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

PITTSBURGH WATER AND SEWER AUTHORITY

YEARS ENDED DECEMBER 31, 2017 AND 2016

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MaherDuessel

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.

Maher 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

STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 2017 AND 2016

	2017	2016
Assets		
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		
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
Total current liabilities	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
Total noncurrent liabilities	860,651	820,815
Total Liabilities	923,613	888,100
Net Position		
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

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.

PITTSBURGH WATER AND SEWER AUTHORITY

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	40,793	49,162
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	(2,549)	(439)
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	(42,424)	(77,025)
Increase (Decrease) in Cash and Cash Equivalents	(4,180)	(28,302)
Cash and Cash Equivalents:		
Beginning of year	33,520	61,822
End of year	$ 29,340	$ 33,520
Consists of:		
Restricted cash and cash equivalents	$ 18,264	$ 11,900
Unrestricted cash and cash equivalents	11,076	21,620
	$ 29,340	$ 33,520
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	$ 40,793	$ 49,162
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.

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

<u>Reporting Entity</u>

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.

<u>Basis of Accounting and Measurement Focus</u>

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

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

Classification of Net Position

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

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

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

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

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

<u>Deposits and Investments</u>

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.

<u>Fair Value Measurements</u>

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.

<u>Premiums and Discounts</u>

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.

<u>Deferred Charge on Refunding</u>

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.

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 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.

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 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.

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 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.

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

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	$ 676,798	$ 30,811	$ (17,802)	$ 689,807

	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	$ 653,548	$ 44,500	$ (21,250)	$ 676,798

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

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

6. Payroll and Related Obligations

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

	Balance at December 31, 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
	$ 1,499	$ 312	$ 1,811	$ 1,217

	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
	$ 1,514	$ (15)	$ 1,499	$ 924

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 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 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.

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.

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:

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

	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 21, 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

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.

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

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
	683,313	384,195	4,150	(397,307)	674,351
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
	743,863	488,052	4,150	(401,964)	834,101
Unamortized bond (discount) premium	11,912	23,374	-	(3,210)	32,076
Total bonds and loans, net	$ 755,775	$ 511,426	$ 4,150	$ (405,174)	$ 866,177

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

	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
	697,636	-	4,377	(18,700)	683,313
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
	749,763	12,569	4,377	(22,846)	743,863
Unamortized bond (discount) premium	13,523	23	-	(1,634)	11,912
Total bonds and loans, net	$ 763,286	$ 12,592	$ 4,377	$ (24,480)	$ 755,775

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

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

	Revenue Bonds		
	Principal	Interest	Total
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		
	Principal	Interest	Total
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

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

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

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

	Capital Lease		
	Principal	Interest	Total
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
	$ 6,331	$ 1,378	$ 7,709

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
	$ 78,431	$ 20,930

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

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:

	2017	2016
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
	$ 34,913	$ 36,966

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:

	2017	2016
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
	$ 29,948	$ 26,337

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.

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	
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	

* - 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.

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

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 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.

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.

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.

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.

- 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 trusteed 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

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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:

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

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

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

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

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

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

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.

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

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
	(29,609)	(5,395)
Restricted assets:		
Operating reserve account	12,654	9,418
Other funds	586	581
	13,240	9,999
Unrestricted	(27,467)	(42,127)
Total net position	$ (43,836)	$ (37,523)

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 is desires not to extend the lease. The general terms of the lease require the lessor to provide for utilities, building repairs, maintenance, and real estate taxes.

(DOLLARS EXPRESSED IN THOUSANDS UNLESS OTHERWISE INDICATED)

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

2018	$	661
2019		661
2020		661
2021		661
2022		667
2023-2027		3,252
	$	6,563

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 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 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).

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 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

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

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)