear and tear on an already aged system.

Decreasing Debt Service Coverage and Liquidity in Need of Rate Increases

Liquidity and reserve levels have been historically narrow, but relatively stable. The past two years, however, have shown a worsening financial trend, with days' cash on hand declining to 60 days in 2016 from 102 days in 2014, and total debt service coverage falling to less than 1xs, compared to 1.12xs two years ago. Clearly the trend here is negative. A near term, material, rate increase has been proposed by management to shore up finances and, subsequently, to begin on significant infrastructure investments.

The Authority ended 2016 with a net loss of (\$1.78 million) and a negative fund balance of (\$37 million). Total debt service, including ordinary swap payments, is considerable, at \$53.2 million, or 36% of total operating expenses. Debt service is the second largest expense the Authority has after its "direct operating expense" of \$61 million. This level of fixed costs is problematic, as it reduces financial flexibility and crowds out other spending. The authority has been unable to support sufficient investment in infrastructure assets and maintenance in the past.

The authority intends to increase its debt burden beginning in 2018 to implement the first stages of its \$2.3 billion CIP. While this additional debt will be a further burden on the system financially, we anticipate that currently proposed rate increases will bolster reserves in the near term. As the authority moves forward with its CIP, it will need to meet its rate covenants before further debt is issued. The rate covenant has been strengthened with a new 2017 indenture (see details below).

Total debt service coverage was just less than 1xs (0.97xs) in 2016. However, this includes a net swap payment of \$12 million. When we exclude the swap, total debt service coverage improves to 1.19xs, though is still relatively narrow. The authority's own rate covenant calculation, pursuant to current indenture definitions, is stronger than Moody's result given inclusion of free cash in the numerator.

The authority expects to end fiscal 2017 with a revenue shortfall versus budget due to a slow down in new construction in the city, which reduced fee income from connection and tap fees below expectations. There was also a billing issue relating to the fact that PWSA bills and collects for ALCOSAN treatment (as well as PWSA's own conveyance fees), which delayed collections from some customers during the year. PWSA has had several major issues with its billing and collections systems since a 2014 technology change.

LIQUIDITY

Days' cash on hand is sufficient at 60 days as of 2016 year end. Liquidity is supported by an \$80 million revolving credit facility with JP Morgan Chase Bank, NA (Aa2 (cr)).

Debt and Legal Covenants

The authority has introduced a new indenture for this issuance, which will replace the existing 1993 senior indenture and all relevant supplements. The new indenture requires consent of registered owners of 66 and 2/3rds percent of bond outstanding. The authority does not intend to solicit bondholders for consent, but rather expects to obtain the balance of required consent through the refunding of outstanding bonds through this current issuance and a subsequent refunding of some variable rate debt in the coming weeks. By purchasing the 2017 A&B First Lien Revenue Refunding Bonds, and the forthcoming 2017 C bonds, bondholders are effectively approving the new indenture.

The 2017 Springing Indenture will strengthen the rate covenant by removing the authority's ability to test at a 120% covenant or a 100% covenant. Instead, the new requirement will be a fixed 125% of senior debt service coverage plus 110% of subordinate debt service coverage. Further, free cash will no longer be used to increase coverage under the new indenture. The authority will have one year to comply with the new test, which will commence with the fiscal year beginning January 1, 2019.

DEBT STRUCTURE

The additional borrowing implied by the authority's capital needs will increase an already elevated debt burden. The authority's total debt is equal to 105% of fixed assets, well above similarly sized peers. The outstanding debt amortizes slowly, with only 36% of principal scheduled to be repaid in the next 10 years.

Moody's notes that the authority maintains pronounced risks associated with its debt profile in the face of already-narrow coverage levels. The authority's \$710 million of debt after this sale includes \$606 million of senior-lien bonds, and \$104 million of privately placed subordinate-lien bonds. The authority also maintains \$33 million outstanding in PennVest loans and an \$80 million revolving credit facility, of which \$21 million is currently drawn. With the 2017 indenture, the PennVest loans and JPM revolving credit facility, previously third lien debt, will now be allowable as parity to the subordinate bonds.

All of the subordinate-lien bonds and roughly \$217 million of senior-lien bonds are variable rate (approximately 45% of total bonds outstanding). The 45% rate is down from a high of 55%, and the authority has expressed a desire to continue fixing its variable rate series.

Assured Guaranty Municipal Holdings Inc. (Baa2 stable) insures much of the authority's variable bonds and all of the authority's swaps, and provides the surety policy for all debt service reserve funds. This counterparty concentration may adversely impact the authority should AGM's credit quality deteriorate. In addition, the authority's VRDO debt requiring liquidity and credit support is provided by Bank of America, N.A. (23%, A1 (cr)), and PNC Bank, N.A. (45%, A1 (cr)). The remaining variable rate debt is privately placed.

DEBT-RELATED DERIVATIVES

The authority has entered into floating-to-fixed rate swaps in connection with all of its variable rate debt (\$320 million) under ISDA Master Agreements with JPMorgan (64%) and Merrill Lynch and Co., Inc. (36%, Baa1 RUR), whereby the authority pays a fixed interest rate semi-annually (4% on average) and receives SIFMA monthly. AGM provides swap insurance for all swaps and, despite a negative \$95 million aggregate mark-to-market as of April 2017, no collateral is required to be posted unless an Insurer Event occurs. The amortization schedule for each swap mirrors that of the corresponding bonds and the swaps terminate at bond maturity. For all of the swaps, per the 2017 indenture, regularly scheduled swap payments are subordinate to subordinate bond debt service. Early termination is optional for the authority only, and termination by the counterparty depends upon specified termination events, including the downgrade of PWSA's underlying rating below investment grade. An authority termination payment would be subordinate to first and second lien debt service payments.

PENSIONS AND OPEB

The authority's employees participate in the city's pension program. However, the authority itself is under no obligation to the city to fund any portion of the city pension plan.

Management and Governance

The authority's permanent management team is relatively new, but seems to have a solid handle on the system's substantial capital and operational needs. However, much of the authority's executive team is interim, with extensive top management upheavals in the two years since Veolia was replaced with an in-house team.

This amount of management volatility is concerning, since the system has overwhelming needs, not only in its infrastructure, but also in its technology systems. Strong leadership will be critical given the proposed plan. In order to achieve the improvements set out in the CIP, even if only near term projects are considered, the authority will require consultants, extensive planning, and sizeable staff increases. Without strong governance, continued unresolved inefficiencies are a major concern.

The authority is currently managed by a seven member board, with at least six members appointed by the mayor and one by the city council. The authority provides water at no cost to city-owned buildings and public areas. The city and authority are in the process of renegotiating their cooperation agreement to more accurately reflect the exchange of services provided. Currently, the authority makes an annual payment of \$715 million to the city under the cooperation agreement.

Legal Security

The 2017 bonds are limited obligations of the authority, payable from pledged water and sewer system revenues.

Use of Proceeds

Proceeds from the 2017 A&B bonds will be used to refund existing debt for net projected present value savings of \$5.6 million, or 3.46% of refunded principal.

Obligor Profile

This is an authority of the city of Pittsburgh, providing water treatment and conveyance to 84% of the city's population and sewer conveyance for the entire city.

Methodology

The principal methodology used in this rating was US Municipal Utility Revenue Debt published in December 2014. Please see the Rating Methodologies page on www.moody's.com for a copy of this methodology.

Ratings

Exhibit 2

Pittsburgh Water & Sewer Authority, PA

Issue	Rating
Water and Sewer System First Lien Revenue Refunding Bonds, Series B of 2017 (Taxable)	A2
Rating Type	Underlying LT
Sale Amount	\$5,460,000
Expected Sale Date	09/27/2017
Rating Description	Revenue: Government Enterprise
Water and Sewer System First Lien Revenue Refunding Bonds, Series A of 2017	A2
Rating Type	Underlying LT
Sale Amount	\$156,785,000
Expected Sale Date	09/27/2017
Rating Description	Revenue: Government Enterprise

Source: Moody's Investors Service

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REPORT NUMBER

1092022

CLIENT SERVICES

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

RatingsDirect®

Summary:

Pittsburgh Water and Sewer Authority; Joint Criteria; Water/Sewer

Primary Credit Analyst:

Theodore A Chapman, Dallas (1) 214-871-1401; theodore.chapman@spglobal.com

Secondary Contact:

Erin Boeke Burke, New York 212-438-1515; Erin.Boeke-Burke@spglobal.com

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Rationale

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Summary:

Pittsburgh Water and Sewer Authority; Joint Criteria; Water/Sewer

Credit Profile

US\$156.785 mil wtr and swr sys first ln rev rfdg bnds ser A of 2017 due 09/01/2031		
<i>Long Term Rating</i>	A/Stable	New
US\$5.46 mil wtr and swr sys first ln rev rfdg bnds ser 2017 B due 09/01/2018		
<i>Long Term Rating</i>	A/Stable	New
Pittsburgh Wtr & Swr Auth WTRSWR		
<i>Long Term Rating</i>	A/Stable	Affirmed

Rationale

S&P Global Ratings assigned its 'A' rating to Pittsburgh Water and Sewer Authority (PWSA), Pa.'s series 2017A and taxable series 2017B first-lien revenue bonds. We affirmed our 'A' rating on the authority's outstanding revenue bonds, and our 'A-' rating on its subordinate-lien debt. The outlook is stable for all ratings.

We have applied our primary utility revenue bond criteria to determine the authority's general creditworthiness and have applied this rating to its senior-lien issues. We rate the subordinate lien one notch lower based on the application of our criteria "Assigning Issue Credit Ratings Of Operating Entities" (published May 20, 2015, on RatingsDirect) given the open status of the senior lien and the likelihood that PWSA will continue to use the senior lien from time to time. Our view of PWSA's general creditworthiness is based on its very strong enterprise risk profile and its strong financial profile.

The authority has in recent months been subject to scrutiny from local and state elected officials who voiced concerns over authority operations, subsequently asking the state to perform an audit of PWSA. There is currently pending legislation that would put PWSA under the state's Public Utility Commission (PUC) jurisdiction. PWSA management is fully cooperating with both actions. While rate regulation of municipal owned systems is less common in Pennsylvania and the exact details of the scope of regulatory oversight is not yet finalized, we view this as currently neutral to credit quality. We have noted that generally rate regulation in Pennsylvania is supportive of credit quality, although we would first look primarily to a history of the magnitude of what is awarded versus what is requested in rate cases, as well as the timing, and how much of the substantial capital improvement plan (CIP) can be put into the rate base with each review; the PUC is compelled to respond within 180 days. In our view, while serious, the legislation is indicative of the identified need for infrastructure investments to which we have observed all parties seem to agree are necessary. The CIP contains projects that are both based on PWSA's prioritization as well as those reflecting consent decrees; much of the existing infrastructure was also built to serve a much larger population and a workforce much different from today's. We understand that PWSA remains cooperative and in fact continues to work with all parties toward a long-term solution. There also has not been resolution between PWSA and the vendor for the now-expired

Summary: Pittsburgh Water and Sewer Authority; Joint Criteria; Water/Sewer

management and operations agreement. PWSA alleged concerns primarily with water treatment techniques and meter replacements and the vendor countered with allegations of its own. We can predict neither the timing nor outcome and are not factoring this into our credit analysis.

The enterprise risk profile reflects our view of Pittsburgh's:

- Role as the anchor and economic engine for western Pennsylvania, based on an employment base that has reinvented itself from one which once relied heavily on manufacturing and industrial jobs;
- Rates for service that remain affordable, but have been pressured over the last decade by the unfunded mandates; and,
- Operational management assessment (OMA) that we view as "good" even despite the aforementioned challenges.

The financial risk profile reflects our view of the system's:

- Adequate all-in debt service coverage (DSC) and liquidity, and while both appear to be on the cusp of steady improvement, a five-year CIP of \$1.17 billion through fiscal 2022--roughly 90% of which is intended to be funded with additional debt--will pressure the overall financial risk profile;
- Decreasing exposure to interest rate risk and contingent liabilities. Just over half of PWSA's \$645 million in total outstanding long-term debt is variable rate, including \$104 million in direct-purchase agreements with various financial institutions. In recent years, however, PWSA has been able to not only negotiate a more favorable cost of borrowing but also eliminated language in the continuing covenant agreements that could expose it to remote but, potentially material, contingent risks. All of the variable-rate debt is synthetically fixed-rate, although the current positions of the interest-rate swaps remain unfavorable; and,
- Good financial management practices and policies.

The first-lien bonds are secured by a senior-lien pledge on the net revenues of the authority's waterworks and sanitary sewer system. A fully funded reserve in the amount of maximum annual debt service (MADS) provides additional liquidity on the senior-lien bonds. Under the current master trust indenture, certain cash reserves are permitted to be applied toward compliance with the rate covenant of either sufficiency (1x) across all liens from net revenues alone, or 1.2x from net revenues plus available reserves in the revenue fund, although the amended indenture proposes to strengthen these covenants. PWSA has only very rarely had to rely on those reserves to satisfy the rate covenant in recent years, and by our calculation not at all since 2010.

We understand that the proceeds of the series 2017A and 2017B bonds will be used to advance refund a portion of the authority's series 1998B and 2013B bonds all of its 2008D-1 bonds, and currently refund all of its series 2008A bonds. Management also intends to refund its variable-rate demand bonds with floating-rate notes. Once the floating-rate note transaction--expected to be an unrated direct purchase--closes, PWSA expects to have achieved the required consent of two-thirds of bondholders such that new covenants will take effect. Primarily, PWSA intends to bolster its rate covenant to achieve at least 1.25x annual DSC of its senior-lien obligations plus 1.1x on its subordinate-lien debt service and that net revenues alone (excluding any rate stabilization fund transfers) must be at least sufficient to cover all annual debt service. We have noted in the past that the existing legal provisions are permissive, and would view the new covenants as adequately removing this weakness.

Following the series 2017A, 2017B, and 2017C transactions, PWSA will have approximately \$519.5 million in outstanding senior-lien obligations, \$103.6 million in subordinate-lien debt, and \$29.9 million in state PENNVEST

Summary: Pittsburgh Water and Sewer Authority; Joint Criteria; Water/Sewer

loans. As of September 2017, PWSA has also drawn \$21.4 million on an \$80 million committed line of credit with JPMorgan Chase Bank NA.

Enterprise risk

Pittsburgh Water and Sewer Authority provides drinking water and sewer collection to over 82,000 metered accounts to most, but not all, of the city, as well as eight neighboring municipalities and one wholesale customer for needs ranging from emergency interconnections and peaking to full requirements. It also provides sewer collection to the entire city. While median household effective buying income is only 77% that of the U.S., the local economy has long since transitioned from its historic manufacturing base. Although those sectors are still part of the employment base, financial services, health care, and a booming technology sector are all important contributors to the metropolitan statistical area (MSA). The Pittsburgh MSA has seen \$1.8 billion in venture capital invested in the telecommunications and high-technology sectors in the last decade, and also saw a major energy sector boom—one which has since waned—from activity in the Marcellus and Utica shales. The stability of the regional economy is reflected in an unemployment rate of 5.4% as of July 2017. We do not view there to be any dependence on the authority's principal customers, given they include another water authority and the University of Pittsburgh.

Based on our OMA, we view PWSA to be a '3' on a scale of 1-6, with '1' being the strongest. An assessment of "standard," in our opinion, implies that overall alignment between the system's operational characteristics and its management is sufficient but not comprehensive. While we note, for example, that the city has an essentially unlimited raw-water supply from the Allegheny River and overall system capacity that could support a population several times the size of the current one, it is also the case that the authority's main focus remains the renewal and replacement of its aging underground infrastructure. PWSA is also dealing—directly and indirectly—with mandates from environmental regulators to address combined sewer overflows and wastewater treatment requirements. For example, Allegheny County Sanitary Authority's (ALCOSAN) 2008 consent decree is expected to cost \$3.6 billion by the final 2026 deadline; PWSA represents about 35% of ALCOSAN's total operating revenues based on the 2017 budget. PWSA has also been working its way through its own consent decree since 2004. Most of the projects in scope for PWSA's consent decree have already reached substantial completion, and some of the remaining projects have been proposed to environmental authorities to be addressed using green infrastructure. Although management has been separating the sewer system in the areas of growth and redevelopment, 77% of the collection system is still a combined storm and sanitary infrastructure. The water distribution system is also an identified area of opportunity given the relatively high nonrevenue water percentage, although this includes free service to the city that PWSA is compelled to provide. To support the CIP, the authority's board has adopted a practice of multiyear rate adjustments, most recently base-rate adjustments of 13% and 8% for 2017 and 2018, respectively. PWSA also passes through all costs from ALCOSAN, although it is uncertain if the state PUC will provide management the ability to continue to pass through administratively any cost increase from ALCOSAN or if it will require some kind of regulatory approval. Based on S&P Global Ratings' universal assumption of 6,000 gallons of both water and sewer service, a monthly residential bill currently stands at \$81, or 2.8% of MHHEBI.

Financial risk

Annual DSC for PWSA has consistently been 1.3x or better, even when treating transfers and subsidy payments as an operating expense. In addition to making a transfer payment to the city's general fund, PWSA also provides the city

Summary: Pittsburgh Water and Sewer Authority; Joint Criteria; Water/Sewer

free service. It also provides a legacy payment that ultimately subsidizes the cost of water to a portion of the Pittsburgh area not served by PWSA. All-in DSC by our calculation has been closer to 1.1x; all-in coverage is our adjusted debt service calculation that includes all utility system obligations regardless of lien or accounting treatment

The system's liquidity remains an area of consistency and credit strength. Total available reserves also include the line of credit, in place through July 2020. All told, liquidity remains sound, usually equivalent to four-to-six months of operating expenses. Given the goal of setting rates to achieve DSC of 1.3x or better and funding the CIP using 10% to 15% pay-as-you-go sources, the authority's financial forecast is one that, in our view, could realistically generate the requisite CIP funding to boost operational performance and lead to stronger and more consistent financial performance, all of which could, in turn, lead to a higher rating, even if beyond our two-year outlook horizon. We would approach upward rating potential cautiously, however, until there is greater detail to—and a record of—PUC oversight.

Based on our financial management assessment (FMA), we view the authority to be a '2' on a scale of 1-6, with '1' being the strongest. An FMA of "good" indicates that we consider practices currently good, but not comprehensive. The authority maintains many best practices we believe are critical to supporting credit quality, particularly in the finance department. These practices, however, may not be institutionalized or formalized in policy, or may not be as robust as comparable utilities with an FMA of "strong." The FMA of "good" includes a well-detailed long-term financial plan that management intends to implement to support its identified capital commitments. The authority also has implemented new, more comprehensive and conservative budgeting assumptions that better capture annual revenue requirements. We understand that the authority's management team regularly tracks budget-to-actual performance and that the new management team is instituting a number of additional best practices to target consistently higher levels of financial performance, minimizing the need to meet a rate covenant of either sufficiency (1x) across all liens from net revenues alone, or 1.2x from net revenues plus unrestricted cash and investments in the authority's revenue fund.

Outlook

The stable outlook reflects S&P Global Ratings' expectation that the authority's demonstrated willingness to raise rates, including its practice of multiyear rate increases, will minimize any reliance on available cash balances just to meet its rate covenant in coming years and allow that cash to be deployed for utility purposes. Even though management has unwound nearly all of the contingent risks associated with its long-term debt structure, its capital structure remains complex. It is also predicated in part on rating stability, which is why we are assuming management will try to resolve some of the ongoing concerns regarding operations and governance as soon as practicable. We will also likely keep in place the one-notch rating distinction between the first- and subordinate-lien debt.

Upside scenario

As the potential financial risks continue to become more remote over time and reliance on cash reserves remains infrequent, a higher rating could still be warranted, even if beyond our outlook horizon and even from a stable outlook. We assume that PUC oversight will eventually be supportive of credit quality, but we would first look at the scope of regulation, then the record of the timing and magnitude of rate relief, and how capital expenditures will be financed

Summary: Pittsburgh Water and Sewer Authority; Joint Criteria; Water/Sewer

before considering an 'A+' rating.

Downside scenario

Conversely, should the size and scope of the capital program cause the financial profile to weaken, we could lower the rating.

Ratings Detail (As Of September 22, 2017)

Pittsburgh Wtr & Swr Auth WTRSWR		
<i>Long Term Rating</i>	A/Stable	Affirmed
Pittsburgh Wtr & Swr Auth (AGM)		
<i>Unenhanced Rating</i>	A(SPUR)/Stable	Affirmed
Pittsburgh Wtr & Swr Auth wtr & swr subord		
<i>Unenhanced Rating</i>	A-(SPUR)/Stable	Affirmed
Pittsburgh Wtr & Swr Auth wtr & swr 1st lien		
<i>Unenhanced Rating</i>	A(SPUR)/Stable	Affirmed
<i>Long Term Rating</i>	AA/A-1/Stable	Affirmed
Pittsburgh Wtr & Swr Auth wt & swr 1st lien		
<i>Unenhanced Rating</i>	A(SPUR)/Stable	Affirmed
<i>Long Term Rating</i>	AA+/A-1	Affirmed
Pittsburgh Wtr & Swr Auth (fixed rate) wtr & swr 1st lien		
<i>Unenhanced Rating</i>	A(SPUR)/Stable	Affirmed

Many issues are enhanced by bond insurance.

Certain terms used in this report, particularly certain adjectives used to express our view on rating relevant factors, have specific meanings ascribed to them in our criteria, and should therefore be read in conjunction with such criteria. Please see Ratings Criteria at www.standardandpoors.com for further information. Complete ratings information is available to subscribers of RatingsDirect at www.globalcreditportal.com. All ratings affected by this rating action can be found on the S&P Global Ratings' public website at www.standardandpoors.com. Use the Ratings search box located in the left column.

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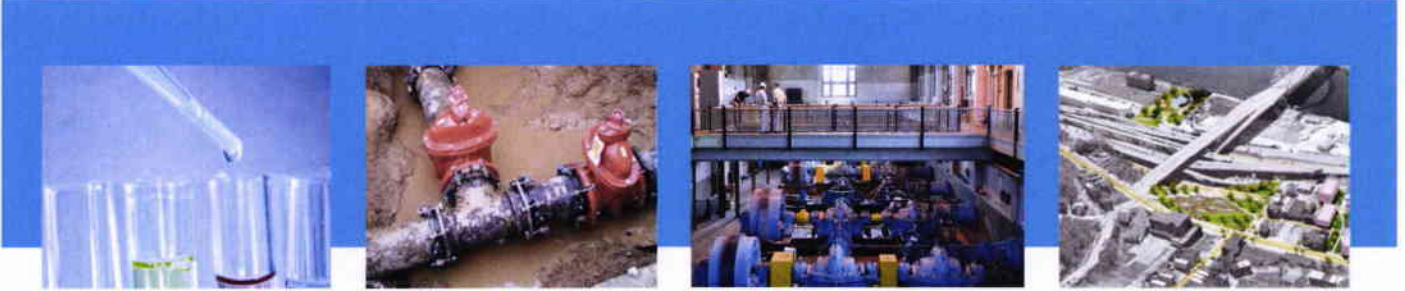
Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.19. Supply copies of all presentations by the company's and, if applicable, its parent's management and securities analysts during the past 2 years, including presentations of financial projections.

RESPONSE:

Please see attached.



Presentation to Standard & Poor's

September 6, 2017



Meeting Participants

PITTSBURGH WATER AND SEWER AUTHORITY ("PWSA" OR THE "AUTHORITY")



Robert Weimar
Interim Executive Director

Kent Lindsay
Director of Finance

Rick Obermeier
Director of Field Services

FINANCIAL ADVISOR



Kathy Clupper
Managing Director

SENIOR MANAGING UNDERWRITER



Gene Spinelli
Managing Director



Presentation Contents

- Executive Summary
- Management Update
- FY 2017 Financial Results
- Capital Improvement Plan
- Financial Projections and Metrics
- Rate Setting, Peer Comparisons, PUC Discussion
- Plan of Finance including Springing Indenture
- Conclusion

Appendix

- Overview and Service Area
- Governance and Rate Setting Process
- Water and Wastewater System Overview
- Financial Information
- Implementing and Funding the Capital Improvement Program
- PWSA's Debt



Executive Summary

- The Authority is a monopoly service provider with numerous fundamental credit strengths, including:
 - Large, diverse and stable service territory
 - Competitive rates combined with history of raising rates
 - Ample water supply
 - New management with commitment to improved capital planning and rate design
 - Springing indenture to improve the rate covenant and Authority flexibility

- The PWSA has implemented a new and improved process for capital and operational planning
 - PWSA has begun the transition to a metrics-based organization
 - Capital and operating budgets have been designed by Mott MacDonald to conform to industry best practice
 - The Consulting Engineer is also Mott MacDonald and the CIP integrates with their system assessment and recommendations
 - Planning drives rates rather than rates driving operating and capital activities

- The Authority expects a Fall 2017 rate increase consistent with new approach that began in January 2017, and is preparing for the potential transition to the PUC rate setting and approval process

- The Authority's proposed Plan of Finance incorporates:
 - Fixed and variable rate refundings to achieve significant savings
 - Deemed consents to the Amended and Restated Indenture, which incorporates improved creditor protections



Management Update

- **The Authority is modernizing to become a metrics-driven organization**
 - Metrics span all areas of the organization, including water operations, sewer operations, storm water operations, water production, engineering, finance, customer service, billing and metering, and other administrative departments
 - Metrics are consistent with water utility best practice, conforming with AWWA and PA Public Utility Commission standards
 - The Authority is targeting top-quartile performance on metrics, though achievement of that level of performance may take several years
 - Current forecasts include capital and operating costs to implement preliminary plans to improve on more than 40 factors
 - Metrics include both activity-based measures and outcome-based measures
 - An integrated model has been developed that includes: budgets, long range plans (10 years), CIP (25 years), cash flow monitoring, credit metrics, water and sewer (and storm water) rates and charges, and rate structures

 - **PWSA oversight**
 - The PA General Assembly has proposed legislation to place PWSA under the jurisdiction of the PA PUC. The Authority welcomes this opportunity to operate the way a responsible utility should and to set rates accordingly.
 - Raftelis Financial Consultants has been engaged to develop a detailed compliance plan for filing with the PA PUC that will form the basis for delivering metrics discussed above in "Compliance Plan".
 - The Compliance Plan will be followed by a rate filing that will establish water and sewer rates consistent with that Plan. Rates are expected to stay within the affordability standards for water and sewer rates.
 - The PA Auditor General has spent several months reviewing the Authority and the report is expected in a month or two. It is expected that their conclusion will point to the lack of resources available to PWSA to conduct its business satisfactorily.

 - **Financial Restructuring**
 - New, modern indenture
 - Improved credit profile
 - Bond refinancings with significant positive economics
 - Improved flexibility, but also improved controls
-

Financial Results



FY 2017 YTD (June 30, 2017) Actuals vs. Budget

- **Revenue Shortfall**
 - Lower Fees from reduced development activity
 - Clean-up of customer accounts from historical billing problems
- **Operating Cost Improvement**
 - Staff efficiencies
 - Early completion of billing system and data rehabilitation Phase 1
 - Procurement and warehousing improvements to lower costs and reduce losses
- **Debt Service**
 - Budgets assumed a 2008 D1 and PENNVEST refinancing that would be done Q2 2017
 - Actual refinancing much more comprehensive which has taken more time

	2017 YTD Actual Results	2017 YTD Budgeted Results	Difference	
Operating Receipts				
Water & Conveyance Utility	\$72,137,011	\$74,887,286	\$2,750,275	-4%
Alcosan Utility	35,745,654	39,669,498	3,923,844	11%
DISC	549,680	0	(549,680)	-100%
Fees	1,640,899	5,941,225	4,300,326	262%
Misc Other	681,472	759,063	77,591	11%
Total Operating Receipts	110,764,717	121,257,072	10,502,355	9%
Operating Expenses				
Distribution	-7,845,680	-9,966,998	(2,121,318)	27%
Water Treatment Plant	-7,521,343	-9,704,958	(2,183,615)	29%
Water Quality	-1,018,800	-1,007,573	11,227	-1%
Sewer Conveyance	-5,631,040	-6,157,419	(526,379)	9%
DISC Disbursements	0	0		0%
Engineering	-6,162,658	-5,689,325	473,333	-8%
Alcosan Sewage Treatment	-43,587,740	-42,075,420	1,512,320	-3%
General Admin	-14,638,931	-16,280,511	(1,641,580)	11%
Total Operating Expenses	-88,408,192	-90,882,294	(4,476,012)	5%
Net Income/(Loss) From Operations	\$24,348,525	\$30,374,888	\$6,026,343	25%
Non-operating Cash Inflows/Outflows				
ADD: Non-Trust Interest Income	0	0	0	0%
LESS: Debt Service & Other:				
Bond Debt Svc (Net Trust Income)	-29,357,729	-28,848,154	509,575	-2%
Pennvest Loan Debt Svc (Net)	-2,267,451	0	2,267,451	-100%
Pvest (Disburs)/Ln Advances - Net	903,725	0	(903,725)	-100%
Total Non-Operating Expenses	-30,721,455	-28,848,154	1,873,301	-8%
Transfer to Restricted Funds	-1,834,298	-1,834,298	0	0%
Net Cash Inflows/(Outflows):	(\$8,207,228)	(\$307,584)	7,899,644	-96%
Capital Project Spending	(\$13,758,779)	(\$22,024,800)	(\$8,266,021)	60%



2018-2027 Capital Improvement Plan

- In 2016, the PWSA, with assistance from Mott MacDonald, developed the Capital Improvement Plan for Fiscal Years 2018 through 2027 (CIP) totaling over \$2.3 billion. The goals were considered in the preparation of the CIP:
 - Improving the operation of PWSA's water supply and distribution system with a target of reducing non-revenue water to below 25% in ten years
 - Eliminating lead service lines, sewer overflows and basement backups in our service territory
 - Deploy new and improved accounting, billing, asset management and SCADA systems
 - Developing green infrastructure strategies, design standards, demonstration projects, and effective best management practices
 - Perform comprehensive system reviews and deploy preventive maintenance and strategic proactive replacement of system assets
 - Building personnel and expertise to support a capital program that will range from approximately \$200 - \$300 million per year
 - Enhance existing systems to deliver projects and monitor performance of those assets

PWSA has developed a comprehensive 10-year investment program to improve safety while maintaining affordable rates



2018-2027 Capital Improvement Plan

- \$2.3 billion Capital Improvement Plan for Fiscal Years 2018-2027 was developed in conjunction with Mott MacDonald to address PWSA system-wide needs

Projected Capital Expenditures, 2018 - 2027 (\$000)											
Category	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
Water Treatment	\$8,054	\$10,875	\$38,719	\$35,904	\$21,975	\$27,191	\$18,811	\$6,949	\$6,949	\$6,949	\$182,374
Water Pump/Storage	8,808	16,466	45,513	54,070	21,584	3,157	7,598	16,116	13,771	7,715	194,798
Water Distribution	24,681	103,928	113,435	120,315	115,194	117,953	115,975	117,979	121,546	123,701	1,074,708
Wastewater System	10,778	37,906	34,326	31,205	32,182	35,430	36,489	37,487	38,473	39,086	333,361
Stormwater System	4,084	14,675	21,267	26,795	18,076	18,073	18,652	19,246	20,105	20,851	181,822
Green Infrastr.	11,174	28,103	40,730	34,236	33,537	26,359	23,443	24,145	24,868	25,616	272,210
Info Management	1,225	7,000	9,000	4,000	381	143	143	143	143	143	22,320
Water Dist. & SW/WW	4,276	6,599	5,851	5,567	3,756	3,574	3,310	3,970	3,508	3,970	44,381
Total	\$73,080	\$225,552	\$308,840	\$312,092	\$246,685	\$231,879	\$224,420	\$226,033	\$229,362	\$228,030	\$2,305,973

Projected CIP Funding Sources, 2018 - 2027 (\$000)											
Category	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
Debt (Rev. Bonds)	\$57,789	\$210,281	\$292,309	\$291,108	\$219,440	\$198,577	\$186,594	\$183,931	\$183,328	\$178,056	\$2,001,413
Cash (PAYGO)	15,291	15,271	16,531	20,984	27,245	33,302	37,827	42,102	46,034	49,974	304,560
Total	\$73,080	\$225,552	\$308,840	\$312,092	\$246,685	\$231,879	\$224,420	\$226,033	\$229,362	\$228,030	\$2,305,973

Source: PWSA Comprehensive Model (170831)



Financial Projections

Revenues, Expenses & Debt Service Coverage

	2018	2019	2020	2021	2022
Revenues	\$286,764	\$297,602	\$321,628	\$355,055	\$390,923
Operating Expenses ¹	-205,198	-211,932	-218,973	-226,262	-233,819
Net Rev Available for D/S	\$81,566	\$85,669	\$102,655	\$128,793	\$157,105
Senior Bond D/S ²	\$46,781	\$50,856	\$65,985	\$86,704	\$107,490
Senior D/S Coverage	1.74x	1.68x	1.56x	1.49x	1.46x
Senior D/S Coverage w/ Co-Op Payment	1.59x	1.54x	1.45x	1.4x	1.4x
Net Rev After Senior D/S	\$34,785	\$34,813	\$36,671	\$42,088	\$49,615
Total D/S	\$50,409	\$54,484	\$69,613	\$90,333	\$111,118
Total D/S Coverage	1.62x	1.57x	1.47x	1.43x	1.41x
Total D/S Coverage w/ Co-Op Payment	1.48x	1.44x	1.37x	1.35x	1.35x
Net Rev After Total D/S	\$31,157	\$31,185	\$33,042	\$38,460	\$45,987

Liquidity

	2018	2019	2020	2021	2022
Unrestricted Cash	\$11,790	\$20,656	\$30,359	\$41,295	\$53,575
Revolving Line of Credit	40,000	40,000	40,000	40,000	40,000
Total Liquidity	\$51,790	\$60,656	\$70,359	\$81,295	\$93,575

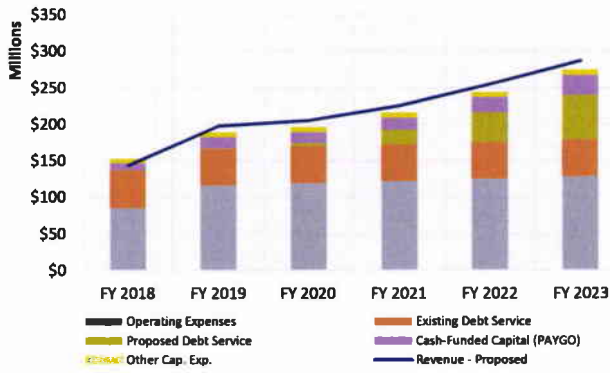
Source: PWSA Comprehensive Model (170831).

1. Excludes City Co-Op Payment of \$7,150,000
2. Includes projected future bonded debt

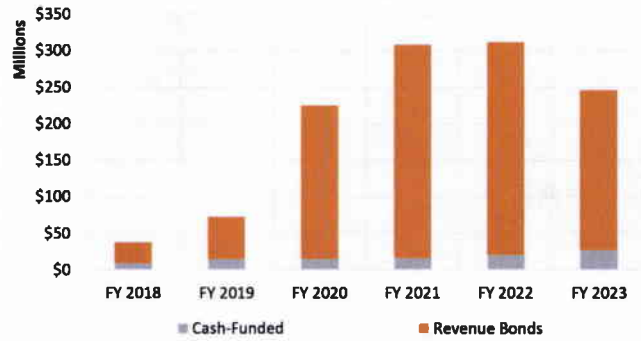


Financial Metrics

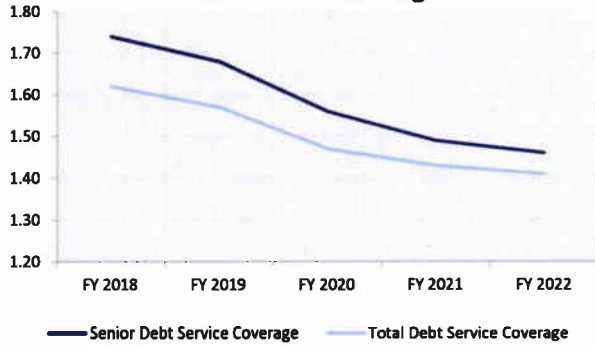
Financial Plan



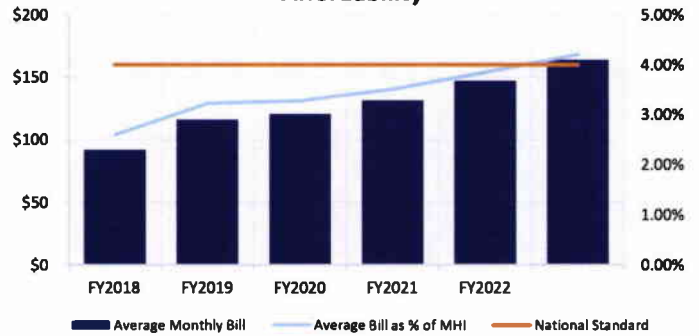
Capital Financing Sources



Debt Service Coverage



Affordability⁽¹⁾

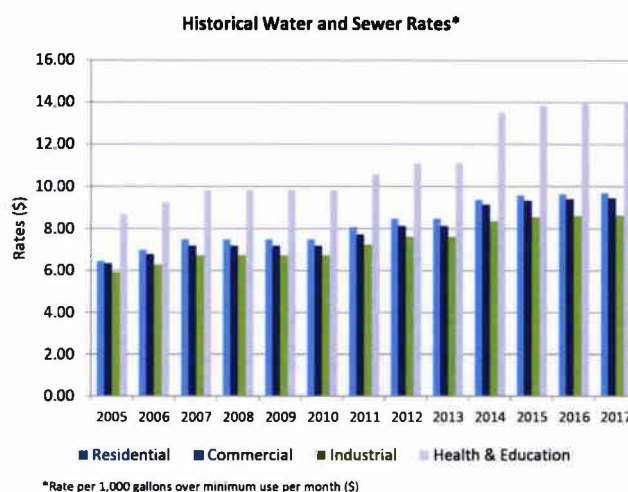


(1) MHI data based on City of Pittsburgh



Rate Setting

- December 2016: Two-year rate adjustment for FY 2017 and 2018
 - Effective January 1, 2017 for 2017-2018
 - 13% increase in the typical monthly bill in 2017
 - 8% increase in the typical monthly bill in 2018
- October 2017: Proposing new rate levels consistent with the Authority's long-range plans
 - Low-income assistance plans are being contemplated
- Cost of service based rates
 - Consistent with the American Water Works Association
- PWSA bills on behalf of the Allegheny County Sanitary Authority (ALCOSAN) for sewage treatment.
 - Sewage treatment rate will increase by 11%, increasing the average monthly bill by \$3.53 per month

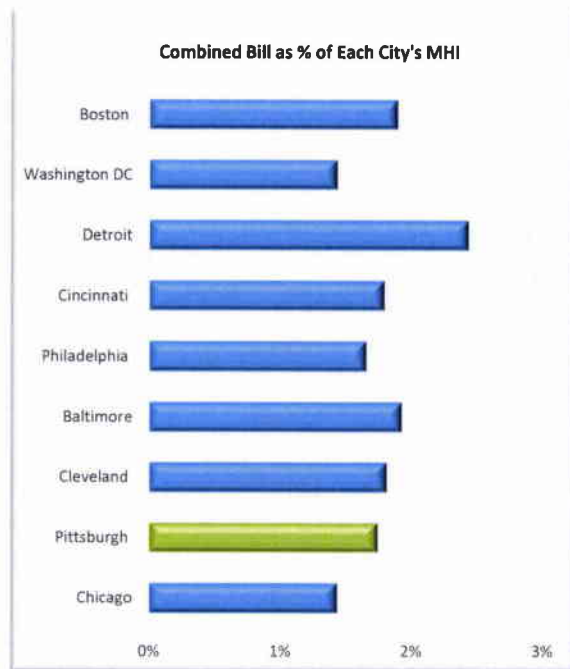
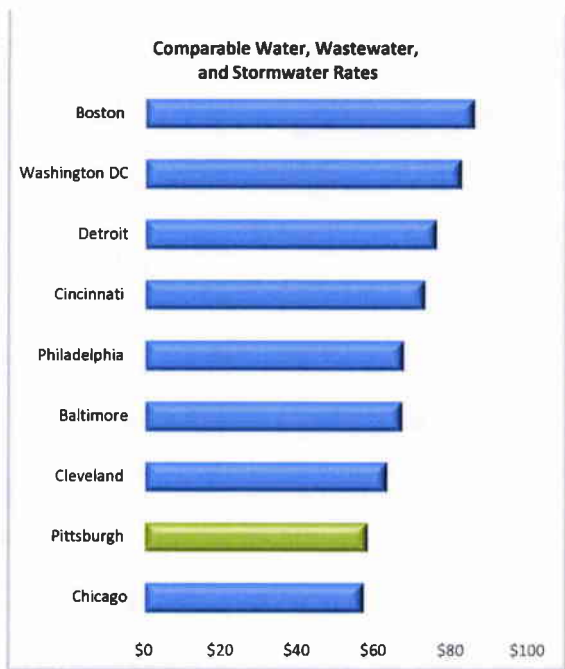


PWSA is committed to setting rates sufficient to fund its capital program and meet its rate covenant



Rate Peer Comparisons

- PWSA rates compare favorably to other large urban water and wastewater systems



Source: Data compiled and results calculated by PFM based upon information from water and sewer authorities serving the cities listed.



Potential Transition to PUC Rate-Setting

- Legislation proposing that PWSA be placed under the oversight of the Pennsylvania Public Utility Commission (“PUC”) was passed by the PA House of Representatives and is being considered by the PA Senate
- PUC oversight should prove to help PWSA address under-investment in infrastructure
- PWSA management has experience with regulated utilities and is familiar with their processes
- Under the Senate-proposed version of the PUC oversight bill, the requirement to respect rate covenant and bondholder rights will remain in place
- PUC oversight is expected to be a long-term positive once PUC and PWSA make the initial adjustment
- Under the current version of the legislation, if enacted, PUC oversight would become effective January 1, 2018



Plan of Finance

- The proposed Plan of Finance incorporates the following features:
 - Advance refundings of long-term fixed rate debt for PV savings
 - Refunding of VRDBs with Floating Rate Notes
 - Re-indexing of swap transactions
 - Springing indenture to modernize provisions and improve rate covenant



Plan of Finance – Fixed Rate Refunding

- **Series 2017A & B Fixed Rate Refunding issued to achieve Savings and Deemed Consents to Amended and Restated Indenture**
- Tax-Exempt Advance Refunding (Series 2008D-1)
 - Series 2008D-1, \$24.7 million Par Refunded
 - \$4.3 million NPV Savings, 17.4% of Refunded Par
- Tax Exempt Refunding of Taxable Bonds (Series 2008A)
 - Series 2008A, \$61.0 million Par Refunded (92% eligible for tax-exempt refunding), subject to make whole call
 - \$1.1 million NPV Savings, 1.8% of Refunded Par
- Tax-Exempt Advance Refunding (Series 1998B)
 - Series 1998B (CABs), \$34.3 million Par Refunded, includes non-callable candidates
 - -\$344k NPV Savings, -1.0% of Refunded Par
- Tax-Exempt Advance Refunding (Series 2013B)
 - Series 2013B, \$42.3 million Par Refunded
 - \$572k NPV Savings, 1.4% of Refunded Par – maintains future optionality on Series 2013B

In aggregate, Series 2017A&B achieve NPV savings of \$5.6 million and deemed consent of 28.7% (of necessary 66 2/3%) for new Indenture to become effective



Plan of Finance – FRN Refunding

- **Series 2017C Refunding of Senior Lien VRDBs with Senior Lien FRNs and Re-Indexing Swap Achieves Savings and Deemed Consents to Amended and Restated Indenture**
- The 2017C issuance will refund \$216.7 million of par across Series 2008B1-2 and D-2
- Refunding with Capital Markets FRNs on Senior Lien (Bank FRNs are also being explored)
- Savings dependent on final structure
- Significant consideration being given to structures to address LIBOR retirement issue

Series 2017C issuance in combination with Series 2017A & B issuances provides deemed consent over 66 2/3% necessary for new Indenture to become effective



Plan of Finance – Springing Indenture

- Amended and Restated Indenture Includes the Following Features:
 - Improved Rate Covenant
 - Ability to establish a Common Debt Service Reserve or Separate Series Debt Service Reserve
 - Additional Bonds Test: Historical test requires meeting Rate Covenant based on Net Revenues in 12 of last 24 months versus MADS, inclusive of proposed Additional Bonds; or Prospective test (requiring a consultant's certificate) that includes approved rate increase in Net Revenues.
 - Establishment of a Rate Stabilization Fund
 - Technical modifications to the Flow of Funds

Current Rate Covenant	<p>The Authority was previously required to satisfy one of the two coverage tests below:</p> <p>(1) Net Revenues shall not be less than:</p> <ul style="list-style-type: none"> (a) all Current Expenses of the Authority; and (b) 120% of debt service requirements with respect to the Senior Bonds, Subordinate Bonds and other Authority Long-Term Indebtedness during the current Authority Fiscal Year <p>(2) Net Revenues shall not be less than:</p> <ul style="list-style-type: none"> (a) all Current Expenses of the Authority; and (b) 100% of debt service requirements with respect to the Senior Bonds, Subordinate Bonds and other Authority Long-Term Indebtedness during the current Authority Fiscal Year
New Rate Covenant	<p>The Authority is required to satisfy the three requirements below:</p> <p>(1) Net Revenues shall be sufficient in each Fiscal Year to pay Annual Senior Debt Service, Annual Subordinate Debt Service, all deposits to satisfy Reserve Requirements and any additional Authority Indebtedness in that Fiscal Year</p> <p>(2) Net Revenues shall not be less than 125% of Annual Senior Debt Service, plus 110% of aggregate Annual Debt Service in that Fiscal Year</p> <p>(3) Rate Covenant Net Revenues, excluding transfers from the Rate Stabilization Fund, shall equal not less than 100% of aggregate Annual Debt Service</p>



Conclusion

- The Authority is a monopoly service provider in a large, diverse and stable service territory with ample water supply
- The Authority's management is committed to improved capital planning and investment
- The Authority expects a Fall 2017 rate increase and is preparing for a potential transition to the PUC rate setting and approval process
- The Authority's proposed Plan of Finance incorporates:
 - Fixed and variable rate refundings to achieve savings
 - Deemed consents to the Amended and Restated Indenture, which incorporates improved creditor protections
- The Authority is committed to strengthening its credit profile and operating performance and its track record of increasing rates speaks to its level of commitment

PWSA requests the confirmation of its current rating in connection with the issuance of the refunding bonds



Appendix





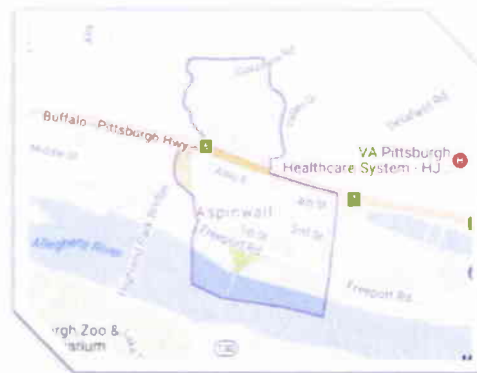
Appendix A: Overview and Service Area





PWSA Overview

- PWSA provides water and sewer service to more than 300,000 consumers throughout the City of Pittsburgh and surrounding areas
- The Authority is the largest combined water and sewer authority in Pennsylvania producing an average of 70 million gallons of water daily
- PWSA assets
 - Aspinwall water treatment plant
 - Highland Park microfiltration plant
 - 12 finished water pump stations
 - 13 water distribution storage tanks
 - 930 miles of water mains
 - 5 reservoirs
 - 18,754 valves
 - 7,450 fire hydrants
 - 1,227 miles of sanitary, storm & combined sewer lines
 - 27,000 catch basins and storm inlets
 - 29,000 manholes



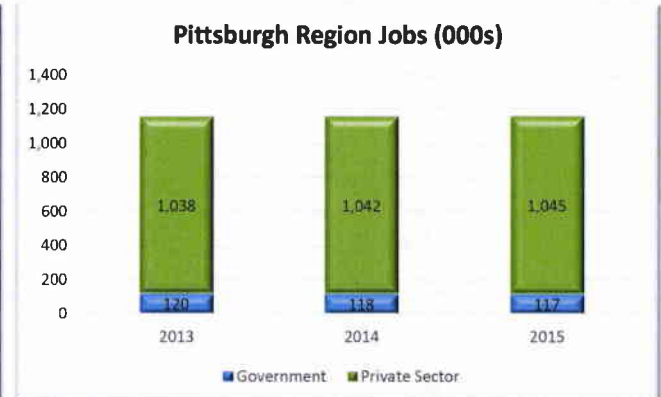
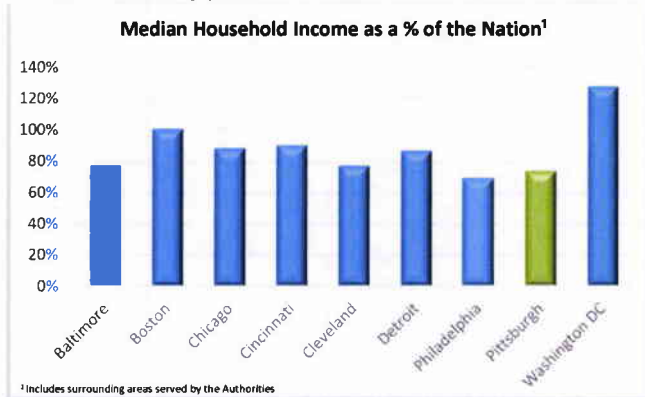


Pittsburgh's Economy

- The City of Pittsburgh (the "City"), located in western Pennsylvania has a total population of 305,704 (2,388,076 metropolitan)
- Second-largest city in Pennsylvania
- \$23 billion tax base has a dynamic economy supported by a strong institutional presence
 - Significant institutional presence with over ten colleges and universities
 - Total enrollment comprises 41% of the city's population
- The city's financial position is likely to continue improving given the conservative budgeting practices outlined in the Act 47 recovery plan

Population Since 2000					
	2000	2010	2015	% Change 2000-10	% Change 2010-15
Pittsburgh	334,563	305,704	304,391	-8.63%	-0.43%
Pittsburgh MSA¹	2,431,087	2,356,285	2,353,045	-3.08%	-0.14%
Pennsylvania	12,281,054	12,702,379	12,802,503	3.43%	0.79%
United States	281,421,906	308,745,538	321,418,820	9.71%	4.10%

¹Includes Allegheny, Armstrong, Beaver, Butler, Fayette, Washington, and Westmoreland counties.
Source: U.S. Census Bureau, Census 2010, Census 2000



Pittsburgh's Economy



- **Financial and Business Services** is the region's leading industry sector, contributing 25% of the gross regional product and employing 230,000 people at some 15,000 firms.
- Pittsburgh is the new center of American **Energy** with strengths across seven strategic energy industries including 800+ firms supporting 50,000 energy jobs.
 - Tremendous economic growth from Southwestern PA natural gas industry (Marcellus and Utica Shale); \$5.4 billion in economic activity.
- A leading regional center for **Healthcare and Life Sciences** sector which contributes nearly 12% of gross regional product, employing some 120,000 people.
 - Nearly 4,700 healthcare degrees awarded annually.
 - \$350 million+ venture capital invested in life sciences over last decade.
- Pittsburgh is a "Top 10 Up and Coming Tech City" (Forbes); Nearly \$1.8 billion venture capital spent on **Information and Communications Technology** sector in last decade.
 - Major ICT employers in Pittsburgh include Google, Uber Advanced Technologies Center, Ariba, IBM Pittsburgh Lab, Verizon, Comcast, and Intel Research.
- Growing **Advanced Manufacturing** sector base with 400+ manufacturing company expansions/relocations and more than 23,800 new jobs since 2005; 99 companies and over 4,801 new jobs in 2011 and 2012 alone.

5 Diverse, Growing, and Stable Regional Sectors





Pittsburgh's Economy

- OFFICE/RETAIL**
- 2 SAP Center
 - 11 Burns and Scalo Ft. Pitt Blvd Tower*
 - 35 North Shore Tower*
 - 47 Allegheny Building Improvements*
 - 48 20 Stanwix Renovations
 - 53 Pitt Building Redevelopment
 - 54 Penn Avenue Place Facade Restoration
 - 56 3 Crossings: Riverfront West
 - 58 One Oxford Centre Renovations
 - 60 The Highline*
 - 62 525 William Penn Place Renovations*
 - 65 Audi Cochran Strip District Dealership
 - 67 223 Boulevard of the Allies*
 - 70 2908 Smallman Renovations*
 - 72 Station Square Freight House Shops Renovation*
 - 75 1600 Smallman*

- RESIDENTIAL**
- 8 Wholey Building Conversion*
 - 9 Eighth and Penn
 - 21 1st Ave Lofts
 - 23 1135 Penn Avenue*
 - 44 Continental Residential Development*
 - 45 Penn Rose Building Redevelopment
 - 49 Riverfront Landing Apartments
 - 50 Town Place Development
 - 59 315 Third Avenue*
 - 61 Heinz Research Building Apartments*
 - 69 1430 Fifth Avenue Apartments*
 - 73 Station Square East Apartments*
 - 74 One Chatham Center Apartments

- PARKS/TRAILS**
- 3 Mon Wharf Trail: Switchback
 - 18 Point State Park Connector
 - 25 Gateway Island Project*
 - 30 Carnegie Science Center Riverfront Trail
 - 31 Josh Gibson Park
 - 36 Curtain Call/Pittsburgh Garden Passage*

- TRANSPORTATION**
- 12 Sister Bridges Rehabilitation
 - 13 Traffic Signalization Upgrade - CBD
 - 17 Bus Rapid Transit Corridor*
 - 22 Fort Pitt Boulevard Bike Track*
 - 28 Civic Arena Site: Road Infrastructure
 - 29 579 Cap
 - 33 Liberty Bridge Rehabilitation
 - 51 Pittsburgh Stadium Authority Garage
 - 63 Allegheny Commons Road Improvements*
 - 64 Liberty Avenue Pedestrian Improvements*

- HOTEL/ENTERTAINMENT**
- 5 Forbes Hotel (Granite Building Conversion)*
 - 10 Holiday Inn - First Avenue
 - 24 AC Hotel by Marriott
 - 27 Distrikt Hotel
 - 40 Rivers Casino Hotel
 - 57 Northbank Hotel*
 - 76 Arcade Comedy Theater

- MIXED USE**
- 1 Civic Arena: Site Redevelopment
 - 4 Cultural District Riverfront Redevelopment*
 - 14 Strip Produce Terminal Redevelopment*
 - 15 Riverfront Landing
 - 19 604 Liberty Avenue*
 - 20 350 Oliver: Phase 1 (Parking & Retail)
 - 37 350 Oliver: Phase 2 (Residential & Hotel)*
 - 38 Station Square East Redevelopment*
 - 41 Kaufmann's Grand on Fifth
 - 46 Nova Place Renovation
 - 66 632-642 Fort Duquesne Redevelopment*
 - 68 MidPoint Parking Garage*

- EDUCATION/CIVIC**
- 6 Point Park University: Pittsburgh Playhouse
 - 7 Point Park University: Student Center*
 - 26 Carnegie Science Center Expansion
 - 71 NRG Power Plant

PROJECTS COMPLETED	\$2,930,015,246	} TOTAL INVESTMENTS JANUARY 2007 THROUGH APRIL 2017
PROJECTS ACTIVE	\$905,500,000	
PROJECTS ANNOUNCED	\$2,278,615,306	
		\$6,114,130,552



INVESTMENT MAP

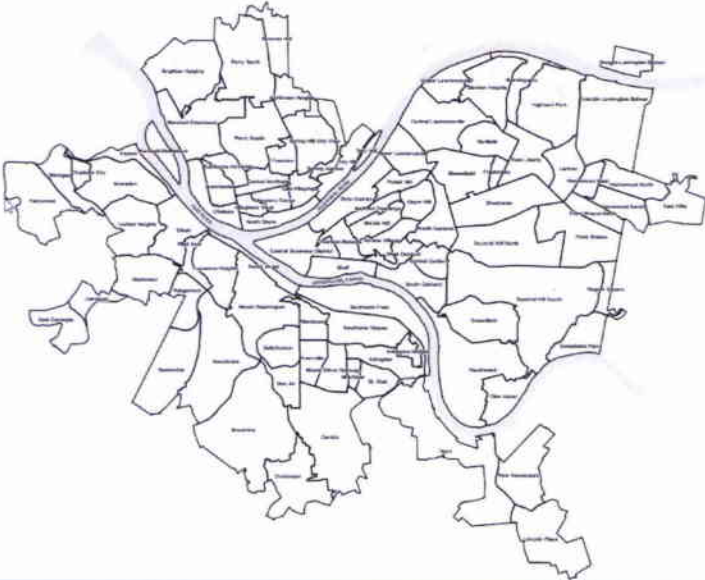
This ongoing list represents active and publicly announced projects in Downtown Pittsburgh as of 4/17. The study area includes the Golden Triangle, North Shore, South Shore, Lower Hill/Uptown, and the Strip District. Projects are listed in three categories: Announced means a project has been publicly announced and/or a construction schedule has been determined and due diligence is under way. Active means ground has been broken. Completed means there is no longer active construction at the project site.

Visit DowntownPittsburgh.com/investment for more information.

*Indicates a Conceptual Project
All other projects are in Planning or Under Construction



Appendix B: Governance





PWSA's Senior Management

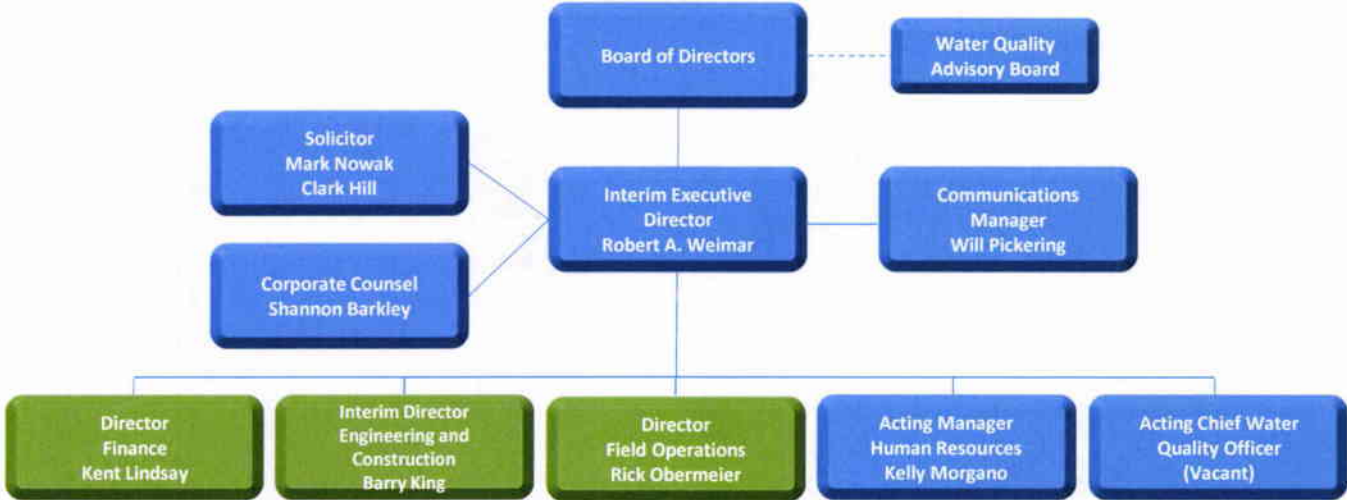
- The Authority's Board consists of seven members
 - No fewer than six members appointed by the Mayor
 - Board members have staggered five year terms
- The present members of the Board and officers of the Authority and their principal private affiliations:

Member	Occupation
Debbie Lestitian, Chairperson	Chief Administrative Officer, City of Pittsburgh
Margaret Lanier, Vice Chairperson	Treasurer, City of Pittsburgh
Paul Leger, Treasurer	Director of Finance, City of Pittsburgh
Jim Turner, Secretary	Adjunct Professor, University of Pittsburgh GSPIA
Deborah Gross, Assistant Secretary/Treasurer	Councilwoman, City of Pittsburgh
Chaton Turner, Member	Assistant Counsel, University of Pittsburgh Medical Center
Mike Weber, Member	Business Development Representative, Laborers' District Council of Western PA



PWSA's Organizational Chart

Pittsburgh Water and Sewer Authority 2017 Organizational Chart



- Provides administrative and support functions:
 - Customer service
 - Billing and collections
 - Finance
 - Procurement and warehousing
 - Management information systems

- Capital planning
- Capital Projects Management
- Permits for water and sewer taps
- Geographical Information system

- Consists of three Departments:
 - Water Operations
 - Sewer Operations
 - Water Production



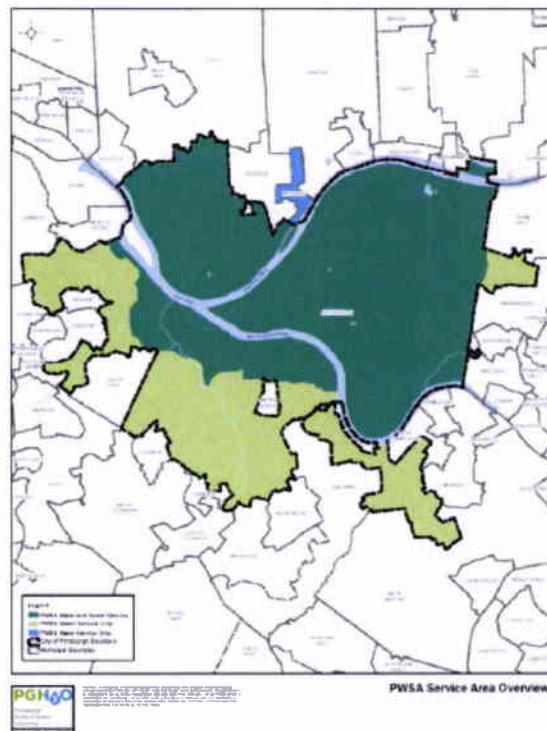
Appendix C: Water and Wastewater System Overview



The Water Supply and Distribution System

- The Water System consists of:
 - One rapid sand type treatment plant (117 million gpd capacity)
 - Approximately 930 miles of water mains
 - 80,864 individual service connections
 - More than 18,754 valves
 - 7,450 fire hydrants
 - 12 pumping stations
 - One membrane filtration plant
 - Five reservoirs
 - 13 tanks with a storage capacity of 455 million gallons of water
 - 1,200 miles of sewer lines and four booster pumping stations
- PWSA provides water that meets or exceeds regulations at the lowest possible cost

PWSA SERVICE AREA





The Sewer System

- The PWSA Sewer System is composed of 1,200 miles of sewers and more than 27,000 catch basins
 - Primarily a combined collection system (77%) that serves the entire City of Pittsburgh
 - Conveys wastewater generated within the city and some neighboring communities to Allegheny County Sanitary Authority (“ALCOSAN”) interceptors along the rivers of the city for conveyance to ALCOSAN's wastewater treatment facility
 - Designed so that if the system's capacity cannot handle storm water flows during wet weather, a portion of the collected storm water and diluted wastewater is discharged to natural water courses by diversion chambers and connections to ALCOSAN interceptors
 - Serves as a conveyance system for portions of flows from 24 neighboring municipal communities.
- The Authority's Consulting Engineer opines that the Sewer System is in adequate operating condition

*The ALCOSAN treatment facility, which is not part of the Water and Sewer System, is operated by ALCOSAN, a county authority

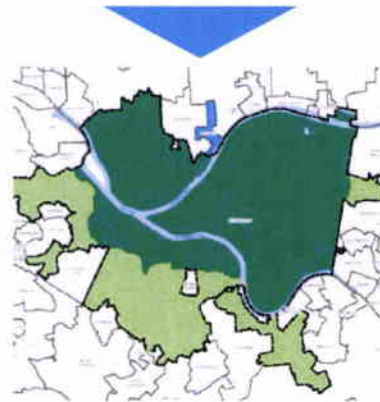


PWSA's Customer Base

- PWSA serves a stable and diverse customer base:
 - Approximately 84 percent of City's population
 - Agreements with seven adjacent municipalities listed below and one wholesale customer for the sale of water
 - Approximately 82,000 active retail water accounts
 - Approximately 112,000 active sewer accounts
- PWSA has taken steps to address billing issues caused by problems with implementing new meter reading system.

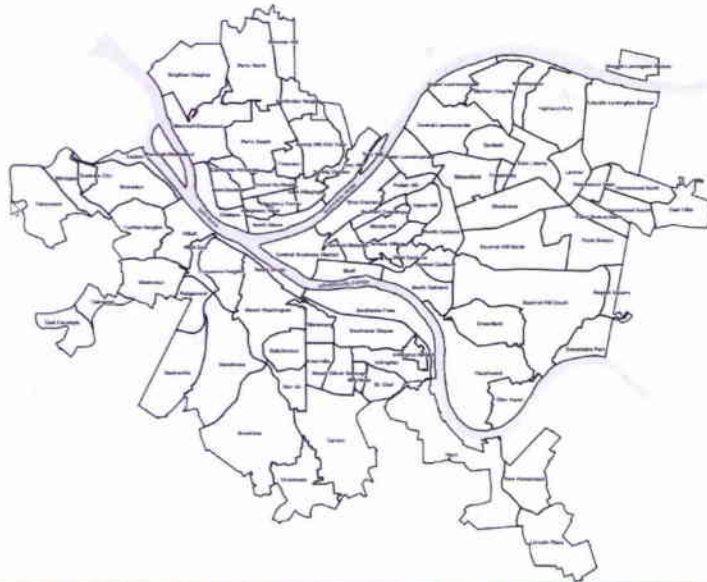
Rank	User	% of Usage
1	Bay Valley Foods	6.75%
2	Fox Chapel Water Authority	5.76%
3	UPMC	5.19%
4	University of Pittsburgh	4.96%
5	Housing Authority of the City of Pittsburgh	2.60%
6	City of Pittsburgh	1.91%
7	Carnegie Mellon University	1.70%
8	Allegheny County Government	1.64%
9	Riverside Community Correction Center	1.27%
10	PNC Park	1.19%
Total		32.95%

Adjacent Municipalities
➤ Borough of Fox Chapel
➤ Reserve Township
➤ Borough of Sharpsburg
➤ Hampton Shaler Water Authority
➤ Borough of West View
➤ Aspinwall
➤ Allegheny





Appendix D: Financial Information





Financial Results

FY 2012-2016 (Cash Basis Actuals) and FY 2017 (Budget)

	2017 Budget	2016 Actuals	2015 Actuals	2014 Actuals	2013 Actuals	2012 Actuals
Receipts						
Water	87,952,137	68,030,331	65,678,075	63,977,711	56,870,371	57,062,217
Sewage Conveyance	45,665,816	36,631,717	35,365,117	34,449,537	30,622,507	30,725,809
DISC		8,939,920	6,769,976	6,619,757	5,930,799	6,072,473
ALCOSAN	70,780,469	62,731,097	57,077,760	53,168,777	47,159,390	47,270,475
Fees	8,718,474	4,050,478	1,573,843	2,143,092	2,568,114	4,214,448
Miscellaneous Revenue	5,669,431	3,135,542	5,502,849	6,614,320	4,686,907	
Total Receipts	218,786,327	181,519,085	171,967,420	166,973,194	147,838,088	145,345,422
Operating Expenses						
Salaries	(18,831,047)	(15,556,521)	(14,999,594)	(13,721,569)	(13,142,315)	(13,122,009)
Benefits	(6,211,309)	(5,091,276)	(4,948,658)	(5,187,576)	(4,399,666)	(4,340,593)
Direct Operating	(24,796,526)	(20,153,582)	(16,987,728)	(19,755,502)	(15,636,634)	(15,221,192)
Inventory	(2,429,421)	(908,616)	(1,384,258)	(632,712)	(565,560)	(520,265)
General & Administrative	(19,303,069)	(19,192,018)	(18,602,956)	(18,663,447)	(15,087,792)	(10,716,745)
ALCOSAN	(70,780,469)	(62,849,859)	(58,322,674)	(51,572,036)	(46,761,134)	(46,036,404)
Co-Op Payment	(7,150,000)	(7,150,000)	(7,150,000)	(7,150,000)	(7,150,000)	(7,150,000)
Non-City Subsidy	(1,920,716)	(2,169,429)	(1,791,062)	(2,583,319)	(2,370,633)	(1,971,281)
DISC						
Total Operating Expenses	(151,422,558)	(133,071,300)	(122,184,930)	(117,266,161)	(105,113,734)	(99,078,489)
Net Operating Income	67,363,769	48,447,785	49,782,490	49,707,033	42,724,354	46,266,933
Debt Service						
Debt Service - Principal	(17,385,490)	(18,855,000)	(18,330,000)	(19,774,999)	(14,155,000)	(12,465,000)
Debt Service - Interest	(30,426,690)	(29,062,173)	(29,705,148)	(26,205,408)	(25,461,291)	(27,845,746)
Debt Service - Liquidity & Remarketing	(1,403,338)	(1,483,083)	(1,384,559)	(2,445,362)	(4,501,127)	(4,276,023)
Debt Service - Pennvest		(3,857,178)	(3,526,800)	(3,078,780)	(3,085,093)	(3,077,362)
Revolver Interest	(780,000)	(94,890)				
Pennvest Cash Flows		(809,206)	317,279	(437,795)	(1,127,978)	(918,942)
Total Debt Service	(49,995,518)	(54,161,530)	(52,629,228)	(51,942,344)	(48,330,489)	(48,583,073)
Total Costs	(201,418,076)	(187,232,830)	(174,814,158)	(169,208,505)	(153,444,223)	(147,661,562)
Net Cash Flow	17,368,251	(5,713,745)	(2,846,738)	(2,235,311)	(5,606,135)	(2,316,140)
Cash Balance - Beginning	22,491,922	28,269,000	31,219,000			
Net Cash Flow	17,368,251	(5,713,745)	(2,846,738)			
Transfer to Reserve	(3,144,510)	(840,966)				
Capital Spending	(14,223,741)					
Cash Balance - Ending	22,491,922	21,714,289	28,372,262			

Financial Results



FY 2016 (Cash Basis Actuals) vs. FY 2017 (Budget)

	2017 Budget	2016 Actuals	Difference	%	2017 Budget	2015 Actuals	Difference	%
Receipts								
Water	87,952,137	68,030,331	19,921,806	29%	87,952,137	65,678,075	22,274,062	34%
Sewage Conveyance	45,665,816	36,631,717	9,034,099	25%	45,665,816	35,365,117	10,300,699	29%
DISC		6,939,920	(6,939,920)	-100%		6,769,976	(6,769,976)	-100%
ALCOSAN	70,780,469	62,731,097	8,049,372	13%	70,780,469	57,077,760	13,702,709	24%
Fees	8,718,474	4,050,478	4,667,996	115%	8,718,474	1,573,643	7,144,831	454%
Miscellaneous Revenue	5,669,431	3,135,542	2,533,889	81%	5,669,431	5,502,849	166,582	3%
Total Receipts	218,786,327	181,519,085	37,267,242	21%	218,786,327	171,967,420	46,818,907	27%
Operating Expenses								
Salaries	(18,831,047)	(15,556,521)	3,274,526	-21%	(18,831,047)	(14,999,594)	3,831,453	-26%
Benefits	(6,211,309)	(5,091,276)	1,120,033	-22%	(6,211,309)	(4,946,658)	1,264,651	-26%
Direct Operating	(24,796,526)	(20,153,582)	4,642,944	-23%	(24,796,526)	(16,987,728)	7,808,799	-46%
Inventory	(2,429,421)	(908,616)	1,520,805	-167%	(2,429,421)	(1,384,258)	1,045,163	-76%
General & Administrative	(19,303,069)	(19,192,018)	111,051	-1%	(19,303,069)	(16,602,956)	2,700,113	-16%
ALCOSAN	(70,780,469)	(62,849,859)	7,930,610	-13%	(70,780,469)	(58,322,674)	12,457,795	-21%
Co-Op Payment	(7,150,000)	(7,150,000)		0%	(7,150,000)	(7,150,000)		0%
Non-City Subsidy	(1,920,716)	(2,169,429)	(248,713)	11%	(1,920,716)	(1,791,062)	129,654	-7%
DISC				0%				0%
Total Operating Expenses	(151,422,558)	(133,071,300)	18,351,258	-14%	(151,422,558)	(122,184,930)	29,516,912	-24%
Net Operating Income	67,363,769	48,447,785	18,915,984	39%	67,363,769	49,782,490	17,581,279	35%
Debt Service								
Debt Service - Principal	(17,385,490)	(18,855,000)	(1,469,510)	8%	(17,385,490)	(18,330,000)	(944,510)	5%
Debt Service - Interest	(30,426,690)	(29,062,173)	1,364,517	-5%	(30,426,690)	(29,705,148)	721,542	-2%
Debt Service - Liquidity & Remarketing	(1,403,338)	(1,483,083)	(79,745)	5%	(1,403,338)	(1,384,559)	18,779	-1%
Debt Service - Pennvest		(3,857,178)	(3,857,178)	100%		(3,526,800)	(3,526,800)	100%
Revolver Interest	(780,000)	(94,890)	685,110	-722%	(780,000)		780,000	
Pennvest Cash Flows		(809,206)	(809,206)	-100%		317,279	317,279	100%
Total Debt Service	(49,995,518)	(54,161,530)	(4,166,012)	8%	(49,995,518)	(52,629,228)	(2,633,710)	5%
Total Costs	(201,418,076)	(187,232,830)	14,185,246	-8%	(201,418,076)	(174,814,158)	26,883,202	-15%
Net Cash Flow	17,368,251	(5,713,745)	23,081,996	404%	17,368,251	(2,846,738)	20,214,989	710%
Cash Balance - Beginning	22,491,922	28,269,000	(5,777,078)	-20%	22,491,922	31,219,000	(8,727,078)	-28%
Net Cash Flow	17,368,251	(5,713,745)	23,081,996	-404%	17,368,251	(2,846,738)	19,935,705	-710%
Transfer to Reserve	(3,144,510)	(840,966)	(2,303,544)	274%	(3,144,510)		(3,144,510)	0%
Capital Spending	(14,223,741)		(14,223,741)	0%	(14,223,741)		(13,944,457)	0%
Cash Balance - Ending	22,491,922	21,714,289	777,633	4%	22,491,922	28,372,262	(5,880,340)	-21%



Rate Collection

- The Finance Division is responsible for billing and collections
- Water and rates are based on a fixed service charge related to the size of the meter and the quantity of use of water
- Charges adjusted annually for Consumer Price Index (CPI) for wholesale customers
- PWSA has a collection factor of 98% for 2016

PWSA 2017 Rates

Meter Size	Minimum Gallons	Minimum Charge: Water	Minimum Charge: Sewer	Total Minimum Charge
5/8"	0 - 1,000	\$18.42	\$6.09	\$24.51
3/4"	0 - 2,000	\$29.93	\$11.27	\$41.20
1"	0 - 5,000	\$60.61	\$25.07	\$85.68
1 1/2"	0 - 10,000	\$118.16	\$50.98	\$169.14
2"	0 - 17,000	\$194.88	\$85.51	\$280.39
3"	0 - 40,000	\$432.68	\$192.45	\$625.13
4"	0 - 70,000	\$731.83	\$326.93	\$1,058.76
6"	0 - 175,000	\$1,728.86	\$774.86	\$2,503.72
8"	0 - 325,000	\$3,109.25	\$1,394.77	\$4,504.02
10" or larger	0 - 548,000	\$5,087.62	\$2,282.80	\$7,370.42

Account Classification	Water Allocation	Sewer Allocation	Total Combined Rate
Residential Property	\$7.48	\$3.96	\$11.44
Commercial Property	\$7.25	\$3.84	\$11.09
Industrial Property	\$6.51	\$3.57	\$10.08
Health or Education Property	\$10.93	\$5.61	\$16.54
Fire Systems (use other than reported fire – Rule 304.9)	\$6.55	\$3.88	\$10.43

Appendix E: Implementing and Funding the Capital Improvement Program





“Green First”

- The Allegheny County area experiences degraded water quality from frequent overflows of sewage and stormwater
 - Occurs during storm events from more than 100 system wide outfalls
 - Pennsylvania Department of Environmental Protection (PADEP) and the United States Environmental Protection Agency (USEPA) have mandated corrections
- Benefits of “Green First” approach:
 - Cost-effectively reduces CSOs and SSOs during storm events
 - Reduces basement backups, localized surface flooding, and direct stream inflows to the sewer system
 - Improves water quality and restores local habitats
 - Enhances urban settings and accrues social, economic, and environmental benefits to the entire Pittsburgh community

Areas Identified for the City-Wide “Green First” Assessment

1. Four Mile Run (M-29 sewershed)
2. Washington Blvd. and Negley Run (A-42 sewershed)
3. South Side (M-16 sewershed)
4. Woods Run (O-27 sewershed)
5. Heth's Run (A-41 sewershed)
6. Hill District/Uptown (M-19 sewershed)

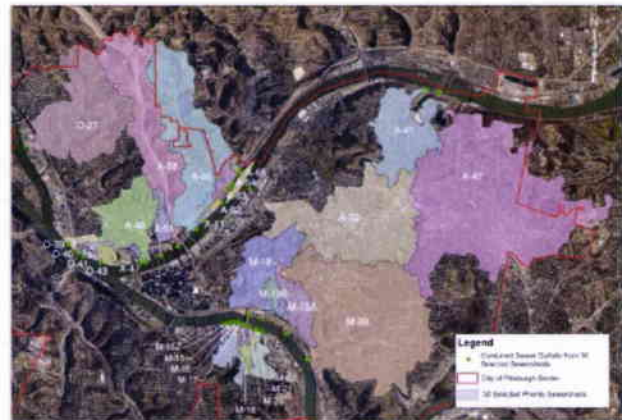


Figure 1: City-Wide 30 Priority Sewersheds (alphanumeric numbers refer to CSO designations)



Consent Order Decree

- On January 29, 2004, PWSA entered into a Consent Order and Agreement (the "Order") regarding alleged wet weather sewer overflows within the City
 - Other signatories to the Order are the City, PADEP and the ACHD
- The Order required the Authority and the City to assess the combined and separate sanitary sewers within the City in order to develop a plan to address alleged wet weather sewer overflows within the City. Assessment activities required under the Order included performing:
 - A physical survey and visual inspection of manholes
 - Sewer line cleaning and closed circuit television internal inspections
 - Sewer system mapping
 - Sewer system dye testing
 - A system of hydraulic characterization
 - Flow monitoring
- The Order provided a very specific schedule for the completion of assessment activities.
 - Most assessment activities for critical sewers and the separate sanitary portion of the sewer system were completed by 2010
 - Most assessment activities for non-critical sewers were substantially completed in 2012
- The Order also required the Authority and the City to:
 - Implement the Nine Minimum Controls for the control of CSOs
 - Perform repairs and maintenance to the deficiencies in the sewer system revealed by the assessment activities



Consent Order Decree (cont'd)

- In response to the January 2004 Consent Order and Agreement the Authority:
 - Developed a feasibility study in conjunction with ALCOSAN which entered into a Consent Decree with the United States Environmental Protection Agency (“EPA”), PADEP and the Allegheny County Health Department (“ACHD”), to address combined sewer overflows and achieve compliance with water quality standards and the Clean Water Act
 - Submitted its feasibility study to PADEP and the ACHD on July 31, 2013.
 - Overall compliance plan is impacted by the Federal Regulatory requirements for ALCOSAN's CSO Compliance plan.
 - In cooperation with the City of Pittsburgh, proposed a Green Infrastructure approach, which is expected to reduce its ultimate scope and cost impact of its CSO compliance investments.
 - Ultimate scope and cost of improvements will not be known until the feasibility study and proposed plan modifications are approved by PADEP, ACHD and the EPA in a Consent Decree which is expected sometime in in 2017.



Appendix F: PWSA's Debt

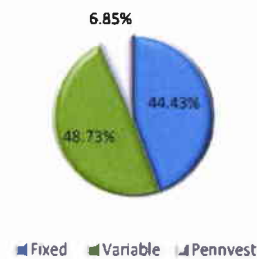




Outstanding Long Term Debt

- As of September 1, 2017 PWSA has \$709.6 million in outstanding long term debt:
 - Eight series of bonds outstanding under the Indenture have a parity claim to the Receipts and Revenues of the Authority (First Lien Bonds)
 - Five series of subordinate revenue bonds are outstanding
 - PENNVEST Loans are subordinate to the First Lien Bonds and the Subordinate Bonds
 - Revolving line of credit on parity basis with PENNVEST loans
- The Authority has swaps hedged against variable rate debt
- PWSA has successfully renegotiated bank and LOC agreements at reduced cost

Summary of PWSA Debt



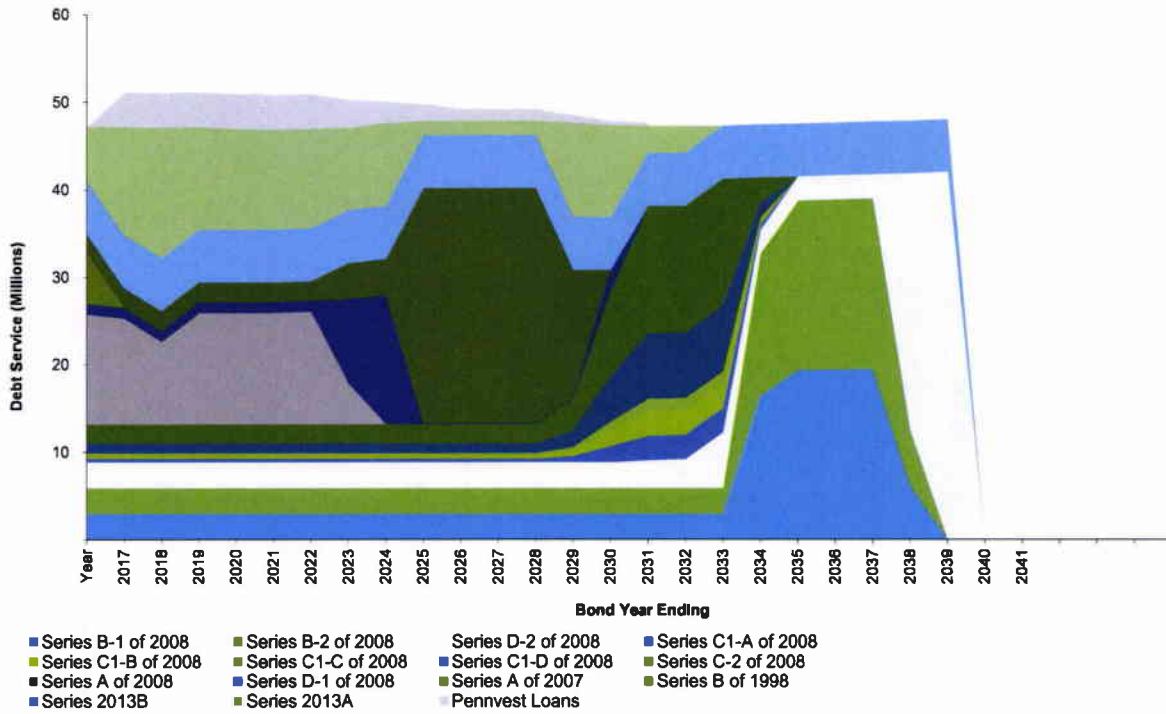
Capital Structure





Outstanding Debt Service

PWSA Debt Service





Senior Lien Outstanding Debt

- As of September 1, 2017, the Authority has \$564.3 million aggregate principal amount of Senior Lien Bonds outstanding:
 - Fixed rate: \$347.6M
 - Variable rate: \$216.7M

SENIOR LIEN														
Series Name	Delivery Date	Interest Mode	Tax Status	Issue Size	Outstanding Par	Final Maturity	Call Date	Amt. Currently Callable	Status	Liquidity Type	Liquidity Provider	Liquidity Fee	Fixed Rate Swap	Liquidity Expiration Date
Series B of 1998	3/2/98	Fixed	Tax-Exempt	32,400,242	87,062,231*	9/1/30			New Money	-	-	-	-	-
Series A of 2008	6/12/08	Fixed	Taxable	68,970,000	60,965,000	9/1/24		\$60,965,000	Refunding	-	-	-	-	-
Series B-1 of 2008	10/22/09	VRDB	Tax-Exempt	72,750,000	72,750,000	9/1/39		\$72,750,000	Refunding	DP LOC	B of A	0.590%	4.038%	10/22/21
Series B-2 of 2008	10/22/09	VRDB	Tax-Exempt	72,745,000	72,745,000	9/1/39		\$72,745,000	Refunding	DP LOC	PNC	0.590%	4.038%	10/22/21
Series D-1 of 2008	6/12/08	Fixed	Tax-Exempt	24,665,000	24,665,000	9/1/31	9/1/18		New Money	-	-	-	-	-
Series D-2 of 2008	8/5/10	VRDB	Tax-Exempt	71,225,000	71,225,000	9/1/40		\$71,225,000	Refunding	SBPA	PNC	0.520%	4.103%	8/4/17
Series 2013A	12/18/13	Fixed	Tax-Exempt	130,215,000	93,825,000	9/1/33	9/1/23		Refunding	-	-	-	-	-
Series 2013B	12/18/13	Fixed	Tax-Exempt	86,695,000	81,100,000	9/1/40	9/1/23		New Money	-	-	-	-	-
Total Senior Lien					564,337,231									

Note: Does not reflect anticipated refunding.

* Accreted value as of 9/1/2017; Original par value was \$32,400,242



Subordinate Debt, Penn Vest Loans and LOC

- PWSA has remarketed Subordinate Debt into direct placement loans that are perfectly hedged to mitigate basis risk and lowered the fixed swap rate by converting to LIBOR based from SIFMA based.

SUBORDINATE LIEN													
Series Name	Delivery Date	Interest Mode	Tax Status	Issue Size	Outstanding Par	Final Maturity	Amt Currently Callable	Status	Liquidity Type	Liquidity Provider	Liquidity Fee	Fixed Rate Swap	Liquidity Expiration Date
Series C1-A of 2008	11/10/09	VRDB	Tax-Exempt	10,000,000	10,000,000	9/1/35	\$10,000,000	Refunding	DP	B of A	0.700%	3.500%	9/1/20
Series C1-B of 2008	11/10/09	VRDB	Tax-Exempt	10,000,000	10,000,000	9/1/35	\$10,000,000	Refunding	DP	B of A	0.700%	3.500%	9/1/20
Series C1-C of 2008	11/10/09	VRDB	Tax-Exempt	5,000,000	5,000,000	9/1/35	\$5,000,000	Refunding	DP	B of A	0.700%	3.500%	9/1/20
Series C1-D of 2008	11/25/09	VRDB	Tax-Exempt	28,910,000	26,840,000	9/1/35	\$26,840,000	Refunding	DP	B of A	0.690%	3.500%	9/1/18
Series C-2 of 2008	8/12/08	VRDB	Tax-Exempt	51,885,000	51,820,000	9/1/35	\$51,820,000	Refunding	DP	JP Morgan	0.750%	3.500%	11/3/18
Total Subordinate Lien					103,660,000								

Notes: Per the 2012 Audit, all of the swaps are hedging derivatives (i.e. integrated) except for \$62,277,000 of the swap on the Series 2008C.

- PWSA was successful in negotiating a line of credit for capital needs to more efficiently manage cash and borrowing costs. Both PennVest and JP LOC are subordinate to the outstanding Subordinate Lien

PennVest and LOC														
Series Name	Delivery Date	Interest Mode	Tax Status	Issue Size	Outstanding Par	Final Maturity	Call Date	Amt Currently Callable	Status	Liquidity Type	Liquidity Provider	Liquidity Fee	Unused Fee	Liquidity Expiration Date
All PV Notes		Fixed		62,772,052	29,882,133									
JP LOC	7/1/2016	VRDN	Tax-Exempt	80,000,000	27,900,000	7/1/2020				LOC	JP Morgan	0.975%	0.425%	

Note: Does not reflect anticipated refunding.



Interest Rate Swap Agreements

- The following table sets forth the terms of all of the Swap agreements as of September 1, 2017:

Bond Series	2008B-1	2008B-2	2008C*	2008C*	2008D
Current Notional Amount	\$72,747,500	\$72,747,500	\$62,196,000	\$41,464,000	\$71,225,000
Effective Date	6/12/2008	6/12/2008	6/12/2008	6/12/2008	6/12/2008
Termination Date	9/1/2039	9/1/2039	9/1/2035	9/1/2035	9/1/2040
Product	Fixed Rate Swap	Fixed Rate Swap	Fixed Rate Swap	Fixed Rate Swap	Fixed Rate Swap
Rate Paid by Provider	SIFMA	SIFMA	70%1moL	70%1moL	SIFMA
Rate Paid by Authority	4.04%	4.04%	3.50%	3.50%	4.10%
Provider	JPMorgan Chase	Merrill Lynch	JPMorgan Chase	Merrill Lynch	JPMorgan Chase
Net Present Value**	(\$24,743,879)	(\$24,743,879)	(\$16,420,204)	(\$10,946,803)	(\$26,780,610)

*The floating rate on the 2008 C swaps was converted from SIFMA to 70% of one-month LIBOR on 11/3/14 in conjunction with the reissuance and restructuring of certain subseries of the 2008C bonds. As a result, the fixed rate on the swaps was amended from 3.998% to 3.500%.

**As of September 1, 2017

Source: Pittsburgh Water and Sewer Authority - Summary of Swap Financial Group Report



Debt Service Coverage

- The Authority is required to satisfy one of the two debt service coverage tests
 - Revenues and unrestricted revenue fund cash must be sufficient to provide for payment of (a) current expenses of the Authority and (b) 120% of debt service on the first lien debt and subordinate debt; or
 - Receipts and revenues, including construction fund earnings with certain limitation, together with debt service reserve fund earnings must be sufficient to provide for payment of (a) current expenses of the Authority and (b) 100% of debt service on the first lien debt and the subordinate debt
- Below is the historical debt service coverage from 2012 to 2016 for Test 1.

Debt Service Coverage Calculations (\$000)					
	2012	2013	2014	2015	2016
Receipts and Revenues	144,138	142,657	164,255	174,164	180,727
Unrestricted Cash	42,542	42,955	33,953	31,432	28,269
Total	186,680	185,612	198,208	205,596	208,996
Operating Expenses	93,305	95,823	111,454	116,908	131,936
120% Debt Service	51,515	54,126	57,023	61,694	63,809
Total	144,820	149,949	168,477	178,602	195,745
Funds in Excess of Test	41,860	35,663	29,731	26,994	13,251
Test 1 Debt Service Coverage	218%	199%	183%	173%	145%

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.20. Provide a listing of all securities issuances for the company and, if applicable, its parent projected for the next 2 years. The response shall identify for each projected issuance the date, dollar amount, type of security, and effective cost rate.

RESPONSE:

PWSA expects to utilize a combination of long-term debt and available cash to meet financing needs during the next two years. Based on the current financial plan and CIP, PWSA expects to issue the long-term debt shown below during 2019 and 2020.

2019 Projected

Revenue Bonds: \$156,000,000 4.02% 30 Year Term

2020 Projected

Revenue Bonds: \$237,000,000 4.02% 30 Year Term

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.21. Identify any plan by the company to refinance high cost long-term debt or preferred stock.

RESPONSE:

PWSA has no plans to refinance long-term debt.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.22. Provide copies of all securities analysts' reports relating to the company and its parent, or both, issued within the past 2 years.

RESPONSE:

Please see PWSA's response to FR VII.19.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.23. If applicable, supply a listing of all common equity infusions from the parent to the company over the past 5 years. In each case, identify date and dollar amount.

RESPONSE:

Not applicable.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.24. If applicable, identify the company's common dividend payments to its parent for each of the last 5 years.

RESPONSE:

Not applicable.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.25. Provide the latest year-by-year financial projections for the company for the next 5 years. Also, please indicate the date these projections were prepared; whether approved by management; and whether the projections have been submitted to bond rating agencies. The information will be treated in a confidential manner, if requested by the company in writing, as set forth in 52 Pa. Code § 5.423.

RESPONSE:

Please refer to the direct testimony of Debbie Lestitian, specifically DML-2. These projections were developed for the purpose of this rate case filing and Cost of Service analysis. These projections, developed in conjunction with PWSA by Raftelis Financial Consultants, Inc., have been approved by PWSA management but they have not been submitted to bond rating agencies.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.26. Provide the company's 5-year construction budget.

RESPONSE:

Please see below.

Year	Construction Budget
2018	\$ 61,368,082
2019	155,190,611
2020	256,228,116
2021	326,725,135
2022	296,444,669
Total	\$ 1,095,956,613

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.27. Identify the company's and, if applicable, its parent's capital structure targets (percentages of capital types). Provide the complete basis for the capital structure targets.

RESPONSE:

Not applicable.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.28. For each month, of the most recent 24 months, supply the company's:

- a. Short-term debt balance.
- b. Short-term debt interest rate.
- c. Balance of construction work in progress.
- d. Balance of construction work in progress which is eligible for AFUDC accrual:

RESPONSE:

- a. PWSA does not have any short-term debt. The only debt-related current liabilities on PWSA's balance sheet is the current portion of long term debt.
- b. Please see the response to VII.28a
- c. Please see the table below.

CWIP	2016	2017
January	\$ 74,697,506	\$ 93,101,925
February	77,012,721	93,491,634
March	80,713,830	96,529,748
April	82,923,640	98,458,856
May	86,597,789	101,090,482
June	88,269,361	102,758,422
July	89,629,275	105,267,462
August	90,585,841	107,712,284
September	90,879,655	110,236,397
October	96,563,464	111,148,293
November	100,093,242	113,766,505
December	91,412,467	103,803,126

- d. Not applicable.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.29. Fully identify all debt, other than instruments traded in public markets, owed to all shareholders, corporate officers, or members of the board of directors, its affiliates, parent company, or subsidiaries.

RESPONSE:

Not applicable.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.30. Provide a summary statement of all stock dividends, splits, or par value changes during the 2-year calendar period preceding the rate case filing.

RESPONSE:

Not applicable.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.31. If a claim of the filing utility is based on utilization of the capital structure or capital costs of the parent company and consolidated system, the reasons for this claim must be fully stated and supported.

RESPONSE:

Not applicable.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

VII.32. To the extent not provided elsewhere, supply financial data of the company, and its parent, if applicable, for the last 5 years.

- a. Times interest earned ratio—pre- and post tax basis.
- b. Preferred stock dividend coverage ratio—post tax basis.
- c. Times fixed charges earned ratio—pretax basis.
- d. Dividend payout ratio.
- e. AFUDC as a percent of earnings available for common equity.
- f. Construction work in progress as a percent of net utility plant.
- g. Effective income tax rate.
- h. Internal cash generations as a percent of total capital requirements.

RESPONSE:

- a. Please see the table below.

Times interest earned	2013	2014	2015	2016	2017
Pre-Tax	1.32	0.89	1.63	0.95	0.82
Post-Tax	N/A	N/A	N/A	N/A	N/A

- b. Not applicable.
- c. Please see the table below.

Times Fixed Charges Earned	2013	2014	2015	2016	2017
Pre-Tax	1.31	0.89	1.62	0.95	0.82
Post-Tax	N/A	N/A	N/A	N/A	N/A

- d. Not applicable
- e. Not applicable
- f. Please see the table below.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VII. RATE OF RETURN

	2013	2014	2015	2016	2017
CWIP as Percent of Net Utility Plant	4.22%	5.25%	10.74%	13.13%	14.53%

- g. Not applicable
- h. Since 2013, PWSA has financed capital assets almost entirely with funds from bond issuances, Pennvest loans, and, more recently, utilizing their revolving line of credit. In addition, prior to 2017, there was not an officially published CIP or capital budget that identified annual capital requirements. PWSA has identified target levels of PAYGO (or rate revenue financed capital) that it plans to achieve in future. Please refer to the direct testimony of Debbie Lestitian and Kathy Clupper for more information.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VIII. RATE STRUCTURE AND COST OF SERVICE

VIII.1. Provide a complete, fully allocated, cost of service study if an interval of 3 years has passed between a previous cost of service study and the historic test year date of the current filing. The cost of service study shall provide the necessary data to determine if the water or wastewater rate structure is fair and equitable to all classifications of water or wastewater customers (including public and private fire protection customers) and reflects, as nearly as possible, the cost of providing the service. The study shall correspond to the test year proposed revenue requirements (future test year only, if used). Summaries of conclusions and all back-up calculations shall be made part of the submission of the cost of service study, and shall include the following:

- a. A description of the allocation methods used. A comparison of the allocated cost of service by class with the present and proposed revenues. A cost of service schedule showing the rate of return produced by present and proposed rates by class of service.
- b. Indicate if the method used for establishing the allocation factors in the cost of service study deviates from the previous study submitted in the last rate case. If yes, indicate which allocation factors were changed and discuss the reason for the changes.
- c. Supply the average day, the maximum day and the maximum hour deliveries to the system adjusted for storage for the historic test year and 2 prior years. Also provide workpapers, analyses, comparative data or other documentation supporting the estimated maximum day and peak hour demands by customer class reflected in the company's cost of service study.
- d. Explain thoroughly the methodology employed if the company distinguishes between transmission and distribution or collection mains in its allocation of costs.
- e. Provide a detailed explanation of how storage is utilized to meet base, maximum day and maximum hour demands.
- f. Provide workpapers, calculations and supporting documentation which develop the equivalent meters and equivalent service line weights reflected in the company's cost of service study.
- g. Provide all workpapers and supporting documentation for the fire flow requirement and duration utilized in the cost of service study.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VIII. RATE STRUCTURE AND COST OF SERVICE

- h. Provide a breakdown of the number and size of private fire services according to the general water service class of customer.
- i. Provide a calculation of the company's base cost of water or wastewater per unit of consumption or usage.
- j. Provide a detailed cost analysis that supports the company's customer charges, by meter size, showing all direct and indirect costs included.

RESPONSE:

Please refer to the direct testimony and accompanying exhibits of Harold J. Smith for the above filing requirement.

Pittsburgh Water and Sewer Authority's Base Rate Filing

VIII. RATE STRUCTURE AND COST OF SERVICE

VIII.2. Provide a listing of negotiated special rate contracts which includes a comparison of revenues under special rate contracts and under tariff rates. Provide the cost of service treatment of any deficiency in revenues resulting from the negotiated special rate contracts. Special rates are defined as rates not contained in the currently effective tariff.

RESPONSE:

Please see attached.

PWSA provides service under negotiated special rate contracts to nine customers; eight of these are wholesale customers. In the cost of service, wholesale revenues are treated as an offset to the retail water revenue requirement. For additional information please refer to the direct testimony and accompanying exhibits of Harold J. Smith.

Pittsburgh Water & Sewer Authority
Wholesale & Contract Customers - Current Contract vs. Proposed Retail Rates

Wholesale/Contract Customers	Description	Fixed Charges	Volume Charges	2018 Charges at Current Rates	2019 Charges at Current Rates	Charges at Proposed Retail Rates	Difference
Allegheny	Wholesale services to Allegheny; 40kgal Minimum Allowance; Escalated by Overall User Charge Increase	\$ 549.96/mo	\$ 6.75/kgal	\$ 46,951	\$ 54,814	\$ 68,185	\$ (13,372)
Aspinwall	Wholesale services to Allegheny; No minimum charge; Escalated by Inflation	n/a	\$ 3.31/kgal	297,214	299,909	930,606	(630,698)
Bay Valley / Riverbend (Water)	Bulk water services to Riverbend; 50kgal minimum consumption; Escalated by Inflation	\$ 111,388/mo	\$ 1.82/kgal	1,479,519	1,343,338	6,053,085	(4,709,746)
Bay Valley / Riverbend (Wastewater)	Bulk wastewater conveyance services to Riverbend; 15,000kgal fixed consumption, Escalated by Inflation	\$ 464,052/mo	n/a	464,052	466,380	1,265,832	(799,452)
Fox Chapel	Wholesale water services to Fox Chapel; 6-tier decreasing block rate; Escalated by Overall User Charge Increase	\$ 6,408.30/mo	0-15,000k: \$3.19 15,000k-30,000k: \$2.53 30,000k-75,000k: \$2.30 75,000k-120,000k: \$2.24 120,000k-180,000k: \$2.20 > 180,000k: \$2.15	2,127,355	2,480,209	8,231,443	(5,751,234)
Hampton	Wholesale water services to Hampton; 3-tier decreasing block rate; Escalated by Overall User Charge Increase	\$ 1,336.17/mo	0-5,000k: \$5.63 5,000k-25,000k: \$4.02 25,000k-50,000k: \$2.32	69,611	81,233	110,829	(29,596)
PAWC	Wholesale services to PAWC; 548kgal Allowance; Escalated by Inflation	\$ 5,508.90/mo	\$ 5.70/kgal	66,107	66,768	95,108	(28,340)
RSRV - 10"	Wholesale services to Reserve (10" meter); No Allowance; Escalated by agreed-upon amount	\$ 3,195.18/mo	\$ 3.70/kgal	410,018	431,025	1,103,666	(672,641)
RSRV - 6"	Wholesale services to Reserve (6" meter); 175kgal Allowance; Escalated by agreed-upon amount	\$ 1,136.72/mo	\$ 3.70/kgal	51,388	54,009	134,791	(80,783)
Sharpsburg	Wholesale services to Sharpsburg; 175kgal Allowance; Escalated by Overall User Charge Increase	n/a	\$ 7.30/kgal	-	-	32,363	(32,363)
Westview	Wholesale services to Westview (4 meters); 175kgal Allowance; Escalated by Overall User Charge Increase	\$ 2,181.84/mo	\$ 7.30/kgal	104,700	122,184	129,452	(7,267)

Pittsburgh Water and Sewer Authority's Base Rate Filing

IX. QUALITY OF SERVICE

IX.1. Indicate whether the company is in violation of any provision of the Pennsylvania Safe Drinking Water Act (SDWA) or any rule, regulation or order, or any condition of any permit, variance or exemption granted by the Pennsylvania Department of Environmental Protection (PA-DEP), or its predecessor.

a. Provide information indicating whether the company is in compliance with SDWA provisions at 25 Pa. Code § 109.407 regarding general public notification requirements:

(i) Provide a copy of each public notification given in accordance with this section, since the last rate proceeding.

(ii) Provide a detailed explanation of all actions taken to remedy an acute violation, and to comply with the requirements prescribed by a variance or exemption.

(iii) State whether any fines or penalties were assessed by PA-DEP, and indicate the amounts paid by the company.

b. Provide the most recent copies of all annual consumer confidence reports Issued pursuant to SDWA Amendments of 1996 since the last rate proceeding.

(i) Provide any annual consumer confidence reports which reflect violations of State and Federal safe drinking water requirements.

(ii) Explain how these violations were resolved.

RESPONSE:

PWSA received a Consent Order and Agreement for Violations of the Safe Drinking Water Act on November 17, 2017 relating to Lead Action Level Exceedances and Failure to Treat as Permitted. PWSA has conducted a yearlong study to find the best corrosion control treatment for the system as well as created a lead service line replacement program.

a. PWSA is in compliance with all public notification requirements. PWSA has provided the following notifications to the public (see below).

i. PWSA had the following Public Notifications: Elevated Lead Levels February 6, 2017; Loss of Positive Pressure - September 24, 2017; Low pressure - December 17, 2017; Elevated Lead Levels -January 26, 2018

Pittsburgh Water and Sewer Authority's Base Rate Filing

IX. QUALITY OF SERVICE

- ii. PWSA received an Administrative Order from the DEP on October 25, 2017. This order requires PWSA to address the following items: Apply for the use of UV disinfection at the Membrane Filtration Plant, Replace the cover on Lanpher Reservoir, Ensure Reliability of Bruecken Pump Station, Install Pressure Sensors in the Distribution System, and Provide the Department with a detailed list of Capital Improvement Projects. PWSA is working with the DEP and is responding as required. PWSA and the DEP have weekly Coordination Meetings to strengthen the working relationship and address concerns as they arise.
 - iii. PWSA was required to pay fines related to the Consent Order and Agreement for Violations of the Safe Drinking Water Act on November 17, 2017 relating to Lead Action Level Exceedances and Failure to Treat as Permitted. (See attached)
- b. Please see attached.
- i. Please see attached.
 - ii. PWSA received late reporting violations for the first quarter Alkalinity, third quarter Total Organic Carbon, and 2,3,7,8 TCDD (Dioxin). The monitoring was conducted correctly, but the results were reported late to the DEP.

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

In The Matter Of:

Pittsburgh Water and Sewer Authority	:	Violations of the Pennsylvania Safe
Penn Liberty Plaza 1	:	Drinking Water Act and the Rules and
1200 Penn Avenue	:	Regulations Promulgated Pursuant Thereto
Pittsburgh, PA 15222	:	Regarding the Lead and Copper Rule

CONSENT ORDER AND AGREEMENT

This Consent Order and Agreement is entered into this 17th day of NOVEMBER 2017, by and between the Commonwealth of Pennsylvania, Department of Environmental Protection (Department) and the Pittsburgh Water and Sewer Authority (PWSA).

The Department has found and determined the following:

A. The Department is the agency with the duty and authority to administer and enforce the Pennsylvania Safe Drinking Water Act, Act of May 1, 1984, P.L. 206, *as amended*, 35 P.S. §§ 721.1-721.17 (Safe Drinking Water Act); Section 1917-A of the Administrative Code of 1929, Act of April 9, 1929, P.L. 177, *as amended*, 71 P.S. § 510-17 (Administrative Code); and the rules and regulations promulgated thereunder (Regulations).

B. PWSA is a municipal authority with a business address of Penn Liberty Plaza 1, 1200 Penn Avenue, Pittsburgh, Pennsylvania 15222. PWSA is a “person” and a “supplier of water,” as those terms are defined in Section 3 of the Safe Drinking Water Act, 35 P.S. § 721.3, and Section 1 of the Regulations, 25 Pa. Code § 109.1.

C. PWSA leases, operates, and is the permittee of a “public water system” and, more specifically, a “community water system,” as those terms are defined in Section 3 of the Safe Drinking Water Act, 35 P. S. § 721.3, and Section 1 of the Regulations, 25 Pa. Code § 109.1.

PWSA's public water system consists of water sources, storage facilities, treatment facilities and a distribution system (System). PWSA provides drinking water through the System to approximately 520,000 people in the Pittsburgh, Pennsylvania area, including approximately 250,000 residential customers. PWSA operates the System pursuant to multiple public water supply permits issued by the Department, and has been assigned Public Water System Identification Number 5020038. The City of Pittsburgh owns the System and leases it to PWSA.

Failure to Treat as Permitted

D. Section 7(a) of the Safe Drinking Water Act, 35 P.S. § 721.7(a), provides that it is unlawful for any person to substantially modify a community water system without first having received a written permit from the Department authorizing such modification. "Substantial modification" includes changes which may affect the quality of water served to the public or may be prejudicial to the public health and safety.

E. Section 109.1105(a) of the Regulations, 25 Pa. Code § 109.1105(a), provides that a person may not substantially modify corrosion control treatment facilities without having obtained appropriate permit approvals from the Department authorizing such modification. Section 109.501(b) of the Regulations, 25 Pa. Code § 109.501(b), provides that a person may not substantially modify a permitted public water system without first obtaining an amended construction permit from the Department pursuant to Section 109.503(b).

F. On July 26, 1995, the Department approved PWSA's corrosion control feasibility study, which identified the use of lime and soda ash as the optimal corrosion control treatment for PWSA's System. PWSA's use of optimal corrosion control treatment is required for compliance with the Regulations under 25 Pa. Code Chapter 109, Subchapter K, Lead and Copper, and was incorporated by reference in Public Water Supply Permit No. 465W001-T1-C1,

as amended, which sets forth the applicable water quality parameters (WQPs) to monitor the effectiveness of PWSA's corrosion control treatment.

G. In April of 2014, PWSA made substantial modification to its corrosion control treatment facilities and to its public water system by substituting caustic soda for soda ash as the primary chemical for corrosion control without first obtaining an amended construction permit from the Department, in violation of Sections 109.501(b) and 109.1105(a) of the Regulations, 25 Pa. Code §§ 109.501(b) and 109.1105(a), and Section 7(a) of the Safe Drinking Water Act, 35 P.S. § 721.7(a). PWSA has informed the Department that in early 2016, it reinstated the use of soda ash in the System.

H. On April 25, 2016, after learning of PWSA's unauthorized substantial modification to the corrosion control treatment facilities at its System, the Department issued an Administrative Order to PWSA directing the Authority to undertake a number of actions to, among other things: investigate lead levels within the System and evaluate impacts from PWSA's change in corrosion control chemicals; provide public notice to its consumers regarding the change of corrosion control chemicals and measures to evaluate impacts; conduct a feasibility study and develop recommendations for optimization of corrosion control treatment for the System; and submit a final report of the study to the Department with all data and PWSA's recommendations for optimal corrosion control protection within the System.

I. PWSA submitted a corrosion control study plan and schedule on May 24, 2016 pursuant to the Administrative Order. On June 24, 2016, the Department provided PWSA with its comments on the plan and conditionally approved the plan subject to PWSA's incorporation of the modifications discussed in the Department's comment letter dated June 24, 2016. PWSA subsequently submitted to the Department a revised version of the plan dated July 14, 2016,

which incorporated the Department's suggested modifications (Plan). Under the Plan, PWSA was to complete its corrosion control treatment feasibility study by the end of June 2017 and submit the final report and recommendations to the Department by July 30, 2017. As of the date of this Consent Order and Agreement, PWSA has not completed the corrosion control treatment feasibility study required under the Order to develop recommendations for optimal corrosion control within its System. Further, PWSA has not evaluated impacts to the System from its change of corrosion control chemicals as required under the Order. PWSA's failure to complete these activities by June 30, 2017 is in violation of the Department's Order, Section 13(a) of the Safe Drinking Water Act, 35 P.S. § 721.13(a), and Sections 109.4 and 109.1102(b)(3) of the Regulations, 25 Pa. Code §§ 109.4 and 109.1102(b)(3).

J. Section 703(a) of the Regulations, 25 Pa. Code § 109.703(a), provides that public water system facilities approved by written permit from the Department shall be operated in a manner consistent with the terms and conditions of the permit to achieve the level of treatment for which the facilities were designed.

K. From August 26, 2016 until July 27, 2017, PWSA failed to operate the treatment facilities in accordance with Permit No. 465W001-T1-C1, in violation of Section 109.703(a) of the Regulations, by failing to maintain and utilize equipment necessary to feed dry lime for raw water pH adjustment. The Department issued to the Authority Construction Permit No. 0216544 on April 18, 2017, for the installation of liquid lime (calcium hydroxide) as a replacement for the dry lime used for pH control in the raw water. The Department issued to the Authority Operation Permit No. 0217533 on July 10, 2017 to begin using the liquid lime feed system. On July 27, 2017, PWSA instituted liquid lime feed for the System.

Lead Action Level Exceedances 2016

L. PWSA is required, pursuant to the regulations, to conduct regular and specific lead and copper monitoring in order to evaluate the level of these substances in the public drinking water and the effectiveness of the System's corrosion controls.

M. Section 109.1102(a) of the Regulations, 25 Pa. Code § 109.1102(a), establishes an action level for lead at 0.015 mg/L, and provides that the action level is exceeded when the concentration in more than 10% of the tap water samples collected during the monitoring period (known as the 90th percentile amount) is greater than the action level.

N. PWSA conducted lead and copper monitoring of its System between January 1, 2016 and June 30, 2016 and between July 1, 2016 and December 31, 2016. The results showed a lead level of 0.022 mg/L and 0.018 mg/L, respectively, at the 90th percentile, which exceeded the action level for lead. PWSA conducted lead and copper monitoring of its System between January 1, 2017 and June 30, 2017. The results showed a lead level of 0.015 mg/L at the 90th percentile, which equaled but did not exceed the action level for lead.

O. Section 109.1107(d)(1) of the Regulations, 25 Pa. Code § 109.1107(d)(1), requires a system such as PWSA that exceeds the lead action level when conducting lead and copper tap monitoring to initiate lead service line replacement. The first year of lead service line replacement begins on the first day following the end of the monitoring period in which the lead action level was exceeded. For PWSA, this first year of required lead service line replacement began on July 1, 2016, and ended on June 30, 2017.

Failure to Conduct System Materials Evaluation

P. Section 109.1107(a)(6) of the Regulations, 25 Pa. Code § 109.1107(a)(6), requires that a water system that is required to initiate lead service line replacement submit to the

Department within the first three months of the first year of lead service line replacement: evidence that a materials evaluation of the system that meets the requirements of Section 109.1103(g)(1) of the Regulations, 25 Pa. Code § 109.1103(g)(1), has been conducted; a schedule for replacing at least 7% of the lead service lines identified in the materials evaluation; and the initial number of lead service lines in its distribution system and the portions owned by the system based on a materials evaluation.

Q. Section 109.1103(g)(1) of the Regulations, 25 Pa. Code § 109.1103(g)(1), requires water suppliers to complete a materials evaluation that includes the review of:

- (1) plumbing codes, permits and records in the files of the building departments of each municipality served by the system which indicate the plumbing materials that are installed within structures connected to the distribution system;
- (2) inspections and records of the distribution system that indicate the material composition of the service connections that connect a structure to the distribution system; and
- (3) existing water quality information indicating locations that may be particularly susceptible to high lead or copper concentrations.

R. As a result of its exceedance of the lead action level, PWSA was required, under 25 Pa. Code § 109.1107(a)(6), to complete a materials evaluation by September 30, 2017 to determine the initial number of lead service lines in its system that would be subject to the 7% lead service line replacement requirements of Section 109.1107(d)(2) of the Regulations, 25 Pa. Code § 109.1107(d)(2), and a schedule for replacing at least 7% of the identified lead service lines. On September 30, 2016, PWSA submitted to the Department a “Lead Service Line Inventory Estimate,” stating to the Department that “PWSA does not currently have an accurate material inventory of the approximately 80,000 active service lines in their system.” PWSA requested that it be allowed to utilize its Lead Service Line Inventory Estimate to calculate the initial number of lead service line replacements it is required to perform, and the Department

approved this request for the first year of required line replacements only, which ended on June 30, 2017, but found the Lead Service Line Inventory Estimate to be insufficient as a complete materials evaluation. As of September 30, 2016, and since that date, PWSA has failed to submit a materials evaluation of the System that meets the requirements of Section 109.1103(g)(1) of the Regulations, 25 Pa. Code § 109.1103(g)(1), and a lead service line replacement schedule, in violation of Sections 109.1107(a)(6) and 109.1103(g)(1) of the Regulations, 25 Pa. Code §§ 109.1107(a)(6) and 109.1103(g)(1).

Failure to Replace Lead Service Lines

S. Section 109.1107(d)(2) of the Regulations, 25 Pa. Code § 109.1107(d)(2), requires water suppliers that exceed the lead action level to replace annually at least 7% of the initial number of lead service lines in place in their system at the beginning of the first year of replacement. Under Section 109.1107(d)(4) of the Regulations, 25 Pa. Code § 109.1107(d)(4), a water supplier is required to replace the system owned portion of the lead service line.

T. Within the “Lead Service Line Inventory Estimate” it submitted, PWSA estimated that the System had 19,152 lead service lines and therefore PWSA would need to replace at least 1,341 lead service lines prior to June 30, 2017.

U. On June 30, 2017, PWSA reported to the Department that only 415 lead service lines had been replaced of the required 1,341, in violation of Section 109.1107(d)(2) of the Regulations, 25 Pa. Code § 109.1107(d)(2).

Failure to Meet Notice and Sampling Requirements

V. Section 109.1107(d)(4) of the Regulations, 25 Pa. Code § 109.1107(d)(4), requires water suppliers conducting partial lead service line replacements to notify the owner of the other portion of the service line that the water supplier will replace the system-owned portion

of the line, and to offer to replace the privately owned portion of the service line at the owner's expense, unless prohibited by law. If the entire length of service line is not replaced at the same time, the water supplier must: (i) provide notice to the residents of all buildings served by the line at least 45 days prior to commencing partial line replacement with specific information regarding partial replacement and that the system will, at its own expense, collect a sample from each partially-replaced lead service line that is representative of the water in the service line for analysis of lead content within 72 hours after completion of the partial replacement of the service line; and (ii) collect the sample and report the results of the analysis to the owner and the residents served by the line within 3 business days of receiving the results.

W. During the period of 2016-2017, PWSA performed non-emergency partial lead service line replacements of the lines serving at least 60 residences without first providing the residents of these structures at least 45 days advance notice of the Authority's intention to perform a partial line replacement, in violation of Section 109.1107(d)(4) of the Regulations, 25 Pa. Code §109.1107(d)(4). For at least 149 residences, PWSA failed to collect a sample of the water from the structures for analysis within 72 hours of partial replacement of the lead service line, in violation of Section 109.1107(d)(4) of the Regulations, 25 Pa. Code §109.1107(d)(4).

X. The violations described in Paragraphs G, I, K, R, U and W, above, constitute a public nuisance under Section 12 of the Safe Drinking Water Act, 35 P.S. § 721.12, and subject PWSA to a claim for civil penalties under Section 13(g) of the Safe Drinking Water Act, 35 P.S. § 721.13(g).

Y. PWSA has informed the Department that, if and when PWSA meets the lead action level during two consecutive 6-month monitoring periods under the Lead and Copper

Rule Regulations, such that it no longer is required to conduct 7% annual lead service line replacement, PWSA intends to continue to replace lead service lines in accordance with a water main and service line replacement plan that PWSA will establish.

After full and complete negotiation of all matters set forth in this Consent Order and Agreement and upon mutual exchange of covenants contained herein, the parties desiring to avoid litigation and intending to be legally bound, it is hereby ORDERED by the Department and AGREED to by PWSA as follows:

1. Authority. This Consent Order and Agreement is an Order of the Department authorized and issued pursuant to Section 5 of the Safe Drinking Water Act, 35 P.S. § 721.5; and Section 1917-A of the Administrative Code, 71 P.S. § 510-17.

2. Findings.

a. PWSA agrees that the findings in Paragraphs A through Y are true and correct and, in any matter or proceeding involving PWSA and the Department, PWSA shall not challenge the accuracy or validity of these findings.

b. The parties do not authorize any other persons to use the findings in this Consent Order and Agreement in any matter or proceeding.

3. Corrective Action. PWSA shall undertake and complete the following tasks pursuant to the following schedule:

a. For any structure for which PWSA completes a partial lead service line replacement (in which the portion of the lead service line not owned by PWSA remains in service for the structure), PWSA shall report this as a partial lead service line replacement as part of the reporting required by 25 Pa. Code § 109.1107(a)(6) and comply with the advance notification and follow-up testing requirements set forth in 25 Pa. Code § 109.1107(d)(4)(i)-(iii)

for every owner, resident and tenant of the structure. In addition, PWSA shall, for each owner, resident and tenant of the structure:

- i. provide (via door hanger notification) an additional advance notification not more than five (5) days and not less than seventy-two (72) hours prior to the initiation of work;
- ii. upon initiation of partial lead service line replacement, provide (by in-person delivery or by leaving at the front door of the residence) NSF-certified lead removal filters and replacement cartridges for six (6) months of use;
- iii. if initial follow-up testing of the water is not conducted because the resident failed to collect the sample, provide (via door hanger notification) a second notice for follow-up testing; and
- iv. if initial follow-up testing of water from the line shows that the lead level exceeds 0.015 mg/L, offer (via door hanger notification with self-addressed postage pre-paid mailer) NSF-certified replacement cartridges for an additional six (6) months of use and provide sample bottles for subsequent follow-up lead testing every three (3) months after partial lead service line replacement until: (a) the lead level in the water from the line is at or below 0.015 mg/L and the water from the line is at or below the pre-replacement lead level, if available; or (b) the resident has failed to return samples on two consecutive sampling opportunities.
- v. In the case of emergency water main and service line repairs or replacements, PWSA may, under 25 Pa. Code § 109.1107(d)(4)(i), provide a shorter time period for notification to affected residents. In the case of

emergencies, PWSA shall provide affected residents with as much advance notice as is possible prior to conducting a partial lead service line replacement. If no advance notice is possible, PWSA shall provide concurrent notification to affected residents at the time it performs the partial lead service line replacement. PWSA shall submit documentation to the Department within ten (10) days of the repair or replacement demonstrating the emergency circumstance, which documentation shall also include the date, address and description of repairs or replacements made. Provision of lead filters and cartridges and follow-up testing must still be completed according to the other requirements of Paragraph 3.a., above.

b. i. On or before December 31, 2017, PWSA shall submit to the Department an interim report of the results of the corrosion control treatment feasibility study required within the Plan submitted and approved under Paragraph 4.a. of the Administrative Order. PWSA shall submit a final report in accordance with 25 Pa. Code §§ 109.1102(b)(2)(ii)(A) and 109.1102(b)(3) on or before March 31, 2018. This paragraph supersedes the requirement for PWSA to submit the results and final report of its corrosion control feasibility study by July 30, 2017 as discussed in Paragraph I, above, and required under Paragraph 4.a. of the Administrative Order. All other requirements in Paragraphs 4.a. and 4.b. of the Administrative Order remain in full force and effect. In the event the Department notifies PWSA of any deficiencies in the study, PWSA shall fully address all such deficiencies within the time period requested by the Department until the study is deemed acceptable by the Department's written notice to PWSA.

ii. Within 90 days of the Department's written approval of PWSA's feasibility study, PWSA shall submit to the Department a complete and technically sufficient application for an amended construction permit to construct the optimal corrosion control treatment identified by PWSA's corrosion control study. PWSA shall fully address any deficiencies raised by the Department within the time frame requested.

iii. Within 180 days of the date the Department issues an amended construction permit to PWSA to modify the corrosion control treatment facilities for the System, PWSA shall complete construction of the modifications in accordance with the amended construction permit and submit to the Department a certification of construction to request an amended operation permit. PWSA shall begin operation of the modified corrosion control treatment facilities immediately upon issuance of an amended operation permit by the Department.

iv. Upon commencing operation of the modified corrosion control treatment facilities, PWSA shall conduct two consecutive 6-month periods of follow-up lead and copper tap monitoring at a minimum of one hundred (100) Tier 1 sites. During this time, PWSA also shall conduct monitoring of the applicable corrosion control treatment water quality parameter performance requirements (WQP) every 2 weeks at each entry point within the System and monthly at 25 locations within the distribution system.

v. Within 30 days of the end of the second period of follow-up tap monitoring required under Paragraph 3.b.iv., above, PWSA shall submit to the Department a request for designation of optimal corrosion control treatment

WQP. PWSA shall fully address any deficiencies raised by the Department within the time frame requested.

vi. Following the Department's designation of optimal corrosion control treatment WQP for PWSA's System, PWSA shall continue to conduct WQP monitoring every 2 weeks at each entry point and monthly at 25 locations within the distribution system for a period of one year.

c. i. On or before December 31, 2017, PWSA shall provide the Department with a Data Summary (in a spreadsheet or spreadsheets) from its GIS system utilizing all inspections and records currently in the possession of or accessible to PWSA, which includes scanned historical records (for City-owned service lines), curb box inspections completed through that date, and field studies completed through that date.

ii. On or before March 31, 2018, PWSA shall provide the Department with: (a) an updated materials evaluation containing all of the lead service line information from the Data Summary, as well as any additional lead service line information collected and processed subsequent to the Data Summary; and (b) a lead service line replacement schedule in conformance with the requirements of this Consent Order and Agreement.

iii. On or before December 31, 2020, PWSA shall provide a supplemental materials evaluation to the Department for all residential structures (single family and multi-family) connected to the system for which PWSA has not been able to confirm the absence of lead service lines, based on the sources of information listed in 25 Pa. Code § 109.1103(g)(1)(ii) and (iii), the results of

PWSA's inspection of service lines (including curb box inspections, if technically feasible, and other field studies, if technically feasible), or both. PWSA shall also identify the ownership of all portions of each line.

iv. On or before December 31, 2022, PWSA shall provide a supplemental materials evaluation to the Department for all structures connected to the system, based on the sources of information listed in 25 Pa. Code § 109.1103(g)(1)(ii) and (iii) and any updated information PWSA has developed from other sources.

v. In the event the Department notifies PWSA of any deficiencies in any of the Data Summary or materials evaluation submissions by PWSA under this paragraph, PWSA shall fully address all deficiencies within the time period requested by the Department until the Data Summary or materials evaluation is deemed acceptable by the Department.

d. On or before June 30, 2018, PWSA shall have, since July 1, 2016, replaced at least 1,341 lead service lines in place within the System. If PWSA determines that it has the legal authority and available funding to replace the privately owned portion of lead service lines when it replaces the City-owned portions, PWSA may submit a revised schedule for full line replacements, which the Department will consider in its sole discretion. PWSA waives any right that it may have to challenge the Department's decision in this regard.

e. Lead service line replacements:

i. Unless PWSA has met the 90th percentile lead action level during two consecutive rounds of 6-month monitoring by June 30, 2018, PWSA shall, on or before December 31, 2018, replace at least an additional 7% of the lead service

lines in place within the System, based upon the updated materials evaluation that PWSA is required to submit to the Department by March 31, 2018 and that has been accepted as compliant by the Department pursuant to Paragraph 3.c.

ii. Thereafter, unless and until PWSA has met the 90th percentile lead action level during two consecutive rounds of 6-month monitoring by June 30 of each calendar year, PWSA shall, on or before June 30th of the following calendar year, have replaced at least an additional 7% of the lead service lines within the System, based upon the most recently updated materials evaluation that has been accepted as compliant by the Department pursuant to Paragraph 3.c. To calculate the 7% amount, PWSA shall add the total number of lead service lines identified in the updated materials evaluation and the total number of lead service lines replaced by PWSA since July 1, 2016, and then calculate 7% of that combined total.

iii. If PWSA does meet the 90th percentile lead action level during two consecutive rounds of 6-month monitoring, but thereafter exceeds the 90th percentile lead action level, PWSA shall comply with all applicable requirements of the Regulations.

f. Every three (3) months, beginning on the date three (3) months after the date of this Consent Order and Agreement, PWSA shall provide to the Department a written report, detailing: the progress and status of PWSA's implementation of the Plan submitted pursuant to Paragraph 4.a. of the Administrative Order; repeat public notice and public education tasks; consumer tap notices; 72-hour partial line replacement sample results; and PWSA's compliance with the requirements of this Consent Order and Agreement, including but not

limited to any locations where PWSA has not complied with the provisions of Paragraph 3.a., above. Upon request by the Department, PWSA shall provide, within the time frame requested by the Department, information regarding lead service line replacement activities, including notification to residents; the results of the follow-up lead testing referenced in Paragraph 3.a.iv., above; outreach efforts to obtain follow-up samples; and the status of PWSA's provision of NSF-certified lead removal filters. The requirement for monthly progress reports set forth in Paragraph 4.a. of the Administrative Order is superseded by the reporting requirements contained herein. All other requirements in Paragraphs 4.a. and 4.b. of the Administrative Order remain in full force and effect.

g. PWSA shall provide repeat Tier 2 public notice to its customers within thirty (30) days following each six-month lead sampling event for which PWSA exceeds 0.015 mg/L of lead. This notice is in addition to the public education program required under Section 109.1104 of the Regulations, 25 Pa. Code § 109.1104. The notice shall include the 90th percentile value of the monitoring results, and any updates to the measures PWSA is undertaking under its approved Plan under Paragraph 4.a. of the Administrative Order, including PWSA's progress in conducting its investigation, determining the effect of changes to treatment methods, and developing recommendations for optimization of corrosion control within the System.

h. PWSA shall use adequately and appropriately qualified staff or consultants to perform the corrective actions required under this Consent Order and Agreement.

4. Civil Penalty Settlement.

a. Within thirty (30) days of execution of this Consent Order and Agreement, and subject to the provisions of Paragraphs 4.b. and 4.c., below, PWSA shall pay a civil penalty in the amount of TWO MILLION FOUR HUNDRED THOUSAND DOLLARS (\$2,400,000)

for the violations set forth in Paragraphs G, I, K, R, U and W, for the dates set forth above and no others. The payment shall be made by corporate check or the like made payable to the “Commonwealth of Pennsylvania – Safe Drinking Water Fund” and sent to Renee Diehl, Operations Sections Chief, Department of Environmental Protection, 400 Waterfront Drive, Pittsburgh, PA 15222-4745.

b. Community Environmental Project. Up to ONE MILLION EIGHT HUNDRED THOUSAND DOLLARS (\$1,800,000) of the civil penalty assessed in this Consent Order and Agreement may be paid by PWSA by performing a Community Environmental Project acceptable to the Department as described below. If the Department does not approve PWSA’s proposed Community Environmental Project within ninety (90) days of execution of this Consent Order and Agreement, then PWSA shall pay the unpaid portion of the civil penalty amount pursuant to Paragraph 4.a., above, within one hundred twenty (120) days of execution of this Consent Order and Agreement.

c. Within sixty (60) days of execution of this Consent Order and Agreement, PWSA may submit a detailed proposal for a Community Environmental Project that will result in the distribution, through a suitable third party administrator, of grant money or low-interest loan money to low income homeowners in the PWSA service system to assist these homeowners in their replacement of privately owned lead service lines on their property. No funds utilized under the Community Environmental Project shall be expended for administrative or oversight costs, nor used to fulfill any activity required of PWSA under law. Any funds that have not been utilized to fulfill the purpose of the approved Community Environmental Project within three (3) years from the execution of this Consent Order and Agreement shall be paid to the Department

as civil penalties pursuant to Paragraph 4.a., within sixty (60) days of termination of that time period.

d. PWSA shall not deduct any costs incurred in connection with or in any way associated with the Community Environmental Project described in Paragraph 4 for any tax purpose or otherwise obtain favorable tax treatment for those costs. If requested to do so by the Department, PWSA shall submit an affidavit of the official responsible for the financial affairs of PWSA certifying that PWSA has not deducted or otherwise obtained favorable tax treatment of any of the costs of the Community Environmental Project.

e. PWSA agrees that whenever it publicizes, in any way, the Community Environmental Project, it will state that the Project was undertaken as part of the settlement of an enforcement action with the Department.

f. PWSA shall submit to the Department an affidavit of the official responsible for overseeing the Project every ninety (90) days, beginning upon the approval by the Department of PWSA's proposed Community Environmental Project. The affidavit shall describe the dates and amounts of all funds allocated and distributed pursuant to the approved Project, including but not limited to the locations and funding amounts per location of funds used. PWSA shall provide the Department with any other documentation and information requested by the Department.

5. Stipulated Civil Penalties.

a. In the event PWSA fails to comply in a timely manner with the provisions of Paragraph 3 of this Consent Order and Agreement, PWSA shall be in violation of this Consent Order and Agreement and, in addition to other applicable remedies, shall pay a civil penalty in the amount determined under the following schedule:

- i. For any violation of Paragraph 3.a., \$500 per violation per residence;
- ii. For any violation of Paragraphs 3.b. or 3.c., \$250 per day for each violation;
- iii. For any violation of Paragraphs 3.d. or 3.e., \$200 per month for each line not replaced;
- iv. For any violation of Paragraph 3.f., the Department reserves the right to determine and assess appropriate civil penalties based on the circumstances of the violation and the factors enumerated in Section 13(g) of the Safe Drinking Water Act;
- v. For any violation of Paragraph 3.g., \$250 per day for each violation.

b. Stipulated civil penalty payments shall be payable monthly on or before the fifteenth day of each succeeding month, and shall be forwarded as described in Paragraph 4 (Civil Penalty Settlement), above.

c. Any payment under this paragraph shall neither waive PWSA's duty to meet its obligations under this Consent Order and Agreement nor preclude the Department from commencing an action to compel PWSA's compliance with the terms and conditions of this Consent Order and Agreement. The payment resolves only PWSA's liability for civil penalties arising from the violation of this Consent Order and Agreement for which the payment is made.

d. Stipulated civil penalties shall be due automatically and without notice.

6. Remedies for Failure to Complete Community Environmental Project. In the event that PWSA fails to complete its obligations under the approved Community Environmental

Project referred to in Paragraph 4, PWSA shall pay an additional stipulated penalty in the amount of \$5,000. In this event, or if PWSA's operation of the System terminates or is transferred to another entity during the term of the Community Environmental Project, PWSA shall within fifteen (15) days of receipt of written notification from the Department, pay all funds that have not been utilized to fulfill the purpose of the approved Community Environmental Project to the Department as civil penalties pursuant to Paragraph 4.a.

7. Additional Remedies.

a. In the event PWSA fails to comply with any provision of this Consent Order and Agreement, the Department may, in addition to the remedies prescribed herein, pursue any remedy available for a violation of an order of the Department, including an action to enforce this Consent Order and Agreement.

b. The remedies provided by this paragraph and Paragraph 5 (Stipulated Civil Penalties) are cumulative and the exercise of one does not preclude the exercise of any other. The failure of the Department to pursue any remedy shall not be deemed to be a waiver of that remedy. The payment of a stipulated civil penalty, however, shall preclude any further assessment of civil penalties for the violation for which the stipulated penalty is paid.

8. Reservation of Rights. The Department reserves the right to require additional measures to achieve compliance with applicable law. PWSA reserves the right to challenge any action which the Department may take to require those measures.

9. Liability of PWSA. PWSA shall be liable for any violations of the Consent Order and Agreement, including those caused by, contributed to, or allowed by its officers, agents, employees, or contractors. Except as provided in Paragraph 10.c., PWSA also shall be liable for

any violation of this Consent Order and Agreement caused by, contributed to, or allowed by its successors and assigns.

10. Transfer of Site.

a. The duties and obligations under this Consent Order and Agreement shall not be modified, diminished, terminated or otherwise altered by the transfer of any legal or equitable interest in the Water System or any part thereof.

b. If PWSA intends to transfer any legal or equitable interest in the Water System which is affected by this Consent Order and Agreement, PWSA shall serve a copy of this Consent Order and Agreement upon the prospective transferee of the legal and equitable interest at least thirty (30) days prior to the contemplated transfer and shall simultaneously inform the Southwest Regional Office of the Department of such intent.

c. The Department in its sole discretion may agree to modify or terminate PWSA's duties and obligations under this Consent Order and Agreement upon transfer of the PWSA System or any part thereof. PWSA waives any right that it may have to challenge the Department's decision in this regard.

11. Department Consent to Transfer, Assignment or Termination of Lease. During the term of this Consent Order and Agreement, PWSA shall not approve or consent to the transfer, assignment or termination of its lease and operation of the System unless the intended new owner and/or operator of the water system first enters into a consent order and agreement with the Department in which it obligates itself to timely complete all of PWSA's obligations that are required under this Consent Order and Agreement.

12. Correspondence with Department. All correspondence with the Department concerning this Consent Order and Agreement shall be addressed to:

Renee Diehl, Operations Section Chief
Department of Environmental Protection
Southwest Regional Office
400 Waterfront Drive
Pittsburgh, Pennsylvania 15222-4745
Telephone: 412.442.4210 Facsimile: 412.442.4242

13. Correspondence with PWSA. All correspondence with PWSA concerning this Consent Order and Agreement shall be addressed to:

Robert Weimar, Interim Executive Director
Pittsburgh Water and Sewer Authority
Penn Liberty Plaza 1
1200 Penn Avenue
Pittsburgh, PA 15222
Telephone: 412-255-2579

PWSA shall notify the Department whenever there is a change in the contact person's name, title, or address. Service of any notice or any legal process for any purpose under this Consent Order and Agreement, including its enforcement, may be made by mailing a copy by first class mail to the above address.

14. Force Majeure.

a. In the event that PWSA is prevented from complying in a timely manner with any time limit imposed in this Consent Order and Agreement solely because of a strike, fire, flood, act of God, or other circumstance beyond the Authority's control and which PWSA, by the exercise of all reasonable diligence, is unable to prevent, then PWSA may petition the Department for an extension of time. An increase in the cost of performing the obligations set forth in this Consent Order and Agreement shall not constitute circumstances beyond PWSA's

control. PWSA's economic inability to comply with any of the obligations of this Consent Order and Agreement shall not be grounds for any extension of time.

b. PWSA shall only be entitled to the benefits of this paragraph if PWSA notifies the Department within five (5) working days by telephone and within ten (10) working days in writing of the date it becomes aware or reasonably should have become aware of the event impeding performance. The written submission shall include all necessary documentation, as well as a notarized affidavit from an authorized individual specifying the reasons for the delay, the expected duration of the delay, and the efforts which have been made and are being made by PWSA to mitigate the effects of the event and to minimize the length of the delay. The initial written submission may be supplemented within ten (10) working days of its submission. PWSA's failure to comply with the requirements of this paragraph specifically and in a timely fashion shall render this paragraph null and of no effect as to the particular incident involved.

c. The Department will decide whether to grant all or part of the extension requested on the basis of all documentation submitted by PWSA and other information available to the Department. In any subsequent litigation, PWSA shall have the burden of proving that the Department's refusal to grant the requested extension was an abuse of discretion based upon the information then available to it.

15. Severability. The paragraphs of this Consent Order and Agreement shall be severable and should any part hereof be declared invalid or unenforceable, the remainder shall continue in full force and effect between the parties.

16. Entire Agreement. This Consent Order and Agreement shall constitute the entire integrated agreement of the parties. No prior or contemporaneous communications or prior

drafts shall be relevant or admissible for purposes of determining the meaning or extent of any provisions herein in any litigation or any other proceeding.

17. Attorney Fees. The parties shall bear their respective attorney fees, expenses and other costs in the prosecution or defense of this matter or any related matters, arising prior to execution of this Consent Order and Agreement.

18. Modifications. No changes, additions, modifications, or amendments of this Consent Order and Agreement shall be effective unless they are set out in writing and signed by the parties hereto.

19. Titles. A title used at the beginning of any paragraph of this Consent Order and Agreement may be used to aid in the construction of that paragraph, but shall not be treated as controlling.

20. Decisions Under Consent Order. Any decision which the Department makes under the provisions of this Consent Order and Agreement, including a notice that stipulated civil penalties are due, is intended to be neither a final action under 25 Pa. Code § 1021.2, nor an adjudication under 2 Pa. C.S. § 101. Any objection which PWSA may have to the decision will be preserved until the Department enforces this Consent Order and Agreement.

21. Dispute Resolution.

a. PWSA may initiate dispute resolution under this paragraph, in response to any decision required of the Department under Paragraphs 3.a., 3.b., or 3.c.

b. To initiate dispute resolution, PWSA shall provide written notice to the Department within ten (10) days of the decision in dispute. PWSA shall have an additional ten days to provide the Department with a written list of objections to the decision in dispute, the

relevant facts, analysis and opinions and other supporting data ("Statement of Position"). The Department shall have twenty (20) days to provide its Statement of Position.

c. Within the twenty (20) day period following receipt of the Department's Statement of Position, the Safe Drinking Water Program Manager and PWSA's representative shall confer in an attempt to resolve the dispute. In the event the parties are unable to resolve the dispute within this period, the Statements of Position shall be provided to the Department's Southwest Regional Director to issue a final decision resolving the dispute.

d. During the pendency of the dispute resolution procedures set forth in subparagraphs b. and c., any obligation to be performed under this Consent Order and Agreement which is the subject of such dispute and any associated activities whose performance is directly dependent upon the resolution of the dispute shall be postponed for a period of time not to exceed the actual time taken to resolve the dispute pursuant to subparagraphs b. and c. or as otherwise agreed by the parties. All other obligations and activities shall be completed in accordance with the terms of this Consent Order and Agreement.

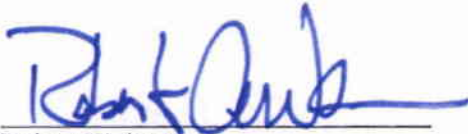
e. Any time period for dispute resolution set forth herein may be extended by written agreement of the parties.

22. Termination. The obligations of this Consent Order and Agreement shall terminate when the Department determines in writing that PWSA has complied with the requirements of Paragraphs 3.a. – 3.d., 3.e.i., 3.e.ii., 4, 5, and 6, and has met the lead action level during two consecutive 6-month monitoring periods.

23. Resolution. Attached hereto as Appendix A is a resolution of the Board of PWSA authorizing its signatories below to enter into this Consent Order and Agreement on its behalf.

IN WITNESS WHEREOF, the parties hereto have caused this Consent Order and Agreement to be executed by their duly authorized representatives. The undersigned representatives of PWSA certify under penalty of law, as provided by 18 Pa. C.S. § 4904, that they are authorized to execute this Consent Order and Agreement on behalf of PWSA; that PWSA consents to the entry of this Consent Order and Agreement as a final ORDER of the Department; and that PWSA hereby knowingly waives its right to appeal this Consent Order and Agreement and to challenge its content or validity, which rights may be available under Section 4 of the Environmental Hearing Board Act, Act of July 13, 1988, P.L. 530, 35 P.S. § 7514; the Administrative Agency Law, 2 Pa. C.S. § 103(a) and Chapters 5A and 7A; or any other provisions of law. Signature by PWSA's attorney certifies only that the agreement has been signed after consulting with counsel.

FOR PITTSBURGH WATER AND SEWER AUTHORITY:



Robert Weimar
Interim Executive Director
Pittsburgh Water and Sewer Authority



David Ries
Attorney for Pittsburgh Water
and Sewer Authority

FOR THE COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION:



Alan Eichler
Environmental Program Manager
Bureau of Safe Drinking Water



John H. Herman
Regional Counsel

Gail Guenther
Assistant Counsel
Southwest Office of Chief Counsel

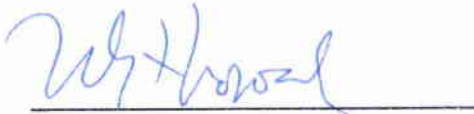
RESOLUTION NO. 222 OF 2017**THE PITTSBURGH WATER AND SEWER AUTHORITY
Allegheny County, Pennsylvania**

The undersigned, an authorized representative of The Pittsburgh Water and Sewer Authority, hereby certifies that at a meeting held on the 17th day of November, 2017, after due notice, at which a quorum was present, the "Authority Board" unanimously adopted the following Resolution:

RESOLVED, that The Pittsburgh Water and Sewer Authority (the "Governing Body") shall be, and the same hereby is authorized to execute and enter into the Consent Order and Agreement with the Pennsylvania Department of Environmental Protection. Appropriate officers of the Governing Body are hereby authorized to execute all certifications and documentation required in connection with the Amendment.

I hereby certify that the above Resolution is in full force and effect as of the 17th day of November, 2017.

WITNESS:





Debbie Lestitian
Chair, PWSA Board



FR-IX.1
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AB

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

City of Pittsburgh
301 City-County Building
414 Grant Street
Pittsburgh Pennsylvania 15219

And

Pittsburgh Water and Sewer Authority
Penn Liberty Plaza 1
1200 Penn Avenue
Pittsburgh, PA 15222

Violations of the Safe Drinking
Water Act and the Rules and
Regulations Promulgated
Pursuant Thereto

ADMINISTRATIVE ORDER

NOW, this 25th day of October 2017, the Commonwealth of Pennsylvania, Department of Environmental Protection (“Department”), issues this Administrative Order after it has found and determined the following:

FINDINGS

A. The Department is the agency with the duty and authority to administer and enforce the Pennsylvania Safe Drinking Water Act, Act of May 1, 1984, P.L. 206, *as amended*, 35 P.S. §§ 721.1-721.17 (“Safe Drinking Water Act”); Section 1917-A of the Administrative Code of 1929, Act of April 9, 1929, P.L. 177, *as amended*, 71 P.S. § 510-17 (“Administrative Code”); and the rules and regulations promulgated thereunder (“Regulations”).

B. The City of Pittsburgh (“City”) is a municipality with a business address of 301 City-County Building, 414 Grant Street, Pittsburgh Pennsylvania 15219. The City is a “person” as that term is defined in Section 3 of the Safe Drinking Water Act, 35 P.S. § 721.3, and Section 109.1 of the Regulations, 25 Pa. Code § 109.1; a “supplier of water” as that term is defined in

Section 3 of the Safe Drinking Water Act, 35 P.S. § 721.3; and a “public water supplier” as that term is defined in Section 109.1 of the Regulations, 25 Pa. Code § 109.1.

C. Pittsburgh Sewer and Water Authority (“PWSA”) is a municipal authority with a business address of Penn Liberty Plaza 1, 1200 Penn Avenue, Pittsburgh Pennsylvania 15222. PWSA is a “person” as that term is defined in Section 3 of the Safe Drinking Water Act, 35 P.S. § 721.3, and Section 109.1 of the Regulations, 25 Pa. Code § 109.1; a “supplier of water” as that term is defined in Section 3 of the Safe Drinking Water Act, 35 P.S. § 721.3; and a “public water supplier” as that term is defined in Section 109.1 of the Regulations, 25 Pa. Code § 109.1.

D. PWSA leases, operates, and is the permittee of a “public water system” and, more specifically, a “community water system,” as those terms are defined in Section 3 of the Safe Drinking Water Act, 35 P. S. § 721.3, and Section 109.1 of the Regulations, 25 Pa. Code § 109.1. PWSA’s public water system consists of water sources, storage facilities, treatment facilities, and a distribution system (“System”). PWSA provides drinking water through the System to approximately 520,000 people in the Pittsburgh, Pennsylvania area, including approximately 250,000 residential customers. PWSA operates the System pursuant to multiple public water supply permits issued by the Department, and has been assigned Public Water System Identification Number 5020038. The City owns the System and leases it to PWSA.

E. Section 109.4(3) of the Regulations, 25 Pa. Code § 109.4(3), requires that public water suppliers shall provide and effectively operate and maintain public water system facilities.

F. Section 109.4(4) of the Regulations, 25 Pa. Code § 109.4(4), requires that public water suppliers shall take whatever investigative or corrective action is necessary to assure that safe and potable water is continuously supplied to the users of the public water system.

G. Section 109.202(c)(1)(ii) of the Regulations, 25 Pa. Code § 109.202(c)(1)(ii), requires that the combined total effect of disinfection processes utilized in a filtration plant shall achieve at least 90% inactivation of Giardia cysts and 99.9% inactivation of viruses, as determined by CTs and measurement methods established by the Environmental Protection Agency (“EPA”).

H. On January 31, 2017, the Department issued a Field Order requiring PWSA to issue a Boil Water Advisory to all customers served by the Highland Membrane Filtration Plant. The Department had discovered that the combined total effect of disinfection processes utilized at the Highland Membrane Filtration Plant failed to achieve at least 90% inactivation of Giardia cysts and 99.9% inactivation of viruses, as determined by CTs and measurement methods established by the EPA, in violation of 25 Pa. Code § 109.202(c)(1)(ii) and 25 Pa. Code § 109.4(3). In response to the January 31, 2017 Field Order, PWSA took the Highland Membrane Filtration Plant out of service.

I. As of the date of this Administrative Order, PWSA’s Highland Membrane Filtration Plant remains out-of-service, and PWSA has not submitted a complete and technically sufficient permit application to modify the Highland Membrane Filtration Plant, in order to achieve at least 90% inactivation of Giardia cysts and 99.9% inactivation of viruses, as determined by CTs and measurement methods established by the EPA as required by 25 Pa. Code § 109.4(4).

J. On August 28, 2017, the Department issued a Field Order requiring PWSA to issue a Boil Water Advisory for all customers served by the Lanpher Reservoir after learning that the integrity of the Lanpher Reservoir floating cover system had been compromised, allowing potential pathways of contamination into the finished water. PWSA failed to effectively operate

and maintain the Lanpher Reservoir floating cover system in violation of 25 Pa. Code § 109.4(3), and failed to take the investigative or corrective actions necessary to assure that safe and potable water was continuously supplied to the users of the System, in violation of 25 Pa. Code § 109.4(4). As a result of the August 28, 2017 Field Order, PWSA took the Lanpher Reservoir out of service.

K. PWSA, as operator, and the City, as owner, have failed to effectively operate and maintain the public water system facilities of the System, in violation of 25 Pa. Code § 109.4(3), and have failed to take the investigative or corrective actions necessary to assure that safe and potable water is continuously supplied to the users of the System, in violation of 25 Pa. Code § 109.4(4).

ORDER

NOW therefore, pursuant to its authority under Sections 5 and 12 of the Safe Drinking Water Act, 35 P.S. §§ 721.5 and 721.12, and Section 1917-A of the Administrative Code, 71 P.S. § 510-17, the Department hereby Orders that:

PWSA and the City shall ensure that the System has the necessary treatment, resiliency, and reliability to maintain adequate quality, quantity, and pressure to assure that safe and potable water is continuously supplied to the users. PWSA shall undertake and complete the following tasks by the deadlines set forth below in order to resume operation of the Highland 1 Reservoir, restore the Lanpher Reservoir to service, address reliability deficiencies at the Bruecken Pump Station, and establish a schedule for other capital improvements to the System:

1. **Highland 1 Reservoir and Membrane Filtration Plant.** PWSA shall perform the actions necessary to resume operation and use of the Highland 1 Reservoir by one of the methods listed in subparagraph a. or b., below:

a. By completing the activities set forth in subparagraphs i. through viii., below, PWSA shall reinstate operation of the Highland Membrane Filtration Plant to provide a continuous supply of safe and potable water to the users, for such time as may be necessary until PWSA has provided an alternative means to do so:

i. On or before November 30, 2017, submit a complete and technically sufficient application to amend Permit No. 0298509 to provide the following:

- (a) Replacement of in-line membrane strainers;
- (b) Replacement of membrane filtration modules;
- (c) Addition of an ultraviolet (UV) disinfection unit capable of inactivation of both Giardia and viruses with UV treatment, in conjunction with the existing chlorination system, that complies with the US EPA Ultraviolet Disinfection Guidance Manual and is validated via an EPA approved 3rd party; and
- (d) Identification of all modifications to the plant recommended to PWSA by the manufacturer of the membrane filters, Pall Corporation.

ii. Within 60 days of the date the Department issues an amended construction permit, replace all in-line membrane filtration strainers according to manufacturer standards.

iii. Within 60 days of the date the Department issues an amended construction permit, replace a minimum of 4 membrane racks.

iv. Within 60 days of the date the Department issues an amended construction permit, submit a schedule to replace the remaining membrane racks.

v. On or before November 30, 2017, provide to the Department documentation that the Kinney strainers are functioning according to manufacturer standards.

vi. Within 90 days of the date the Department issues an amended construction permit, install the UV disinfection unit as approved.

vii. Notify the Department at least 48 hours prior to start-up of the Highland Membrane Filtration Plant and request a pre-operational site visit by the Department to verify that PWSA has:

- (a) Completed the modifications recommended by Pall Corporation;
- (b) Retained the services of adequately trained and properly certified operators to operate the membrane and UV facilities; and
- (c) Complied with all conditions of the amended construction permit issued by the Department.

viii. Following start-up of the Highland Membrane Filtration Plant, PWSA shall submit to the Department each day by 9 a.m. all information contained in the Monthly Daily Integrity Pressure Decay Testing Report form and shall continue to provide daily reports until directed otherwise in writing by the Department.

b. On or before November 30, 2017, PWSA shall submit a complete application for a minor permit amendment to cover the Highland 1 reservoir. Within 150 days of the date the Department issues an amended construction permit, cover the Highland 1 reservoir in accordance with the terms and conditions of the permit, and provide adequate security with a physical barrier.

2. **Lanpher Reservoir.** PWSA shall complete all actions necessary to restore the Lanpher Reservoir to service in accordance with the following schedule:

- a. On or before November 15, 2017, PWSA shall complete repairs to the cover of the Lanpher Reservoir East Cell and return the East Cell to service.
- b. On or before November 30, 2017, PWSA shall submit a complete permit application for an amended construction permit to replace the cover and liner on both cells of the Lanpher Reservoir.
- c. Within 150 days of the date the Department issues an amended construction permit, PWSA shall replace the West Cell cover and liner, and apply for an operation permit for the West Cell. PWSA shall return the West Cell to service immediately upon issuance of an operation permit by the Department.

d. Within 150 days of returning the West Cell to service, PWSA shall replace the East Cell cover and liner, and apply for an operation permit for the East Cell. PWSA shall return the East Cell to service immediately upon issuance of an operation permit by the Department.

3. **Bruecken Pump Station.** PWSA shall complete the actions necessary to ensure reliability of the Bruecken Pump Station in accordance with the following schedule:

a. On or before November 30, 2017, PWSA shall submit a complete application for an amended construction permit to install a backup variable speed pump at the Bruecken Pump Station.

b. Within 60 days of the date the Department issues an amended construction permit, PWSA shall obtain the backup pump and submit to the Department a standard operating procedure (SOP) describing the circumstances and specific mechanism as to how it will be brought into service if needed.

c. On or before December 31, 2017, PWSA shall provide emergency backup power for the Bruecken Pump Station and shall submit to the Department the details of the backup power system and a copy of the SOP that will be added to PWSA's Emergency Response Plan for use of the backup power system.

4. **Pressure Sensors.** PWSA shall complete the actions necessary to assure that water at adequate pressure is continuously supplied to the users in accordance with the following schedule:

a. On or before November 30, 2017, PWSA shall identify critical low pressure points in each of the System's pressure zones and provide those locations to the

Department for its approval, in the form of a System drawing identifying both the pressure zones and the critical low pressure points.

b. Within 30 days of the Department's approval of PWSA's submission, PWSA shall install pressure sensors at each of these locations capable of reporting pressure data to PWSA in real time. PWSA will maintain adequate records of pressure sensor data with data points recorded no less frequently than once every 15 minutes. These readings shall be used by PWSA to make any necessary System changes or repairs as soon as possible to assure adequate pressures are maintained.

c. PWSA must notify the Department within one hour if any of the following occur:

i. If any pressure data indicates a loss of positive pressure.

ii. If any two consecutive 15-minute readings are below 20 PSI.

5. **Capital Improvement Projects.** On or before November 30, 2017, PWSA shall provide a detailed schedule for completion of the longer term projects set forth in PWSA's "Capital Improvement Projects from the 2017 to 2021 Capital Improvement Program" presented by PWSA to the Department on October 18, 2017, attached as Exhibit A. The schedule shall include dates for design, permitting, procurement, construction, start-up and final in-service date for each individual project.

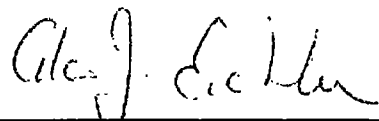
6. **Qualified Personnel.** PWSA and the City shall ensure that adequately and appropriately qualified staff and/or consultants are employed to perform the tasks required under this Administrative Order.

7. **Funding.** The City shall ensure that PWSA has funds available to complete all of the tasks required under this Administrative Order.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa. C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717-787-3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800-654-5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's Rules of Practice and Procedure may be obtained from the Board. The appeal form and the Board's Rules of Practice and Procedure are also available in Braille or on audiotape from the Secretary to the Board at 717-787-3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

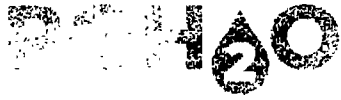
IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD. IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717-787-3483) FOR MORE INFORMATION.

FOR THE COMMONWEALTH OF
PENNSYLVANIA, DEPARTMENT OF
ENVIRONMENTAL PROTECTION:



Alan J. Eichler
Program Manager
Safe Drinking Water Program

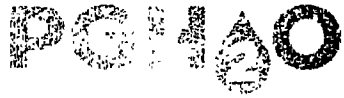
EXHIBIT A



2017-2021 Capital Projects Defined Projects*

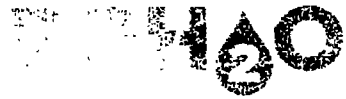
Project Name	Project Budget	Start Date
Aspinwall WTP Electrical & Backup Power Improvements	\$ 26,320,000	Mar-17
Aspinwall WTP Pretreatment & Clarification Improvements	\$ 28,371,000	Mar-17
Clearwell Emergency Response Project	\$ 27,630,000	Mar-17
Highland Reservoir Pump Station and Rising Main	\$ 31,690,000	Mar-17
Maryland Avenue Green Infrastructure	\$ 6,495,000	Mar-17
Ft. Duquesne Bridge Water Main Improvements	\$ 770,000	Mar-17
31 st Ward Sewer Improvements	\$ 13,520,000	Mar-17
Highland MFP Critical Process Improvements	\$ 985,000	Mar-17
Highland MFP Filtration Module Replacement	\$ 2,950,000	Apr-17
Highland MFP Transformer and UPS Replacement	\$ 90,000	Apr-17
Lawn and Ophelia Green Infrastructure	\$ 845,000	Aug-17

* Note: Annual reoccurring projects NOT included (i.e. lead, valve, hydrant, catch basin, relays, CIPP, etc.)



2017-2021 Capital Projects Defined Projects*

Project Name	Project Budget	Start Date
MFP FRP Chemical Tank Inspections & Repairs/Replacement	\$ 165,000	Aug-17
Smallman Street Infrastructure Improvements	\$ 12,700,000	Sept-17
Lanpher Reservoir Improvements	\$ 16,830,000	Sept-17
Corrosion Control Chemical Storage & Feed Systems	\$ 3,960,000	Oct-17
Aspinwall Pump Station Improvements	\$ 29,460,000	Nov-17
2018 Small Water Main Replacement Project	\$ 10,520,000	Nov-17
2018 Sewers Under Structures	\$ 6,580,000	Nov-17
Maytide Storm and Sanitary Sewer System Improvements	\$ 2,660,000	Nov-17
Woods Run Stream Inflow - Mairdale Avenue	\$ 1,920,000	Nov-17
Wightman Park Green Infrastructure Project	\$ 1,525,000	Nov-17
Aspinwall Pump Station to Lanpher Reservoir Rising Main	\$ 48,684,000	Feb-18
Bruecken Pump Station Improvements	\$25,080,000	Feb-18
Herron Hill Reservoir Improvements	\$ 4,000,000	Feb-18



2017-2021 Capital Projects Defined Projects*

Project Name	Project Budget	Start Date
Chlorine Booster Station Improvements	\$ 6,175,000	Feb-18
Panther Hollow/Four Mile Run Green Infrastructure	\$ 40,500,00	Feb-18
District Water and Pressure Meters	\$ 2,795,000	Feb-18
Garfield Tank Improvements	\$ 3,970,000	Feb-18
Lincoln Tank Improvements	\$ 4,105,000	Feb-18
Washout Disconnection Program	\$ 12,750,000	Mar-18
Heth's Run Green Infrastructure	\$ 10,960,000	Mar-18

DRINKING WATER WARNING
BOIL YOUR WATER BEFORE USING

HIERVAN EL AGUA ANTES DE USARLA.
ESTE INFORME CONTIENE INFORMACION MUY IMPORTANTE SOBRE SU AGUA DE BEBER.
TRADUZCALO O HABLE CON ALGUIEN QUE LO ENTIENDA BIEN.

The Pittsburgh Water and Sewer Authority May Be At Increased Risk From Microbial Contamination.

We routinely monitor the conditions in the distribution system. On December 17, 2017, PWSA experienced a loss of positive water pressure due to a 20-inch transmission main break at Centre Avenue and South Negley Avenue at approximately 7:00 am this morning, which caused low and no water pressure for localized customers in the central and eastern areas of the City of Pittsburgh. The break was isolated and the majority of customers water returned to service at approximately 10:30 am. A localized number of customers will remain without water service until the repair is completed.

A loss of positive water pressure is a signal of the existence of conditions that could allow contamination to enter the distribution system through back-flow by back-pressure or back-siphonage. As a result, there is an increased chance that the water may contain disease-causing organisms.

What should I do?

Until further notice, customers who live in the impacted areas should take the following steps before using tap water for drinking, making ice, brushing teeth, washing dishes, and food preparation:

- 1. Flush your water tap by running water for 1 minute or longer, then**
- 2. Boil water for 1 minute, and let it cool before consumption.**

Flushing water brings in fresh water from the main and boiling fresh water kills any bacteria and other organisms that can enter the water.

Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

These symptoms, however, are not caused only by organisms in drinking water, but also by other factors. If you experience any of these symptoms and they persist, you may want to seek medical advice.

People with severely compromised immune systems, infants, and some elderly may be at increased risk. These people should seek advice about drinking water from their health care providers. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at 1 (800) 426-4791.

What happened? What is being done?

The main break was isolated, and pressure was restored at approximately 10:30 am today and conducting testing to confirm adequate disinfectant levels and verify that the water is safe to consume.

For more information, please contact: PWSA Customer Service/Dispatch at 412-255-2423

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by The Pittsburgh Water and Sewer Authority

IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

The Pittsburgh Water and Sewer Authority (PWSA) has found elevated levels of lead in tap water samples in some homes (see reverse for detailed summary of sample results). Elevated levels of lead can cause serious health problems. **Please read this information closely to see what you can do to reduce lead in your drinking water.**

A lead level of 21 parts per billion (ppb) was reported at the 90th percentile for compliance samples collected during the monitoring period of July 1, 2017 to December 31, 2017. This lead value is greater than the action level of 15 ppb.

What does this mean?

Under the authority of the Safe Drinking Water Act, the U. S. Environmental Protection Agency (EPA) set the action level for lead in drinking water at 15 ppb. This means utilities must ensure that water from the customer's tap does not exceed this level in at least 90 percent of the **homes** sampled (represents the 90th percentile value). An action level exceedance is not a violation but triggers other requirements that include water quality parameter monitoring, corrosion control treatment, source water monitoring, public education, and lead service line replacement.

Lead is rarely found in the source of a public water supply. Rather, it enters tap water through the corrosion of a home's service line or plumbing materials.

What happened? What was done?

Due to elevated levels of lead in water detected in some homes, PWSA is required by the Pennsylvania Department of Environmental Protection (DEP) to conduct lead and copper compliance sampling every six months. Samples are taken from homes that have lead service lines or lead in their internal plumbing. For the second half of 2017, PWSA received **118 samples from 114 homes**. Four of the 114 sites were sampled twice because those participants submitted multiple samples during the six-month monitoring period. All 118 samples were included in PWSA's 90th percentile calculation. The 90th percentile lead level for these homes is 21 ppb, which exceeds the EPA 15 ppb action level. Results of the samples are summarized on the reverse side of this notice. The next round of compliance samples will be completed by June 30, 2018, as required by the Lead and Copper Rule.

PWSA has already started water quality parameter monitoring, source water monitoring, public education, and lead service line replacement and is evaluating the effectiveness of corrosion control treatment and will continue these measures. PWSA will also continue to cooperate with DEP and the Allegheny County Health Department.

What are the health effects of lead?

EPA provides for the following notice in 40 C.F.R. § 141.85:

Health effects of lead. Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

Additional sources of information on health effects of lead, including the Centers for Disease Control and Prevention, are listed below.

What should I do?

- **If you have specific health concerns, consult your health care provider.**
- **Steps you can take to reduce exposure to lead in drinking water:**

- **Run your water to flush out lead.** If you haven't used your water for several hours, run your cold tap for one minute before cooking or drinking. Homes with longer lead water service lines may require flushing for a longer period of time.
 - Use cold water for cooking and preparing baby formula. Do not cook with or drink water from the hot water tap. Do not use water from the hot water tap to make baby formula.
 - Do not boil water to remove lead. Boiling water will not reduce lead.
 - **Look for alternative sources or treatment of water.** NSF Consumer Affairs Office has developed a NSF Water Fact Kit for consumers that includes specific information about lead in drinking water at: www.nsf.org.
- **If you would like your tap water tested for lead,** please contact the PWSA at 412-255-2423 or e-mail at servicelines@pgh2o.com.
 - **Identify if your plumbing fixtures contain lead.** There are lead check swabs that can detect lead on plumbing surfaces such as solder and pipes. These swabs can be purchased at plumbing and home improvement stores. Consider having lead-containing pipes and fixtures replaced, or use the precautions listed above.
 - **Contact PWSA if you believe your home has a lead service line.**

For more information, please visit www.pgh2o.com/lead-facts or contact the PWSA at 412-255-2423.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by The Pittsburgh Water and Sewer Authority.

PWS ID#: 5020038

For more information:

Visit www.pgh2o.com/lead-facts or call us at 412-255-2423 to find out additional information on lead.

For more information on reducing lead exposure around your home and the health effects of lead:

- EPA's website at: www.epa.gov/lead,
- DEP's website at: www.dep.pa.gov/Citizens/My-Water/PublicDrinkingWater/Pages/Lead-in-Drinking-Water.aspx
- Centers for Disease Control's website at: www.cdc.gov/nceh/lead/tips/water.htm,
- Allegheny County Health Department's website at www.achd.net/lead,
- Call the National Lead Information Center at 800-424-LEAD, or
- Contact your health care provider.

Sample results:

Results for the compliance sampling, analyzed by an independent, accredited laboratory and submitted to DEP, are as follows:

- 38 are non-detect for lead
- 23 are between 2.1 and 4.9 ppb (parts per billion)
- 27 are between 5 and 9.9 ppb
- 12 are between 10 and 14 ppb
- 4 are between 15 and 19 ppb
- 11 are between 20 and 49 ppb
- 3 are higher than 50 ppb

In addition to the compliance sampling, PWSA has also been conducting analyses of tap samples requested by customers. These samples are not limited to homes that have, or are expected to have, lead service lines or plumbing.

Date distributed: 1/26/2018

IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER

ESTE INFORME CONTIENE INFORMACIÓN IMPORTANTE ACERCA DE SU AGUA POTABLE. HAGA QUE ALGUIEN LO TRADUZCA PARA USTED, O HABLE CON ALGUIEN QUE LO ENTIENDA.

The Pittsburgh Water and Sewer Authority (PWSA) has found elevated levels of lead in tap water samples in some homes (see reverse for detailed summary of sample results). Elevated levels of lead can cause serious health problems. **Please read this information closely to see what you can do to reduce lead in your drinking water.**

A lead level of 18 parts per billion (ppb) was reported at the 90th percentile for compliance samples collected during December, 2016. This lead value is greater than the action level of 15 ppb.

What does this mean?

Under the authority of the Safe Drinking Water Act, the U. S. Environmental Protection Agency (EPA) set the action level for lead in drinking water at 15 ppb. This means utilities must ensure that water from the customer's tap does not exceed this level in at least 90 percent of the homes sampled (represents the 90th percentile value). An action level exceedance is not a violation but triggers other requirements that include water quality parameter monitoring, corrosion control treatment, source water monitoring, public education, and lead service line replacement.

Lead is rarely found in the source of a public water supply. Rather, it enters tap water through the corrosion of a home's service line or plumbing materials.

What happened? What was done?

Under an Administrative Order dated April 25, 2016, issued by the Pennsylvania Department of Environmental Protection (DEP), PWSA was required to conduct two rounds of compliance samples for lead and copper. The first round was completed by June 30, 2016 and the second completed by December 31, 2016. For the second round, PWSA received samples from 149 homes that have lead service lines or plumbing (Tier 1 sites). Ten of the 149 sites were sampled twice because the initial results were not consistent with historical sampling data for those specific locations. All 159 samples were included in PWSA's 90th percentile calculation. The 90th percentile lead level for these homes is 18 ppb, which exceeds the EPA 15 ppb action level. Results of the samples are summarized on the reverse side of this notice. A third round of compliance samples will be completed by June 30, 2017, as required by the Lead and Copper Rule.

PWSA has already started water quality parameter monitoring, source water monitoring, public education, and lead service line replacement and is evaluating the effectiveness of corrosion control treatment and will continue these measures. PWSA will also continue to cooperate with DEP and the Allegheny County Health Department.

What are the health effects of lead?

EPA provides for the following notice in 40 C.F.R. § 141.85:

Health effects of lead. Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

Additional sources of information on health effects of lead, including the Centers for Disease Control and Prevention, are listed below.

What should I do?

- **If you have specific health concerns, consult your health care provider.**

- **Steps you can take to reduce exposure to lead in drinking water:**
 - **Run your water to flush out lead.** If you haven't used your water for several hours, run your cold tap for one minute before cooking or drinking. Homes with longer lead water service lines may require flushing for a longer period of time.
 - Use cold water for cooking and preparing baby formula. Do not cook with or drink water from the hot water tap. Do not use water from the hot water tap to make baby formula.
 - Do not boil water to remove lead. Boiling water will not reduce lead.
 - **Look for alternative sources or treatment of water.** NSF Consumer Affairs Office has developed a NSF Water Fact Kit for consumers that includes specific information about lead in drinking water at: www.nsf.org.
- **If you would like your tap water tested for lead,** please contact the PWSA at 412-255-2423 or e-mail at servicelines@pgh2o.com.
- **Identify if your plumbing fixtures contain lead.** There are lead check swabs that can detect lead on plumbing surfaces such as solder and pipes. These swabs can be purchased at plumbing and home improvement stores. Consider having lead-containing pipes and fixtures replaced, or use the precautions listed above.
- **Contact PWSA if you believe your home has a lead service line.**

For more information, please visit www.pgh2o.com/lead-facts or contact the PWSA at 412-255-2423.

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PWS ID#: 5020038

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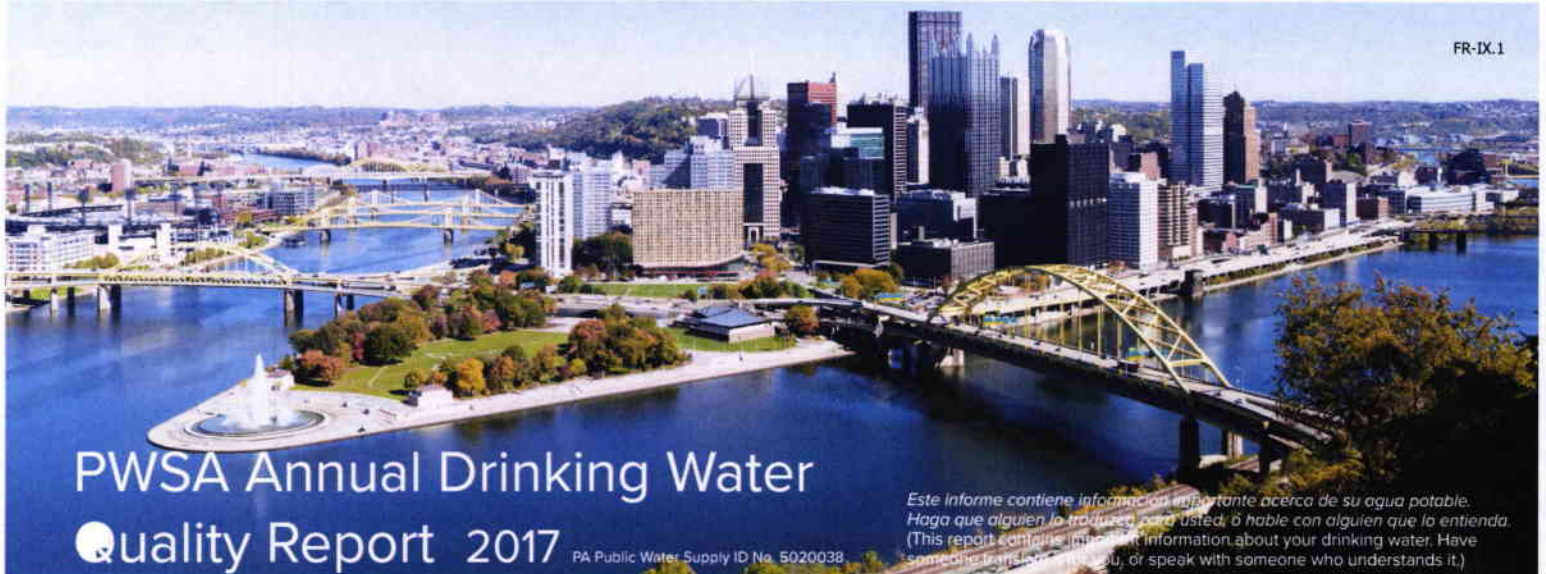
- EPA's website at: www.epa.gov/lead,
- DEP's website at: www.dep.pa.gov/Citizens/My-Water/PublicDrinkingWater/Pages/Lead-in-Drinking-Water.aspx
- Centers for Disease Control's website at: www.cdc.gov/nceh/lead/tips/water.htm,
- Allegheny County Health Department's website at www.achd.net/lead,
- Call the National Lead Information Center at 800-424-LEAD, or
- Contact your health care provider.

Sample results:

Results for the compliance sampling, analyzed by an independent, accredited laboratory and submitted to DEP, are as follows:

- 51 are non-detect for lead
- 25 are between 2.1 and 4.7 ppb (parts per billion)
- 28 are between 5 and 9.8 ppb
- 25 are between 10 and 14 ppb
- 16 are between 15 and 19 ppb
- 12 are between 20 and 46 ppb
- 2 are between 50 and 160 ppb (The sample that detected a 160 ppb level was taken from a sink that had not been used for several years.)

In addition to the compliance sampling, PWSA has also been conducting analyses of tap samples requested by customers. These samples are not limited to homes that have, or are expected to have, lead service lines or plumbing.



PWSA Annual Drinking Water Quality Report 2017

PA Public Water Supply ID No. 5020038

Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda. (This report contains important information about your drinking water. Have someone translate it for you, or speak with someone who understands it.)

We are pleased to present The Pittsburgh Water & Sewer Authority's (PWSA) 2017 Annual Drinking Water Quality Report.

Our constant goal is to provide you with a high quality, dependable, and ample supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and to protect our water resources. We are committed to ensuring the quality of your water. If you have any questions about the report, please contact the PWSA Water Treatment Plant at 412.782.7552.

We want customers to be informed about their water. The Water Quality Report and additional information are available on PWSA's website: pgh2o.com. Additional copies may be obtained by calling PWSA Customer Service at 412.255.2423. If you want to learn more, please attend any of our regularly scheduled meetings on the fourth Friday of every month at 1200 Penn Avenue, Pittsburgh, PA, 15222. More information can be found at pgh2o.com/board.

PWSA provides water and sewer service to more than 300,000 customers throughout the City of Pittsburgh and surrounding areas. PWSA is the largest combined water and sewer authority in Pennsylvania producing an average of 70 million gallons of water daily. In addition, PWSA provides bulk water sales to Reserve Township, Fox Chapel Borough, and Aspinwall Borough, along with being interconnected to several other regional water systems for emergency purposes. The PWSA drinking water system contains approximately 965 miles of water lines, five reservoirs and 11 tanks with a storage capacity of 455 million gallons of water. The PWSA sewer system contains over 1,200 miles of sewer lines and four booster pumping stations.



**Pittsburgh
Water & Sewer
Authority**

Penn Liberty Plaza I
1200 Penn Avenue
Pittsburgh PA 15222

info@pgh2o.com
T 412 255 2423
F 412 255 2475

www.pgh2o.com
[@pgh2o](https://twitter.com/pgh2o)

Where Does Your Water Come from and How is it Treated?

PWSA draws its water from the Allegheny River. We do not use ground or well water. Approximately 70 million gallons of water are treated each day at our drinking water treatment plant. The plant is capable of producing over 100 million gallons of water per day. The treatment process takes three full days and consists of three separate stages:

STAGE 1: Clarification

River water passes through a process called "clarification," in which silts and clays are removed. This stage involves the addition of treatment chemicals (coagulants) which form clumped particles called "floc," which are then physically removed by gravity sedimentation.

STAGE 2: Filtration

The clarified water next passes slowly through anthracite and sand filters in order to remove the fine particles and microorganisms.

STAGE 3: Disinfection

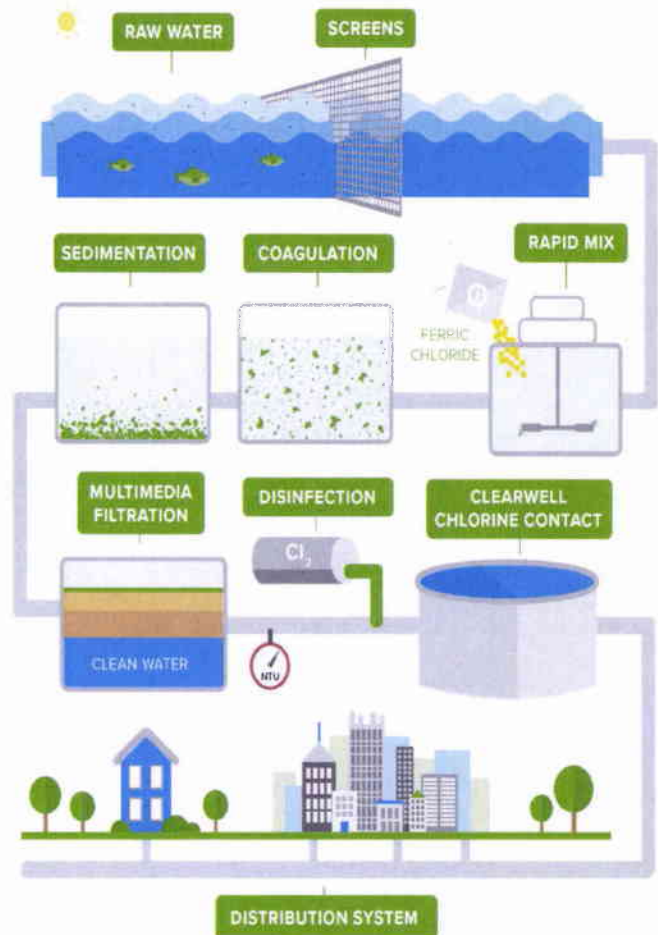
The filtered water is treated with chlorine to ensure removal of any harmful microorganisms. During this process, several additional chemicals are added to complete treatment. These include sodium carbonate to adjust the pH of the water and fluoride to prevent cavities.

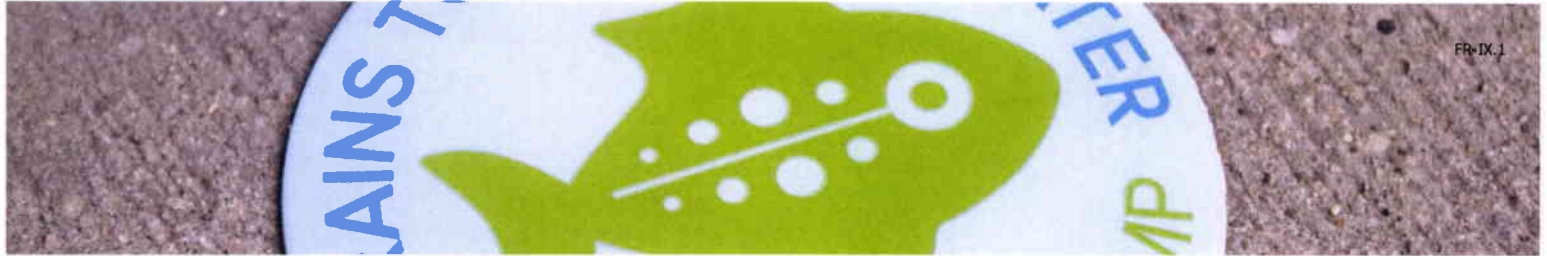
Secondary Treatment of Reservoir Water

In addition to our primary water treatment plant located near Aspinwall, PWSA operates a secondary treatment plant known as the Microfiltration Plant in Highland Park.

All of the water stored in the open-air Highland Reservoir #1 is originally treated in our primary plant. Then, before the Highland Reservoir #1 water is distributed to the public, it is retreated in our secondary plant. This membrane filtration plant utilizes state-of-the-art microfiltration and chlorination to remove any impurities that may have entered the water during storage in the reservoir.

PGH₂O WATER TREATMENT PROCESS





Stormwater

Stormwater pollution affects water quality. PWSA draws water from the Allegheny River. Anything that enters a storm sewer is ultimately released, untreated, into the rivers and streams. In addition to the Allegheny River being used as the source of our drinking water, it is also used for swimming, boating, and fishing.

The PWSA system is made up of sanitary, dedicated stormwater, and combined sewers. All new development is required to have separate storm sewers. As an older city, only about 25 percent of the system has separate storm sewers.

Residents can help prevent stormwater pollution by doing the following:

Dispose of trash properly.

Don't litter. You can help reduce cost and keep our rivers clean by properly disposing of waste.

Use fertilizer sparingly.

During rain events, fertilizer runs down the street and may enter the storm sewers and eventually end up in the river. Don't fertilize before a rain storm.

Consider where you wash your car.

If you're washing your car in the driveway, all the soap is running into the street and may enter the storm sewers and eventually end up in the river.

Stop oil leaks immediately.

Leaking oil runs down the street and may enter the storm sewers and eventually end up in the river. Check for oil leaks regularly and dispose of oil properly.

Properly dispose of pet waste.

If pet waste is not properly disposed of during rain events, the bacteria may enter the storm sewers and eventually end up in the river.

Who Monitors and Ensures the Quality of Water?

PWSA continuously monitors your drinking water in accordance with Federal and State regulations.

On pages 6 and 7, Table #2 shows our monitoring results at the Aspinwall Water Treatment Plant for the period of January 1, 2017 to December 31, 2017. On page 8, Table #3 shows our monitoring results at the Highland Park Membrane Filtration Plant during the same period. While we conducted more than 100,000 analyses for approximately 100 different chemical and microbial constituents last year, we only found detectable levels of the contaminants listed in the water quality tables. It should be noted that none of the test results exceeded federal or state maximum contaminant levels (MCLs).

Source Water Protection

PWSA's source water protection plan is approved by the Pennsylvania Department of Environmental Protection (PADEP). This report identifies the most likely sources of pollution affecting the Allegheny River.

These include accidental release of contaminants from industrial processes; cumulative impact of discharge from power plants; cumulative release of petroleum products from pipeline ruptures; stormwater runoff from lands adjacent to the river and Combined Sewer Overflows (CSOs). A summary of the Source Water Assessment is available on the PADEP website at dep.state.pa.us.

PWSA realizes the importance of protecting our source water and is actively involved with organizations that aid the Authority in accomplishing this goal. PWSA is a member of River Alert Information Network (RAIN), which is an early warning spill detection monitoring network along the Allegheny, Monongahela, and their tributaries. For more information please visit their site at rainmatters.org. PWSA is also a member of the Ohio River Valley Water Sanitation Commission (ORSANCO) and is enrolled in their organic detection program. For more information please visit their site at orsanco.org.

Should You Be Concerned About Lead?

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead found in drinking water is primarily from materials and components associated with water service lines and plumbing inside private property.

PWSA recently tested 114 pre-selected sites in its service area that have lead service lines or plumbing (Tier 1 sites). EPA has established an action level for lead of 15 parts per billion (ppb). This means that water providers must ensure that water from the customer's tap does not exceed this level in at least 90 percent of the homes sampled. The action level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that include water quality parameter monitoring, corrosion control treatment, source water monitoring, public education, and lead service line replacement. An action level exceedance is not a violation. While a majority of those sites sampled resulted in no detection of lead or amounts less than the action level, 12.7 percent of the sites exceeded the action level. Another set of tests will be completed by June 30, 2018. PWSA is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components in your home. More information on lead in drinking water can be found at pgh2o.com/lead-facts.

Here are some steps you can take to reduce exposure to lead in drinking water:

Run your water to flush out lead

If you haven't used your water for several hours, run your cold tap for at least one minute before cooking or drinking. Homes with longer lead water service lines may require flushing for a longer period of time.

Use cold water for cooking and preparing baby formula

Do not cook with or drink water from the hot water tap. Do not use water from the hot water tap to make baby formula. Lead dissolves more easily in hot water.

Do not boil water to remove lead

Boiling water will not reduce lead.

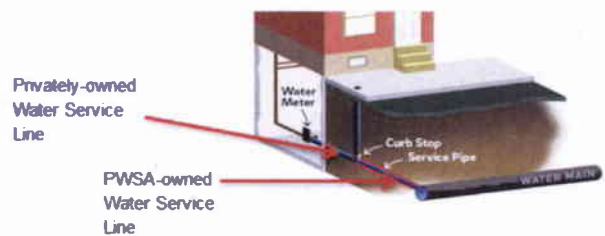
Look for alternative sources or treatment of water

The NSF Consumer Affairs Office has developed a NSF Water Fact Kit for

consumers that includes specific information about lead drinking water filters at nsf.org. Read the package to be sure the filter is approved to reduce lead or contact NSF International at 800.NSF.8010 or nsf.org.

Identify if your plumbing fixtures contain lead

There are lead check swabs that can detect lead on plumbing surfaces such as solder and pipes. These swabs can be purchased at plumbing and home improvement stores. Consider having lead-containing pipes and fixtures replaced, or use the precautions listed above. Contact PWSA if you decide to replace your lead service line and for information about coordinating removal of the PWSA-owned portion of the service line.



If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods and steps you can take to minimize exposure are now available from the Safe Drinking Water Hotline or at epa.gov/safewater/lead.

PWSA residential water customers who are interested in testing their water may request a test kit, free of charge, by calling PWSA at 412.255.2423, or online at pgh2o.com/leadform.

Women for a Healthy Environment (WHE) is distributing water pitchers and filters that are certified to remove lead from tap water, and hosting community workshops to discuss lead exposure. Priority for filters is given to pregnant women and households with young children. WomenForAHealthyEnvironment.org.

What Does PWSA Test for?

In general, the sources of all drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source or raw water include:

- 1 **Microbial contaminants** such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- 1 **Inorganic contaminants** such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- 1 **Pesticides and herbicides** which may come from a variety of sources, such as agriculture, urban stormwater runoff, and residential uses.
- 1 **Organic chemical contaminants** including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, can come from gas stations, urban stormwater runoff, and septic systems.
- 1 **Radioactive contaminants** which can be naturally-occurring or the result of oil and gas production and mining activities.

In order to assure that tap water is safe to drink, the EPA and PADEP regulate the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and PADEP regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

PWSA tests for contaminants that may be present in the source water prior to treatment. Results of the tests enables PWSA to adjust the treatment process in order to maximize the reduction and removal of contaminants. Tests are also conducted during the treatment process and on the finished water. Additional samples for testing are collected on a regular basis from our storage facilities, various points in the distribution network, and customers' taps.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 1.800.426.4791.

Long Term Surface Water Enhancement Treatment Rule Round 2 (LT2)

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

Table 1: Test Results for Cryptosporidium in Allegheny River

CONTAMINANT	RESULT IDOCYSTIS/L	DATE SAMPLED	DATE ANALYZED
Cryptosporidium	0.190	1/19/2017	1/30/2017
Cryptosporidium	0.000	2/21/2017	2/27/2017
Cryptosporidium	0.000	3/21/2017	3/23/2017

Special Information for Immuno-Compromised Individuals

Some people may be more vulnerable to contaminants in drinking water than others.

Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections.

These people should seek advice about drinking water from their health care providers. Environmental Protection Agency (EPA) and Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 1.800.426.4791.

TABLE 2: Test Results for Regulated Contaminants at Aspinwall Treatment Plant

	CONTAMINANT (UNIT OF MEASUREMENT)	VIOLATION (Y / N)	LEVEL DETECTED	RANGE	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
MICROBIOLOGICAL CONTAMINANTS	Turbidity (a)	N	0.202 (b) 100%	N/A	N/A	TT = 1 NTU for a single measurement TT = at least 95% of sample ≤ 0.3 NTU	Soil runoff
	Total Coliform	N	21	N/A	N/A	For systems that collect ≥ 40 samples/month 5% of samples are positive	Coliforms are bacteria that are naturally present in the environment and are used as indicators that other, potentially harmful bacteria may be present
	Total Chlorine Residual in Distribution System (ppm)	N	0.97	0.37 - .097	(c) 4	(d) 4	Water additive used to control microbes
	Free Chlorine Residual at Entry Point to Distribution System (ppm)	N	0.20	0.20 - 1.77	(c) 4	(d) 4	Water additive used to control microbes
	E. coli	N	1	N/A	0	Routine and repeat samples are total coliform - positive AND either is E. coli - positive or system fails to take repeat samples following E. coli - positive routine sample or system fails to analyze total coliform-positive repeat sample for E. coli	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially-harmful bacteria may be present, or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments. Additional sampling determined that the initial positive result was due to a sampling error.

TABLE 2: Test Results for Regulated Contaminants at Aspinwall Treatment Plant

	CONTAMINANT (UNIT OF MEASUREMENT)	VIOLATION (Y / N)	LEVEL DETECTED	RANGE	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
DISINFECTION BYPRODUCTS	Total Trihalomethanes (ppb)	N	(e) 105	13 - 105	80	80	Byproduct of drinking water chlorination
	Total Haloacetic Acids (ppb)	N	(e) 18.8	8 - 18.8	60	60	Byproduct of drinking water disinfection
LEAD & COPPER	Lead (ppb) (f)	N	90 th Percentile = 15	11 sites above AL (128 sites sampled)	15	AL = 15	Corrosion of household plumbing systems; erosion of natural deposits
	Lead (ppb) (g)	N	90 th Percentile = 21	15 sites above AL (118 sites sampled)	15	AL = 15	Corrosion of household plumbing systems; erosion of natural deposits
	Copper (ppm) (f)	N	90 th Percentile = 0.073	No sites above	1.3	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
	Copper (ppm) (g)	N	90 th Percentile = 0.12	No sites above	1.3	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
INORGANIC CHEMICAL CONTAMINANTS	Fluoride (ppm)	N	0.78	(h)	2	2	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
	Nitrate (ppm)	N	0.74	0.47 - 0.74	10	10	Runoff from fertilizers; leaching from sewage; natural deposits
	Barium (ppm)	N	0.03	(h)	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
TOC REMOVAL	Total Organic Carbon (TOC) (% removal) (i)	N	No quarters out of compliance	39.2% - 52.2%	N/A	TT = 35%	Naturally present in the environment



PWSA Microfiltration Plant located in Highland Park

TABLE 3: Test Results for Regulated Contaminants at Highland Park Membrane Filtration Plant

	CONTAMINANT (UNIT OF MEASUREMENT)	VIOLATION (Y / N)	LEVEL DETECTED	RANGE	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
MICROBIOLOGICAL CONTAMINANTS	Turbidity (a)	N	0.081 (b) 100%	N/A	N/A	TT=1 NTU for a single measurement TT= at least 95% of sample ≤0.3 NTU	Soil runoff
	Free Chlorine Residual at Entry Point to Distribution system (ppm)	N	0.27	(d) 0.27 – 1.13	4	4	Water additive used to control microbes
INORGANIC CHEMICAL CONTAMINANTS	Fluoride (ppm)	N	Plant offline during monitoring period	(e)	2	2	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
	Nitrate (ppm)	N	Plant offline during monitoring period	Plant offline during monitoring period	10	10	Runoff from fertilizers; leaching from sewage; natural deposits
	Barium (ppm)	N	Plant offline during monitoring period	Plant offline during monitoring period	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural debris

Footnotes for Table 2: Aspinwall Treatment Plant

- (a) Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
- (b) All turbidity samples met the turbidity limit of 0.3 NTU.
- (c) MRDLG
- (d) MRDL
- (e) Data based on Locational Running Annual Averages.
- (f) Data from June 2017.
- (g) Data from December 2017.
- (h) Only one sample required.
- (i) Adequate removal of TOC may be necessary to control unwanted formation of disinfection byproducts.

Other Violations: In 2017 PWSA received late reporting violations for the first quarter Alkalinity, third quarter Total Organic Carbon (TOC) and 2.3.7.8 TCDD (Dioxin). The monitoring was conducted correctly, but the results were reported late to the DEP.

Footnotes for Table 3: Highland Park Membrane Filtration Plant

- (a) Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
- (b) All turbidity samples met the turbidity limit of 0.3 NTU. (Turbidity data from January 2017 only).
- (c) Lowest concentration of free chlorine detected. (Chlorine data from January 2017 only).
- (d) Minimum allowable free chlorine residual at entry point to distribution system.
- (e) Only one sample required.

Abbreviations & Definitions

(ND) Non-Detect

Laboratory analysis indicates that the contaminant is not present at a detectable level.

(ppm or mg/L) Parts Per Million or Milligrams Per Liter

One part per million corresponds to one minute in two years or a single penny in \$10,000.

(ppb or µg/L) Parts Per Billion or Micrograms Per Liter

One part per billion corresponds to one minute in 2000 years or a single penny in \$10,000,000.

(NTU) Nephelometric Turbidity Unit

Measurement of the clarity of water. Turbidity in excess of 5 NTU becomes just barely noticeable to the average person.

(AL) Action Level

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

(TT) Treatment Technique

A required process intended to reduce the level of a contaminant in drinking water.

(MCLG) Maximum Contaminant Level Goal

The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

(MCL) Maximum Contaminant Level

The highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLGs as feasible, using the best available treatment technology.

(MRDLG) Maximum Residual Disinfectant Level Goal

The level of drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

(MRDL) Maximum Residual Disinfectant Level

The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

(N/A) Non-Applicable

Does not apply.

Level 1 Assessment

A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.



What Do the Results Mean?

We are proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some constituents have been detected but are below the recommended minimum contaminant level (MCL) and therefore meet the regulatory requirements.

Stay Informed

Update your contact information and stay informed. It's important that your contact information is up to date so that we can notify you about planned construction, water emergencies, extended water outages, and provide other safety information. PWSA encourages all customers to provide updated contact information by going to our website at pgh2o.com and selecting "Update Contact Info" or by calling PWSA Customer Service at 412.255.2423.

This information ensures that we are able to make direct contact in the event of an emergency.

Pittsburgh Water and Sewer Authority's Base Rate Filing

IX. QUALITY OF SERVICE

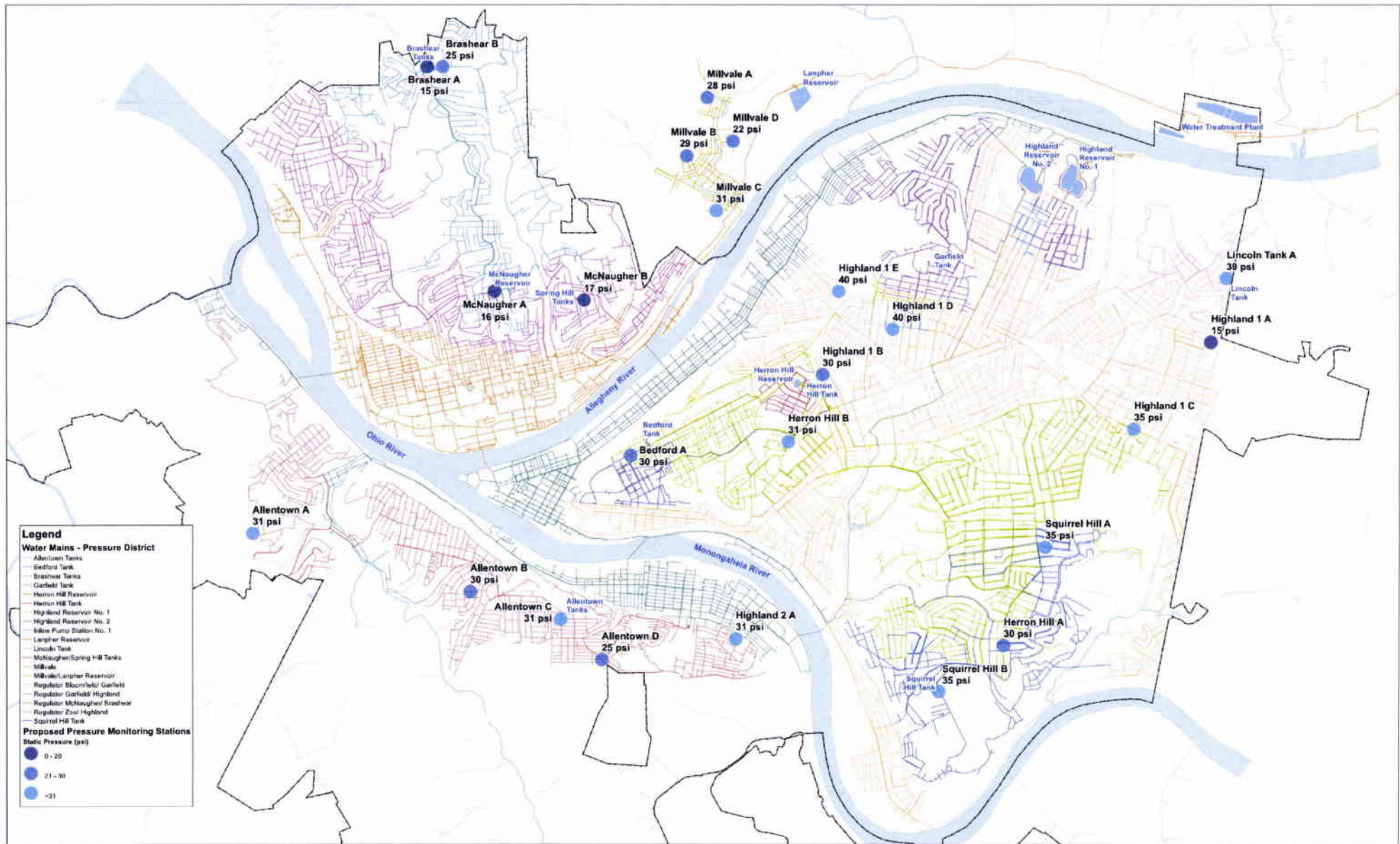
IX.2. Indicate whether the company is in compliance with 52 Pa. Code, § 65.6(a) regarding normal operating pressure standards, and with 52 Pa. Code, § 65.6(d) regarding pressure surveys at regular intervals.

- a. Provide details on any water pressure problems, lasting longer than 5 days, which had occurred since the last rate proceeding in any part of the water transmission and distribution system.
- b. Describe any action taken on a temporary basis, and the long term solutions developed to address any water pressure problems.

RESPONSE:

PWSA provides water service in compliance with 52 Pa. Code, § 65.6(a) over more than 95% of its service territory, during normal operating periods. The design of PWSA's system is such that some areas (less than 5%) experience higher or lower pressures routinely, outside of those provided in 52 Pa. Code, § 65.6(a). During non-normal operating periods, such as when there is a main break or a facility is out of service, PWSA may not be able to meet 52 Pa. Code, § 65.6(a) in larger portions of the system. PWSA is developing a pressure and flow monitoring program to address these issues. the details of the program will be included in the Compliance Plan.

- a. PWSA has recently installed pressure monitors throughout the system. Please see attached map depicting the modeled low-pressure areas where these meters were installed.
- b. PWSA is currently working with DEP to review data from the pressure sensors in the distribution system. From there they will develop a plan to address problems individually.



The City of Pittsburgh and the PWSA guarantee the accuracy of any of the information made available herein to the best of their knowledge and belief, but they do not warrant or accept any liability for any errors or omissions in this information. The City of Pittsburgh and the PWSA assume no responsibility for any and all use of the information made by third parties or complete or partial reproduction of the information in any form or by any means without the express written permission of the City of Pittsburgh and the PWSA.



Pittsburgh Water & Sewer Authority
Proposed Distribution Pressure Monitoring Stations

Pittsburgh Water and Sewer Authority's Base Rate Filing

IX. QUALITY OF SERVICE

IX.3. Provide support to demonstrate that water or wastewater service is being furnished on a continuous basis by supplying a summary of the company's records of each service interruption greater than 24 hours since the last rate proceeding.

RESPONSE:

PWSA did not previously record the time of restoration prior to April 1, 2018. Since then all of this information has been compiled within an Access Database.

IX. QUALITY OF SERVICE

IX.4. Provide a discussion of the company's policy, or provide a copy of the policy if in written form, on tracking and responding to customer complaints.

- a. Provide a summary report demonstrating the company's compliance with 52 Pa. Code, § 65.3 regarding the full and prompt investigation of service or facility complaints and the recordkeeping requirements of such complaints.

RESPONSE:

When a PWSA representative is notified that a customer is unsatisfied with their service or with the information provided to them, the representative will request the customer's authorization to initiate an Inquiry regarding the matter and will respond to that Inquiry within three business days. The matter is then escalated to a PWSA Senior Representative who contacts the customer and attempts to resolve the customer's Inquiry during that contact by providing additional information or taking additional action. If the customer is still not satisfied, the Inquiry becomes a Dispute. In the Dispute process, the customer's information is forwarded to the PWSA Compliance group to investigate, using reasonable methods under the given circumstances. Within thirty days, a member of the Compliance group will contact the customer to review the full Dispute investigation, supporting documentation, and all information available for the customer to make an informed judgement. At that time, the customer is offered a copy of the Utility Report, which details the account history and investigation. The Utility Report also provides the contact information for the Pennsylvania Public Utility Commission, should the customer wish to appeal the matter further. If the customer indicates that they are satisfied with PWSA's response, or the customer does not respond to the findings within fifteen days, the matter is considered resolved.

- a. Please see below for a table from April and May 2018 when PWSA came under PUC jurisdiction. This summary is used for tracking compliance metrics. More robust reporting and monitoring customer complaints regarding Pa. Code, § 65.3 will be addressed in the PWSA Compliance Plan.

Pittsburgh Water and Sewer Authority's Base Rate Filing

IX. QUALITY OF SERVICE

FR-IX.4(a)

<u>Inquiry</u>	<u>April</u>	<u>May</u>	<u>PUC Informal</u>		
Received	25	31	Received	71	61
Closed	14	26	Closed	19	17
Outstanding	8	5	Responded	33	37
Escalated to Dispute	7	7	Outstanding	19	7
Escalated to PUC Informal	0	0	Violations	0	4
Escalated to PUC Formal	0	0	Escalated to PUC Formal	0	0
 <u>PWSA Dispute</u>			 <u>PUC Formal</u>		
Received	88	55	Received	1	1
Closed	25	19			
Outstanding	63	36			
Escalated to PUC Informal		3			
Escalated to PUC Formal	0	0			

Pittsburgh Water and Sewer Authority's Base Rate Filing

IX. QUALITY OF SERVICE

IX.5. Indicate whether the company is in compliance with 52 Pa. Code, § 65.4(b) regarding complete and current mapping of the entire distribution or collection system.

RESPONSE:

PWSA has a partial GIS of its distribution and collection systems, as well as historical paper maps and plans of most facilities. PWSA has plans to develop a more complete GIS. Plans for GIS enhancements will be included in the Compliance Plan submission.

Pittsburgh Water and Sewer Authority's Base Rate Filing

IX. QUALITY OF SERVICE

IX.6. Provide a summary report demonstrating the company's efforts in water conservation, since the last rate proceeding, pursuant to 52 Pa. Code, § 65.20.

RESPONSE:

Plans for conservation activities will be included in the Compliance Plan submission.

Pittsburgh Water and Sewer Authority's Base Rate Filing

IX. QUALITY OF SERVICE

IX.7. Provide a discussion of the company's policy regarding meter requirements, replacements and testing. State if the company's procedures are in compliance with 52 Pa. Code, § 65.8(b).

- a. Provide meter test records as required in 52 Pa. Code, § 65.8(c) for the 50 meters most recently removed from service.
- b. Provide a discussion of the company's policy and history of compliance with 52 Pa. Code, § 65.9 regarding adjustment of bills for meter error within the last year.

RESPONSE:

In Section 509.6 of PWSA's prior tariff, currently The Pittsburgh Water and Sewer Authority Rules and Regulations, PWSA does provide meter tests at a customer's request. However, the Authority will only perform a meter test at no charge if the meter passes testing. Also, the Authority does not track the age of meters, nor does it have a process in place to test aged meters. Therefore, the Authority is not wholly in compliance with 52 Pa. Code § 65.8(b).

PWSA is developing a plan to comply with these provisions, which it will include in its Compliance Plan filing. PWSA will require additional staff, budget and facilities to comply with these provisions.

- a. PWSA maintains records containing meter testing information. Meter test records exclude, however, the reason for making the test and a record of the general results of all meter tests.
- b. With respect to 52 Pa. Code § 65.9(a), PWSA's recent 12 months practice has been to credit disputed usage for meters with test results in excess of 106% accuracy. With respect to 52 Pa. Code § 65.9(b), PWSA does not assess any charges outside of the cost of the meter test for slow meters. With respect to 52 Pa. Code § 65.9(c), PWSA does not assess any charges for non-registering meters. Therefore, PWSA is not compliant with 52 Pa. Code § 65.9(a). PWSA is developing a plan for compliance with 52 Pa. Code § 65.9 and will include additional information for such in the Compliance Plan.

Pittsburgh Water and Sewer Authority's Base Rate Filing

X. BALANCE SHEET

X.1. Provide a comparative balance sheet for the historic test year-end and the preceding year-end.

RESPONSE:

Please see attached.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 2017 AND 2016

Assets	2017	2016
Current assets:		
Cash and cash equivalents	\$ 11,076	\$ 21,620
Accounts receivable, net:		
Water:		
Billed	9,335	6,388
Unbilled	6,760	5,886
Total water	16,095	12,274
Wastewater treatment:		
Billed	9,975	10,844
Unbilled	3,746	3,719
Total wastewater treatment	13,721	14,563
Other receivables	1,074	797
Total accounts receivable, net	30,890	27,634
Prepaid expenses	674	65
Inventory	3,777	2,218
Total current assets	46,417	51,537
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents	18,264	11,900
Investments	11,684	14,437
Total restricted assets	29,948	26,337
Capital assets, not being depreciated	100,240	88,861
Capital assets, net of accumulated depreciation	589,567	587,937
Total noncurrent assets	719,755	703,135
Total Assets	766,172	754,672
Deferred Outflows of Resources		
Deferred charge on refunding	110,326	25,008
Accumulated decrease in fair value of hedging derivatives	3,279	70,897
Total Deferred Outflows of Resources	113,605	95,905

(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, 2017 AND 2016

(Continued)

	2017	2016
Liabilities		
<hr/>		
Current liabilities:		
Bonds and loans payable	24,603	22,492
Accrued payroll and related obligations	1,217	924
Accounts payable wastewater treatment	17,863	15,283
Accounts payable and other accrued expenses	15,506	17,936
Accrued interest payable from restricted assets	3,773	10,650
	<u>62,962</u>	<u>67,285</u>
Total current liabilities		
Noncurrent liabilities:		
Unearned revenue	164	185
Accrued payroll and related obligations	594	575
Swap liability	18,319	86,772
Bonds and loans payable, net	841,574	733,283
	<u>860,651</u>	<u>820,815</u>
Total noncurrent liabilities		
	<u>923,613</u>	<u>888,100</u>
Total Liabilities		
<hr/>		
Net Position		
Net investment in capital assets	(29,609)	(5,395)
Restricted	13,240	9,999
Unrestricted	(27,467)	(42,127)
	<u>\$ (43,836)</u>	<u>\$ (37,523)</u>
Total Net Position		

(Concluded)

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

Pittsburgh Water and Sewer Authority's Base Rate Filing

X. BALANCE SHEET

X.2. Provide a detail of other physical property, investments in affiliated companies and other investments.

RESPONSE:

PWSA is currently not in compliance with 52 Pa. Code, § 65.16 System of Accounts. PWSA is developing a plan to comply with these provisions which includes establishing accounts that are in conformity with the most recent Uniform System of Accounts for Class A Water Utilities, which it will include in its Compliance Plan filing.

Pittsburgh Water and Sewer Authority's Base Rate Filing

X. BALANCE SHEET

X.3. Provide the amounts and purpose of special cash accounts as of the historic test year-end.

RESPONSE:

PWSA does not have any special cash accounts.

Pittsburgh Water and Sewer Authority's Base Rate Filing

X. BALANCE SHEET

X.4. Describe the nature and amounts of notes receivable, accounts receivable from associated companies, and any other receivables, other than customers' accounts, greater than 15% of the total. Limit the explanation to variances greater than \$10,000.

RESPONSE:

PWSA does not have any notes receivable or accounts receivable from associated companies. Other receivables only account for 3.48% of total receivables balance with the rest attributable to billed and unbilled water, wastewater, and wastewater treatment charges from customers.

Pittsburgh Water and Sewer Authority's Base Rate Filing

X. BALANCE SHEET

X.5. Provide the amount of accumulated reserve for uncollectible accounts, method and rate of accrual, amounts accrued and amounts written-off in each of the last 3 years.

RESPONSE:

PWSA maintains a reserve for uncollectible accounts. This reserve, based on an analytical review of outstanding accounts and historical collection data, is recognized coincident with recognition of revenue. PWSA 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. Due to this leverage, PWSA's current policy is not to write off bad debts. The table below shows the amounts accrued over the last three years.

	Per Books 12/31/2015	Per Books 12/31/2016	Per Books 12/31/2017
Water & Sewer Conveyance	\$ 15,059,382	\$ 14,767,746	\$ 22,007,645
Sewer Treatment	7,203,859	7,857,308	11,853,005
Total	\$ 22,263,241	\$ 22,625,054	\$ 33,860,650

Pittsburgh Water and Sewer Authority's Base Rate Filing

X. BALANCE SHEET

X.6. Provide a list of prepayments and give an explanation of special prepayments.

RESPONSE:

Please see the table below.

Prepaid Expense	Amount	Paid	Cost Period
Auto Insurance	\$ 88,260	Dec 2017	2018
Workers Comp Insurance	248,718	Dec 2017	2018
Cogsdale Licensing	215,507	Dec 2017	2018
Microsoft Licensing	88,032	Dec 2017	2018
Sensus Annual Fee	33,750	Feb 2017	3 months of 2018
Total	\$ 674,268		

Pittsburgh Water and Sewer Authority's Base Rate Filing

X. BALANCE SHEET

X.7. Break down and explain in detail any significant items, greater than 15% of the total, in the current assets account listed on the balance sheet. Limit the explanation to variances greater than \$10,000.

RESPONSE:

Cash and Cash Equivalents

2017: \$11,076,000

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.

Accounts Receivable: Water and Wastewater Treatment

2017: \$30,890,000

Accounts receivables consist of monies owed to PWSA for services provided. 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. Accounts receivable, both billed and unbilled, are divided by water (which includes wastewater conveyance) and wastewater treatment. Accounts receivable are presented net of a reserve for uncollectible amounts

Pittsburgh Water and Sewer Authority's Base Rate Filing

X. BALANCE SHEET

X.8. Explain in detail, including the amount and purpose, the deferred asset accounts that currently operate to affect or will at a later date affect the operating account supplying:

- a. Origin of these accounts.
- b. Probable changes to this account in the near future.
- c. Amortization of these accounts currently charged to operations or to be charged in the near future.

RESPONSE:

PWSA maintains various swap agreements that represent deferred outflows and/or inflows. The follow excerpts have been extracted from PWSA's 2017 Financial Statements and Required Supplementary and Supplementary Information.

- a. 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.

- b. PWSA does not expect any changes to this account in the near future.

Pittsburgh Water and Sewer Authority's Base Rate Filing

X. BALANCE SHEET

- c. During the years ended December 31, 2017 and 2016, the Authority paid \$12,512,000 and \$13,418,000, respectively, fixed and received \$2,467,000 and \$1,227,000, respectively, variable related to their outstanding swap agreements.

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 deferred outflows. 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.

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. A detailed description, valuation, and amortization, and associated risks can be found in PWSA's 2017 Audit report (FR VII.15).

Pittsburgh Water and Sewer Authority's Base Rate Filing

X. BALANCE SHEET

X.9. Explain the nature of accounts payable to associated companies. Provide a breakdown by category.

RESPONSE:

PWSA has no associated companies.

Pittsburgh Water and Sewer Authority's Base Rate Filing

X. BALANCE SHEET

X.10. Provide breakdown and explanation of other deferred credits as to their origin and disposition policy, for example, amortization.

RESPONSE:

Deferred Charge on Refunding

In conjunction with the 2017 debt refunding, the Authority has recorded a deferred charge on refunding, which is shown as a deferred outflow of resources on the statements of net position.

Balance at 12/31/2016	Additions	Amortization	Balance at 12/31/2017
\$ 25,008,000	\$ 98,931,000	\$ 13,613,000	\$ 110,326,000

Interest Rate Swaps

The aggregate change in fair value during the year for hedging derivatives is reported on the statement of net position as a deferred outflow and swap borrowing and the investment derivative is considered an ineffective hedging derivative, whereby the change in fair value will be reported as a change in fair value of swap on the statement of revenues, expenses and changes in net position. A detailed description, valuation, and amortization, and associated risks can be found in PWSA's 2017 Audit report (FR VII.15).

Pittsburgh Water and Sewer Authority's Base Rate Filing

X. BALANCE SHEET

X.11. Provide an explanation and method of funding of any reserves, other than depreciation and bad debt appearing on historic balance sheet.

RESPONSE:

Operating Reserve Fund

2017 Audit: \$12,654,000

PWSA is required by the 2017 Trust Indenture to maintain and fully fund an operating reserve. Per the indenture, monies in the Operating Reserve Fund can be used by PWSA to pay for the Current Expenses of the Authority. To the extent the Debt Service Fund is insufficient to make the required interest in principals on Senior Debt, monies in the operating reserve fund can be used. PWSA is required to maintain one sixth (1/6th) of the Current Expenses reflected in the most recent annual audited financial statements of the Authority. PWSA funds this reserve using cash generated from operations and has included a deposit in the FPFTY revenue requirement

Pittsburgh Water and Sewer Authority's Base Rate Filing

X. BALANCE SHEET

X.12. Provide an analysis of unappropriated retained earnings for the historic test year and 2 preceding years.

RESPONSE:

PWSA does not have unappropriated retained earnings. Any revenues collected in excess of system costs are deposited into cash account for payment of future operating and non-operating costs.

Pittsburgh Water and Sewer Authority's Base Rate Filing

X. BALANCE SHEET

X.13. Describe the purpose of any advances made by the company to its parent corporation and describe all terms and conditions associated with such advances, including an estimate of future advances or repayments that are expected to occur.

RESPONSE:

Not applicable.

Pittsburgh Water and Sewer Authority's Base Rate Filing

XI. OTHER DATA

XI.1. Provide the company's monthly balance sheets and income statements for each month of the historic and future test year.

RESPONSE:

Please see schedules attached.

Pittsburgh Water & Sewer Authority
Monthly Income Statements - HTY (2017)

Monthly Profit / Loss	Per Books 1/31/2017	Per Books 2/28/2017	Per Books 3/31/2017	Per Books 4/30/2017	Per Books 5/31/2017	Per Books 6/30/2017	Per Books 7/31/2017	Per Books 8/31/2017	Per Books 9/30/2017	Per Books 10/31/2017	Per Books 11/30/2017	Per Books 12/31/2017
REVENUES												
Utility Revenue	\$ (13,223,590)	\$ (16,538,675)	\$ (16,025,410)	\$ (15,389,896)	\$ (14,377,537)	\$ (18,657,436)	\$ (15,739,222)	\$ (23,084,643)	\$ (17,785,268)	\$ (14,437,343)	\$ (16,461,495)	\$ (15,564,975)
Fee Revenue	(166,264)	(186,590)	(201,194)	(103,795)	(708,113)	(160,626)	(114,316)	(254,016)	(520,196)	(126,160)	(240,156)	(64,545)
Misc Revenue	(74,345)	(21,412)	(368,991)	(60,769)	(51,264)	(52,907)	(34,868)	(42,291)	(30,716)	(35,912)	(165,127)	(1,788,031)
Interest Income (NonTrust)	-	-	-	-	-	-	-	-	-	-	-	-
Interest Income (Trust)	(78,737)	(38,329)	(36,598)	(17,275)	(52,970)	(36,308)	(32,150)	(31,979)	(17,642)	(77,034)	(19,293)	(20,504)
Other Income	(2)	-	-	-	-	-	-	-	-	-	-	(2,430,346)
Gain/Loss on Asset Disposal	-	-	-	-	-	-	-	-	-	-	-	-
Revenues Total	\$ (13,542,938)	\$ (16,785,006)	\$ (16,632,193)	\$ (15,571,734)	\$ (15,189,883)	\$ (18,907,278)	\$ (15,920,555)	\$ (23,412,929)	\$ (18,353,822)	\$ (14,676,450)	\$ (16,886,071)	\$ (19,868,402)
EXPENSES												
Salaries & Benefits												
Salaries Expense	\$ 1,192,307	\$ 1,196,635	\$ 1,772,220	\$ 1,263,051	\$ 1,204,983	\$ 1,208,212	\$ 1,285,489	\$ 1,853,951	\$ 1,269,269	\$ 1,232,361	\$ 1,321,905	\$ 1,374,911
Other Employee Expenses	667,985	373,099	420,086	370,919	374,370	386,768	424,455	442,346	401,470	399,009	400,989	538,561
Salaries & Benefits Total	1,860,292	1,569,734	2,192,306	1,633,971	1,579,353	1,594,979	1,709,944	2,296,297	1,670,739	1,631,370	1,722,894	1,913,472
Direct Operating Expenses												
Chemicals Costs	334,981	248,128	556,748	311,888	265,478	78,937	-	643,730	214,829	590,342	177,179	570,495
Equipment Costs	203,249	75,051	24,315	5,581	41,765	227,433	34,564	71,986	270,415	318,050	84,038	(983,085)
Material Costs	40,982	43,160	53,884	24,725	23,177	33,338	32,161	42,001	25,798	32,644	64,253	60,870
Operating Contracts	5,234,508	5,784,621	7,247,359	6,236,766	5,173,441	7,592,236	5,914,717	8,708,090	7,236,604	5,928,854	6,529,225	13,357,048
Repairs and Maintenance	674,660	168,558	109,007	53,717	70,950	617,866	622,886	948,235	428,914	699,566	597,530	530,330
Misc Direct Operating Costs	13,920	6,596	72,023	55,558	183,546	268,485	20,927	64,669	39,753	90,904	800	208,894
Inventory Exp - Castings	-	-	-	-	-	-	-	150,013	-	-	-	-
Inventory Exp - Clarifier	-	-	-	-	-	-	-	-	3,166	16,821	-	-
Inventory Exp - Equipment	1,693	1,752	3,559	3,922	6,267	2,656	5,040	3,707	2,444	3,529	2,227	4,198
Inventory Exp - Hardware	44,162	25,663	38,693	30,095	63,613	32,479	20,098	237,141	64,124	41,552	51,652	68,837
Inventory Exp - Heavy Equip	80	6	29	80	23	-	329	-	-	107	407	332
Inventory Exp - Misc	5,034	6,699	7,097	6,971	14,018	12,755	8,002	16,702	17,097	20,493	5,889	6,805
Inventory Exp - Parts	17,332	12,312	11,370	9,726	11,382	15,186	7,795	19,300	12,385	13,869	13,092	17,241
Inventory Exp - Pipe	4,238	3,042	3,585	6,830	3,502	3,672	4,147	20,946	491	423	4,908	2,125
Inventory Exp - Valves	2,236	2,493	6,467	4,807	9,654	8,676	8,134	77,676	3,193	2,412	12,452	10,096
Direct Operating Expenses Total	6,577,076	6,378,082	8,134,137	6,750,668	5,866,815	8,893,719	6,678,799	11,004,196	8,419,215	7,759,566	7,543,652	13,854,185
General & Administrative												
Admin Fees	47,154	32,924	44,404	63,025	33,034	63,247	66,047	28,733	57,215	80,451	48,947	65,516
Freight and Postage	6,744	36,944	3,355	125,384	3,975	156,024	2,608	3,034	117,403	13,212	3,745	102,296
Leases and Rent	159,299	77,410	72,459	52,993	176,216	57,191	58,358	72,976	21,279	216,504	(78,290)	736,331
Professional Services	1,472,628	827,366	1,191,908	1,408,590	1,168,478	439,904	860,998	973,627	326,646	2,324,412	1,137,203	4,674,312
Supplies	80,082	53,930	41,435	34,231	28,435	23,001	25,595	27,132	17,705	41,142	28,511	25,501
Travel and Training	1,324	2,918	12,265	7,412	908	4,024	2,593	5,397	1,773	8,187	1,070	4,358
Utility Expense	387,807	13,241	1,110,063	231,824	502,635	319,200	468,388	407,175	280,314	914,983	415,298	71,399
Admin Misc	123,263	27,504	27,469	1,565	278,207	13,690	23,069	7,156	84,747	146,081	88,625	4,868,628
General & Administrative Total	2,278,299	1,072,237	2,503,358	1,925,024	2,191,888	1,076,281	1,507,656	1,525,231	907,083	3,744,973	1,645,109	10,548,342
Other Expenses												
Other Expenses - City	-	-	-	1,787,500	-	-	1,787,500	-	-	-	-	1,787,500
Other Expenses - Non-City	169,737	153,479	26,752	76,819	70,688	49,846	790,953	495,218	501,371	31,792	2,421,479	805,522
Depreciation Expense	1,347,357	1,347,357	1,347,357	1,347,357	1,347,357	1,347,357	1,347,357	1,347,357	1,347,357	1,347,357	1,347,377	1,349,484
Interest Expense	3,208,527	2,916,757	2,961,642	3,329,300	3,035,553	2,932,584	3,153,990	2,883,162	3,004,462	3,000,146	2,627,694	1,858,924
Other Expenses Total	4,725,621	4,417,594	4,335,751	6,540,976	4,453,599	4,329,787	7,079,801	4,725,738	4,853,190	4,379,295	6,396,550	5,801,430
Expenses Total	\$ 15,441,288	\$ 13,437,647	\$ 17,165,551	\$ 16,850,639	\$ 14,091,654	\$ 15,894,766	\$ 16,976,199	\$ 19,551,461	\$ 15,850,226	\$ 17,515,204	\$ 17,308,205	\$ 32,117,429
(Profit) / Loss	\$ 1,898,351	\$ (3,347,360)	\$ 533,358	\$ 1,278,906	\$ (3,098,229)	\$ (3,012,512)	\$ 1,055,643	\$ (3,861,468)	\$ (2,503,596)	\$ 2,838,754	\$ 422,134	\$ 12,249,028

Pittsburgh Water & Sewer Authority
Monthly Income Statements - FTY (2018)

Monthly Profit / Loss	Per Books 1/31/2018	Per Books 2/28/2018	Per Books 3/31/2018	Per Books 4/30/2018
REVENUES				
Utility Revenue	\$ (12,302,256)	\$ (18,430,957)	\$ (18,874,482)	\$ (18,080,539)
Fee Revenue	(753,758)	(289,168)	(137,190)	(345,586)
Misc Revenue	(22,692)	(349,030)	(22,336)	(91,469)
Interest Income (NonTrust)	-	-	-	-
Interest Income (Trust)	(72,566)	(1,782)	(1,782)	(1,782)
Other Income	-	-	-	-
Gain/Loss on Asset Disposal	-	-	-	-
Revenues Total	\$ (13,151,271)	\$ (19,070,937)	\$ (19,035,790)	\$ (18,519,376)
EXPENSES				
Salaries & Benefits				
Salaries Expense	\$ 2,122,165	\$ 1,391,206	\$ 1,345,933	\$ 1,401,283
Other Employee Expenses	534,509	438,954	471,699	486,922
Salaries & Benefits Total	2,656,674	1,830,160	1,817,632	1,888,204
Direct Operating Expenses				
Chemicals Costs	473,994	414,116	217,179	288,425
Equipment Costs	218,213	55,415	38,869	39,495
Material Costs	46,680	22,007	64,158	41,494
Operating Contracts	5,102,922	6,609,195	7,614,796	7,456,839
Repairs and Maintenance	427,635	140,598	184,889	111,408
Misc Direct Operating Costs	5,080	85,399	282,810	25,369
Inventory Exp - Castings	-	-	-	27
Inventory Exp - Clarifier	-	-	-	-
Inventory Exp - Equipment	6,561	5,488	8,030	4,699
Inventory Exp - Hardware	69,141	50,800	67,474	37,393
Inventory Exp - Heavy Equip	177	-	-	74
Inventory Exp - Misc	16,197	7,806	8,735	16,219
Inventory Exp - Parts	15,697	12,595	23,806	16,152
Inventory Exp - Pipe	1,862	2,778	4,042	4,163
Inventory Exp - Valves	8,211	6,862	9,765	8,489
Direct Operating Expenses Total	6,392,369	7,413,060	8,524,552	8,050,245
General & Administrative				
Admin Fees	56,154	59,240	67,472	72,536
Freight and Postage	131,250	9,792	119,870	3,272
Leases and Rent	145,533	531,032	135,447	259,491
Professional Services	1,123,168	1,276,794	1,185,048	1,388,000
Supplies	52,466	44,784	29,407	18,968
Travel and Training	2,278	5,949	3,043	8,082
Utility Expense	439,757	447,887	531,288	442,776
Admin Misc	58,654	(62,377)	99,674	(2,393)
General & Administrative Total	2,009,259	2,313,101	2,171,250	2,190,731
Other Expenses				
Other Expenses - City	1,787,500	-	-	-
Other Expenses - Non-City	477,854	25,914	30,067	761,725
Depreciation Expense	1,411,302	1,411,266	1,411,017	1,410,969
Interest Expense	2,821,409	2,513,706	2,690,288	2,660,585
Other Expenses Total	6,498,065	3,950,886	4,131,372	4,833,279
Expenses Total	\$ 17,556,367	\$ 15,507,207	\$ 16,644,806	\$ 16,962,460
(Profit) / Loss	\$ 4,405,096	\$ (3,563,730)	\$ (2,390,983)	\$ (1,556,916)

Pittsburgh Water & Sewer Authority
Monthly Balance Sheets - HTY (2017)

	Per Books 1/31/2017	Per Books 2/28/2017	Per Books 3/31/2017	Per Books 4/30/2017	Per Books 5/31/2017	Per Books 6/30/2017	Per Books 7/31/2017	Per Books 8/31/2017	Per Books 9/30/2017	Per Books 10/31/2017	Per Books 11/30/2017	Per Books 12/31/2017
ASSETS												
Current Assets												
Cash	\$ 19,217,128	\$ 12,555,827	\$ 9,660,642	\$ 7,640,212	\$ 8,102,632	\$ 12,108,854	\$ 9,104,144	\$ 11,659,626	\$ 10,955,635	\$ 9,491,320	\$ 10,651,063	\$ 11,075,964
Short-Term Investments	-	-	-	-	-	-	-	-	-	-	-	-
Accounts Receivable	23,707,505	28,211,585	27,953,218	29,651,728	27,382,460	30,158,149	28,473,686	32,501,903	34,011,343	30,023,119	32,515,428	30,107,649
Inventory	2,297,343	2,478,325	2,678,743	2,834,311	2,952,319	3,204,907	3,701,333	3,497,386	3,646,722	3,590,468	3,808,355	3,776,094
Other Assets	7,404,808	6,413,629	6,390,068	6,387,846	6,386,642	6,384,411	6,384,411	6,380,114	6,377,867	6,374,395	6,372,133	7,497,209
Current Assets Total	52,626,784	49,659,365	46,682,672	46,514,097	44,824,051	51,856,321	47,663,574	54,039,029	54,991,567	49,479,302	53,346,979	52,456,916
Trusted Funds												
Trusted Funds	100,873,790	110,652,150	100,453,952	103,834,890	106,990,892	110,138,511	113,254,863	122,608,617	92,575,332	95,749,374	98,868,724	33,228,161
Trusted Funds Total	100,873,790	110,652,150	100,453,952	103,834,890	106,990,892	110,138,511	113,254,863	122,608,617	92,575,332	95,749,374	98,868,724	33,228,161
Long-Term Assets												
Construction In Progress	93,101,925	93,491,633	96,529,748	98,458,856	101,090,482	102,758,422	105,267,462	107,712,284	110,236,397	111,148,293	113,766,505	103,803,126
Utility Assets	858,168,128	858,168,128	858,168,128	858,168,128	858,168,128	858,168,128	858,168,128	858,168,128	858,168,128	858,168,128	858,168,128	875,597,039
Accum Depr - Utility Assets	(277,152,920)	(278,460,265)	(279,767,611)	(281,074,957)	(282,382,302)	(283,689,648)	(284,996,994)	(286,304,339)	(287,611,685)	(288,919,031)	(290,226,376)	(291,533,742)
Non-Utility Assets	22,342,178	22,342,178	22,342,178	22,342,178	22,342,178	22,342,178	22,342,178	22,342,178	22,342,178	22,342,178	22,342,178	22,715,696
Accum Depr - Non-Utility Assets	(16,770,549)	(16,810,561)	(16,850,573)	(16,890,584)	(16,930,596)	(16,970,608)	(17,010,620)	(17,050,632)	(17,090,643)	(17,130,655)	(17,170,667)	(17,210,606)
Bond Issue Costs	(1,488)	(1,488)	(1,488)	(1,488)	(1,488)	(1,488)	(1,488)	(1,488)	(1,488)	(1,488)	(1,488)	(1,488)
Long-Term Assets Total	679,687,274	678,729,625	680,420,382	681,002,134	682,286,402	682,606,984	683,768,666	684,866,131	686,042,887	686,607,425	686,878,260	693,367,825
Assets Total	\$ 833,187,849	\$ 839,041,139	\$ 827,557,007	\$ 831,351,120	\$ 834,101,346	\$ 844,601,816	\$ 844,687,103	\$ 861,513,777	\$ 833,609,785	\$ 830,836,101	\$ 839,093,963	\$ 779,052,903
LIABILITIES & EQUITY												
Current Liabilities												
Current Maturities of Long-Term Debt	\$ (22,218,299)	\$ (21,943,248)	\$ (21,668,451)	\$ (21,394,096)	\$ (21,118,567)	\$ (20,842,603)	\$ (20,566,203)	\$ (20,289,365)	\$ (20,012,090)	\$ (19,734,376)	\$ (19,456,223)	\$ (24,602,838)
Accounts Payable	(2,716,388)	(2,381,156)	(3,132,460)	(3,208,220)	(3,036,565)	(3,186,669)	(3,498,266)	(3,708,496)	(3,726,163)	(3,944,204)	(3,738,626)	(3,563,213)
Accrued Payroll	(906,866)	(1,008,306)	(992,275)	(849,560)	(836,271)	(957,236)	(806,627)	(925,739)	(921,169)	(1,031,483)	(894,231)	(1,216,101)
AP From Trusted Funds	(13,007,349)	(15,365,065)	(4,072,476)	(6,430,192)	(8,787,908)	(11,145,624)	(13,481,587)	(15,817,550)	(4,503,208)	(6,784,398)	(9,065,588)	(3,772,680)
AP Retainage	-	-	-	-	-	-	-	-	-	-	-	-
Other Current Liabilities	(37,096,852)	(36,339,025)	(35,793,440)	(33,313,638)	(32,631,977)	(32,830,699)	(31,399,787)	(35,125,236)	(35,109,877)	(32,657,167)	(34,191,011)	(39,119,097)
Current Liabilities Total	(75,945,754)	(77,036,801)	(65,659,101)	(65,195,706)	(66,411,287)	(68,962,831)	(69,752,470)	(75,866,385)	(64,272,507)	(64,151,629)	(67,345,678)	(72,273,929)
Long-Term Liabilities												
Long-Term Debt	(788,718,955)	(790,135,621)	(790,564,329)	(796,102,526)	(796,540,723)	(801,478,920)	(801,831,993)	(808,685,066)	(789,873,139)	(790,060,869)	(795,548,599)	(743,235,145)
Other LT Liabilities	(7,514,180)	(7,512,390)	(7,510,616)	(7,508,834)	(7,507,052)	(7,505,270)	(7,503,488)	(7,501,706)	(7,499,924)	(7,498,142)	(7,496,360)	(7,089,529)
Long-Term Liabilities Total	(796,233,136)	(797,648,011)	(798,074,945)	(803,611,360)	(804,047,775)	(808,984,190)	(809,335,481)	(816,186,772)	(797,373,063)	(797,559,011)	(803,044,959)	(750,324,675)
Equity												
Contributed Capital	(5,277,000)	(5,277,000)	(5,277,000)	(5,277,000)	(5,277,000)	(5,277,000)	(5,277,000)	(5,277,000)	(5,277,000)	(5,277,000)	(5,277,000)	(5,277,000)
Net Investment in capital assets	42,369,690	42,369,690	42,369,690	42,369,690	42,369,690	42,369,690	42,369,690	42,369,690	42,369,690	42,369,690	42,369,690	42,369,690
Equity Total	37,092,690	37,092,690	37,092,690	37,092,690	37,092,690	37,092,690	37,092,690	37,092,690	37,092,690	37,092,690	37,092,690	37,092,690
Net (Profit) or Loss	1,898,351	(1,449,009)	(915,651)	363,255	(734,974)	(3,747,485)	(2,691,842)	(6,553,310)	(9,054,905)	(6,218,151)	(5,796,017)	6,453,011
Liabilities & Equity Total	\$ (835,065,199)	\$ (837,592,130)	\$ (826,641,356)	\$ (831,714,375)	\$ (833,366,372)	\$ (840,854,331)	\$ (841,995,261)	\$ (854,960,467)	\$ (824,552,880)	\$ (824,617,950)	\$ (833,297,946)	\$ (785,505,913)

Pittsburgh Water & Sewer Authority
Monthly Balance Sheet - FTY (2018)

	Per Books 1/31/2018	Per Books 2/28/2018	Per Books 3/31/2018	Per Books 4/30/2018
ASSETS				
Current Assets				
Cash	\$ 10,661,257	\$ 4,240,047	\$ 9,434,501	\$ 11,066,752
Short-Term Investments	-	-	-	-
Accounts Receivable	25,414,492	29,436,748	27,509,436	27,136,373
Inventory	3,846,693	3,912,530	4,085,412	4,185,272
Other Assets	7,532,342	7,528,838	7,504,565	7,502,275
Current Assets Total	47,454,783	45,118,163	48,533,913	49,890,671
Trusteed Funds				
Trusteed Funds	33,838,979	45,575,337	46,380,501	47,163,577
Trusteed Funds Total	33,838,979	45,575,337	46,380,501	47,163,577
Long-Term Assets				
Construction In Progress	104,832,945	107,444,407	109,176,226	111,937,900
Utility Assets	875,597,039	875,597,039	875,597,039	875,597,039
Accum Depr - Utility Assets	(292,903,231)	(294,270,683)	(295,637,887)	(297,005,091)
Non-Utility Assets	22,715,696	22,715,696	22,715,696	22,715,696
Accum Depr - Non Utility Assets	(17,254,619)	(17,298,432)	(17,342,245)	(17,386,011)
Bond Issue Costs	(1,488)	(1,488)	(1,488)	(1,488)
Long-Term Assets Total	692,986,342	694,186,538	694,507,340	695,858,045
Assets Total	<u>\$ 774,280,104</u>	<u>\$ 784,880,038</u>	<u>\$ 789,421,754</u>	<u>\$ 792,912,293</u>
LIABILITIES & EQUITY				
Current Liabilities				
Current Maturities of Long-Term Debt	\$ (24,323,803)	\$ (24,044,325)	\$ (23,764,405)	\$ (23,483,962)
Accounts Payable	(3,807,146)	(3,966,290)	(3,821,200)	(3,612,929)
Accrued Payroll	(1,121,888)	(1,285,873)	(1,166,301)	(1,360,332)
AP From Trusteed Funds	(5,862,108)	(7,951,536)	(10,040,964)	(12,130,392)
AP Retainage	-	-	-	-
Other Current Liabilities	(36,418,913)	(37,749,669)	(37,983,187)	(37,751,354)
Current Liabilities Total	(71,533,858)	(74,997,694)	(76,776,057)	(78,338,969)
Long-Term Liabilities				
Long-Term Debt	(743,609,296)	(747,183,447)	(747,557,598)	(747,930,091)
Other LT Liabilities	(7,087,747)	(7,085,965)	(7,084,183)	(7,082,401)
Long-Term Liabilities Total	(750,697,044)	(754,269,413)	(754,641,782)	(755,012,493)
Equity				
Contributed Capital	(5,277,000)	(5,277,000)	(5,277,000)	(5,277,000)
Net investment in capital assets	48,822,701	48,822,701	48,822,701	48,822,701
Equity Total	43,545,701	43,545,701	43,545,701	43,545,701
Net (Profit) or Loss	4,405,096	841,367	(1,549,617)	(3,106,533)
Liabilities & Equity Total	<u>\$(778,685,200)</u>	<u>\$(785,721,405)</u>	<u>\$(787,872,137)</u>	<u>\$(789,805,760)</u>

Pittsburgh Water and Sewer Authority's Base Rate Filing

XI. OTHER DATA

XI.2. Supply a copy of internal and independent audit reports of the historic test year and prior calendar year, noting any exceptions and recommendations and disposition thereof.

RESPONSE:

Please refer to FR VII.15 for the December 31, 2017 and 2016 audited financial statements.

Pittsburgh Water and Sewer Authority's Base Rate Filing

XI. OTHER DATA

XI.3. Provide all monthly or quarterly, or both, budget variance reports to management, or the board of directors, or both, submitted during the past year. Please provide the most recent detailed budget variance report which the company compiled, and update as additional reports are issued.

RESPONSE:

Please see attached.

PWSA Revenues and Expenses
April 2017
(Modified Cash Basis)

	Current Month Actual	Current Month Budget	Prior Year Month Actual	2017 Current Y-T-D Actual	Current Y-T-D Budget	Prior Year Y-T-D Actual
Operating Revenues						
Water & Conveyance Utility Revenues	\$ 8,933,968	\$ 10,799,718	\$ 8,241,900	\$ 37,717,438	\$ 42,006,932	\$ 35,721,260
Alcosan Utility Revenues	4,791,325	5,720,856	4,350,583	20,096,321	22,252,028	17,341,944
DISC receipts	(894)	0	548,004	547,085	0	2,260,850
Fees	103,795	355,180	233,681	657,844	3,364,160	1,568,319
Misc Other	60,769	76,153	37,680	542,433	530,603	408,110
Total Operating Revenues	13,888,962	16,951,908	13,411,848	59,561,121	68,153,723	57,300,484
Operating Expenses						
Distribution	(721,784)	(1,785,908)	(662,126)	(4,161,884)	(5,830,999)	(2,918,595)
Water Treatment Plant	(844,334)	(1,722,591)	(1,182,352)	(4,765,541)	(5,694,083)	(5,057,663)
Water Quality	(115,349)	(158,904)	(52,487)	(375,521)	(586,745)	(233,171)
Sewer Conveyance	(835,870)	(1,013,562)	(441,716)	(2,867,841)	(3,752,577)	(1,984,331)
DISC Disbursements	-	-	(812,315)	-	-	(1,645,749)
Engineering	(1,320,324)	(926,878)	(377,141)	(3,979,381)	(3,417,975)	(1,450,599)
Alcosan Sewage Treatment	(7,853,882)	(7,263,139)	(6,449,339)	(26,252,217)	(24,371,211)	(21,640,534)
General Admin	(2,958,688)	(4,844,426)	(3,481,306)	(8,165,018)	(10,457,228)	(8,565,840)
Total Operating Expenses	(14,650,231)	(17,715,407)	(13,458,781)	(50,567,403)	(54,110,819)	(43,496,483)
Net Income(Loss) From Operations	\$ (761,269)	\$ (763,499)	\$ (46,934)	\$ 8,993,718	\$ 14,042,904	\$ 13,804,001
Non-operating Cash Inflows/Outflows						
ADD: Non-Trust Interest Income	-	-	1,795	-	-	8,732
LESS Debt Service & Other						
Bond Debt Svc (Net Trust Income)	(3,319,267)	(3,058,617)	(3,184,263)	(20,188,591)	(20,410,777)	(20,534,712)
Pennvest Loan Debt Svc (Net)	(326,938)	-	(318,943)	(1,282,616)	-	(1,253,687)
Pvest (Disburs)/Ln Advances - Net	(58,945)	-	(46,183)	913,536	-	128,793
Total Non-Operating Expenses	(3,705,150)	(3,058,617)	(3,549,389)	(20,557,671)	(20,410,777)	(21,659,606)
Transfer to Restricted Funds	(262,043)	(262,043)	-	(1,048,170)	(1,048,170)	-
Net Cash Inflows/(Outflows)	\$ (4,728,462)	\$ (4,084,158)	\$ (3,594,528)	\$ (12,612,123)	\$ (7,416,043)	\$ (7,846,873)
Capital Project Spending	\$ (1,870,835)	\$ (3,351,600)	\$ (1,326,698)	\$ (6,974,653)	\$ (9,576,000)	\$ (8,519,422)
Beginning Line of Credit Balance:	\$ 68,200,000.00					
April Net Change	\$ (5,100,000.00)					
Ending Line of Credit Balance:	\$ 63,100,000.00					

PWSA 2017

(\$000)

	Actual				Forecast								Total	2017 Total Budget	Var.
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			
Operating Revenues															
Water & Conveyance	10,401	8,520	9,862	8,934	11,539	10,112	11,230	11,742	12,261	12,707	10,823	11,197	129,328	133,618	(4,289)
Alcosan	5,893	3,497	5,915	4,791	6,112	5,356	5,949	6,220	6,495	6,731	5,733	5,931	68,625	70,780	(2,156)
DISC	488	23	37	(1)	0	0	0	0	0	0	0	0	547	0	547
Fees	166	187	201	104	307	545	675	675	415	350	233	142	3,997	8,718	(4,721)
Misc Other	74	38	369	61	76	76	76	76	76	76	76	4,606	5,681	5,669	12
Total Operating Revenues	17,023	12,265	16,384	13,889	18,034	16,089	17,929	18,713	19,247	19,864	16,865	21,876	208,179	218,786	(10,608)
Operating Expenses															
Distribution	(948)	(979)	(1,513)	(722)	(1,590)	(1,952)	(1,415)	(1,411)	(1,441)	(1,341)	(1,313)	(1,302)	(15,928)	(16,502)	574
Water Treatment Plant	(1,090)	(655)	(2,176)	(844)	(1,371)	(1,362)	(1,338)	(1,522)	(1,408)	(1,220)	(1,195)	(1,361)	(15,542)	(16,059)	517
Water Quality	(68)	(54)	(138)	(115)	(135)	(147)	(138)	(141)	(125)	(117)	(130)	(115)	(1,425)	(1,636)	211
Sewer Conveyance	(651)	(803)	(578)	(836)	(805)	(879)	(832)	(899)	(784)	(766)	(790)	(772)	(9,393)	(10,048)	655
DISC Disbursements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Engineering	(1,158)	(654)	(847)	(1,320)	(1,018)	(938)	(815)	(804)	(988)	(870)	(893)	(949)	(11,255)	(9,694)	(1,561)
Alcosan	(7,278)	(4,572)	(6,548)	(7,854)	(4,582)	(6,566)	(6,751)	(4,899)	(6,318)	(6,610)	(4,473)	(6,405)	(72,856)	(70,780)	(2,076)
General Admin	(2,347)	(1,239)	(1,621)	(2,959)	(2,154)	(1,907)	(3,711)	(1,875)	(1,853)	(3,643)	(2,005)	(3,464)	(28,776)	(26,703)	(2,073)
Total Operating Expenses	(13,540)	(8,955)	(13,422)	(14,650)	(11,654)	(13,751)	(14,999)	(11,552)	(12,917)	(14,567)	(10,799)	(14,368)	(155,176)	(151,423)	(3,754)
Operating Income/(Loss)	3,483	3,310	2,962	(761)	6,380	2,338	2,930	7,161	6,330	5,297	6,065	7,508	53,002	67,364	(14,361)
Non-operating Cash Flows															
ADD Interest Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LESS Debt Service & Other															
Bond Debt Svc, Net	(4,019)	(9,832)	(3,019)	(3,319)	(2,782)	(2,783)	(2,873)	(9,487)	(2,889)	(2,969)	(2,899)	(2,902)	(49,773)	(49,996)	222
Pennvest Debt Svc, Net	(330)	(326)	(300)	(327)	0	0	0	0	0	0	0	0	(1,283)	0	(1,283)
Pvest (Disburs)/Ln Reimb - Net	(15)	988	0	(59)	0	0	0	0	0	0	0	0	914	0	914
Total Non-Operating Expenses	(4,364)	(9,170)	(3,319)	(3,705)	(2,782)	(2,783)	(2,873)	(9,487)	(2,889)	(2,969)	(2,899)	(2,902)	(50,142)	(49,996)	(147)
Transfer to Restricted Funds	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(3,145)	(3,145)	0
Net Cash Inflows/(Outflows):	(1,143)	(6,122)	(619)	(4,728)	3,336	(707)	(205)	(2,588)	3,178	2,065	2,904	4,344	(284)	14,224	(14,508)
Capital Project Spending	(1,675)	(390)	(3,039)	(1,871)	(3,830)	(3,830)	(4,788)	(5,267)	(5,267)	(5,267)	(5,267)	(4,788)	(45,279)	(47,880)	2,601

PWSA Revenues and Expenses
May 2017
(Modified Cash Basis)

	Current Month Actual	Current Month Budget	Prior Year Month Actual	2017 Current Y-T-D Actual	Current Y-T-D Budget	Prior Year Y-T-D Actual
Operating Receipts						
Water & Conveyance Utility	\$ 12,190,805	\$ 11,538,907	\$ 9,000,512	\$ 49,908,242	\$ 53,545,839	\$ 44,721,772
Alcosan Utility	4,547,025	6,112,421	4,857,646	24,643,347	28,364,449	22,199,590
DISC	(1,455)	0	625,636	545,630	0	2,886,486
Fees	708,113	215,123	90,815	1,365,956	3,579,283	1,659,134
Misc Other	51,264	76,153	19,114	593,697	606,756	427,224
Total Operating Receipts	<u>17,495,751</u>	<u>17,942,605</u>	<u>14,593,723</u>	<u>77,056,872</u>	<u>86,096,328</u>	<u>71,894,206</u>
Operating Expenses						
Distribution	(1,195,650)	(1,372,688)	(682,008)	(5,357,534)	(7,203,687)	(3,600,604)
Water Treatment Plant	(1,131,326)	(1,370,743)	(1,283,393)	(5,896,867)	(7,064,826)	(6,341,056)
Water Quality	(242,239)	(135,041)	(45,413)	(617,760)	(721,786)	(278,585)
Sewer Conveyance	(808,266)	(874,647)	(443,920)	(3,676,107)	(4,627,225)	(2,428,251)
DISC Disbursements	-	-	(357,212)	-	-	(2,002,961)
Engineering	(1,120,586)	(717,913)	(376,865)	(5,099,967)	(4,135,888)	(1,827,464)
Alcosan Sewage Treatment	(4,579,573)	(4,387,226)	(3,895,658)	(30,831,790)	(28,758,437)	(25,536,192)
General Admin	(1,378,677)	(1,233,161)	(1,533,120)	(9,543,695)	(11,690,389)	(10,098,960)
Total Operating Expenses	<u>(10,456,317)</u>	<u>(10,091,418)</u>	<u>(8,617,590)</u>	<u>(61,023,720)</u>	<u>(64,202,237)</u>	<u>(52,114,073)</u>
Net Income/(Loss) From Operations	<u>\$ 7,039,435</u>	<u>\$ 7,851,186</u>	<u>\$ 5,976,132</u>	<u>\$ 16,033,152</u>	<u>\$ 21,894,091</u>	<u>\$ 19,780,133</u>
Non-operating Cash Inflows/Outflows						
ADD: Non-Trust Interest Income	-	-	2,564	-	-	11,296
LESS Debt Service & Other						
Bond Debt Svc (Net Trust Income)	(3,027,871)	(2,781,887)	(3,015,809)	(23,216,462)	(23,192,664)	(23,550,521)
Pennvest Loan Debt Svc (Net)	(328,195)	-	(326,999)	(1,610,810)	-	(1,580,686)
Pvest (Disburs)/Ln Advances - Net	-	-	(124,267)	913,536	-	4,526
Total Non-Operating Expenses	<u>(3,356,066)</u>	<u>(2,781,887)</u>	<u>(3,467,075)</u>	<u>(23,913,737)</u>	<u>(23,192,664)</u>	<u>(25,126,680)</u>
Transfer to Restricted Funds	(262,043)	(262,043)	-	(1,310,213)	(1,310,213)	-
Net Cash Inflows/(Outflows)	<u>\$ 3,421,326</u>	<u>\$ 4,807,257</u>	<u>\$ 2,511,622</u>	<u>\$ (9,190,797)</u>	<u>\$ (2,608,786)</u>	<u>\$ (5,335,251)</u>
Capital Project Spending	\$ (2,632,297)	\$ (3,830,400)	\$ (1,326,698)	\$ (9,606,950)	\$ (13,406,400)	\$ (8,519,422)
Beginning Line of Credit Balance:	\$ 63,100,000.00					
May Net Change	\$ -					
Ending Line of Credit Balance:	\$ 63,100,000.00					

PWSA 2017

(\$000)

	Actual					Forecast							Total	2017 Total Budget	Var.	
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC				
Operating Receipts																
Water & Conveyance	10,401	8,520	9,862	8,934	12,191	10,112	11,230	11,742	12,261	12,707	10,823	11,197	129,980	133,618	(3,638)	
Alcosan	5,893	3,497	5,915	4,791	4,547	5,356	5,949	6,220	6,495	6,731	5,733	5,931	67,059	70,780	(3,721)	
DISC	488	23	37	(1)	(1)	0	0	0	0	0	0	0	546	0	546	
Fees	166	187	201	104	708	545	675	675	415	350	233	142	4,398	8,718	(4,320)	
Misc Other	74	38	369	61	51	76	76	76	76	76	76	4,606	5,656	5,669	(13)	
Total Operating Receipts	17,023	12,265	16,384	13,889	17,496	16,089	17,929	18,713	19,247	19,864	16,865	21,876	207,640	218,786	(11,146)	
Operating Expenses																
Distribution	(948)	(979)	(1,513)	(722)	(1,196)	(1,952)	(1,520)	(1,411)	(1,441)	(1,341)	(1,313)	(1,302)	(15,639)	(16,502)	864	
Water Treatment Plant	(1,090)	(655)	(2,176)	(844)	(1,131)	(1,362)	(1,338)	(1,522)	(1,408)	(1,220)	(1,195)	(1,361)	(15,303)	(16,059)	756	
Water Quality	(68)	(54)	(138)	(115)	(242)	(147)	(138)	(141)	(125)	(117)	(130)	(115)	(1,532)	(1,636)	104	
Sewer Conveyance	(651)	(803)	(578)	(836)	(808)	(933)	(832)	(899)	(784)	(766)	(790)	(772)	(9,451)	(10,048)	597	
DISC Disbursements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Engineering	(1,158)	(654)	(847)	(1,320)	(1,121)	(945)	(815)	(804)	(988)	(870)	(893)	(949)	(11,365)	(9,694)	(1,671)	
Alcosan	(7,278)	(4,572)	(6,548)	(7,854)	(4,580)	(6,566)	(6,751)	(4,899)	(6,318)	(6,610)	(4,473)	(6,405)	(72,854)	(70,780)	(2,073)	
General Admin	(2,347)	(1,239)	(1,621)	(2,959)	(1,379)	(2,108)	(3,616)	(1,875)	(1,853)	(3,643)	(2,005)	(3,464)	(28,107)	(26,703)	(1,404)	
Total Operating Expenses	(13,540)	(8,955)	(13,422)	(14,650)	(10,456)	(14,014)	(15,009)	(11,552)	(12,917)	(14,567)	(10,799)	(14,368)	(154,250)	(151,423)	(2,828)	
Operating Income/(Loss)	3,483	3,310	2,962	(761)	7,039	2,076	2,920	7,161	6,330	5,297	6,065	7,508	53,390	67,364	(13,974)	
Non-operating Cash Flows																
ADD Interest Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LESS Debt Service & Other																
Bond Debt Svc, Net	(4,019)	(9,832)	(3,019)	(3,319)	(3,028)	(2,783)	(2,873)	(9,487)	(2,889)	(2,969)	(2,899)	(2,902)	(50,019)	(49,996)	(24)	
Pennvest Debt Svc, Net	(330)	(326)	(300)	(327)	(328)	0	0	0	0	0	0	0	(1,611)	0	(1,611)	
Pvest (Disburs)/Ln Reimb - Net	(15)	988	0	(59)	0	0	0	0	0	0	0	0	914	0	914	
Total Non-Operating Expenses	(4,364)	(9,170)	(3,319)	(3,705)	(3,356)	(2,783)	(2,873)	(9,487)	(2,889)	(2,969)	(2,899)	(2,902)	(50,717)	(49,996)	(721)	
Transfer to Restricted Funds	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(3,145)	(3,145)	0	
Net Cash Inflows/(Outflows):	(1,143)	(6,122)	(619)	(4,728)	3,421	(969)	(215)	(2,588)	3,178	2,065	2,904	4,344	(471)	14,224	(14,695)	
Capital Project Spending	(1,675)	(390)	(3,039)	(1,871)	(2,632)	(3,830)	(4,788)	(5,267)	(5,267)	(5,267)	(5,267)	(4,788)	(44,081)	(47,880)	3,799	

PWSA Revenues and Expenses
June 2017
(Modified Cash Basis)

	Current Month Actual	Current Month Budget	Prior Year Month Actual	2017 Current Y-T-D Actual	Current Y-T-D Budget	Prior Year Y-T-D Actual
Operating Receipts						
Water & Conveyance Utility	\$ 10,443,376	\$ 10,111,834	\$ 10,297,093	\$ 60,351,618	\$ 63,657,673	\$ 55,018,865
Alcosan Utility	5,375,555	5,356,468	4,715,256	30,018,902	33,720,917	26,914,845
DISC	3,417	0	699,881	549,047	0	3,586,367
Fees	160,626	1,609,139	233,845	1,526,583	5,188,423	1,892,979
Misc Other	52,907	76,153	26,769	646,604	682,910	453,993
Total Operating Receipts	16,035,882	17,153,595	15,972,844	93,092,754	103,249,922	87,867,050
Operating Expenses						
Distribution	(1,400,114)	(1,448,690)	(685,017)	(6,757,648)	(8,652,377)	(4,285,620)
Water Treatment Plant	(795,700)	(1,362,460)	(589,944)	(6,692,567)	(8,427,286)	(6,931,000)
Water Quality	(332,634)	(147,467)	(60,318)	(950,394)	(869,253)	(338,902)
Sewer Conveyance	(1,107,374)	(768,621)	(519,150)	(4,783,481)	(5,395,846)	(2,947,401)
DISC Disbursements	-	-	(1,085,878)	-	-	(3,088,839)
Engineering	(491,365)	(838,050)	(1,739,061)	(5,591,332)	(4,973,938)	(3,566,525)
Alcosan Sewage Treatment	(6,160,121)	(6,565,792)	(5,830,126)	(36,991,911)	(35,324,228)	(31,366,319)
General Admin	(1,153,050)	(1,393,158)	(863,065)	(10,696,745)	(13,083,548)	(10,962,025)
Total Operating Expenses	(11,440,358)	(12,524,239)	(11,372,560)	(72,464,078)	(76,726,476)	(63,486,633)
Net Income/(Loss) From Operations	\$ 4,595,524	\$ 4,629,356	\$ 4,600,284	\$ 20,628,676	\$ 26,523,446	\$ 24,380,417
Non-operating Cash Inflows/Outflows						
ADD Non-Trust Interest Income	-	-	437	-	-	11,733
LESS Debt Service & Other						
Bond Debt Svc (Net Trust Income)	(2,933,845)	(2,782,887)	(3,056,044)	(26,150,307)	(25,975,551)	(26,606,565)
Pennvest Loan Debt Svc (Net)	(326,938)	-	(321,469)	(1,937,748)	-	(1,902,155)
Pvest (Disburs)/Ln Advances - Net	(9,810)	-	(629,885)	903,725	-	(625,359)
Total Non-Operating Expenses	(3,270,593)	(2,782,887)	(4,007,398)	(27,184,330)	(25,975,551)	(29,134,078)
Transfer to Restricted Funds	(262,043)	(262,043)	-	(1,572,255)	(1,572,255)	-
Net Cash Inflows/(Outflows)	\$ 1,062,888	\$ 1,584,426	\$ 593,323	\$ (8,127,909)	\$ (1,024,360)	\$ (4,741,928)
Capital Project Spending	\$ (1,640,119)	\$ (3,830,400)	\$ (1,280,698)	\$ (11,247,068)	\$ (17,236,800)	\$ (12,980,004)
Beginning Line of Credit Balance:	\$ 63,100,000.00					
June Net Change	\$ (4,500,000.00)					
Ending Line of Credit Balance:	\$ 58,600,000.00					

PWSA 2017

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	Actuals						Forecast						Total	2017 Total Budget	Var.
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			
Operating Receipts															
Water & Conveyance	10,401	8,520	9,862	8,934	12,191	10,443	11,230	11,742	12,261	12,707	10,823	11,197	130,312	133,618	(3,306)
Alcosan	5,893	3,497	5,915	4,791	4,547	5,376	5,949	6,220	6,495	6,731	5,733	5,931	67,078	70,780	(3,702)
DISC	488	23	37	(1)	(1)	3	0	0	0	0	0	0	549	0	549
Fees	166	187	201	104	708	161	675	675	415	350	233	142	4,014	8,718	(4,704)
Misc Other	74	38	369	61	51	53	76	76	76	76	76	4,606	5,633	5,669	(36)
Total Operating Receipts	17,023	12,265	16,384	13,889	17,496	16,036	17,929	18,713	19,247	19,864	16,865	21,876	207,587	218,786	(11,199)
Operating Expenses															
Distribution	(948)	(979)	(1,513)	(722)	(1,196)	(1,400)	(1,958)	(1,582)	(1,645)	(1,446)	(1,546)	(1,415)	(16,349)	(16,502)	153
Water Treatment Plant	(1,090)	(655)	(2,176)	(844)	(1,131)	(796)	(1,605)	(1,568)	(1,408)	(1,307)	(1,281)	(1,459)	(15,322)	(16,059)	737
Water Quality	(68)	(54)	(138)	(115)	(242)	(333)	(114)	(105)	(99)	(89)	(97)	(91)	(1,547)	(1,636)	90
Sewer Conveyance	(651)	(803)	(578)	(836)	(808)	(1,107)	(850)	(798)	(780)	(788)	(783)	(811)	(9,593)	(10,048)	455
DISC Disbursements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Engineering	(1,158)	(654)	(847)	(1,320)	(1,121)	(491)	(1,105)	(1,219)	(1,467)	(1,471)	(1,493)	(1,720)	(14,066)	(9,694)	(4,373)
Alcosan	(7,278)	(4,572)	(6,548)	(7,854)	(4,580)	(6,160)	(6,596)	(4,899)	(6,318)	(6,610)	(4,473)	(6,405)	(72,293)	(70,780)	(1,512)
General Admin	(2,347)	(1,239)	(1,621)	(2,959)	(1,379)	(1,153)	(3,917)	(2,014)	(2,204)	(4,621)	(2,208)	(3,717)	(29,378)	(26,703)	(2,675)
Total Operating Expenses	(13,540)	(8,955)	(13,422)	(14,650)	(10,456)	(11,440)	(16,145)	(12,185)	(13,921)	(16,332)	(11,881)	(15,619)	(158,547)	(151,423)	(7,125)
Operating Income/(Loss)	3,483	3,310	2,962	(761)	7,039	4,596	1,784	6,528	5,326	3,532	4,984	6,257	49,040	67,364	(18,324)
Non-operating Cash Flows															
ADD Interest Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LESS Debt Service & Other															
Bond Debt Svc, Net	(4,019)	(9,832)	(3,019)	(3,319)	(3,028)	(2,934)	(2,873)	(9,487)	(2,889)	(2,969)	(2,899)	(2,902)	(50,170)	(49,996)	(175)
Pennvest Debt Svc, Net	(330)	(326)	(300)	(327)	(328)	(327)	0	0	0	0	0	0	(1,938)	0	(1,938)
Pvest (Disburs)/Ln Reimb - Net	(15)	988	0	(59)	0	(10)	0	0	0	0	0	0	904	0	904
Total Non-Operating Expenses	(4,364)	(9,170)	(3,319)	(3,705)	(3,356)	(3,271)	(2,873)	(9,487)	(2,889)	(2,969)	(2,899)	(2,902)	(51,204)	(49,996)	(1,209)
Transfer to Restricted Funds	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(3,145)	(3,145)	0
Net Cash Inflows/(Outflows):	(1,143)	(6,122)	(619)	(4,728)	3,421	1,063	(1,350)	(3,221)	2,175	300	1,823	3,093	(5,309)	14,224	(19,533)
Capital Project Spending	(1,675)	(390)	(3,039)	(1,871)	(2,632)	(1,640)	(4,788)	(5,267)	(5,267)	(5,267)	(5,267)	(4,788)	(41,890)	(47,880)	5,990

PWSA Revenues and Expenses
July 2017
(Modified Cash Basis)

	Current Month Actual	Current Month Budget	Prior Year Month Actual	2017 Current Y-T-D Actual	Current Y-T-D Budget	Prior Year Y-T-D Actual
Operating Receipts						
Water & Conveyance Utility	\$ 11,785,393	\$ 11,229,613	\$ 6,889,320	\$ 72,137,011	\$ 74,887,286	\$ 61,908,185
Alcosan Utility	5,726,753	5,948,581	5,706,183	35,745,654	39,669,498	32,621,028
DISC	634	0	445,080	549,680	0	4,031,448
Fees	114,316	752,802	398,046	1,640,899	5,941,225	2,291,025
Misc Other	34,868	76,153	35,403	681,472	759,063	489,396
Total Operating Receipts	17,661,963	18,007,150	13,474,032	110,754,717	121,257,072	101,341,082
Operating Expenses						
Distribution	(1,088,032)	(1,314,621)	(581,332)	(7,845,680)	(9,966,998)	(4,866,952)
Water Treatment Plant	(828,776)	(1,277,671)	(930,296)	(7,521,343)	(9,704,958)	(7,861,296)
Water Quality	(68,406)	(138,320)	(69,189)	(1,018,800)	(1,007,573)	(408,091)
Sewer Conveyance	(847,559)	(761,574)	(412,200)	(5,631,040)	(6,157,419)	(3,359,600)
DISC Disbursements	-	-	(41,429)	-	-	(3,130,269)
Engineering	(571,326)	(715,387)	(927,634)	(6,162,658)	(5,689,325)	(4,494,159)
Alcosan Sewage Treatment	(6,595,829)	(6,751,192)	(5,994,754)	(43,587,740)	(42,075,420)	(37,361,073)
General Admin	(3,942,186)	(3,196,963)	(3,755,876)	(14,638,931)	(16,280,511)	(14,717,902)
Total Operating Expenses	(13,942,114)	(14,155,728)	(12,712,708)	(86,406,192)	(90,882,204)	(76,199,341)
Net Income/(Loss) From Operations	\$ 3,719,848	\$ 3,851,421	\$ 761,324	\$ 24,348,525	\$ 30,374,868	\$ 25,141,741
Non-operating Cash Inflows/Outflows						
ADD Non-Trust Interest Income	-	-	3	-	-	11,736
LESS Debt Service & Other:						
Bond Debt Svc (Net Trust Income)	(3,207,422)	(2,872,603)	(3,047,378)	(29,357,729)	(28,848,154)	(29,653,943)
Pennvest Loan Debt Svc (Net)	(329,703)	-	(324,234)	(2,267,451)	-	(2,226,388)
Pvest (Disburs)/Ln Advances - Net	-	-	(34,524)	903,725	-	(659,883)
Total Non-Operating Expenses	(3,537,125)	(2,872,603)	(3,406,136)	(30,721,455)	(28,848,154)	(32,540,214)
Transfer to Restricted Funds	(262,043)	(262,043)	(140,161)	(1,834,298)	(1,834,298)	(140,161)
Net Cash Inflows/(Outflows)	\$ (79,319)	\$ 716,776	\$ (2,784,970)	\$ (8,207,228)	\$ (307,584)	\$ (7,526,898)
Capital Project Spending	\$ (2,509,711)	\$ (4,788,000)	\$ (1,791,422)	\$ (13,756,779)	\$ (22,024,800)	\$ (12,980,004)

Beginning Line of Credit Balance:	\$ 58,600,000.00
July Net Change	\$ -
Ending Line of Credit Balance:	\$ 58,600,000.00

PWSA 2017

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	Actuals							Forecast					Total	2017 Total Budget	Var.
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			
Operating Receipts															
Water & Conveyance	10,401	8,520	9,862	8,934	12,191	10,443	11,785	11,742	12,261	12,707	10,823	11,197	130,868	133,618	(2,750)
Alcosan	5,893	3,497	5,915	4,791	4,547	5,376	5,727	6,220	6,495	6,731	5,733	5,931	66,857	70,780	(3,924)
DISC	488	23	37	(1)	(1)	3	1	0	0	0	0	0	550	0	550
Fees	166	187	201	104	708	161	114	675	415	350	233	142	3,454	8,718	(5,265)
Misc Other	74	38	369	61	51	53	35	76	76	76	76	4,606	5,592	5,689	(78)
Total Operating Receipts	17,023	12,265	16,384	13,889	17,496	16,036	17,662	18,713	19,247	19,864	16,865	21,876	207,320	218,786	(11,467)
Operating Expenses															
Distribution	(948)	(979)	(1,513)	(722)	(1,196)	(1,400)	(1,088)	(1,582)	(1,645)	(1,446)	(1,546)	(1,415)	(15,479)	(16,502)	1,023
Water Treatment Plant	(1,090)	(655)	(2,176)	(844)	(1,131)	(796)	(829)	(1,568)	(1,408)	(1,307)	(1,281)	(1,459)	(14,545)	(16,059)	1,514
Water Quality	(68)	(54)	(138)	(115)	(242)	(333)	(66)	(284)	(254)	(223)	(219)	(263)	(2,260)	(1,636)	(624)
Sewer Conveyance	(651)	(803)	(578)	(836)	(808)	(1,107)	(848)	(798)	(780)	(788)	(783)	(811)	(9,590)	(10,048)	458
DISC Disbursements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Engineering	(1,158)	(654)	(847)	(1,320)	(1,121)	(491)	(571)	(1,007)	(1,295)	(1,295)	(1,247)	(1,755)	(12,761)	(9,694)	(3,067)
Alcosan	(7,278)	(4,572)	(6,548)	(7,854)	(4,580)	(6,160)	(6,596)	(4,654)	(6,318)	(6,610)	(4,473)	(6,405)	(72,048)	(70,780)	(1,267)
General Admin	(2,347)	(1,239)	(1,621)	(2,959)	(1,379)	(1,153)	(3,942)	(1,994)	(2,261)	(4,885)	(2,281)	(3,726)	(29,785)	(26,703)	(3,083)
Total Operating Expenses	(13,540)	(8,955)	(13,422)	(14,650)	(10,456)	(11,440)	(13,942)	(11,887)	(13,960)	(16,554)	(11,828)	(15,834)	(156,469)	(151,423)	(5,047)
Operating Income/(Loss)	3,483	3,310	2,962	(761)	7,039	4,596	3,720	6,826	5,287	3,310	5,037	6,042	50,850	67,364	(16,513)
Non-operating Cash Flows															
ADD Interest Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LESS Debt Service & Other															
Bond Debt Svc, Net	(4,019)	(9,832)	(3,019)	(3,319)	(3,028)	(2,934)	(3,207)	(9,487)	(2,889)	(2,969)	(2,899)	(2,902)	(50,505)	(49,996)	(510)
Pennvest Debt Svc, Net	(330)	(326)	(300)	(327)	(328)	(327)	(330)	(327)	(327)	(327)	(327)	(327)	(3,902)	0	(3,902)
Pvest (Disburs)/Ln Reimb - Net	(15)	988	0	(59)	0	(10)	0	0	0	0	0	0	904	0	904
Total Non-Operating Expenses	(4,364)	(9,170)	(3,319)	(3,705)	(3,356)	(3,271)	(3,537)	(9,814)	(3,216)	(3,296)	(3,226)	(3,229)	(53,504)	(49,996)	(3,508)
Transfer to Restricted Funds	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(3,145)	(3,145)	0
Net Cash Inflows/(Outflows):	(1,143)	(6,122)	(619)	(4,728)	3,421	1,063	(79)	(3,250)	1,809	(248)	1,548	2,551	(5,798)	14,224	(20,021)
Capital Project Spending	(1,675)	(390)	(3,039)	(1,871)	(2,632)	(1,640)	(2,510)	(5,267)	(5,267)	(5,267)	(5,267)	(4,788)	(39,612)	(47,880)	8,268

PWSA Revenues and Expenses
August 2017
(Modified Cash Basis)

	Current Month Actual	Current Month Budget	Prior Year Month Actual	2017 Current Y-T-D Actual	Current Y-T-D Budget	Prior Year Y-T-D Actual
Operating Receipts						
Water & Conveyance Utility	\$ 12,168,819	\$ 11,742,190	\$ 7,569,470	\$ 84,305,831	\$ 86,629,476	\$ 69,477,655
Alcosan Utility	6,874,226	6,220,105	10,056,846	42,619,880	45,889,603	42,677,874
DISC	(451)	0	523,058	549,229	0	4,554,506
Fees	254,016	379,147	234,156	1,894,915	6,320,372	2,525,181
Misc Other	42,291	76,153	22,999	723,763	835,216	512,394
Total Operating Receipts	<u>19,338,901</u>	<u>18,417,596</u>	<u>18,406,528</u>	<u>130,093,618</u>	<u>139,674,668</u>	<u>119,747,610</u>
Operating Expenses						
Distribution	(1,601,038)	(1,311,267)	(755,914)	(9,446,718)	(11,278,266)	(5,622,866)
Water Treatment Plant	(1,507,627)	(1,290,108)	(1,262,326)	(9,028,970)	(10,995,066)	(9,123,622)
Water Quality	(168,223)	(140,964)	(109,907)	(1,187,023)	(1,148,537)	(517,998)
Sewer Conveyance	(944,574)	(778,600)	(607,754)	(6,575,614)	(6,936,019)	(3,967,354)
DISC Disbursements	-	-	(868,891)	-	-	(3,999,159)
Engineering	(939,681)	(704,165)	(1,013,257)	(7,102,339)	(6,393,490)	(5,507,415)
Alcosan Sewage Treatment	(4,627,219)	(4,899,406)	(4,350,451)	(48,214,959)	(46,974,827)	(41,711,524)
General Admin	(1,828,660)	(1,395,346)	(1,536,596)	(16,467,591)	(17,675,856)	(16,254,497)
Total Operating Expenses	<u>(11,617,022)</u>	<u>(10,519,856)</u>	<u>(10,505,095)</u>	<u>(98,023,215)</u>	<u>(101,402,061)</u>	<u>(86,704,436)</u>
Net Income/(Loss) From Operations	<u>\$ 7,721,879</u>	<u>\$ 7,897,739</u>	<u>\$ 7,901,433</u>	<u>\$ 32,070,404</u>	<u>\$ 38,272,607</u>	<u>\$ 33,043,174</u>
Non-operating Cash Inflows/Outflows						
ADD Non-Trust Interest Income	-	-	3	-	-	11,739
LESS Debt Service & Other						
Bond Debt Svc (Net Trust Income)	(9,203,086)	(9,487,150)	(9,122,563)	(38,560,815)	(38,335,303)	(38,776,505)
Pennvest Loan Debt Svc (Net)	(324,424)	-	(325,742)	(2,591,876)	-	(2,552,130)
Pvest (Disburs)/Ln Advances - Net	(87,103)	-	(91,975)	816,622	-	(751,858)
Total Non-Operating Expenses	<u>(9,614,613)</u>	<u>(9,487,150)</u>	<u>(9,540,280)</u>	<u>(40,336,068)</u>	<u>(38,335,303)</u>	<u>(42,080,494)</u>
Transfer to Restricted Funds	(262,043)	(262,043)	(140,161)	(2,096,340)	(2,096,340)	(280,322)
Net Cash Inflows/(Outflows)	<u>\$ (2,154,777)</u>	<u>\$ (1,851,453)</u>	<u>\$ (1,779,004)</u>	<u>\$ (10,362,005)</u>	<u>\$ (2,159,037)</u>	<u>\$ (9,305,902)</u>
Capital Project Spending	\$ (2,358,390)	\$ (5,266,800)	\$ (4,459,693)	\$ (16,115,169)	\$ (27,291,600)	\$ (19,231,120)
Beginning Line of Credit Balance:	\$ 58,600,000.00					
August Net Change	\$ (6,500,000.00)					
Ending Line of Credit Balance:	\$ 52,100,000.00					

PWSA 2017

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	Actuals								Forecast				Total	2017 Total Budget	Var.	
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC				
Operating Receipts																
Water & Conveyance	10,401	8,520	9,862	8,934	12,191	10,443	11,785	12,169	12,261	12,707	10,823	11,197	131,294	133,618	(2,324)	
Alcosan	5,893	3,497	5,915	4,791	4,547	5,376	5,727	6,874	6,495	6,731	5,733	5,931	67,511	70,780	(3,270)	
DISC	488	23	37	(1)	(1)	3	1	(0)	0	0	0	0	549	0	549	
Fees	166	187	201	104	708	161	114	254	415	350	233	142	3,033	8,718	(5,685)	
Misc Other	74	38	369	61	51	53	35	42	76	76	76	4,606	5,558	5,669	(111)	
Total Operating Receipts	17,023	12,265	16,384	13,889	17,496	16,036	17,662	19,339	19,247	19,864	16,865	21,876	207,945	218,786	(10,841)	
Operating Expenses																
Distribution	(948)	(979)	(1,513)	(722)	(1,196)	(1,400)	(1,088)	(1,601)	(1,645)	(1,446)	(1,546)	(1,415)	(15,498)	(16,502)	1,004	
Water Treatment Plant	(1,090)	(655)	(2,176)	(844)	(1,131)	(796)	(829)	(1,508)	(1,408)	(1,307)	(1,281)	(1,459)	(14,485)	(16,059)	1,574	
Water Quality	(68)	(54)	(138)	(115)	(242)	(333)	(68)	(168)	(254)	(223)	(219)	(263)	(2,145)	(1,636)	(509)	
Sewer Conveyance	(651)	(803)	(578)	(836)	(808)	(1,107)	(848)	(945)	(780)	(788)	(783)	(811)	(9,737)	(10,048)	311	
DISC Disbursements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Engineering	(1,158)	(654)	(847)	(1,320)	(1,121)	(491)	(571)	(940)	(1,295)	(1,295)	(1,247)	(1,755)	(12,693)	(9,694)	(3,000)	
Alcosan	(7,278)	(4,572)	(6,548)	(7,854)	(4,580)	(6,160)	(6,596)	(4,627)	(6,498)	(6,610)	(4,473)	(6,405)	(72,201)	(70,780)	(1,421)	
General Admin	(2,347)	(1,239)	(1,621)	(2,959)	(1,379)	(1,153)	(3,942)	(1,829)	(2,261)	(4,885)	(2,281)	(3,726)	(29,620)	(26,703)	(2,917)	
Total Operating Expenses	(13,540)	(8,955)	(13,422)	(14,650)	(10,456)	(11,440)	(13,942)	(11,617)	(14,141)	(16,554)	(11,828)	(15,834)	(156,380)	(151,423)	(4,957)	
Operating Income/(Loss)	3,483	3,310	2,962	(761)	7,039	4,596	3,720	7,722	5,106	3,310	5,037	6,042	51,566	67,364	(15,798)	
Non-operating Cash Flows																
ADD Interest Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LESS Debt Service & Other																
Bond Debt Svc, Net	(4,019)	(9,832)	(3,019)	(3,319)	(3,028)	(2,934)	(3,207)	(9,203)	(2,867)	(2,969)	(2,899)	(2,902)	(50,199)	(49,996)	(204)	
Pennvest Debt Svc, Net	(330)	(326)	(300)	(327)	(328)	(327)	(330)	(324)	(327)	(327)	(327)	(327)	(3,900)	0	(3,900)	
Pvest (Disburs)/Ln Reimb - Net	(15)	988	0	(59)	0	(10)	0	(87)	0	0	0	0	817	0	817	
Total Non-Operating Expenses	(4,364)	(9,170)	(3,319)	(3,705)	(3,356)	(3,271)	(3,537)	(9,615)	(3,194)	(3,296)	(3,226)	(3,229)	(53,282)	(49,996)	(3,287)	
Transfer to Restricted Funds	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(3,145)	(3,145)	0	
Net Cash Inflows/(Outflows):	(1,143)	(6,122)	(619)	(4,728)	3,421	1,063	(79)	(2,155)	1,650	(248)	1,548	2,551	(4,861)	14,224	(19,085)	
Capital Project Spending	(1,675)	(390)	(3,039)	(1,871)	(2,632)	(1,640)	(2,510)	(2,358)	(5,267)	(5,267)	(5,267)	(4,788)	(36,704)	(47,880)	11,176	

**PWSA Revenues and Expenses
September 2017
(Modified Cash Basis)**

	Current Month Actual	Current Month Budget	Prior Year Month Actual	2017 Current Y-T-D Actual	Current Y-T-D Budget	Prior Year Y-T-D Actual
Operating Receipts						
Water & Conveyance Utility	\$ 10,413,036	\$ 12,261,234	\$ 8,782,665	\$ 94,718,866	\$ 98,890,710	\$ 78,260,321
Alcosan Utility	5,943,048	6,495,055	3,733,409	48,562,928	52,384,658	46,411,283
DISC	(7,113)	0	608,588	542,116	0	5,163,094
Fees	520,196	336,187	245,442	2,415,111	6,656,560	2,770,623
Misc Other	30,716	76,153	23,463	754,479	911,370	535,857
Total Operating Receipts	<u>16,899,882</u>	<u>19,168,630</u>	<u>13,393,567</u>	<u>146,993,500</u>	<u>158,843,297</u>	<u>133,141,178</u>
Operating Expenses						
Distribution	(1,197,997)	(1,317,104)	(537,988)	(10,644,715)	(12,595,370)	(6,160,854)
Water Treatment Plant	(894,195)	(1,288,330)	(1,140,189)	(9,923,165)	(12,283,396)	(10,263,811)
Water Quality	(80,669)	(125,183)	(134,063)	(1,267,692)	(1,273,720)	(652,061)
Sewer Conveyance	(950,224)	(784,166)	(469,320)	(7,525,838)	(7,720,185)	(4,436,674)
DISC Disbursements	-	-	-	-	-	(3,999,159)
Engineering	(268,268)	(887,915)	(198,218)	(7,370,607)	(7,281,405)	(5,705,633)
Alcosan Sewage Treatment	(6,498,412)	(6,317,819)	(5,609,938)	(54,713,371)	(53,292,645)	(47,321,462)
General Admin	(1,685,215)	(1,372,343)	(997,991)	(18,152,805)	(19,048,199)	(17,252,488)
Total Operating Expenses	<u>(11,574,979)</u>	<u>(12,092,860)</u>	<u>(9,087,706)</u>	<u>(109,598,194)</u>	<u>(113,494,921)</u>	<u>(95,792,142)</u>
Net Income/(Loss) From Operations	<u>\$ 5,324,903</u>	<u>\$ 7,075,770</u>	<u>\$ 4,305,861</u>	<u>\$ 37,395,307</u>	<u>\$ 45,348,377</u>	<u>\$ 37,349,035</u>
Non-operating Cash Inflows/Outflows						
ADD: Non-Trust Interest Income	-	-	3	-	-	11,742
LESS Debt Service & Other:						
Bond Debt Svc (Net Trust Income)	(2,700,659)	(2,889,304)	(2,703,433)	(41,261,474)	(41,224,607)	(41,479,939)
Pennvest Loan Debt Svc (Net)	(326,938)	-	(322,726)	(2,918,814)	-	(2,874,856)
Pvest (Disburs)/Ln Advances - Net	-	-	(1,100)	816,622	-	(752,958)
Total Non-Operating Expenses	<u>(3,027,597)</u>	<u>(2,889,304)</u>	<u>(3,027,258)</u>	<u>(43,363,666)</u>	<u>(41,224,607)</u>	<u>(45,107,752)</u>
Transfer to Restricted Funds	(262,043)	(262,043)	(140,161)	(2,358,383)	(2,358,383)	(420,483)
Net Cash Inflows/(Outflows)	<u>\$ 2,035,263</u>	<u>\$ 3,924,424</u>	<u>\$ 1,138,445</u>	<u>\$ (8,326,741)</u>	<u>\$ 1,765,387</u>	<u>\$ (8,167,458)</u>
Capital Project Spending	\$ (2,524,784)	\$ (5,266,800)	\$ (1,127,065)	\$ (18,639,953)	\$ (32,558,400)	\$ (20,358,185)
Beginning Line of Credit Balance:	\$ 52,100,000.00					
September Net Change	\$ -					
Ending Line of Credit Balance:	\$ 52,100,000.00					

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(\$000)

	Actuals									Forecast			Total	2017 Total Budget	Var.
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			
Operating Receipts															
Water & Conveyance	10,401	8,520	9,862	8,934	12,191	10,443	11,785	12,169	10,413	12,707	10,823	11,197	129,446	133,618	(4,172)
Alcosan	5,893	3,497	5,915	4,791	4,547	5,376	5,727	6,874	5,943	6,731	5,733	5,931	66,959	70,780	(3,822)
DISC	488	23	37	(1)	(1)	3	1	(0)	(7)	0	0	0	542	0	542
Fees	166	187	201	104	708	161	114	254	520	350	233	142	3,139	8,718	(5,580)
Misc Other	74	38	369	61	51	53	35	42	31	76	76	4,006	4,913	5,669	(757)
Total Operating Receipts	17,023	12,265	16,384	13,889	17,496	16,036	17,662	19,339	16,900	19,864	16,865	21,276	204,998	218,786	(13,788)
Operating Expenses															
Distribution	(948)	(979)	(1,513)	(722)	(1,196)	(1,400)	(1,088)	(1,601)	(1,198)	(1,446)	(1,546)	(1,415)	(15,052)	(16,502)	1,451
Water Treatment Plant	(1,090)	(655)	(2,176)	(844)	(1,131)	(796)	(829)	(1,508)	(894)	(1,307)	(1,281)	(1,459)	(13,970)	(16,059)	2,088
Water Quality	(68)	(54)	(138)	(115)	(242)	(333)	(68)	(168)	(81)	(223)	(219)	(263)	(1,972)	(1,636)	(336)
Sewer Conveyance	(651)	(803)	(578)	(836)	(808)	(1,107)	(848)	(945)	(950)	(788)	(783)	(811)	(9,908)	(10,048)	140
DISC Disbursements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Engineering	(1,158)	(654)	(847)	(1,320)	(1,121)	(491)	(571)	(940)	(268)	(1,295)	(1,247)	(1,755)	(11,667)	(9,694)	(1,974)
Alcosan	(7,278)	(4,572)	(6,548)	(7,854)	(4,580)	(6,160)	(6,596)	(4,627)	(6,498)	(7,062)	(4,473)	(6,405)	(72,653)	(70,780)	(1,872)
General Admin	(2,347)	(1,239)	(1,621)	(2,959)	(1,379)	(1,153)	(3,942)	(1,829)	(1,685)	(4,885)	(2,281)	(3,726)	(29,044)	(26,703)	(2,341)
Total Operating Expenses	(13,540)	(8,955)	(13,422)	(14,650)	(10,456)	(11,440)	(13,942)	(11,617)	(11,575)	(17,005)	(11,828)	(15,834)	(154,265)	(151,423)	(2,843)
Operating Income/(Loss)	3,483	3,310	2,962	(761)	7,039	4,596	3,720	7,722	5,325	2,859	5,037	5,442	50,733	67,364	(16,631)
Non-operating Cash Flows															
ADD Interest Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LESS Debt Service & Other:															
Bond Debt Svc, Net	(4,019)	(9,832)	(3,019)	(3,319)	(3,028)	(2,934)	(3,207)	(9,203)	(2,701)	(2,969)	(2,899)	(2,902)	(50,032)	(49,996)	(37)
Pennvest Debt Svc, Net	(330)	(326)	(300)	(327)	(328)	(327)	(330)	(324)	(327)	(327)	(327)	(327)	(3,900)	0	(3,900)
Pvest (Disburs)/Ln Reimb - Net	(15)	988	0	(59)	0	(10)	0	(87)	0	0	0	0	817	0	817
Total Non-Operating Expenses	(4,364)	(9,170)	(3,319)	(3,705)	(3,356)	(3,271)	(3,537)	(9,615)	(3,028)	(3,296)	(3,226)	(3,229)	(53,115)	(49,996)	(3,120)
Transfer to Restricted Funds	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(3,145)	(3,145)	0
Net Cash Inflows/(Outflows):	(1,143)	(6,122)	(619)	(4,728)	3,421	1,063	(79)	(2,155)	2,035	(699)	1,548	1,951	(5,527)	14,224	(19,750)
Capital Project Spending	(1,675)	(390)	(3,039)	(1,871)	(2,632)	(1,640)	(2,510)	(2,358)	(2,525)	(5,267)	(5,267)	(4,788)	(33,962)	(47,880)	13,918

PWSA Revenues and Expenses
October 2017
(Modified Cash Basis)

	Current Month Actual	Current Month Budget	Prior Year Month Actual	2017 Current Y-T-D Actual	Current Y-T-D Budget	Prior Year Y-T-D Actual
Operating Receipts						
Water & Conveyance Utility	\$ 12,526,659	\$ 12,707,000	\$ 8,864,584	\$ 107,245,525	\$ 111,597,710	\$ 87,124,904
Alcosan Utility	5,896,655	6,731,187	6,022,617	54,459,582	59,115,845	52,433,899
DISC	(2,838)	0	601,304	539,278	0	5,764,397
Fees	126,160	900,493	625,613	2,541,272	7,557,053	3,396,237
Misc Other	35,912	76,153	31,530	790,391	987,523	567,387
Total Operating Receipts	18,582,548	20,414,834	16,145,647	165,576,049	179,258,131	149,286,824
Operating Expenses						
Distribution	(1,615,439)	(1,291,461)	(644,994)	(12,260,154)	(13,886,831)	(6,805,847)
Water Treatment Plant	(2,092,647)	(1,219,760)	(1,213,227)	(12,015,813)	(13,503,156)	(11,477,038)
Water Quality	(134,457)	(116,791)	(113,099)	(1,402,149)	(1,390,511)	(765,160)
Sewer Conveyance	(1,345,960)	(765,610)	(649,450)	(8,871,799)	(8,485,796)	(5,086,124)
DISC Disbursements	-	-	(592,209)	-	-	(4,591,369)
Engineering	(1,742,899)	(770,220)	(953,416)	(9,113,506)	(8,051,625)	(6,659,049)
Alcosan Sewage Treatment	(7,061,797)	(6,610,437)	(5,869,770)	(61,775,168)	(59,903,082)	(53,191,231)
General Admin	(1,640,905)	(3,162,943)	(3,106,614)	(19,793,711)	(22,211,143)	(20,359,102)
Total Operating Expenses	(15,634,105)	(13,937,223)	(13,142,778)	(125,232,298)	(127,432,143)	(108,934,920)
Net Income/(Loss) From Operations	\$ 2,948,443	\$ 6,477,611	\$ 3,002,869	\$ 40,343,750	\$ 51,825,988	\$ 40,351,904
Non-operating Cash Inflows/Outflows						
ADD: Non-Trust Interest Income	-	-	3	-	-	11,745
LESS: Debt Service & Other:						
Bond Debt Svc (Net Trust Income)	(3,314,418)	(2,969,304)	(2,795,410)	(44,575,892)	(44,193,911)	(44,275,348)
Pennvest Loan Debt Svc (Net)	(325,430)	-	(326,938)	(3,244,243)	-	(3,201,794)
Pvest (Disburs)/Ln Advances - Net	-	-	-	816,622	-	(752,958)
Total Non-Operating Expenses	(3,639,848)	(2,969,304)	(3,122,348)	(47,003,513)	(44,193,911)	(48,230,100)
Transfer to Restricted Funds	(262,043)	(262,043)	(140,161)	(2,620,425)	(2,620,425)	(560,644)
Net Cash Inflows/(Outflows)	\$ (953,447)	\$ 3,246,265	\$ (259,636)	\$ (9,280,188)	\$ 5,011,652	\$ (8,427,094)
Capital Project Spending	\$ (953,236)	\$ (5,266,800)	\$ (4,678,309)	\$ (19,593,189)	\$ (37,825,200)	\$ (25,036,494)
Beginning Line of Credit Balance:	\$ 52,100,000.00					
October Net Change	\$ -					
Ending Line of Credit Balance:	\$ 52,100,000.00					

PWSA 2017

(\$000)

	Actuals										Forecast		Total	2017 Total Budget	Var.		
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC					
Operating Receipts																	
Water & Conveyance	10,401	8,520	9,862	8,934	12,191	10,443	11,785	12,169	10,413	12,527	10,823	11,197	129,266	133,618	(4,352)		
Alcosan	5,893	3,497	5,915	4,791	4,547	5,376	5,727	6,874	5,943	5,897	5,733	5,931	66,124	70,780	(4,656)		
DISC	488	23	37	(1)	(1)	3	1	(0)	(7)	(3)	0	0	539	0	539		
Fees	166	187	201	104	708	161	114	254	520	126	233	142	2,915	8,718	(5,803)		
Misc Other	74	38	369	61	51	53	35	42	31	36	76	3,506	4,372	5,669	(1,297)		
Total Operating Receipts	17,023	12,265	16,384	13,889	17,496	16,036	17,662	19,339	16,900	18,583	16,865	20,776	203,217	218,786	(15,569)		
Operating Expenses																	
Distribution	(948)	(979)	(1,513)	(722)	(1,196)	(1,400)	(1,088)	(1,601)	(1,198)	(1,615)	(1,546)	(1,415)	(15,221)	(16,502)	1,281		
Water Treatment Plant	(1,090)	(655)	(2,176)	(844)	(1,131)	(796)	(829)	(1,508)	(894)	(2,093)	(1,281)	(1,459)	(14,756)	(16,059)	1,303		
Water Quality	(68)	(54)	(138)	(115)	(242)	(333)	(68)	(168)	(81)	(134)	(219)	(263)	(1,883)	(1,636)	(247)		
Sewer Conveyance	(651)	(803)	(578)	(836)	(808)	(1,107)	(848)	(945)	(950)	(1,346)	(783)	(811)	(10,466)	(10,048)	(418)		
DISC Disbursements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Engineering	(1,158)	(654)	(847)	(1,320)	(1,121)	(491)	(571)	(940)	(268)	(1,743)	(1,247)	(1,755)	(12,115)	(9,694)	(2,422)		
Alcosan	(7,278)	(4,572)	(6,548)	(7,854)	(4,580)	(6,160)	(6,596)	(4,627)	(6,498)	(7,062)	(4,473)	(6,405)	(72,653)	(70,780)	(1,872)		
General Admin	(2,347)	(1,239)	(1,621)	(2,959)	(1,379)	(1,153)	(3,942)	(1,829)	(1,685)	(1,641)	(4,068)	(3,726)	(27,588)	(26,703)	(885)		
Total Operating Expenses	(13,540)	(8,955)	(13,422)	(14,650)	(10,456)	(11,440)	(13,942)	(11,617)	(11,575)	(15,634)	(13,616)	(15,834)	(154,682)	(151,423)	(3,259)		
Operating Income/(Loss)	3,483	3,310	2,962	(781)	7,039	4,596	3,720	7,722	5,325	2,948	3,249	4,942	48,535	67,364	(18,829)		
Non-operating Cash Flows																	
ADD Interest Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
LESS Debt Service & Other																	
Bond Debt Svc, Net	(4,019)	(9,832)	(3,019)	(3,319)	(3,028)	(2,934)	(3,207)	(9,203)	(2,701)	(3,314)	(2,875)	(2,902)	(50,353)	(49,996)	(358)		
Pennvest Debt Svc, Net	(330)	(326)	(300)	(327)	(328)	(327)	(330)	(324)	(327)	(325)	(327)	(327)	(3,898)	0	(3,898)		
Pvest (Disburs)/Ln Reimb - Net	(15)	988	0	(59)	0	(10)	0	(87)	0	0	0	0	817	0	817		
Total Non-Operating Expenses	(4,364)	(9,170)	(3,319)	(3,705)	(3,356)	(3,271)	(3,537)	(9,615)	(3,028)	(3,640)	(3,202)	(3,229)	(53,435)	(49,996)	(3,439)		
Transfer to Restrcted Funds	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(3,145)	(3,145)	0		
Net Cash Inflows/(Outflows):	(1,143)	(6,122)	(619)	(4,728)	3,421	1,063	(79)	(2,155)	2,035	(953)	(215)	1,451	(8,044)	14,224	(22,268)		
Capital Project Spending	(1,675)	(390)	(3,039)	(1,871)	(2,632)	(1,640)	(2,510)	(2,358)	(2,525)	(953)	(5,267)	(4,788)	(29,648)	(47,880)	18,232		

PWSA Revenues and Expenses
November 2017
(Modified Cash Basis)

	Current Month Actual	Current Month Budget	Prior Year Month Actual	2017 Current Y-T-D Actual	Current Y-T-D Budget	Prior Year Y-T-D Actual
Operating Receipts						
Water & Conveyance Utility	\$ 8,893,170	\$ 10,822,907	\$ 8,432,834	\$ 116,138,695	\$ 122,420,617	\$ 95,557,739
Alcosan Utility	5,117,122	5,733,140	5,978,075	59,576,704	64,848,985	58,411,974
DISC	(701)	0	559,582	538,577	0	6,323,979
Fees	240,156	628,981	296,235	2,781,428	8,186,034	3,692,471
Misc Other	165,127	76,153	167,456	955,517	1,063,676	734,843
Total Operating Receipts	14,414,874	17,261,182	15,434,182	179,990,922	196,519,313	164,721,007
Operating Expenses						
Distribution	(1,158,501)	(1,313,139)	(591,737)	(13,418,655)	(15,199,970)	(7,397,584)
Water Treatment Plant	(845,025)	(1,195,009)	(900,750)	(12,860,838)	(14,698,165)	(12,377,788)
Water Quality	(36,920)	(130,479)	(120,443)	(1,439,069)	(1,520,990)	(885,603)
Sewer Conveyance	(818,751)	(790,400)	(452,950)	(9,690,550)	(9,276,196)	(5,539,074)
DISC Disbursements	-	-	(77,394)	-	-	(4,668,762)
Engineering	(577,632)	(792,517)	(2,019,776)	(9,691,138)	(8,844,142)	(8,678,825)
Alcosan Sewage Treatment	(4,495,451)	(4,472,830)	(3,971,671)	(66,270,619)	(64,375,913)	(57,162,902)
General Admin	(3,878,113)	(1,491,588)	(1,808,461)	(23,671,823)	(23,702,731)	(22,167,562)
Total Operating Expenses	(11,810,392)	(10,185,964)	(9,943,181)	(137,042,690)	(137,618,107)	(118,878,101)
Net Income/(Loss) From Operations	\$ 2,604,482	\$ 7,075,218	\$ 5,491,001	\$ 42,948,232	\$ 58,901,205	\$ 45,842,905
Non-operating Cash Inflows/Outflows						
ADD Non-Trust Interest Income	-	-	3	-	-	11,748
LESS Debt Service & Other:						
Bond Debt Svc (Net Trust Income)	(2,875,072)	(2,899,304)	(2,595,516)	(47,450,964)	(47,093,214)	(46,870,864)
Pennvest Loan Debt Svc (Net)	(326,938)	-	(326,938)	(3,571,181)	-	(3,528,732)
Pvest (Disburs)/Ln Advances - Net	-	-	(56,248)	816,622	-	(809,206)
Total Non-Operating Expenses	(3,202,010)	(2,899,304)	(2,978,702)	(50,205,523)	(47,093,214)	(51,208,802)
Transfer to Restricted Funds	(262,043)	(262,043)	(140,161)	(2,882,468)	(2,882,468)	(700,805)
Net Cash Inflows/(Outflows)	\$ (859,570)	\$ 3,913,872	\$ 2,372,141	\$ (10,139,758)	\$ 8,925,524	\$ (6,054,953)
Capital Project Spending	\$ (2,618,883)	\$ (5,266,800)	\$ (3,400,436)	\$ (22,212,073)	\$ (43,092,000)	\$ (28,436,930)
Beginning Line of Credit Balance:	\$ 52,100,000.00					
November Net Change	\$ (5,300,000.00)					
Ending Line of Credit Balance:	\$ 46,800,000.00					

PWSA 2017

(\$000)

	Actuals											Forecast	Total	2017 Total Budget	Var.		
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC					
Operating Receipts																	
Water & Conveyance	10,401	8,520	9,862	8,934	12,191	10,443	11,785	12,169	10,413	12,527	8,893	11,197	127,336	133,618	(6,282)		
Alcosan	5,893	3,497	5,915	4,791	4,547	5,376	5,727	6,874	5,943	5,897	5,117	5,931	65,508	70,780	(5,272)		
DISC	488	23	37	(1)	(1)	3	1	(0)	(7)	(3)	(1)	0	539	0	539		
Fees	166	187	201	104	708	161	114	254	520	126	240	142	2,923	8,718	(5,796)		
Misc Other	74	38	369	61	51	53	35	42	31	36	165	2,906	3,861	5,669	(1,808)		
Total Operating Receipts	17,023	12,265	16,384	13,889	17,496	16,036	17,662	19,339	16,900	18,583	14,415	20,176	200,167	218,786	(18,619)		
Operating Expenses																	
Distribution	(948)	(979)	(1,513)	(722)	(1,196)	(1,400)	(1,088)	(1,601)	(1,198)	(1,615)	(1,159)	(1,415)	(14,834)	(16,502)	1,668		
Water Treatment Plant	(1,090)	(655)	(2,176)	(844)	(1,131)	(796)	(829)	(1,508)	(894)	(2,093)	(845)	(1,459)	(14,320)	(16,059)	1,739		
Water Quality	(68)	(54)	(138)	(115)	(242)	(333)	(68)	(168)	(81)	(134)	(37)	(263)	(1,702)	(1,636)	(65)		
Sewer Conveyance	(651)	(803)	(578)	(836)	(808)	(1,107)	(848)	(945)	(950)	(1,346)	(819)	(811)	(10,502)	(10,048)	(454)		
DISC Disbursements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Engineering	(1,158)	(654)	(847)	(1,320)	(1,121)	(491)	(571)	(940)	(268)	(1,743)	(578)	(1,755)	(11,446)	(9,694)	(1,752)		
Alcosan	(7,278)	(4,572)	(6,548)	(7,854)	(4,580)	(6,160)	(6,596)	(4,627)	(6,498)	(7,062)	(4,495)	(6,287)	(72,558)	(70,780)	(1,777)		
General Admin	(2,347)	(1,239)	(1,621)	(2,959)	(1,379)	(1,153)	(3,942)	(1,829)	(1,685)	(1,641)	(3,878)	(1,951)	(25,623)	(26,703)	1,080		
Total Operating Expenses	(13,540)	(8,955)	(13,422)	(14,650)	(10,456)	(11,440)	(13,942)	(11,617)	(11,575)	(15,634)	(11,810)	(13,942)	(150,984)	(151,423)	438		
Operating Income/(Loss)	3,483	3,310	2,962	(761)	7,039	4,596	3,720	7,722	5,325	2,948	2,604	6,234	49,183	67,364	(18,181)		
Non-operating Cash Flows																	
ADD: Interest Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
LESS: Debt Service & Other																	
Bond Debt Svc, Net	(4,019)	(9,832)	(3,019)	(3,319)	(3,028)	(2,934)	(3,207)	(9,203)	(2,701)	(3,314)	(2,875)	(2,878)	(50,329)	(49,996)	(334)		
Pennvest Debt Svc, Net	(330)	(326)	(300)	(327)	(328)	(327)	(330)	(324)	(327)	(325)	(327)	(327)	(3,898)	0	(3,898)		
Pvest (Disburs)/Ln Reimb - Net	(15)	988	0	(59)	0	(10)	0	(87)	0	0	0	0	817	0	817		
Total Non-Operating Expenses	(4,364)	(9,170)	(3,319)	(3,705)	(3,356)	(3,271)	(3,537)	(9,615)	(3,028)	(3,640)	(3,202)	(3,205)	(53,411)	(49,996)	(3,415)		
Transfer to Restricted Funds	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(3,145)	(3,145)	0		
Net Cash Inflows/(Outflows):	(1,143)	(6,122)	(619)	(4,728)	3,421	1,063	(79)	(2,155)	2,035	(953)	(860)	2,767	(7,372)	14,224	(21,596)		
Capital Project Spending	(1,675)	(390)	(3,039)	(1,871)	(2,632)	(1,640)	(2,510)	(2,358)	(2,525)	(953)	(2,619)	(7,556)	(29,768)	(47,860)	18,112		

**PWSA Revenues and Expenses
December 2017
(Modified Cash Basis)**

	Current Month Actual	Current Month Budget	Prior Year Month Actual	2017 Current Y-T-D Actual	Current Y-T-D Budget	Prior Year Y-T-D Actual
Operating Receipts						
Water & Conveyance Utility	\$ 9,632,044	\$ 11,197,335	\$ 9,104,309	\$ 125,770,739	\$ 133,617,952	\$ 104,662,048
Alcosan Utility	4,218,799	5,931,483	4,319,123	63,795,503	70,780,468	62,731,097
DISC	140	0	615,940	538,717	0	6,939,920
Fees	64,545	532,440	358,007	2,845,973	8,718,475	4,050,478
Misc Other	1,645,045	4,605,755	2,388,947	2,600,562	5,669,431	3,123,791
Total Operating Receipts	<u>15,560,572</u>	<u>22,267,013</u>	<u>16,786,326</u>	<u>195,551,494</u>	<u>218,786,326</u>	<u>181,507,333</u>
Operating Expenses						
Distribution	(1,078,679)	(1,302,398)	(720,014)	(14,497,334)	(16,502,368)	(8,117,599)
Water Treatment Plant	(1,283,751)	(1,360,797)	(1,326,427)	(14,144,589)	(16,058,962)	(13,704,215)
Water Quality	(167,937)	(115,440)	(231,552)	(1,607,006)	(1,636,430)	(1,117,154)
Sewer Conveyance	(543,729)	(771,777)	(492,993)	(10,234,279)	(10,047,973)	(6,032,067)
DISC Disbursements	-	-	(898,954)	-	-	(5,567,716)
Engineering	(1,535,739)	(849,379)	(1,266,423)	(11,226,877)	(9,693,521)	(9,945,248)
Alcosan Sewage Treatment	(6,284,419)	(6,404,556)	(5,686,957)	(72,555,038)	(70,780,469)	(62,849,859)
General Admin	(3,284,747)	(3,000,104)	(3,598,080)	(26,956,570)	(26,702,835)	(25,765,643)
Total Operating Expenses	<u>(14,179,000)</u>	<u>(13,804,450)</u>	<u>(14,221,400)</u>	<u>(151,221,691)</u>	<u>(151,422,558)</u>	<u>(133,099,501)</u>
Net Income/(Loss) From Operations	<u>\$ 1,381,572</u>	<u>\$ 8,462,563</u>	<u>\$ 2,564,926</u>	<u>\$ 44,329,804</u>	<u>\$ 67,363,768</u>	<u>\$ 48,407,832</u>
Non-operating Cash Inflows/Outflows						
ADD Non-Trust Interest Income	-	-	3	-	-	11,751
LESS Debt Service & Other						
Bond Debt Svc (Net Trust Income)	(1,189,210)	(2,902,304)	(2,624,281)	(48,711,708)	(49,995,518)	(49,495,146)
Pennvest Loan Debt Svc (Net)	(326,938)	-	(328,446)	(3,898,119)	-	(3,857,178)
Pvest (Disburs)/Ln Advances - Net	(22,693)	-	-	793,929	-	(809,206)
Total Non-Operating Expenses	<u>(1,538,842)</u>	<u>(2,902,304)</u>	<u>(2,952,728)</u>	<u>(51,815,898)</u>	<u>(49,995,518)</u>	<u>(54,161,530)</u>
Transfer to Restricted Funds	(262,043)	(262,043)	(140,161)	(3,144,510)	(3,144,510)	(840,966)
Net Cash Inflows/(Outflows)	<u>\$ (419,313)</u>	<u>\$ 5,298,217</u>	<u>\$ (527,960)</u>	<u>\$ (10,630,604)</u>	<u>\$ 14,223,740</u>	<u>\$ (6,582,913)</u>
Capital Project Spending	\$ (8,201,841)	\$ (4,788,000)	\$ (2,236,071)	\$ (30,413,914)	\$ (47,880,000)	\$ (30,673,001)
Beginning Line of Credit Balance:	\$ 46,800,000.00					
December Net Change	\$ (10,600,000.00)					
Ending Line of Credit Balance:	\$ 36,200,000.00					

PWSA 2017

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	Actuals												Total	2017 Total Budget	Var.
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			
Operating Receipts															
Water & Conveyance	10,401	8,520	9,862	8,934	12,191	10,443	11,785	12,169	10,413	12,527	8,893	9,632	125,771	133,618	(7,847)
Alcosan	5,893	3,497	5,915	4,791	4,547	5,376	5,727	6,874	5,943	5,897	5,117	4,219	63,796	70,780	(6,985)
DISC	488	23	37	(1)	(1)	3	1	(0)	(7)	(3)	(1)	0	539	0	539
Fees	166	187	201	104	708	161	114	254	520	126	240	65	2,846	8,718	(5,873)
Misc Other	74	38	369	61	51	53	35	42	31	36	165	1,645	2,601	5,669	(3,069)
Total Operating Receipts	17,023	12,265	16,384	13,889	17,496	16,036	17,662	19,339	16,900	18,583	14,415	15,561	195,551	218,786	(23,235)
Operating Expenses															
Distribution	(948)	(979)	(1,513)	(722)	(1,196)	(1,400)	(1,088)	(1,601)	(1,198)	(1,615)	(1,159)	(1,079)	(14,497)	(16,502)	2,005
Water Treatment Plant	(1,090)	(655)	(2,176)	(844)	(1,131)	(796)	(829)	(1,508)	(894)	(2,093)	(845)	(1,284)	(14,145)	(16,059)	1,914
Water Quality	(68)	(54)	(138)	(115)	(242)	(333)	(68)	(168)	(81)	(134)	(37)	(168)	(1,607)	(1,636)	29
Sewer Conveyance	(651)	(803)	(578)	(836)	(808)	(1,107)	(848)	(945)	(950)	(1,346)	(819)	(544)	(10,234)	(10,048)	(186)
DISC Disbursements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Engineering	(1,158)	(654)	(847)	(1,320)	(1,121)	(491)	(571)	(940)	(268)	(1,743)	(578)	(1,536)	(11,227)	(9,694)	(1,533)
Alcosan	(7,278)	(4,572)	(6,548)	(7,854)	(4,580)	(6,160)	(6,596)	(4,627)	(6,498)	(7,062)	(4,495)	(6,284)	(72,555)	(70,780)	(1,775)
General Admin	(2,347)	(1,239)	(1,621)	(2,959)	(1,379)	(1,153)	(3,942)	(1,829)	(1,685)	(1,641)	(3,878)	(3,285)	(26,957)	(26,703)	(254)
Total Operating Expenses	(13,540)	(8,955)	(13,422)	(14,650)	(10,456)	(11,440)	(13,942)	(11,617)	(11,575)	(15,634)	(11,810)	(14,179)	(151,222)	(151,423)	201
Operating Income/(Loss)	3,483	3,310	2,962	(761)	7,039	4,596	3,720	7,722	5,325	2,948	2,604	1,382	44,330	67,364	(23,034)
Non-operating Cash Flows															
ADD Interest Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LESS Debt Service & Other															
Bond Debt Svc, Net	(4,019)	(9,832)	(3,019)	(3,319)	(3,028)	(2,934)	(3,207)	(9,203)	(2,701)	(3,314)	(2,947)	(1,189)	(48,712)	(49,996)	1,284
Pennvest Debt Svc, Net	(330)	(326)	(300)	(327)	(328)	(327)	(330)	(324)	(327)	(325)	(327)	(327)	(3,898)	0	(3,898)
Pvest (Disburs)/Ln Reimb - Net	(15)	988	0	(59)	0	(10)	0	(87)	0	0	0	(23)	794	0	794
Total Non-Operating Expenses	(4,364)	(9,170)	(3,319)	(3,705)	(3,356)	(3,271)	(3,537)	(9,615)	(3,028)	(3,640)	(3,274)	(1,539)	(51,816)	(49,996)	(1,820)
Transfer to Restrcted Funds	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(3,145)	(3,145)	0
Net Cash Inflows/(Outflows):	(1,143)	(6,122)	(619)	(4,728)	3,421	1,063	(79)	(2,155)	2,035	(953)	(931)	(419)	(10,631)	14,224	(24,854)
Capital Project Spending	(1,675)	(390)	(3,039)	(1,871)	(2,632)	(1,640)	(2,510)	(2,358)	(2,525)	(953)	(2,619)	(8,202)	(30,414)	(47,880)	17,466

**PWSA Revenues and Expenses
January 2018
(Modified Cash Basis)**

	Current Month Actual	Current Month Budget	Prior Year Month Actual	2018 Current Y-T-D Actual	Current Y-T-D Budget	Prior Year Y-T-D Actual
Operating Receipts						
Water & Conveyance Utility	\$ 11,700,658	\$ 13,483,875	\$ 10,401,139	\$ 11,700,658	\$ 13,483,875	\$ 10,401,139
Alcosan Utility	5,124,844	5,770,323	5,893,043	5,124,844	5,770,323	5,893,043
DISC	169	0	488,392	169	0	488,392
Fees	753,758	166,264	166,264	753,758	166,264	166,264
Misc Other	22,692	77,383	74,345	22,692	77,383	74,345
Total Operating Receipts	17,602,122	19,497,845	17,023,183	17,602,122	19,497,845	17,023,183
Operating Expenses						
Distribution	(1,978,426)	(1,504,515)	(948,186)	(1,978,426)	(1,504,515)	(948,186)
Water Treatment Plant	(1,514,301)	(1,627,629)	(1,090,297)	(1,514,301)	(1,627,629)	(1,090,297)
Water Quality	(110,564)	(298,384)	(67,931)	(110,564)	(298,384)	(67,931)
Sewer Conveyance	(597,755)	(817,269)	(651,448)	(597,755)	(817,269)	(651,448)
DISC Disbursements	-	-	-	-	-	-
Engineering	(366,902)	(1,047,488)	(1,158,064)	(366,902)	(1,047,488)	(1,158,064)
Environmental Compliance	(37,614)	(271,685)	-	(37,614)	(271,685)	-
Alcosan Sewage Treatment	(7,086,696)	(7,724,907)	(7,277,754)	(7,086,696)	(7,724,907)	(7,277,754)
General Admin	(4,346,928)	(2,817,265)	(2,346,586)	(4,346,928)	(2,817,265)	(2,346,586)
Total Operating Expenses	(16,039,186)	(16,109,141)	(13,540,266)	(16,039,186)	(16,109,141)	(13,540,266)
Net Income/(Loss) From Operations	\$ 1,562,936	\$ 3,388,704	\$ 3,482,917	\$ 1,562,936	\$ 3,388,704	\$ 3,482,917
Non-operating Cash Inflows/Outflows						
ADD Non-Trust Interest Income	-	-	-	-	-	-
LESS Debt Service & Other						
Bond Debt Svc (Net Trust Income)	(749,405)	(837,169)	(4,018,726)	(749,405)	(837,169)	(4,018,726)
Pennvest Loan Debt Svc (Net)	(329,703)	(325,536)	(329,703)	(329,703)	(325,536)	(329,703)
Pvest (Disburs)/Ln Advances - Net	-	-	(15,476)	-	-	(15,476)
Total Non-Operating Expenses	(1,079,108)	(1,162,706)	(4,363,905)	(1,079,108)	(1,162,706)	(4,363,905)
Transfer to Restricted Funds	(244,426)	(244,426)	(262,043)	(244,426)	(244,426)	(262,043)
Net Cash Inflows/(Outflows)	\$ 239,401	\$ 1,981,573	\$ (1,143,031)	\$ 239,401	\$ 1,981,573	\$ (1,143,031)
Capital Project Spending	\$ (1,030,490)	\$ (4,533,327)	\$ (1,674,653)	\$ (1,030,490)	\$ (4,533,327)	\$ (1,674,653)

Beginning Line of Credit Balance:	\$ 36,200,000.00
January Net Change	\$ -
Ending Line of Credit Balance:	\$ 36,200,000.00

PWSA 2018

(\$000)

	Actuals	Budget											Total	2018 Total Budget	Var.		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV				DEC	
Operating Receipts																	
Water & Conveyance	11,701	13,546	13,303	13,971	14,187	14,577	14,045	17,355	16,213	16,077	14,090	16,442	175,506	177,289	(1,783)		
Alcosan	5,125	5,797	5,693	5,979	6,071	6,238	6,010	7,427	6,938	6,880	6,030	7,036	75,224	75,870	(645)		
DISC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Fees	754	187	201	104	708	160	114	234	244	252	259	282	3,498	2,910	587		
Misc Other	23	300	77	77	77	77	77	77	77	77	77	77	1,097	1,151	(55)		
Total Operating Receipts	17,602	19,830	19,274	20,131	21,043	21,053	20,247	25,093	23,472	23,287	20,456	23,838	255,325	257,221	(1,896)		
Operating Expenses																	
Distribution	(1,978)	(1,450)	(1,433)	(1,599)	(1,692)	(1,685)	(1,967)	(2,386)	(1,791)	(1,433)	(1,231)	(1,131)	(19,777)	(19,303)	(474)		
Water Treatment Plant	(1,514)	(1,414)	(1,568)	(1,852)	(1,467)	(1,398)	(1,550)	(1,503)	(1,428)	(1,384)	(1,313)	(1,382)	(17,773)	(17,887)	113		
Water Quality	(111)	(264)	(266)	(247)	(209)	(219)	(227)	(249)	(222)	(194)	(203)	(196)	(2,606)	(2,794)	188		
Sewer Conveyance	(598)	(745)	(1,090)	(1,412)	(2,066)	(2,110)	(2,095)	(2,237)	(2,074)	(1,846)	(1,432)	(1,071)	(18,775)	(18,994)	220		
DISC Disbursements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Engineering	(367)	(807)	(1,003)	(788)	(837)	(889)	(1,068)	(896)	(965)	(861)	(840)	(864)	(10,184)	(10,864)	681		
Environmental Compliance	(38)	(408)	(331)	(237)	(335)	(348)	(358)	(468)	(423)	(384)	(342)	(286)	(3,959)	(4,193)	234		
Alcosan	(7,087)	(4,911)	(6,948)	(8,329)	(4,860)	(6,769)	(6,995)	(4,936)	(6,892)	(7,489)	(4,768)	(6,668)	(76,653)	(77,291)	638		
General Admin	(4,347)	(2,796)	(2,536)	(4,594)	(2,121)	(2,215)	(3,806)	(2,206)	(2,519)	(3,700)	(2,018)	(4,060)	(36,916)	(35,386)	(1,530)		
Total Operating Expenses	(16,039)	(12,794)	(15,175)	(19,058)	(13,586)	(15,632)	(18,066)	(14,883)	(16,314)	(17,290)	(12,146)	(15,659)	(186,642)	(186,712)	70		
Operating Income/(Loss)	1,563	7,036	4,099	1,073	7,457	5,421	2,181	10,210	7,159	5,997	8,310	8,179	68,683	70,508	(1,826)		
Non-operating Cash Flows																	
LESS: Debt Service & Other																	
Bond Debt Svc, Net	(749)	(21,611)	(548)	(551)	(546)	(456)	(456)	(21,569)	(461)	(461)	(462)	(463)	(48,331)	(48,419)	88		
Pennvest Debt Svc, Net	(330)	(326)	(326)	(326)	(326)	(326)	(326)	(326)	(326)	(326)	(326)	(326)	(3,911)	(3,906)	(4)		
Pvest (Disburs)/Ln Reimb - Net	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total Non-Operating Expenses	(1,079)	(21,937)	(874)	(876)	(871)	(781)	(781)	(21,894)	(786)	(787)	(788)	(788)	(52,242)	(52,325)	84		
Transfer to Restricted Funds	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(2,933)	(2,933)	0		
Net Cash Inflows/(Outflows):	239	(15,145)	2,981	(48)	6,341	4,395	1,155	(11,929)	6,128	4,966	7,278	7,147	13,508	15,250	(1,742)		
Capital Project Spending	(1,030)	(3,870)	(4,591)	(5,558)	(5,938)	(7,085)	(5,728)	(6,292)	(6,427)	(6,860)	(7,292)	(12,746)	(73,418)	(76,921)	3,503		

**PWSA Revenues and Expenses
February 2018
(Modified Cash Basis)**

	Current Month Actual	Current Month Budget	Prior Year Month Actual	2018 Current Y-T-D Actual	Current Y-T-D Budget	Prior Year Y-T-D Actual
Operating Receipts						
Water & Conveyance Utility	\$ 9,563,894	\$ 13,546,181	\$ 8,520,035	\$ 21,264,552	\$ 27,030,056	\$ 18,921,174
Alcosan Utility	5,222,954	5,796,986	3,497,136	10,347,799	11,567,308	9,390,179
DISC	(273)	0	23,084	(104)	0	511,476
Fees	289,168	186,590	186,590	1,042,926	352,854	352,854
Misc Other	349,030	300,019	38,329	371,722	377,402	112,674
Total Operating Receipts	15,424,772	19,829,776	12,265,174	33,026,894	39,327,620	29,288,357
Operating Expenses						
Distribution	(1,345,171)	(1,449,710)	(978,600)	(3,323,597)	(2,954,225)	(1,926,786)
Water Treatment Plant	(1,807,976)	(1,414,220)	(655,045)	(3,322,278)	(3,041,849)	(1,745,342)
Water Quality	(223,126)	(263,538)	(54,368)	(333,690)	(561,921)	(122,299)
Sewer Conveyance	(624,893)	(744,743)	(802,527)	(1,222,648)	(1,562,012)	(1,453,975)
DISC Disbursements	-	-	-	-	-	-
Engineering	(603,304)	(806,960)	(653,787)	(970,206)	(1,854,448)	(1,811,851)
Environmental Compliance	(15,616)	(407,892)	-	(53,230)	(679,577)	-
Alcosan Sewage Treatment	(4,362,793)	(4,911,199)	(4,572,302)	(11,449,490)	(12,636,106)	(11,850,055)
General Admin	(1,406,398)	(2,795,766)	(1,238,590)	(5,753,326)	(5,613,031)	(3,585,176)
Total Operating Expenses	(10,389,278)	(12,794,029)	(8,955,219)	(26,428,464)	(28,903,169)	(22,495,485)
Net Income/(Loss) From Operations	\$ 5,035,495	\$ 7,035,747	\$ 3,309,955	\$ 6,598,430	\$ 10,424,451	\$ 6,792,872
Non-operating Cash Inflows/Outflows						
ADD Non-Trust Interest Income	-	-	-	-	-	-
LESS Debt Service & Other						
Bond Debt Svc (Net Trust Income)	(11,166,326)	(21,611,275)	(9,831,900)	(11,915,732)	(22,448,445)	(13,850,626)
Pennvest Loan Debt Svc (Net)	(325,430)	(325,536)	(325,681)	(655,133)	(651,072)	(655,384)
Pvest (Disburs)/Ln Advances - Net	-	-	987,957	-	-	972,481
Total Non-Operating Expenses	(11,491,756)	(21,936,812)	(9,169,624)	(12,570,864)	(23,099,517)	(13,533,529)
Transfer to Restricted Funds	(244,426)	(244,426)	(262,043)	(488,852)	(488,852)	(524,085)
Net Cash Inflows/(Outflows)	\$ (6,700,687)	\$ (15,145,490)	\$ (6,121,712)	\$ (6,461,286)	\$ (13,163,917)	\$ (7,264,742)
Capital Project Spending	\$ (2,612,133)	\$ (3,869,685)	\$ (390,379)	\$ (3,642,623)	\$ (8,403,012)	\$ (2,065,032)

Beginning Line of Credit Balance:	\$ 36,200,000.00
February Net Change	\$ (3,200,000.00)
Ending Line of Credit Balance:	\$ 33,000,000.00

PWSA 2018

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	Actuals		Budget										Total	2018 Total Budget	Var.		
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC					
Operating Receipts																	
Water & Conveyance	11,701	9,564	13,303	13,971	14,187	14,577	14,045	17,355	16,213	16,077	14,090	16,442	171,524	177,289	(5,766)		
Alcosan	5,125	5,223	5,693	5,979	6,071	6,238	6,010	7,427	6,938	6,880	6,030	7,036	74,650	75,870	(1,220)		
DISC	0	(0)	0	0	0	0	0	0	0	0	0	0	(0)	0	(0)		
Fees	754	289	201	104	708	160	114	234	244	252	259	282	3,600	2,910	690		
Misc Other	23	349	77	77	77	77	77	77	77	77	77	77	1,146	1,151	(6)		
Total Operating Receipts	17,602	15,425	19,274	20,131	21,043	21,053	20,247	25,093	23,472	23,287	20,456	23,838	250,920	257,221	(6,301)		
Operating Expenses																	
Distribution	(1,978)	(1,345)	(1,433)	(1,599)	(1,692)	(1,685)	(1,967)	(2,386)	(1,791)	(1,433)	(1,231)	(1,131)	(19,672)	(19,303)	(369)		
Water Treatment Plant	(1,514)	(1,808)	(1,568)	(1,852)	(1,467)	(1,398)	(1,550)	(1,503)	(1,428)	(1,384)	(1,313)	(1,382)	(18,167)	(17,887)	(280)		
Water Quality	(111)	(223)	(266)	(247)	(209)	(219)	(227)	(249)	(222)	(194)	(203)	(196)	(2,566)	(2,794)	228		
Sewer Conveyance	(598)	(625)	(1,090)	(1,412)	(2,066)	(2,110)	(2,095)	(2,237)	(2,074)	(1,846)	(1,432)	(1,071)	(18,655)	(18,994)	339		
DISC Disbursements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Engineering	(367)	(603)	(1,003)	(788)	(837)	(889)	(1,068)	(896)	(965)	(861)	(840)	(864)	(9,980)	(10,864)	884		
Environmental Compliance	(38)	(16)	(331)	(237)	(335)	(348)	(358)	(468)	(423)	(384)	(342)	(286)	(3,566)	(4,193)	626		
Alcosan	(7,087)	(4,363)	(6,948)	(8,329)	(4,860)	(6,769)	(6,995)	(4,936)	(6,892)	(7,489)	(4,768)	(6,668)	(76,104)	(77,291)	1,187		
General Admin	(4,347)	(1,406)	(2,536)	(4,594)	(2,121)	(2,215)	(3,806)	(2,206)	(2,519)	(3,700)	(2,018)	(4,060)	(35,527)	(35,386)	(140)		
Total Operating Expenses	(16,039)	(10,389)	(15,175)	(19,058)	(13,586)	(15,632)	(18,066)	(14,883)	(16,314)	(17,290)	(12,146)	(15,659)	(184,238)	(186,712)	2,475		
Operating Income/(Loss)	1,563	5,035	4,099	1,073	7,457	5,421	2,181	10,210	7,159	5,997	8,310	8,179	66,682	70,508	(3,826)		
Non-operating Cash Flows																	
LESS Debt Service & Other																	
Bond Debt Svc, Net	(749)	(11,166)	(548)	(551)	(546)	(456)	(456)	(21,569)	(461)	(461)	(462)	(463)	(37,886)	(48,419)	10,533		
Pennvest Debt Svc, Net	(330)	(325)	(326)	(326)	(326)	(326)	(326)	(326)	(326)	(326)	(326)	(326)	(3,910)	(3,906)	(4)		
Pvest (Disburs)/Ln Reimb - Net	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total Non-Operating Expenses	(1,079)	(11,492)	(874)	(876)	(871)	(781)	(781)	(21,894)	(786)	(787)	(788)	(788)	(41,797)	(52,325)	10,529		
Transfer to Restricted Funds	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(2,933)	(2,933)	0		
Net Cash Inflows/(Outflows):	239	(6,701)	2,981	(48)	6,341	4,395	1,155	(11,929)	6,128	4,966	7,278	7,147	21,953	15,250	6,703		
Capital Project Spending	(1,030)	(2,612)	(4,591)	(5,558)	(5,938)	(7,085)	(5,728)	(6,292)	(6,427)	(6,860)	(7,292)	(12,746)	(72,160)	(76,921)	4,760		

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	Actuals												Total	2017 Total Budget	Var.		
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC					
Operating Receipts																	
Water & Conveyance	10,401	8,520	9,862	8,934	12,191	10,443	11,785	12,169	10,413	12,527	8,893	9,632	125,771	133,618	(7,847)		
Alcosan	5,893	3,497	5,915	4,791	4,547	5,376	5,727	6,874	5,943	5,897	5,117	4,219	63,796	70,780	(6,985)		
DISC	488	23	37	(1)	(1)	3	1	(0)	(7)	(3)	(1)	0	539	0	539		
Fees	166	187	201	104	708	161	114	254	520	126	240	65	2,846	8,718	(5,873)		
Misc Other	74	38	369	61	51	53	35	42	31	36	165	1,645	2,601	5,689	(3,089)		
Total Operating Receipts	17,023	12,265	16,384	13,889	17,496	16,036	17,662	19,339	16,900	18,583	14,415	15,561	195,551	218,786	(23,235)		
Operating Expenses																	
Distribution	(948)	(979)	(1,513)	(722)	(1,196)	(1,400)	(1,088)	(1,601)	(1,198)	(1,615)	(1,159)	(1,079)	(14,497)	(16,502)	2,005		
Water Treatment Plant	(1,090)	(655)	(2,176)	(844)	(1,131)	(796)	(829)	(1,508)	(894)	(2,093)	(845)	(1,284)	(14,145)	(16,059)	1,914		
Water Quality	(68)	(54)	(138)	(115)	(242)	(333)	(68)	(168)	(81)	(134)	(37)	(168)	(1,607)	(1,636)	29		
Sewer Conveyance	(651)	(803)	(578)	(836)	(808)	(1,107)	(848)	(945)	(950)	(1,346)	(819)	(544)	(10,234)	(10,048)	(186)		
DISC Disbursements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Engineering	(1,158)	(654)	(847)	(1,320)	(1,121)	(491)	(571)	(940)	(268)	(1,743)	(578)	(1,536)	(11,227)	(9,694)	(1,533)		
Alcosan	(7,278)	(4,572)	(6,548)	(7,854)	(4,580)	(6,160)	(6,596)	(4,627)	(6,498)	(7,062)	(4,495)	(6,284)	(72,555)	(70,780)	(1,775)		
General Admin	(2,347)	(1,239)	(1,621)	(2,959)	(1,379)	(1,153)	(3,942)	(1,829)	(1,685)	(1,641)	(3,878)	(3,285)	(26,957)	(26,703)	(254)		
Total Operating Expenses	(13,540)	(8,955)	(13,422)	(14,650)	(10,456)	(11,440)	(13,942)	(11,617)	(11,575)	(15,634)	(11,810)	(14,179)	(151,222)	(151,423)	201		
Operating Income/(Loss)	3,483	3,310	2,962	(761)	7,039	4,596	3,720	7,722	5,325	2,948	2,604	1,382	44,330	67,364	(23,034)		
Non-operating Cash Flows																	
ADD Interest Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LESS Debt Service & Other																	
Bond Debt Svc, Net	(4,019)	(9,832)	(3,019)	(3,319)	(3,028)	(2,934)	(3,207)	(9,203)	(2,701)	(3,314)	(2,947)	(1,189)	(48,712)	(49,996)	1,284		
Pennvest Debt Svc, Net	(330)	(326)	(300)	(327)	(328)	(327)	(330)	(324)	(327)	(325)	(327)	(327)	(3,898)	0	(3,898)		
Pvest (Disburs)/Ln Reimb - Net	(15)	988	0	(59)	0	(10)	0	(87)	0	0	0	(23)	794	0	794		
Total Non-Operating Expenses	(4,364)	(9,170)	(3,319)	(3,705)	(3,356)	(3,271)	(3,537)	(9,615)	(3,028)	(3,640)	(3,274)	(1,539)	(51,816)	(49,996)	(1,820)		
Transfer to Restricted Funds	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(3,145)	(3,145)	0		
Net Cash Inflows/(Outflows):	(1,143)	(6,122)	(619)	(4,728)	3,421	1,063	(79)	(2,155)	2,035	(953)	(931)	(419)	(10,631)	14,224	(24,854)		
Capital Project Spending	(1,675)	(390)	(3,039)	(1,871)	(2,632)	(1,640)	(2,510)	(2,358)	(2,525)	(953)	(2,619)	(8,202)	(30,414)	(47,880)	17,466		

**PWSA Revenues and Expenses
March 2018
(Modified Cash Basis)**

	Current Month Actual	Current Month Budget	Prior Year Month Actual	2018 Current Y-T-D Actual	Current Y-T-D Budget	Prior Year Y-T-D Actual
Operating Receipts						
Water & Conveyance Utility	\$ 14,421,628	\$ 13,302,515	\$ 9,862,296	\$ 35,686,180	\$ 40,332,571	\$ 28,783,470
Alcosan Utility	6,396,088	5,692,711	5,914,817	16,743,887	17,260,019	15,304,997
DISC	(2,474)	0	36,503	(2,578)	0	547,979
Fees	137,190	201,194	201,194	1,180,116	554,049	554,049
Misc Other	22,336	77,383	368,991	394,057	454,785	481,664
Total Operating Receipts	20,974,768	19,273,803	16,383,802	54,001,662	58,601,424	45,672,159
Operating Expenses						
Distribution	(1,604,549)	(1,432,522)	(1,513,314)	(4,928,146)	(4,386,748)	(3,440,100)
Water Treatment Plant	(1,378,741)	(1,567,956)	(2,175,865)	(4,701,019)	(4,609,805)	(3,921,207)
Water Quality	(463,970)	(266,465)	(137,873)	(797,660)	(828,386)	(260,172)
Sewer Conveyance	(726,705)	(1,090,167)	(577,996)	(1,949,353)	(2,652,179)	(2,031,971)
DISC Disbursements	-	-	-	-	-	-
Engineering	(646,253)	(1,002,837)	(847,206)	(1,616,459)	(2,857,285)	(2,659,057)
Environmental Compliance	(28,947)	(330,809)	-	(82,176)	(1,010,386)	-
Alcosan Sewage Treatment	(5,784,884)	(6,948,382)	(6,548,279)	(17,234,374)	(19,584,487)	(18,398,335)
General Admin	(1,769,409)	(2,535,878)	(1,621,154)	(7,522,735)	(8,148,909)	(5,206,330)
Total Operating Expenses	(12,403,459)	(15,175,016)	(13,421,687)	(38,831,923)	(44,078,185)	(35,917,172)
Net Income/(Loss) From Operations	\$ 8,571,309	\$ 4,098,787	\$ 2,962,115	\$ 15,169,739	\$ 14,523,239	\$ 9,754,987
Non-operating Cash Inflows/Outflows						
ADD Non-Trust Interest Income	-	-	-	-	-	-
LESS Debt Service & Other						
Bond Debt Svc (Net Trust Income)	(742,129)	(548,063)	(3,018,697)	(12,657,861)	(22,996,508)	(16,869,323)
Pennvest Loan Debt Svc (Net)	(300,294)	(325,536)	(300,294)	(955,426)	(976,609)	(955,678)
Pvest (Disburs)/Ln Advances - Net	-	-	-	-	-	972,481
Total Non-Operating Expenses	(1,042,423)	(873,600)	(3,318,991)	(13,613,288)	(23,973,117)	(16,852,520)
Transfer to Restricted Funds	(244,426)	(244,426)	(262,043)	(733,278)	(733,278)	(786,128)
Net Cash Inflows/(Outflows)	\$ 7,284,460	\$ 2,980,762	\$ (618,919)	\$ 823,174	\$ (10,183,155)	\$ (7,883,661)
Capital Project Spending	\$ (1,732,490)	\$ (4,591,297)	\$ (3,038,786)	\$ (5,375,112)	\$ (12,994,309)	\$ (5,103,818)

Beginning Line of Credit Balance:	\$ 33,000,000.00
March Net Change	\$ -
Ending Line of Credit Balance:	\$ 33,000,000.00

PWSA 2018

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	Actuals			Forecast								Total	2018 Total Budget	Var.	
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV				DEC
Operating Receipts															
Water & Conveyance	11,701	9,564	14,422	13,971	14,187	14,577	14,045	17,355	16,213	16,077	14,090	16,442	172,643	177,289	(4,646)
Alcosan	5,125	5,223	6,396	5,979	6,071	6,238	6,010	7,427	6,938	6,880	6,030	7,036	75,354	75,870	(516)
DISC	0	(0)	(2)	0	0	0	0	0	0	0	0	0	(3)	0	(3)
Fees	754	289	137	104	708	160	114	234	244	252	259	282	3,536	2,910	626
Misc Other	23	349	22	77	77	77	77	77	77	77	77	77	1,091	1,151	(61)
Total Operating Receipts	17,602	15,425	20,975	20,131	21,043	21,053	20,247	25,093	23,472	23,287	20,456	23,838	252,621	257,221	(4,600)
Operating Expenses															
Distribution	(1,978)	(1,345)	(1,605)	(1,599)	(1,692)	(1,685)	(1,967)	(2,386)	(1,791)	(1,433)	(1,231)	(1,131)	(19,844)	(19,303)	(541)
Water Treatment Plant	(1,514)	(1,808)	(1,379)	(1,852)	(1,467)	(1,398)	(1,550)	(1,503)	(1,428)	(1,384)	(1,313)	(1,382)	(17,978)	(17,887)	(91)
Water Quality	(111)	(223)	(464)	(247)	(209)	(219)	(227)	(249)	(222)	(194)	(203)	(196)	(2,763)	(2,794)	31
Sewer Conveyance	(598)	(625)	(727)	(1,412)	(2,066)	(2,110)	(2,095)	(2,237)	(2,074)	(1,846)	(1,432)	(1,071)	(18,291)	(18,994)	703
DISC Disbursements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Engineering	(367)	(603)	(646)	(788)	(837)	(889)	(1,068)	(896)	(965)	(861)	(840)	(864)	(9,623)	(10,864)	1,241
Environmental Compliance	(38)	(16)	(29)	(237)	(335)	(348)	(358)	(468)	(423)	(384)	(342)	(286)	(3,264)	(4,193)	928
Alcosan	(7,087)	(4,363)	(5,785)	(6,280)	(4,860)	(6,769)	(6,995)	(4,936)	(6,892)	(7,489)	(4,768)	(6,668)	(72,891)	(77,291)	4,400
General Admin	(4,347)	(1,406)	(1,769)	(4,594)	(2,121)	(2,215)	(3,806)	(2,206)	(2,519)	(3,700)	(2,018)	(4,060)	(34,760)	(35,386)	626
Total Operating Expenses	(16,039)	(10,389)	(12,403)	(17,009)	(13,586)	(15,632)	(18,066)	(14,883)	(16,314)	(17,290)	(12,146)	(15,659)	(179,417)	(186,712)	7,296
Operating Income/(Loss)	1,563	5,035	8,571	3,123	7,457	5,421	2,181	10,210	7,159	5,997	8,310	8,179	73,204	70,508	2,696
Non-operating Cash Flows															
LESS: Debt Service & Other															
Bond Debt Svc, Net	(749)	(11,166)	(742)	(660)	(655)	(681)	(660)	(23,934)	(681)	(571)	(572)	(572)	(41,642)	(48,419)	6,776
Pennvest Debt Svc, Net	(330)	(325)	(300)	(326)	(326)	(326)	(326)	(326)	(326)	(326)	(326)	(326)	(3,885)	(3,906)	21
Pvest (Disburs)/Ln Reimb - Net	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Non-Operating Expenses	(1,079)	(11,492)	(1,042)	(986)	(981)	(1,007)	(986)	(24,259)	(1,007)	(896)	(897)	(898)	(45,528)	(52,325)	6,798
Transfer to Restricted Funds	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(2,933)	(2,933)	0
Net Cash Inflows/(Outflows):	239	(6,701)	7,284	1,893	6,232	4,170	951	(14,294)	5,908	4,856	7,168	7,037	24,744	15,250	9,494
Capital Project Spending	(1,030)	(2,612)	(1,732)	(5,558)	(5,938)	(7,085)	(5,728)	(6,292)	(6,427)	(6,860)	(7,292)	(12,746)	(69,301)	(76,921)	7,619

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	Actuals												Total	2017 Total Budget	Var.
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			
Operating Receipts															
Water & Conveyance	10,401	8,520	9,862	8,934	12,191	10,443	11,785	12,169	10,413	12,527	8,893	9,632	125,771	133,618	(7,847)
Alcosan	5,893	3,497	5,915	4,791	4,547	5,376	5,727	6,874	5,943	5,897	5,117	4,219	63,796	70,780	(6,985)
DISC	488	23	37	(1)	(1)	3	1	(0)	(7)	(3)	(1)	0	539	0	539
Fees	166	187	201	104	708	161	114	254	520	126	240	65	2,846	8,718	(5,873)
Misc Other	74	38	369	61	51	53	35	42	31	36	165	1,645	2,601	5,669	(3,069)
Total Operating Receipts	17,023	12,265	16,384	13,889	17,496	16,036	17,662	19,339	16,900	18,583	14,415	15,561	195,551	218,786	(23,235)
Operating Expenses															
Distribution	(948)	(979)	(1,513)	(722)	(1,196)	(1,400)	(1,088)	(1,601)	(1,198)	(1,615)	(1,159)	(1,079)	(14,497)	(16,502)	2,005
Water Treatment Plant	(1,090)	(655)	(2,176)	(844)	(1,131)	(796)	(829)	(1,508)	(894)	(2,093)	(845)	(1,284)	(14,145)	(16,059)	1,914
Water Quality	(68)	(54)	(138)	(115)	(242)	(333)	(68)	(168)	(81)	(134)	(37)	(168)	(1,607)	(1,636)	29
Sewer Conveyance	(651)	(803)	(578)	(836)	(808)	(1,107)	(848)	(945)	(950)	(1,346)	(819)	(544)	(10,234)	(10,048)	(186)
DISC Disbursements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Engineering	(1,158)	(654)	(847)	(1,320)	(1,121)	(491)	(571)	(940)	(268)	(1,743)	(578)	(1,536)	(11,227)	(9,694)	(1,533)
Alcosan	(7,278)	(4,572)	(6,548)	(7,854)	(4,580)	(6,160)	(6,596)	(4,627)	(6,498)	(7,062)	(4,495)	(6,284)	(72,555)	(70,780)	(1,775)
General Admin	(2,347)	(1,239)	(1,621)	(2,959)	(1,379)	(1,153)	(3,942)	(1,829)	(1,685)	(1,641)	(3,878)	(3,285)	(26,957)	(26,703)	(254)
Total Operating Expenses	(13,540)	(8,955)	(13,422)	(14,650)	(10,456)	(11,440)	(13,942)	(11,617)	(11,575)	(15,634)	(11,810)	(14,179)	(151,222)	(151,423)	201
Operating Income/(Loss)	3,483	3,310	2,962	(761)	7,039	4,596	3,720	7,722	5,325	2,948	2,604	1,382	44,330	67,364	(23,034)
Non-operating Cash Flows															
ADD Interest Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LESS Debt Service & Other															
Bond Debt Svc, Net	(4,019)	(9,832)	(3,019)	(3,319)	(3,028)	(2,934)	(3,207)	(9,203)	(2,701)	(3,314)	(2,947)	(1,189)	(48,712)	(49,996)	1,284
Pennvest Debt Svc, Net	(330)	(326)	(300)	(327)	(328)	(327)	(330)	(324)	(327)	(325)	(327)	(327)	(3,898)	0	(3,898)
Pvest (Disburs)/Ln Reimb - Net	(15)	988	0	(59)	0	(10)	0	(87)	0	0	0	(23)	794	0	794
Total Non-Operating Expenses	(4,364)	(9,170)	(3,319)	(3,705)	(3,356)	(3,271)	(3,537)	(9,615)	(3,028)	(3,640)	(3,274)	(1,539)	(51,816)	(49,996)	(1,820)
Transfer to Restricted Funds	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(3,145)	(3,145)	0
Net Cash Inflows/(Outflows):	(1,143)	(6,122)	(619)	(4,728)	3,421	1,063	(79)	(2,155)	2,035	(953)	(931)	(419)	(10,631)	14,224	(24,854)
Capital Project Spending	(1,675)	(390)	(3,039)	(1,871)	(2,632)	(1,640)	(2,510)	(2,358)	(2,525)	(953)	(2,619)	(8,202)	(30,414)	(47,880)	17,466

PWSA Revenues and Expenses
April 2018
(Modified Cash Basis)

	Current Month Actual	Current Month Budget	Prior Year Month Actual	2018 Current Y-T-D Actual	Current Y-T-D Budget	Prior Year Y-T-D Actual
Operating Receipts						
Water & Conveyance Utility	\$ 12,655,674	\$ 13,971,330	\$ 8,933,968	\$ 48,341,854	\$ 54,303,901	\$ 37,717,438
Alcosan Utility	5,836,740	5,978,925	4,791,325	22,580,627	23,238,944	20,096,321
DISC	(17)	0	(894)	(2,595)	0	547,085
Fees	345,586	103,795	103,795	1,525,702	657,843	657,844
Misc Other	91,469	77,383	60,769	485,526	532,167	542,433
Total Operating Receipts	18,929,452	20,131,433	13,888,962	72,931,114	78,732,856	59,561,121
Operating Expenses						
Distributon	(1,397,640)	(1,822,855)	(721,784)	(6,325,786)	(6,878,956)	(4,161,884)
Water Treatment Plant	(1,388,797)	(1,971,952)	(844,334)	(6,089,816)	(7,238,647)	(4,765,541)
Water Quality	(168,727)	(339,407)	(115,349)	(966,387)	(1,778,749)	(375,521)
Sewer Conveyance	(868,514)	(1,381,369)	(835,870)	(2,817,867)	(3,884,390)	(2,867,841)
DISC Disbursements	-	-	-	-	-	-
Engineering	(961,499)	(1,126,686)	(1,320,324)	(2,577,957)	(3,982,810)	(3,979,381)
Environmental Compliance	(103,109)	(269,108)	-	(185,285)	(1,349,421)	-
Alcosan Sewage Treatment	(6,250,839)	(8,329,462)	(7,853,882)	(23,485,213)	(27,913,949)	(26,252,217)
General Admin	(2,030,691)	(4,945,528)	(2,958,688)	(9,553,426)	(13,696,801)	(8,165,018)
Total Operating Expenses	(13,169,815)	(20,186,365)	(14,650,231)	(52,001,738)	(66,723,722)	(50,567,403)
Net Income/(Loss) From Operations	\$ 5,759,637	\$ (54,933)	\$ (761,269)	\$ 20,929,376	\$ 12,009,134	\$ 8,993,718
Non-operating Cash Inflows/Outflows						
ADD Non-Trust Interest Income	-	-	-	-	-	-
LESS Debt Service & Other						
Bond Debt Svc (Net Trust Income)	(356,107)	(550,563)	(3,319,267)	(13,013,968)	(23,547,071)	(20,188,591)
Pennvest Loan Debt Svc (Net)	(326,938)	(325,536)	(326,938)	(1,282,364)	(1,302,145)	(1,282,616)
Pvest (Disburs)/Ln Advances - Net	-	-	(58,945)	-	-	913,536
Total Non-Operating Expenses	(683,045)	(876,100)	(3,705,150)	(14,296,333)	(24,849,216)	(20,557,671)
Transfer to Restrincted Funds	(244,426)	(244,426)	(262,043)	(977,703)	(977,703)	(1,048,170)
Net Cash Inflows/(Outflows)	\$ 4,832,166	\$ (1,175,458)	\$ (4,728,462)	\$ 5,655,340	\$ (13,817,785)	\$ (12,612,123)
Capital Project Spending	\$ (2,756,945)	\$ (5,557,809)	\$ (1,870,835)	\$ (8,132,057)	\$ (18,552,117)	\$ (6,974,653)

Beginning Line of Credit Balance:	\$ 33,000,000.00
April Revolver Draw:	\$ -
Funds to be Drawn through April:	\$ (4,915,837.98)
Available Line of Credit Balance:	\$ 28,084,162.02

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	Actuals				Forecast								Total	2018 Total Budget	Var.
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			
Operating Receipts															
Water & Conveyance	11,701	9,564	14,422	12,656	14,187	14,577	14,045	17,355	16,213	16,077	14,090	16,442	171,327	177,289	(5,962)
Alcosan	5,125	5,223	6,396	5,837	6,071	6,238	6,010	7,427	6,938	6,880	6,030	7,036	75,211	75,870	(658)
DISC	0	(0)	(2)	(0)	0	0	0	0	0	0	0	0	(3)	0	(3)
Fees	754	289	137	346	708	160	114	234	244	252	259	282	3,778	2,910	868
Misc Other	23	349	22	91	77	77	77	77	77	77	77	77	1,105	1,151	(47)
Total Operating Receipts	17,602	15,425	20,975	18,929	21,043	21,053	20,247	25,093	23,472	23,287	20,456	23,838	251,419	257,221	(5,802)
Operating Expenses															
Distribution	(1,978)	(1,345)	(1,605)	(1,398)	(1,886)	(1,955)	(2,451)	(2,710)	(2,034)	(1,707)	(1,490)	(1,395)	(21,953)	(22,506)	553
Water Treatment Plant	(1,514)	(1,808)	(1,379)	(1,389)	(1,733)	(1,659)	(1,672)	(1,616)	(1,559)	(1,481)	(1,455)	(1,581)	(18,846)	(19,994)	1,149
Water Quality	(111)	(223)	(464)	(169)	(316)	(266)	(284)	(290)	(267)	(246)	(251)	(249)	(3,137)	(3,950)	812
Sewer Conveyance	(598)	(625)	(727)	(669)	(2,037)	(2,082)	(2,106)	(2,251)	(2,044)	(1,816)	(1,401)	(1,039)	(17,594)	(18,661)	1,067
DISC Disbursements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Engineering	(367)	(603)	(646)	(961)	(1,341)	(1,192)	(1,442)	(1,327)	(1,340)	(1,178)	(1,073)	(1,093)	(12,565)	(13,970)	1,405
Environmental Compliance	(38)	(16)	(29)	(103)	(368)	(379)	(361)	(471)	(426)	(386)	(344)	(288)	(3,209)	(4,373)	1,164
Alcosan	(7,087)	(4,363)	(5,785)	(6,251)	(4,767)	(6,769)	(6,995)	(4,936)	(6,892)	(7,489)	(4,768)	(6,668)	(72,769)	(77,291)	4,522
General Admin	(4,347)	(1,406)	(1,769)	(2,031)	(2,373)	(2,473)	(4,813)	(2,577)	(2,875)	(4,143)	(2,316)	(4,209)	(35,334)	(39,478)	4,143
Total Operating Expenses	(16,039)	(10,389)	(12,403)	(13,170)	(14,823)	(16,776)	(20,126)	(16,179)	(17,437)	(18,446)	(13,099)	(16,521)	(185,408)	(200,223)	14,815
Operating Income/(Loss)	1,563	5,035	8,571	5,760	6,220	4,278	121	8,914	6,035	4,841	7,357	7,316	66,011	56,998	9,013
Non-operating Cash Flows															
LESS: Debt Service & Other															
Bond Debt Svc, Net	(749)	(11,166)	(742)	(356)	(667)	(675)	(715)	(23,987)	(715)	(765)	(765)	(765)	(42,068)	(48,419)	6,351
Pennvest Debt Svc, Net	(330)	(325)	(300)	(327)	(326)	(326)	(326)	(326)	(326)	(326)	(326)	(326)	(3,887)	(3,906)	20
Pvest (Disburs)/Ln Reimb - Net	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Non-Operating Expenses	(1,079)	(11,492)	(1,042)	(683)	(993)	(1,001)	(1,041)	(24,312)	(1,041)	(1,091)	(1,091)	(1,091)	(45,954)	(52,325)	6,371
Transfer to Restricted Funds	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(244)	(2,933)	(2,933)	0
Net Cash Inflows/(Outflows):	239	(6,701)	7,284	4,832	4,983	3,033	(1,164)	(15,642)	4,750	3,506	6,022	5,981	17,124	1,739	15,384
Capital Project Spending	(1,030)	(2,612)	(1,732)	(2,757)	(5,938)	(7,085)	(5,728)	(6,292)	(6,427)	(6,860)	(7,292)	(12,746)	(66,501)	(76,921)	10,420

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	Actuals												Total	2017 Total Budget	Var.		
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC					
Operating Receipts																	
Water & Conveyance	10,401	8,520	9,862	8,934	12,191	10,443	11,785	12,169	10,413	12,527	8,893	9,632	125,771	133,618	(7,847)		
Alcosan	5,893	3,497	5,915	4,791	4,547	5,376	5,727	6,874	5,943	5,897	5,117	4,219	63,796	70,780	(6,985)		
DISC	488	23	37	(1)	(1)	3	1	(0)	(7)	(3)	(1)	0	539	0	539		
Fees	166	187	201	104	708	161	114	254	520	126	240	65	2,846	8,718	(5,873)		
Misc Other	74	38	369	61	51	53	35	42	31	36	165	1,645	2,601	5,669	(3,069)		
Total Operating Receipts	17,023	12,265	16,384	13,889	17,496	16,036	17,662	19,339	16,900	18,583	14,415	15,561	195,551	218,786	(23,235)		
Operating Expenses																	
Distribution	(948)	(979)	(1,513)	(722)	(1,196)	(1,400)	(1,088)	(1,601)	(1,198)	(1,615)	(1,159)	(1,079)	(14,497)	(16,502)	2,005		
Water Treatment Plant	(1,090)	(655)	(2,176)	(844)	(1,131)	(796)	(829)	(1,508)	(894)	(2,093)	(845)	(1,284)	(14,145)	(18,059)	1,914		
Water Quality	(68)	(54)	(138)	(115)	(242)	(333)	(68)	(168)	(81)	(134)	(37)	(168)	(1,607)	(1,636)	29		
Sewer Conveyance	(651)	(803)	(578)	(836)	(808)	(1,107)	(848)	(945)	(950)	(1,346)	(819)	(544)	(10,234)	(10,048)	(186)		
DISC Disbursements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Engineering	(1,158)	(654)	(847)	(1,320)	(1,121)	(491)	(571)	(940)	(268)	(1,743)	(578)	(1,536)	(11,227)	(9,694)	(1,533)		
Alcosan	(7,278)	(4,572)	(6,548)	(7,854)	(4,580)	(6,160)	(6,596)	(4,627)	(6,498)	(7,062)	(4,495)	(6,284)	(72,555)	(70,780)	(1,775)		
General Admin	(2,347)	(1,239)	(1,621)	(2,959)	(1,379)	(1,153)	(3,942)	(1,829)	(1,685)	(1,641)	(3,878)	(3,285)	(26,957)	(26,703)	(254)		
Total Operating Expenses	(13,540)	(8,955)	(13,422)	(14,650)	(10,456)	(11,440)	(13,942)	(11,617)	(11,575)	(15,634)	(11,810)	(14,179)	(151,222)	(151,423)	201		
Operating Income/(Loss)	3,483	3,310	2,962	(761)	7,039	4,596	3,720	7,722	5,325	2,948	2,604	1,382	44,330	67,364	(23,034)		
Non-operating Cash Flows																	
ADD Interest Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
LESS Debt Service & Other:																	
Bond Debt Svc, Net	(4,019)	(9,832)	(3,019)	(3,319)	(3,028)	(2,934)	(3,207)	(9,203)	(2,701)	(3,314)	(2,947)	(1,189)	(48,712)	(49,996)	1,284		
Pennvest Debt Svc, Net	(330)	(326)	(300)	(327)	(328)	(327)	(330)	(324)	(327)	(325)	(327)	(327)	(3,898)	0	(3,898)		
Pvest (Disburs)/Ln Reimb - Net	(15)	988	0	(59)	0	(10)	0	(87)	0	0	0	(23)	794	0	794		
Total Non-Operating Expenses	(4,364)	(9,170)	(3,319)	(3,705)	(3,356)	(3,271)	(3,537)	(9,615)	(3,028)	(3,640)	(3,274)	(1,539)	(51,816)	(49,996)	(1,820)		
Transfer to Restricted Funds	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(3,145)	(3,145)	0		
Net Cash Inflows/(Outflows):	(1,143)	(6,122)	(619)	(4,728)	3,421	1,063	(79)	(2,155)	2,035	(953)	(931)	(419)	(10,631)	14,224	(24,854)		
Capital Project Spending	(1,675)	(390)	(3,039)	(1,871)	(2,632)	(1,640)	(2,510)	(2,358)	(2,525)	(953)	(2,619)	(8,202)	(30,414)	(47,880)	17,466		

Pittsburgh Water and Sewer Authority's Base Rate Filing

XI. OTHER DATA

XI.4. Provide a copy of the company's most recent operating and capital budgets.

RESPONSE:

Please see attached.

**2018 Operating Reforecast Master File
Summary**

	2018	2018			2018	2017		
	Budget	Forecast	Difference	%	Budget	Actuals	Difference	%
Receipts								
Water	109,674,239	109,674,239	-	0%	109,674,239	81,750,980	27,923,259	34%
Sewage Conveyance	67,615,260	67,615,260	-	0%	67,615,260	44,019,758	23,595,502	54%
DISC	-	-	-	#DIV/0!	-	538,717	(538,717)	-100%
ALCOSAN	75,869,702	75,869,702	-	0%	75,869,702	63,795,503	12,074,199	19%
Fees	2,910,369	2,910,369	-	0%	2,910,369	2,845,973	64,396	2%
Miscellaneous Revenue	1,151,229	1,151,229	-	0%	1,151,229	2,600,562	(1,449,333)	-56%
Total Receipts	257,220,799	257,220,799	-	0%	257,220,799	195,551,494	61,669,305	32%
Operating Expenses								
Salaries	(21,386,377)	(22,870,060)	(1,483,684)	6%	(21,386,377)	(16,071,511)	5,314,866	-33%
Benefits	(7,281,447)	(7,709,311)	(427,865)	6%	(7,281,447)	(5,439,531)	1,841,916	-34%
Direct Operating	(34,642,650)	(40,675,946)	(6,033,297)	15%	(34,642,650)	(23,134,400)	11,508,250	-50%
Inventory	(2,815,278)	(2,822,078)	(6,800)	0%	(2,815,278)	(1,425,146)	1,390,132	-98%
General & Administrative	(28,745,676)	(34,304,588)	(5,558,912)	16%	(28,745,676)	(23,760,116)	4,985,560	-21%
ALCOSAN	(77,290,985)	(77,290,985)	-	0%	(77,290,985)	(72,555,038)	4,735,948	-7%
Co-Op Payment	(7,150,000)	(7,150,000)	-	0%	(7,150,000)	(3,575,000)	3,575,000	-100%
Non-City Subsidy	(4,800,000)	(4,800,000)	-	0%	(4,800,000)	(5,260,476)	(460,476)	9%
Customer Assistance Program	(2,600,000)	(2,600,000)	-	0%	(2,600,000)	-	2,600,000	0%
Total Operating Expenses	(186,712,412)	(200,222,969)	(13,510,557)	7%	(186,712,412)	(151,221,217)	35,491,195	-23%
Net Operating Income	70,508,387	56,997,830	13,510,557	24%	70,508,387	44,330,277	26,178,110	59%
Debt Service								
Debt Service - Principal	(20,070,000)	(20,070,000)	-	0%	(20,070,000)	(16,576,470)	3,493,530	-21%
Debt Service - Interest	(26,382,293)	(26,382,293)	-	0%	(26,382,293)	(30,031,145)	(3,648,852)	12%
Debt Service - Liquidity & Remarketing	(1,406,559)	(1,406,559)	-	0%	(1,406,559)	(1,493,100)	(86,541)	6%
Debt Service - Pennvest	(3,906,434)	(3,906,434)	-	0%	(3,906,434)	(3,898,119)	8,315	0%
Revolver Interest	(560,000)	(560,000)	-	0%	(560,000)	(610,992)	(50,992)	
Pennvest Cash Flows	-	-	-	0%	-	793,929	793,929	100%
Total Debt Service	(52,325,286)	(52,325,286)	-	0%	(52,325,286)	(51,815,898)	509,388	-1%
Total Costs	(239,037,698)	(252,548,255)	(13,510,557)	5%	(239,037,698)	(203,037,115)	36,000,583	-18%
Net Cash Flow	18,183,101	4,672,544	13,510,557	289%	18,183,101	(7,485,621)	26,667,498	-357%
Cash Balance - Beginning	18,874,052	10,989,869	7,884,183	72%	18,874,052	21,620,000	(2,745,948)	-13%
Net Cash Flow	18,183,101	4,672,544	13,510,557	289%	18,183,101	(7,485,621)	25,668,722	-343%
Transfer to Reserve	(2,933,110)	(2,933,110)	-	0%	(2,933,110)	(3,144,510)	211,400	-7%
Capital Spending	(15,249,991)	-	(15,249,991)	0%	(15,249,991)	-	(15,249,991)	0%
Cash Balance - Ending	18,874,052	12,729,303	6,144,749	48%	18,874,052	10,989,869	7,884,183	72%

**2018 Operating Reforecast Master File
3 Year Operating Expenses**

2018 BUDGET

Department Name	Department Number	2018 BUDGET										Total
		Labor	Chemicals Materials Inventory	Equipment	Operating Contracts	Repair & Maintenance	Testing	Admin	Professional Services	Utilities		
Executive Director	910	\$ 216,025	\$ -	\$ -	\$ -	\$ 121,200	\$ -	\$ 821,345	\$ 1,060,009	\$ 3,600	\$ 2,222,180	
Customer Service	911	\$ 2,972,237	\$ -	\$ 81,466	\$ 12,000	\$ -	\$ -	\$ 1,076,188	\$ 2,890,253	\$ 5,580	\$ 7,037,724	
MIS	912	\$ 702,392	\$ -	\$ 262,600	\$ -	\$ 493,782	\$ -	\$ 179,400	\$ 1,124,160	\$ 144,780	\$ 2,907,115	
Finance	913	\$ 1,069,600	\$ -	\$ 18,100	\$ -	\$ -	\$ -	\$ 335,718	\$ 2,314,727	\$ 2,210	\$ 3,740,355	
Procurement	914	\$ 391,228	\$ -	\$ 8,000	\$ -	\$ -	\$ -	\$ 12,962	\$ 152,000	\$ -	\$ 564,190	
Human Resources	915	\$ 978,921	\$ -	\$ 18,500	\$ -	\$ -	\$ -	\$ 73,184	\$ 351,750	\$ 3,600	\$ 1,425,955	
Legal	916	\$ 420,229	\$ -	\$ 5,400	\$ -	\$ -	\$ -	\$ 413,221	\$ 999,000	\$ 2,400	\$ 1,840,250	
External Affairs	921	\$ 491,536	\$ -	\$ 4,000	\$ -	\$ -	\$ -	\$ 78,850	\$ 74,800	\$ 3,560	\$ 652,746	
Ops Executive	922	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Admin General	900	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 24,000	\$ -	\$ -	\$ 24,000	
Warehouse	918	\$ 381,905	\$ 7,680	\$ 23,650	\$ 1,480	\$ 1,575	\$ -	\$ 3,784	\$ -	\$ 1,788	\$ 421,862	
Water Quality (Lab)	321	\$ 890,315	\$ -	\$ -	\$ -	\$ 50,800	\$ 1,228,800	\$ 145,950	\$ 477,101	\$ 1,152	\$ 2,794,118	
Water Treatment Plant	322	\$ 3,942,469	\$ 5,420,922	\$ 155,200	\$ 1,947,900	\$ 1,048,028	\$ -	\$ 300,150	\$ 164,400	\$ 4,907,700	\$ 17,886,768	
Water Distribution	325	\$ 9,191,352	\$ 2,573,217	\$ 53,400	\$ 3,971,926	\$ 3,326,700	\$ -	\$ 34,050	\$ 116,400	\$ 36,000	\$ 19,303,045	
Sewer Operations	424	\$ 3,590,331	\$ 502,213	\$ 35,600	\$ 13,082,033	\$ 1,395,130	\$ -	\$ 24,500	\$ 304,400	\$ 60,000	\$ 18,994,208	
Engineering & Construction	930	\$ 3,091,411	\$ -	\$ 75,385	\$ 261,000	\$ 399,322	\$ -	\$ 330,584	\$ 6,704,394	\$ 2,220	\$ 10,864,316	
Environmental Compliance	999	\$ 337,872	\$ -	\$ 32,868	\$ 204,000	\$ 526,050	\$ 108,000	\$ 24,506	\$ 2,959,300	\$ -	\$ 4,192,596	
Total		\$ 28,667,823	\$ 8,504,032	\$ 774,169	\$ 19,480,339	\$ 7,362,587	\$ 1,336,800	\$ 3,878,392	\$ 19,892,694	\$ 5,174,590	\$ 94,871,427	

2018 FORECAST

Department Name	Department Number	2018 FORECAST										Total
		Labor	Chemicals Materials Inventory	Equipment	Operating Contracts	Repair & Maintenance	Testing	Admin	Professional Services	Utilities		
Executive Director	910	\$ 379,694	\$ -	\$ 3,000	\$ -	\$ 126,200	\$ -	\$ 836,345	\$ 835,009	\$ 3,600	\$ 2,183,848	
Customer Service	911	\$ 3,145,578	\$ -	\$ 22,000	\$ 232,470	\$ -	\$ -	\$ 1,158,792	\$ 2,144,419	\$ 5,400	\$ 6,708,658	
MIS	912	\$ 799,330	\$ -	\$ 668,050	\$ -	\$ 498,792	\$ -	\$ 203,400	\$ 1,634,160	\$ 144,780	\$ 3,948,512	
Finance	913	\$ 993,580	\$ -	\$ 18,100	\$ -	\$ -	\$ -	\$ 335,718	\$ 3,634,060	\$ 2,210	\$ 4,983,669	
Procurement	914	\$ 391,228	\$ -	\$ 8,000	\$ -	\$ -	\$ -	\$ 12,962	\$ 152,000	\$ -	\$ 564,190	
Human Resources	915	\$ 1,020,401	\$ -	\$ 44,320	\$ -	\$ -	\$ -	\$ 81,084	\$ 395,750	\$ 3,600	\$ 1,545,155	
Legal	916	\$ 464,980	\$ -	\$ 5,400	\$ -	\$ -	\$ -	\$ 414,221	\$ 2,849,000	\$ 2,400	\$ 3,736,001	
External Affairs	921	\$ 492,664	\$ -	\$ 4,000	\$ -	\$ -	\$ -	\$ 114,350	\$ 193,800	\$ 3,560	\$ 808,374	
Ops Executive	922	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Admin General	900	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 27,499	\$ -	\$ -	\$ 27,499	
Warehouse	918	\$ 381,905	\$ 7,680	\$ 23,650	\$ 1,480	\$ 1,575	\$ -	\$ 3,784	\$ -	\$ 1,788	\$ 421,862	
Water Quality (Lab)	321	\$ 393,878	\$ -	\$ 413,580	\$ -	\$ 89,700	\$ 2,177,501	\$ 139,525	\$ 734,404	\$ 1,152	\$ 3,949,740	
Water Treatment Plant	322	\$ 4,186,610	\$ 5,779,256	\$ 452,364	\$ 2,615,400	\$ 1,498,616	\$ -	\$ 300,100	\$ 164,400	\$ 4,997,700	\$ 19,994,446	
Water Distribution	325	\$ 10,584,939	\$ 2,764,318	\$ 149,900	\$ 5,171,926	\$ 3,566,200	\$ -	\$ 36,650	\$ 196,400	\$ 36,000	\$ 22,506,332	
Sewer Operations	424	\$ 2,984,790	\$ 502,213	\$ 110,600	\$ 13,182,033	\$ 1,443,130	\$ -	\$ 24,500	\$ 353,400	\$ 60,000	\$ 18,660,666	
Engineering & Construction	930	\$ 3,999,307	\$ -	\$ 366,439	\$ 330,000	\$ 348,029	\$ -	\$ 333,881	\$ 8,586,978	\$ 5,125	\$ 13,969,759	
Environmental Compliance	999	\$ 360,489	\$ -	\$ 34,052	\$ 204,000	\$ 526,050	\$ 108,000	\$ 31,381	\$ 3,109,300	\$ -	\$ 4,373,272	
Total		\$ 30,579,371	\$ 9,053,466	\$ 2,323,456	\$ 21,737,309	\$ 8,098,292	\$ 2,285,501	\$ 4,054,193	\$ 24,983,080	\$ 5,267,315	\$ 108,381,984	

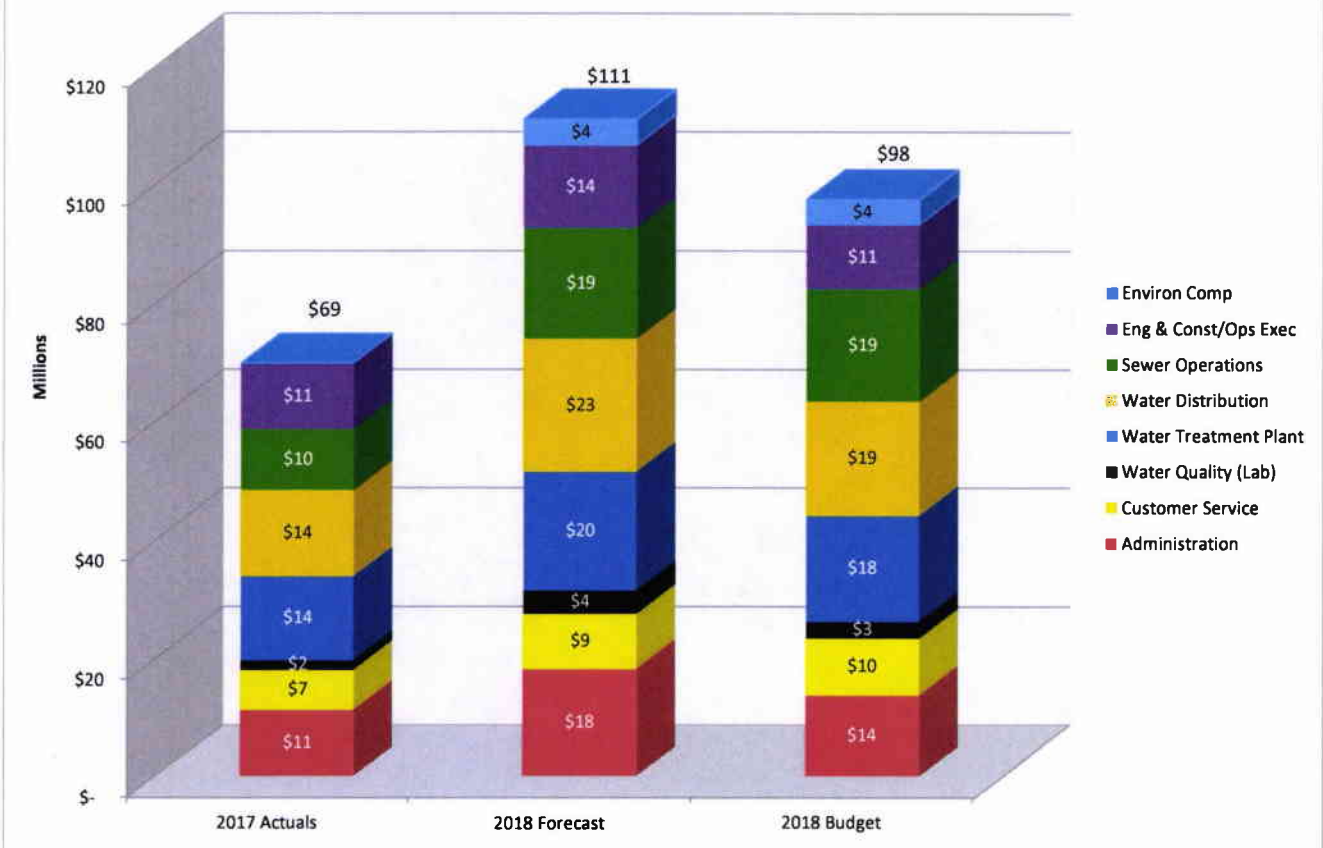
2017 ACTUALS

Department Name	Department Number	2017 ACTUALS										Total
		Labor	Chemicals Materials Inventory	Equipment	Operating Contracts	Repair & Maintenance	Testing	Admin	Professional Services	Utilities		
Executive Director	910	\$ 127,630	\$ -	\$ 2,901	\$ -	\$ 8,284	\$ -	\$ 1,556,171	\$ 1,073,167	\$ 3,163	\$ 2,771,316	
Customer Service	911	\$ 2,305,052	\$ -	\$ 242,547	\$ 1,322,264	\$ -	\$ -	\$ 1,052,656	\$ 1,823,247	\$ 46,044	\$ 6,791,810	
MIS	912	\$ 367,829	\$ -	\$ 336,882	\$ 75,329	\$ 717,979	\$ -	\$ 133,084	\$ 243,631	\$ 181,490	\$ 2,056,224	
Finance	913	\$ 452,386	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 304,989	\$ 674,845	\$ 780	\$ 1,433,000	
Procurement	914	\$ 204,618	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 13,380	\$ 63,867	\$ -	\$ 281,865	
Human Resources	915	\$ 852,279	\$ -	\$ 1,488	\$ 2,138	\$ -	\$ -	\$ 5,002	\$ 92,325	\$ 1,846	\$ 955,078	
Legal	916	\$ 220,146	\$ -	\$ 519	\$ -	\$ -	\$ -	\$ 231,600	\$ 1,777,103	\$ 1,525	\$ 2,230,893	
External Affairs	921	\$ 318,294	\$ -	\$ 4,610	\$ 10,795	\$ -	\$ -	\$ 36,708	\$ 48,925	\$ 2,915	\$ 422,247	
Ops Executive	922	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Admin General	900	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 78,989	\$ -	\$ -	\$ 78,989	
Warehouse	918	\$ 373,256	\$ 620,200	\$ -	\$ -	\$ -	\$ -	\$ 104,590	\$ -	\$ 1,128	\$ 1,099,174	
Water Quality (Lab)	321	\$ 510,721	\$ -	\$ 19,626	\$ 25,192	\$ 20,937	\$ 847,118	\$ 95,656	\$ 86,433	\$ 1,323	\$ 1,607,006	
Water Treatment Plant	322	\$ 3,413,413	\$ 3,970,586	\$ 78,609	\$ 770,544	\$ 507,581	\$ -	\$ 295,017	\$ 79,340	\$ 5,029,503	\$ 14,144,593	
Water Distribution	325	\$ 7,367,574	\$ 815,336	\$ 585,464	\$ 2,601,354	\$ 2,741,321	\$ -	\$ 266,883	\$ 82,152	\$ 37,257	\$ 14,497,341	
Sewer Operations	424	\$ 2,972,610	\$ 258,967	\$ 100,712	\$ 5,217,795	\$ 1,495,546	\$ 92	\$ 27,115	\$ 117,493	\$ 43,958	\$ 10,234,288	
Engineering & Construction	930	\$ 2,025,234	\$ -	\$ 58,790	\$ 815,373	\$ 282,667	\$ -	\$ 85,030	\$ 7,957,585	\$ 2,201	\$ 11,226,880	
Environmental Compliance	999	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total		\$ 21,511,042	\$ 5,665,089	\$ 1,432,148	\$ 10,840,784	\$ 5,774,315	\$ 847,210	\$ 4,286,870	\$ 14,120,113	\$ 5,353,133	\$ 89,830,704	

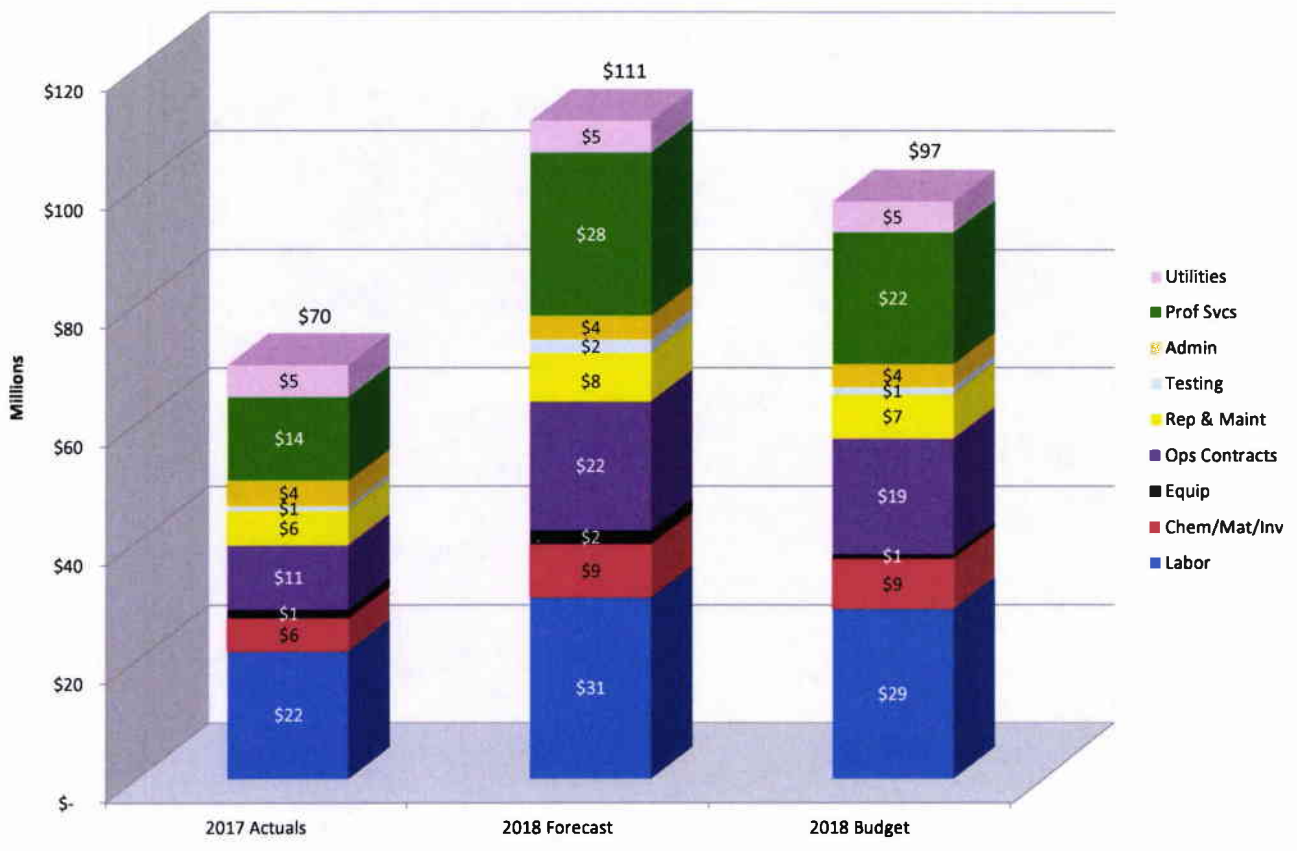
PWSA Expenses 2017-2018



PWSA Operating Expenses by Department 2017-2018



PWSA Operating Expenses 2017-2018



Pittsburgh Water and Sewer Authority's Base Rate Filing

XI. OTHER DATA

XI.5. Provide a schedule that shows the percentage of unaccounted for water for the test year and 2 prior years. Describe how this amount was determined and explain any steps taken to reduce unaccounted for water. Provide a similar analysis of infiltration for wastewater utilities.

RESPONSE:

PWSA has had significant problems with high levels of unaccounted for water and with sewer infiltration. Estimates for unaccounted for water are in excess of 50%. PWSA is developing a plan to accurately meter production, pumping and storage location as part of a comprehensive non-revenue water reduction plan. PWSA is also developing a plan to reduce inflow and infiltration. Additional details on the plan will be included in the Compliance Plan.

Pittsburgh Water and Sewer Authority's Base Rate Filing

XI. OTHER DATA

XI.6. Provide a corporate history (include the dates of original incorporation, subsequent mergers, or acquisitions, or both). Indicate all counties and cities and other governmental subdivisions to which service is provided, including service areas outside the state, and the total population in the area served.

RESPONSE:

Please see attached.

Pittsburgh Water and Sewer Authority's Base Rate Filing

XI. OTHER DATA

PWSA Corporate History

Published in the Official Statement for Water and Sewer System First Lien Revenue Refunding Bonds, Series C of 2017

Official Statement Dated December 22, 2017

The Authority is a body corporate and politic organized and existing under the Act pursuant to resolution No. 36 of the Council of the City of Pittsburgh (the "City"), duly enacted on February 6, 1984, approved by the Mayor on February 8, 1984, and effective February 16, 1984. The Secretary of the Commonwealth of Pennsylvania approved the Authority's Articles of Incorporation and issued a Certificate of Incorporation on February 17, 1984. Articles of Amendment were approved and a Certificate of Amendment was issued by the Pennsylvania Department of State on December 11, 1989, to include, among authorized projects, low head dams and facilities for generating surplus electric power. Articles of Amendment were approved and a Certificate of Amendment was issued by the Pennsylvania Department of State on May 9, 2008, to extend the term of existence of the Authority to May 21, 2045.

Under its Articles of Incorporation, the Authority is specifically authorized to acquire, hold, construct, finance, improve, maintain, operate, own and lease, either as lessor or lessee, projects of the following kinds and character: sewers, sewer systems or parts thereof, waterworks, water supply works, and water distribution systems, low head dams and facilities for generating surplus power.

The System provides water to approximately 83,000 customers or 84% of the total population in the geographic boundaries of the City. The Authority provides wastewater collection and transmission service to almost the entire City, estimated at 306,000 residents. The System does not include wastewater treatment facilities; such facilities are the responsibility of Allegheny County Sanitary Authority ("ALCOSAN"), a separate and distinct legal entity.

The Authority operates and maintains a 117 million gallon per day (MGD) rapid sand type treatment plant, a 26 MGD microfiltration plant, approximately 1,000 miles of water mains, over 25,000 valves and fire hydrants, 1 raw water pump station, 10 finished water pump stations, 4 in-ground reservoirs, 13 storage tanks, approximately 1,220 miles of sanitary, storm and combined sewers, 29,000 manholes, 27,000 catch basins and inlets, 38 combined sewer overflow outfalls, 185 storm outfalls, and four wastewater pump stations.