

BOSTON WATER AND SEWER COMMISSION

Financial Statements, Required Supplementary Information
and Other Supplemental Information

December 31, 2016 and 2015

(With Independent Auditors' Report Thereon)

BOSTON WATER AND SEWER COMMISSION

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INDEPENDENT AUDITORS' REPORT

To the Commissioners of
Boston Water and Sewer Commission
Boston, Massachusetts

Report on Financial Statements

We have audited the accompanying financial statements of Boston Water and Sewer Commission (the "Commission"), which comprise the statements of net position for the years ended December 31, 2016 and 2015, the related statements of revenues, expenses and change in net position and cash flows for the years then ended, and the related notes to the financial statements, which collectively comprise the Commission'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.

Auditors' 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 and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. 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 auditors' 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 Boston Water and Sewer Commission as of December 31, 2016 and 2015, and the respective change in net position and cash flows thereof for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that Management's Discussion and Analysis on pages 4 through 8, the schedule of proportionate share of the net pension liability on page 43, and the schedule of contributions on page 44 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Government 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 historic 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 with 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.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Boston Water and Sewer Commission's basic financial statements. The accompanying supplemental schedule of revenues and expenses on page 45 is presented for purposes of additional analysis and is not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the financial statements as a whole.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated December 1, 2017 on our consideration of Boston Water and Sewer Commission's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Boston Water and Sewer Commission's internal control over financial reporting and compliance.

O'Connell and Duen, P.C.

**Certified Public Accountants
Braintree, Massachusetts**

December 1, 2017

BOSTON WATER AND SEWER COMMISSION

Management's Discussion and Analysis

Required Supplementary Information

December 31, 2016 and 2015

(Unaudited)

Overview

Upon its creation in 1977, Boston Water and Sewer Commission (the "Commission") assumed the responsibility to provide water distribution, wastewater collection and storm water drainage services in the City of Boston (the "City").

The Commission has realized a rate basis surplus from its operation in each year since its inception. In accordance with the Boston Water and Sewer Reorganization Act of 1977 (the Enabling Act), the Commission applies audited surpluses to reduce its rates in succeeding years.

To accommodate the rate making process, the Commission follows the accounting standards set forth in Governmental Accounting Standards Board Statement No. 62 ("GASB 62"), *Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements*. GASB 62 allows certain (a) revenues provided for future allowable costs to be deferred until the costs are actually incurred (deferred credits) and (b) costs incurred to be capitalized if future recovery is reasonably assured (deferred charges).

The statements of net position provide information on the assets and liabilities of the Commission, with net position reported as the difference between assets and liabilities. The statements of operations of the Commission reflect all revenues earned and all expenses incurred.

Condensed financial information for the most recent fiscal years is presented in this section of the report.

Condensed Financial Information (in thousands)

	<u>2016</u>	<u>2015</u>	<u>2014</u>
Current assets	\$ 319,075	287,022	296,050
Capital assets, net	<u>1,337,352</u>	<u>1,302,178</u>	<u>1,256,782</u>
Total assets	<u>1,656,427</u>	<u>1,589,200</u>	<u>1,552,832</u>
Total deferred outflows	<u>58,417</u>	<u>68,553</u>	<u>42,292</u>
Current liabilities	64,382	93,966	60,148
Noncurrent liabilities	<u>575,092</u>	<u>520,903</u>	<u>562,165</u>
Total liabilities	<u>639,474</u>	<u>614,869</u>	<u>622,313</u>
Total deferred inflows	<u>682,079</u>	<u>652,233</u>	<u>600,022</u>
Net position:			
Invested in capital assets, net of related debt	755,338	764,282	724,198
Restricted	103,782	100,161	96,277
Unrestricted net deficit	<u>(465,829)</u>	<u>(473,792)</u>	<u>(447,686)</u>
Total net position	<u>\$ 393,291</u>	<u>390,651</u>	<u>372,789</u>

BOSTON WATER AND SEWER COMMISSION

Management's Discussion and Analysis

Required Supplementary Information

December 31, 2016 and 2015

(Unaudited)

During the year, the Commission saw an increase in total assets and in total liabilities, resulting in a increase in total net position of \$2.6 million, or 0.7%. In 2015, net position totaled \$390.7 million, an increase of \$17.9 million, or 4.8% from 2014. The Commission's 2016 operations resulted in a rate basis surplus of \$689,086 compared to \$521,428 in 2015.

Since inception, the Commission has invested in various capital assets, including capital improvement projects, machinery and equipment, buildings, and improvements. These investments, net of accumulated depreciation, totaled \$1.3 billion at December 2016, which is 2.7% higher than in 2015. In 2015, these investments also totaled \$1.3 billion, an increase of \$48.8 million, or 3.6% over the 2014 total investment in capital assets. These increases in capital assets are the result of continuous upgrades of the Commission owned water and sewer infrastructure.

Total operating revenues in 2016 were \$361.6 million, which is 3.6% greater than in 2015. Total operating revenues in 2015 were \$349.0 million, which is 6.7% greater than 2014. Operating revenues consist of water and sewer revenue, late charge revenue, fire pipe revenue and other income. Water and sewer revenue in 2016 and 2015 represented 96.8% and 96.9% of total operating revenues, respectively. The increases in 2016 and 2015 operating revenues were primarily driven by a 3.0% and 5.0% average rate increase, respectively.

Total operating expenses in 2016 were \$314.1 million, which represents an increase of 7.4% from 2015. The increase in 2016 operating expenses was primarily due to a combined additional spending of 8.8%, or \$24.1 million in three line items (operations, maintenance and Massachusetts Water Resources Authority ("MWRA") assessment) coupled with a reduction of pension expenses related to GASB 68. Total operating expenses in 2015 were \$292.6 million, which represents an increase of 1.4% from 2014. This increase in 2015 expenses was driven primarily due to a combined additional spending of 19.7%, or \$12.8 million in three line items (operations, maintenance and Massachusetts Water Resources Authority ("MWRA") assessment) coupled with a reduction of pension expenses related to the enactment of GASB 68. Operating expenses consist of operations and maintenance, MWRA assessment, depreciation and amortization. The MWRA assessment is the largest expense incurred by the Commission, representing 67.0% and 70.7% in 2016 and 2015, respectively, of total operating expenses.

In 2016 and 2015, over 84% of water provided by MWRA was billable to customers. Since its inception, the Commission has maintained the percentage of billable water at 78% and is continuing to take steps to improve the amount of billable water, including replacement of old and defective meters and implementation of a comprehensive leak detection and repair program.

BOSTON WATER AND SEWER COMMISSION

Management's Discussion and Analysis

Required Supplementary Information

December 31, 2016 and 2015

(Unaudited)

Condensed Financial Information

(in thousands)

	<u>2016</u>	<u>2015</u>	<u>2014</u>
Operating revenues:			
Water and sewer usage	\$ 349,948	338,220	317,224
Other	11,694	10,780	9,997
Operating expenses	<u>(314,169)</u>	<u>(292,641)</u>	<u>(288,549)</u>
Excess operating revenues	47,473	56,359	38,672
Investment income	3,903	2,934	5,215
Interest expense	<u>(19,637)</u>	<u>(19,769)</u>	<u>(18,697)</u>
Total nonoperating net expense	<u>(15,734)</u>	<u>(16,835)</u>	<u>(13,482)</u>
Excess revenues before capital grants, contributions and transfer requirements	31,739	39,524	25,190
Capital grants and contributions	8,367	30,549	3,355
Excess revenues used to fund reserves and other deferrals	(37,298)	(52,079)	(31,454)
Change in accumulated revenues used to offset future rates	<u>(168)</u>	<u>(132)</u>	<u>(178)</u>
Change in net position	2,640	17,862	(3,087)
Net position, beginning of year	<u>390,651</u>	<u>372,789</u>	<u>375,876</u>
Net position, end of year	<u>\$ 393,291</u>	<u>390,651</u>	<u>372,789</u>

Capital Assets

In fiscal year 2016, major Commission project additions totaled \$38.1 million, of which \$23.2 million was financed with bond proceeds. Major project expenditures (in millions) are as follows:

Relay of water mains	\$ 15.0
Relining of water mains	-
Rehabilitation/replacement of sewers or storm drains	12.4
Interceptor improvements	2.1
Separation of combined sewers	3.2
Infiltration and inflow	-
Meter replacement	<u>5.4</u>
	<u>\$ 38.1</u>

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(Unaudited)

The Commission's 2017-2019 capital budget includes projected expenditures of \$206.4 million for infrastructure and capital projects. The major projects are for the rehabilitation of water mains and the replacement/rehabilitation of the sewer system. Some water projects are financed on a pay-as-you go basis combined with interest free loans for water rehabilitation provided by the MWRA. The majority of the sewer improvements along with the installation of a new radio frequency meter reading system will be financed through bond proceeds. However, there are sewer improvements that are funded through the utilization of the MWRA loan programs. Please refer to footnote 4 for more detailed capital asset activity.

Debt Plan

The Commission is empowered by the Enabling Act to issue bonds and notes payable solely constituted on the general obligation of the Commission. The Commission has no legal restrictions concerning the amount of debt, which it may have outstanding, subject to the coverage requirements described below.

The Commission issues General Revenue Bonds to finance portions of its capital improvement projects. The Commission's 2017-2019 capital budget, which totals \$206.4 million, anticipates that projects totaling \$147.3 million, or 71.4% of the Commission's 2017-2019 capital budget, will be funded from bond proceeds. The 2017 budget for debt service is \$51.1 million. Please refer to footnote 5 for more detailed long-term debt information.

The Commission currently has ten series of General Revenue Bonds outstanding at the end of 2016, totaling approximately \$507.0 million as follows (in millions):

1993 Series A	\$	21.2
1994 Series A		18.6
2009 Series A		13.0
2009 Series B		24.9
2010 Series A		6.3
2012 Series A		105.0
2014 Series A		100.0
2015 Series A		72.8
2016 Series A		60.2
2016 Series B		85.0
	\$	<u>507.0</u>

Debt Service Coverage Requirements

The Commission's bond covenants require that rates and charges be at least sufficient to provide revenues (i) to pay all current expenses of the Commission, (ii) to pay the principal of, premium if any, and interest on all bonds issued by the Commission as they become due and payable, (iii) to create and maintain such reasonable reserves as may be reasonably required by any trust agreement or resolution securing bonds, (iv) to provide funds for paying the cost of all necessary repairs, replacements and renewal of the systems and (v) to pay or provide for any and all amounts which the Commission may be obligated to pay or provide for by law or contract. The Commission is also required to establish and maintain rates and charges at levels sufficient so that total net revenues in each year during which bonds are outstanding will equal at least 125% of (1) the bond debt service

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(Unaudited)

requirement during such year less (2) the amount, if any, of bond proceeds available to pay interest becoming due in such year on bonds outstanding as of the first day of such year. The Commission has exceeded the 125% debt service coverage requirement of the Resolution in each year since its inception in 1977.

Additional Bonds and Refunding Bonds

The Enabling Act permits the issuance of additional bonds for paying the cost of any project, making deposits in various funds established under the Enabling Act, paying costs of issuance, paying the principal, premium and interest on any notes issued in anticipation of additional bonds, or any combination of the above.

Refunding bonds may also be issued by the Commission only upon certifying that the aggregate debt service in each fiscal year in which Refunding Bonds are outstanding will not be increased as a result of the issuance of the Refunding Bonds; provided that, in lieu of such certification, the Commission may deliver to the Trustee certificates satisfying the conditions described above for the issuance of additional bonds.

Budgets and Rates

The Commission is required by law to be self-sustaining to set its rates at a level sufficient to cover expenses and debt service requirements each year.

In 2006 the Commission modified its inclining block rate structure. The number of rate blocks was reduced from ten to six, thereby making the structure easier to understand for customers while still promoting water conservation and generating sufficient revenue. In 2016 and 2015, the Commission increased its water and sewer rates by an average of 3.0% and 5.0% respectively. The major reasons behind these increases were: (i) the increase in assessment paid to the MWRA, and (ii) the decline in water sales due to general water conservation efforts of individuals and businesses throughout the City.

Effective January 1, 2017, the Commission increased its water and sewer rates by an average of 2.4%.

Credit Ratings

The Commission's revenue bonds are rated "Aa1" by Moody's Investors Service, "AA+" by Standard and Poor's and "AA+" by Fitch Ratings.

Contacting the Commission's Financial Management

This report is designed to provide our bondholders, customers and other interested parties with a general overview of the Commission's finances and to demonstrate the Commission's accountability for the revenue it receives. If you have questions about this report or need additional information, contact Boston Water and Sewer Commission Finance Department in writing at 980 Harrison Avenue, Boston, MA 02119, or by telephone 617-989-7000, or on the web at www.bwsc.org.

BOSTON WATER AND SEWER COMMISSION

Statements of Net Position

December 31, 2016 and 2015

Assets	2016	2015
Current assets:		
Cash and cash equivalents (Note 11)	\$ 8,343,002	8,646,589
Restricted cash and investments (Notes 5 and 11)	260,419,706	229,384,295
Accounts receivable, net:		
Customers, less allowance of \$2,731,284 in 2016 and 2015 (Note 1)	22,867,815	21,425,174
Unbilled revenues, less allowance of \$1,702,361 in 2016 and 2015	26,740,428	26,996,634
Prepaid expenses	704,032	569,870
Total current assets	319,074,983	287,022,562
Noncurrent assets:		
Capital assets (Note 4):		
Depreciable, net	1,215,562,374	1,135,194,778
Nondepreciable	121,788,889	166,982,457
Total noncurrent assets	1,337,351,263	1,302,177,235
Total Assets	1,656,426,246	1,589,199,797
Deferred Outflows of resources		
Deferred outflows (Note 2)	58,416,958	68,553,363
	58,416,958	68,553,363
Liabilities		
Current liabilities:		
Accounts payable	17,662,374	20,926,975
Other accrued liabilities	12,126,058	15,932,360
Commercial paper notes (Note 6)	—	25,000,000
Current portion of long-term notes (Note 5)	8,089,510	8,778,755
Current portion of revenue bonds (Note 5)	26,503,568	23,327,699
Total current liabilities	64,381,510	93,965,789
Noncurrent liabilities:		
Long-term notes (Note 5)	21,297,019	25,511,128
Revenue bonds, net (Note 5)	526,122,589	455,277,025
Net pension liability (Note 9)	26,503,599	38,931,280
Other long-term liabilities (Note 13)	1,168,599	1,183,508
Total noncurrent liabilities	575,091,806	520,902,941
Total Liabilities	639,473,316	614,868,730
Deferred Inflows of resources		
Deferred inflows (Note 3)	682,078,984	652,233,335
	682,078,984	652,233,335
Commitments and contingencies (Notes 12, and 14)		
Net Position		
Net position:		
Invested in capital assets, net of related debt	755,338,577	764,282,627
Restricted for debt service	51,558,245	48,538,724
Restricted for capital assets	199,829	200,044
Restricted for debt covenants	52,023,329	51,422,141
Unrestricted net deficit	(465,829,076)	(473,792,441)
Total Net Position	\$ 393,290,904	390,651,095

See accompanying notes to financial statements

BOSTON WATER AND SEWER COMMISSION
Statements of Revenues, Expenses and Change in Net Position
Years ended December 31, 2016 and 2015

	<u>2016</u>	<u>2015</u>
Operating revenues:		
Water and sewer usage (Note 1)	\$ 349,947,915	338,220,862
Fire pipe	4,601,031	4,486,066
Other	7,093,016	6,294,690
Total operating revenues	<u>361,641,962</u>	<u>349,001,618</u>
Operating expenses:		
Operations	73,988,041	59,240,716
Maintenance	7,289,132	6,686,471
MWRA assessment (Note 7)	212,475,077	206,839,502
Depreciation and amortization	20,416,904	19,875,281
Total operating expenses	<u>314,169,154</u>	<u>292,641,970</u>
Excess operating revenues	<u>47,472,808</u>	<u>56,359,648</u>
Nonoperating revenue (expense):		
Investment income:	3,903,063	2,933,609
Interest expense	(19,637,265)	(19,769,119)
Total nonoperating net expense	<u>(15,734,202)</u>	<u>(16,835,510)</u>
Excess revenues before capital grants and contributions and transfer requirements	31,738,606	39,524,138
Capital grants and contributions: (Note 1)	8,366,915	30,549,566
Excess revenues before transfer requirements	<u>40,105,521</u>	<u>70,073,704</u>
Excess revenues used to fund reserves and other deferrals (Note 3)	(37,298,053)	(52,078,807)
Change in accumulated revenues used to offset future rates (Note 3)	(167,659)	(132,363)
Change in net position	<u>2,639,809</u>	<u>17,862,534</u>
Net position, beginning of year	390,651,095	372,788,561
Net position, end of year	<u>\$ 393,290,904</u>	<u>390,651,095</u>

See accompanying notes to financial statements.

BOSTON WATER AND SEWER COMMISSION

Statements of Cash Flows

Years Ended December 31, 2016 and 2015

	<u>2016</u>	<u>2015</u>
Cash flows from operating activities:		
Receipts from customers	\$ 360,912,066	351,913,896
Payments to suppliers	(259,430,410)	(258,160,024)
Payments to employees	(58,866,231)	(40,043,576)
	<hr/>	<hr/>
Net cash provided by operating activities	42,615,425	53,710,296
Cash flows from investing activities:		
Investment income	5,442,084	2,933,609
Sales of investments	196,043,371	206,934,979
Purchases of investments	(206,632,924)	(196,043,371)
	<hr/>	<hr/>
Net cash provided by (applied to) investing activities	(5,147,469)	13,825,217
Cash flows from capital and related financing activities:		
Purchase of capital assets	(57,726,344)	(66,292,967)
Proceeds from long-term notes	3,875,400	3,875,400
Proceeds from revenue bonds	166,036,408	86,352,138
Payment of long-term notes	(8,501,646)	(9,209,612)
Payment of revenue bonds	(85,800,000)	(94,645,000)
Proceeds from (payments of) commercial paper, net	(25,000,000)	25,000,000
Capital grants and contributions	8,089,806	5,947,910
Payment of interest	(19,292,419)	(20,208,154)
	<hr/>	<hr/>
Net cash applied to capital and related financing activities	(18,318,795)	(69,180,285)
Net increase (decrease)	19,149,161	(1,644,772)
Cash and cash equivalents, beginning of year	102,216,120	103,860,892
	<hr/>	<hr/>
Cash and cash equivalents, end of year	\$ 121,365,281	102,216,120
	<hr/>	<hr/>
Reconciliation of operating income to net cash provided by operating activities:		
Excess operating revenues	\$ 47,472,808	56,359,648
Adjustment to reconcile operating income to net cash:		
Depreciation and amortization	20,416,904	19,875,281
Deferred outflows of resources	(5,644,699)	(12,638,087)
Change in assets and liabilities:		
Accounts receivable, net	(1,442,641)	631,652
Unbilled revenues	256,206	2,272,663
Prepaid expenses	(134,162)	(14,441)
Accounts payable	(1,715,253)	604,179
Other accrued liabilities	(4,151,148)	7,964,857
Other long-term liabilities	(14,909)	(7,787,363)
Net pension activity	(12,427,681)	(13,558,093)
	<hr/>	<hr/>
Net cash provided by operating activities	\$ 42,615,425	53,710,296
Noncash capital and related financing activities:		
Bond issuance costs	\$ 456,543	391,444
MCWT subsidized loan repayments (Note 4)	\$ 277,109	454,074
	<hr/>	<hr/>
Cash and cash equivalents are comprised of the following:		
Cash and cash equivalents	\$ 8,343,002	8,646,589
Money market and cash investments in restricted cash and investments	59,149,618	74,241,476
Cash in restricted cash and investments	53,872,661	19,328,055
	<hr/>	<hr/>
Total	\$ 121,365,281	102,216,120
	<hr/>	<hr/>

See accompanying notes to financial statements.

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(1) Organization, Basis of Presentation, and Summary of Significant Accounting Policies

Boston Water and Sewer Commission (the "Commission") has the responsibility to provide water and wastewater services on a fair and equitable basis in the City of Boston (the "City") as required under the Boston Water and Sewer Reorganization Act of 1977 (the "Enabling Act").

Under the Enabling Act, the Commission is subject to regulation with respect to rates, accounting and other matters, where applicable, by the board of commissioners (the "Board"). The Board is appointed by the City's Mayor, subject to confirmation by the City Council. It regulates the rates that the Commission can charge its customers for water and sewer usage. The rates charged to customers are based on the cash requirements to cover the Commission's operations, debt service, and reserve contributions. To comply with the external financial reporting requirements of the Board, the accompanying financial statements are presented on a basis that is consistent with United States of America generally accepted accounting principles (GAAP) for regulated utilities (i.e., the accrual basis of accounting and the capital maintenance measurement focus).

To accommodate the rate-making process, the Commission follows the accounting standards set forth in Governmental Accounting Standards Board Statement No. 62 ("GASB 62"), *Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements*. GASB 62 allows certain board approved (a) revenues provided for future allowable costs to be deferred until the costs are actually incurred (deferred credits) and (b) costs incurred to be capitalized if future recovery is reasonably assured (deferred charges). Revenues and expenses appearing in the supplemental schedule of revenues and expenses – rate basis are presented in the same format as utilized in the Commission's operational budgeting and rate-setting process. The revenues and expenses shown on the statements of revenues and expenses are presented on a GAAP basis. Reconciliation between the revenues and expenses of these two operating statements for the year ended December 31, 2016 is provided below:

	Revenues	Expenses
As presented in the statements of revenues and expenses:		
Operating revenues/expenses	\$ 361,641,962	314,169,154
Investment income/interest expense	3,903,063	19,637,265
Total	365,545,025	333,806,419
Reclassifications and deferrals:		
Contributions to reserves	—	2,313,000
GAAP adjustments	(9,544,011)	(9,544,011)
Excess bond payments over depreciation and amortization	—	8,132,896
Interest expense (escrowed funds)	—	(42,908)
Investment income (escrowed funds)	(170,323)	—
Capital expenditures	—	12,565,520
Excess revenue used to offset current rates	521,428	—
Other deferrals	—	8,432,116
As presented in the supplemental schedule of revenues and expenses - rate basis	\$ 356,352,119	355,663,032

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(1) Organization, Basis of Presentation, and Summary of Significant Accounting Policies - Continued

The Enabling Act requires that any net surplus, as defined by the rate-setting process, be either turned over to the City or applied to offset water and sewer rates for the following year. The Commission has applied \$689,086 and \$521,428 for the years ended December 31, 2016 and 2015, respectively, to offset rates in the respective subsequent years.

(a) Revenue Billings

Water and sewerage fees are billed to users of the systems on a monthly cycle basis. Revenues are accrued for periods between the termination of billings for the various cycles and the end of the year. Some adjustments are made on a post-billing basis that reduce the amount of total billings. The total customer bills outstanding as of December 31, 2016 and 2015 were approximately \$25.6 million and \$24.1 million, respectively. These net billing amounts are reduced by an allowance for uncollectible accounts of approximately \$2.7 million in 2016 and 2015 to arrive at the net accounts receivable. Charges for water and sewer services provided but unbilled at year end are estimated based on a historical usage. The calculation is reduced by an allowance for the adjustment of approximately \$1.7 million in 2016 and 2015 to arrive at the net accounts receivable.

(b) Investments

Investments are stated at fair value. Fair value is based on quoted market prices.

The Commission categorizes the fair value measurements of its investments based on the hierarchy established by generally accepted accounting principles as prescribed by the GASB. The fair value hierarchy, which has three levels, is based on the valuation inputs used to measure an asset's fair value: 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. The Commission does not have any investments that are measured using Level 2 or 3 inputs as disclosed in Note 11.

(c) Capital Assets

Capital assets are stated at historical cost. Depreciation is provided on the straight-line method based upon the estimated useful lives of the various classes of assets. Maintenance and repairs are charged to expense as incurred. Major renewals or betterments over \$500 are capitalized and depreciated over their estimated useful lives.

The Commission capitalizes interest costs during construction of assets for its own use. No interest was capitalized in 2016 and 2015.

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(1) Organization, Basis of Presentation, and Summary of Significant Accounting Policies - Continued

(d) *Compensated Absences*

Employees of the Commission accumulate unused sick time (subject to certain limitations) to be used at a later date or a percentage paid in cash upon voluntary resignation and/or retirement from the Commission (subject to Commission policies and/or bargaining agreements). The liability for vacation leave is based on the amount earned but not used; for sick leave, it is based on a percentage of the amount accumulated at the statement of net position dates that would be paid to employees on termination. The liability for each amount is calculated based on the pay or salary rates in effect as of the date of the statement of net position.

(e) *Business-Type Activity Accounting*

Business-type activity funds distinguish operating revenues and expenses from non-operating items. Operating revenues and expenses result from providing services in connection with ongoing operations. All revenues and expenses not meeting this definition are reported as non-operating revenues and expenses.

(f) *Depreciation*

The Commission provides for depreciation using the straight-line method. Estimated useful lives used in computing depreciation are as follows:

	<u>Years</u>
Water:	
Works	100
Meters	10
Hydrants	40
Sewerage:	
Works	75
Pumping station	35
Buildings	40
Other	4 to 14

(g) *Cash and Cash Equivalents*

The Commission considers all highly liquid, short-term cash investments with original maturities of three months or less to be cash equivalents for purposes of the statement of cash flows.

(h) *Deferred Inflows and Outflows*

Deferred inflows and outflows represent the consumption or acquisition of net assets applicable to a future reporting period. These are typically items of an asset or liability nature for which an exchange transaction is not inherent to their realization or liquidation.

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(1) Organization, Basis of Presentation, and Summary of Significant Accounting Policies - Continued

(i) *Pensions*

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions and pension expense, information about the fiduciary net position of the State-Boston Retirement System (“SBRs”) and the additions to/deductions from the Commission's fiduciary net position have been determined on the same basis as they were reported by the SBRs. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with benefit terms. Investments are reported at fair value.

(j) *Post-Employment Benefits*

GASB 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other than Pensions* requires governments to account for other postemployment benefits (“OPEB”) on the accrual basis, rather than pay as you go (cash basis). Furthermore, the determination of the OPEB liability is dependent upon the type of plan in which the employer participates. Effective January 15, 2015, the Commission established an independent entity titled the Boston Water and Sewer Other Post-Employment Benefits (“OPEB”) Trust, to manage OPEB benefits for the Commission and assess the annual required contribution (“ARC”). To the extent the Commission does not pay the entire ARC or contractual obligation, they will have an OPEB related liability.

(k) *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 about future events. These estimates and assumptions affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, as well as reported amounts of revenues and expenses during the reporting period. Management evaluates the estimates and assumptions on an ongoing basis using historical experience and other factors that management believes to be reasonable under the circumstances. Adjustments to estimates and assumptions are made as facts and circumstances require. As future events and their effects cannot be determined with certainty, actual results may differ from the estimates used in preparing the accompanying financial statements. Significant estimates and assumptions are required as part of determining the value of inventory and accounts receivable, estimating depreciation, insurance reserves, and the net pension liability.

(l) *Contributions in Aid of Construction*

Contributions in aid of construction (“CIAC”) are additions and/or upgrades to infrastructure made by customers or developers that have been assigned to the Commission upon completion of the applicable project. Historically, CIAC has not been material to the financial statements and the contribution is not recorded. The Commission accepts the responsibility for the ongoing maintenance of CIAC.

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(1) Organization, Basis of Presentation, and Summary of Significant Accounting Policies - Continued

(m) *Capital contributions*

Capital contributions consist of special grants or loan subsidies received from the Massachusetts Water Resource Authority (“MWRA”) or Massachusetts Clean Water Trust (“MCWT”) along with funds received from property owners and developers to assist the Commission in development of their infrastructure.

(n) *New Government Accounting Pronouncements*

GASB Statement 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions* is effective for periods beginning after June 15, 2017. This Statement replaces Statement 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pension Plans* and Statement 57, *OPEB Measurements by Agent Employers and Agent Multiple-Employer Plans*. The objective of Statement 75 is to improve accounting and financial reporting by state and local governments for postemployment benefits other than pensions (“OPEB”). It also requires additional information by state and local governmental employers about financial support for OPEB that is provided by other entities. The Statement establishes standards for recognizing and measuring liabilities, deferred outflows and inflows of resources, and expense/expenditures. GASB 75 also identifies the assumptions and methods that are required to be used to project benefit payments, discount projected benefit payments to their actuarial present value and attribute that present value to periods of employee service for defined benefit OPEB. Management has not yet evaluated the effects of the implementation of this Statement.

GASB Statement 82, *Pension Issues-An Amendment of GASB Statements 67, 68 and 73* is effective for reporting periods beginning after June 15, 2016. The objective of this Statement is to address certain issues that have been raised with respect to Statements No. 67, *Financial Reporting for Pension Plans*, No. 68, *Accounting and Financial Reporting for Pensions*, and No. 73, *Accounting and Financial Reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement 68, and Amendments to Certain Provisions of GASB Statements 67 and 68*. Specifically, this Statement addresses issues regarding (1) the presentation of payroll-related measures in required supplementary information, (2) the selection of assumptions and the treatment of deviations from the guidance in an Actuarial Standard of Practice for financial reporting purposes, and (3) the classification of payments made by employers to satisfy employee (plan member) contribution requirements. Management has not completed its review of the requirements of this standard.

GASB Statement 83, *Certain Asset Retirement Obligations (AROs)* is effective for periods beginning after June 15, 2018. An ARO is a legally enforceable liability associated with the retirement of a tangible capital asset. This Statement establishes criteria for determining the timing and pattern of recognition of a liability and a corresponding deferred outflow of resources for AROs and requires that recognition occur when the liability is both incurred and reasonably estimable. Management has not completed its review of the requirements of this standard and its applicability.

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(1) Organization, Basis of Presentation, and Summary of Significant Accounting Policies - Continued

(n) New Government Accounting Pronouncements - Continued

GASB Statement 85, *Omnibus 2017* is effective for periods beginning after June 15, 2017. The objective of this Statement is to address practice issues that have been identified during implementation and application of certain GASB Statements. This Statement addresses a variety of topics including issues related to blending component units, goodwill, fair value measurement and application, and postemployment benefits (pensions and other postemployment benefits). Management has not completed its review of the requirements of this standard and its applicability.

GASB Statement 86, *Certain Debt Extinguishment Issues* is effective for reporting periods beginning after June 15, 2017. The primary objective of this Statement is to improve consistency in accounting and financial reporting for in-substance defeasance of debt by providing guidance for transactions in which cash and other monetary assets acquired with only existing resources—resources other than the proceeds of refunding debt—are placed in an irrevocable trust for the sole purpose of extinguishing debt. This Statement also improves accounting and financial reporting for prepaid insurance on debt that is extinguished and disclosures in the financial statements for debt that is defeased in substance. Management has not completed its review of the requirements of this standard.

(o) Reclassification

Certain amounts in the 2015 financial statements presentation have been reclassified to conform to the 2016 presentation.

(2) Deferred Outflows of Resources

Deferred outflows of resources represent the consumption of net assets by the Commission that are applicable to future reporting periods. Deferred outflows of resources have a positive effect on net position, similar to assets. In accordance with GASB 62, pension obligations will be recovered through future rates or matched against credits related to the specific costs in the future.

The following is a summary of deferred outflow of resources as of December 31,:

	<u>2016</u>	<u>2015</u>
Costs to be recovered through future revenues:		
Pension obligation	\$ 26,503,599	38,931,280
Differences between projected and actual earnings		
on pension plan investments	4,101,069	7,454,492
Contributions made after the plan valuation date	11,083,375	7,955,018
Deferred loss on defeasance	<u>16,728,915</u>	<u>14,212,573</u>
Total	<u>\$ 58,416,958</u>	<u>68,553,363</u>

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(3) Deferred Inflows of Resources

In accordance with Governmental Accounting Standards Board Statement No. 62 ("GASB-62"), resulted in certain revenues and expenses being removed from the statements of revenues and expenses and reflected in the statements of net position as deferred charges or deferred credits. The revenues and expenses that have been removed from the statements of revenues and expenses and added to the statements of net position as deferred credits appear in the line "Excess revenues used to fund reserves and other deferrals" on the statements of operations.

Components of excess revenues used to fund reserves and other deferrals for the years ended December 31, are as follows:

	<u>2016</u>	<u>2015</u>
Contributions to reserves	\$ 2,313,000	6,990,000
Principal payments on long-term debt	28,549,800	28,412,734
Interest paid from escrow funds	368,257	(76,122)
Capital expenditures	12,565,520	9,015,955
Depreciation and amortization	(13,878,675)	(13,356,449)
Investment income on project and escrow funds	(1,539,021)	(658,305)
Other	8,919,172	21,750,994
	<u>\$ 37,298,053</u>	<u>52,078,807</u>

Excess revenues have been designated for the purpose of the deferred credits and reserves listed below. The activity in, and the components of, these items for the years ended December 31, and is as follows:

	<u>2016</u>	<u>2015</u>
Debt service	\$ 160,917,814	158,604,816
Capital improvements	507,960,428	477,252,012
Pension related	8,143,787	15,399,510
Differences between expected and actual experience	3,912,300	—
Working capital	(1,784,431)	(1,784,431)
Self-insurance	2,240,000	2,240,000
	<u>681,389,898</u>	<u>651,711,907</u>
Reduction of future Rates	<u>689,086</u>	<u>521,428</u>
Total	<u>\$ 682,078,984</u>	<u>652,233,335</u>

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(4) Capital Assets

The cost and activities of water and sewer capital assets and their related accumulated depreciation at December 31, is as follows:

	Balance at December 31, 2015	Additions	Disposals	Reclassifications	Balance at December 31, 2016
Capital assets, not being depreciated:					
Land	\$ 5,884,243	—	—	—	5,884,243
Construction in progress	161,098,214	51,889,084	—	(97,082,652)	115,904,646
Total capital assets, not being depreciated	<u>166,982,457</u>	<u>51,889,084</u>	<u>—</u>	<u>(97,082,652)</u>	<u>121,788,889</u>
Capital assets, being depreciated:					
Buildings and improvements	67,941,817	35,869	—	—	67,977,686
Machinery and equipment	37,499,509	4,235,579	(14,352,045)	432,994	27,816,037
Infrastructure	1,378,454,927	16,465	—	96,649,658	1,475,121,050
Total capital assets, being depreciated	<u>1,483,896,253</u>	<u>4,287,913</u>	<u>(14,352,045)</u>	<u>97,082,652</u>	<u>1,570,914,773</u>
Less: accumulated depreciation for:					
Buildings and improvements	27,310,936	1,628,844	—	—	28,939,780
Machinery and equipment	30,114,729	2,416,953	(14,352,045)	—	18,179,637
Infrastructure	291,275,810	16,957,172	—	—	308,232,982
Total accumulated depreciation	<u>348,701,475</u>	<u>21,002,969</u>	<u>(14,352,045)</u>	<u>—</u>	<u>355,352,399</u>
Total capital assets being depreciated, net	<u>1,135,194,778</u>	<u>(16,715,056)</u>	<u>—</u>	<u>97,082,652</u>	<u>1,215,562,374</u>
Capital assets, net	\$ <u><u>1,302,177,235</u></u>	<u><u>35,174,028</u></u>	<u><u>—</u></u>	<u><u>—</u></u>	<u><u>1,337,351,263</u></u>

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(4) Capital Assets - Continued

	Balance at December 31, 2014	Additions	Disposals	Reclassifications	Balance at December 31, 2015
Capital assets, not being depreciated:					
Land	\$ 5,884,243	—	—	—	5,884,243
Construction in progress	178,229,299	62,864,802	—	(79,995,887)	161,098,214
Total capital assets, not being depreciated	<u>184,113,542</u>	<u>62,864,802</u>	<u>—</u>	<u>(79,995,887)</u>	<u>166,982,457</u>
Capital assets, being depreciated:					
Buildings and improvements	67,873,512	4,295	—	64,010	67,941,817
Machinery and equipment	34,427,273	3,057,567	—	14,669	37,499,509
Infrastructure	1,298,171,416	366,303	—	79,917,208	1,378,454,927
Total capital assets, being depreciated	<u>1,400,472,201</u>	<u>3,428,165</u>	<u>—</u>	<u>79,995,887</u>	<u>1,483,896,253</u>
Less: accumulated depreciation for:					
Buildings and improvements	25,682,377	1,628,559	—	—	27,310,936
Machinery and equipment	28,072,501	2,042,227	—	—	30,114,728
Infrastructure	274,048,853	17,226,958	—	—	291,275,811
Total accumulated depreciation	<u>327,803,731</u>	<u>20,897,744</u>	<u>—</u>	<u>—</u>	<u>348,701,475</u>
Total capital assets being depreciated, net	<u>1,072,668,470</u>	<u>(17,469,579)</u>	<u>—</u>	<u>79,995,887</u>	<u>1,135,194,778</u>
Capital assets, net	\$ <u><u>1,256,782,012</u></u>	<u><u>45,395,223</u></u>	<u><u>—</u></u>	<u><u>—</u></u>	<u><u>1,302,177,235</u></u>

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(5) Long-Term Obligations

(a) Revenue Bonds

The Commission issues revenue bonds to support various projects. The following is a summary of revenue bond activity for the years ended December 31, (amounts in thousands).

Description	Balance at December 31, 2015	Additions	Reductions	Balance at December 31, 2016	Amounts due within one year
Revenue bonds:					
1993 Series A, bearing interest ranging from 2.2% to 5.25% issued September 17, 1993, maturing 1993 to 2019	\$ 28,555	—	7,405	21,150	7,790
1994 Series A, bearing a variable interest rate based on the daily Municipal Market Data scal issued August 20, 1994, maturing 1995 to 2024	20,300	—	1,700	18,600	1,800
2009 Series A, bearing interest ranging from 3.0% to 5.0% issued March 26, 2009, maturing 2010 to 2028	33,825	—	20,795	13,030	3,565
2009 Series B, bearing interest ranging from 3.0% to 5.0% issued March 26, 2009, maturing 2009 to 2021	29,090	—	4,200	24,890	4,415
2010 Series A, bearing interest ranging from 2.5% to 5.0% issued January 26, 2010, maturing 2010 to 2031	55,385	—	49,115	6,270	705
2012 Series A, bearing interest ranging from 3.0% to 5.0% issued June 6, 2012, maturing 2015 to 2037	107,545	—	2,585	104,960	2,720
2014 Series A, bearing interest ranging from 3.0% to 5.0% issued July 22, 2014, maturing 2017 to 2044	100,000	—	—	100,000	100
2015 Series A, bearing interest ranging from 3.0% to 5.0% issued August 05, 2015, maturing 2023 to 2028	72,760	—	—	72,760	—
2016 Series A, bearing interest ranging from 3.0% to 5.0% issued September 13, 2016, maturing 2020 to 2031	—	60,155	—	60,155	—
2016 Series B, bearing interest ranging from 3.0% to 5.0% issued September 13, 2016, maturing 2017 to 2046	—	84,960	—	84,960	500
	<u>447,460</u>	<u>145,115</u>	<u>85,800</u>	<u>506,775</u>	<u>21,595</u>
Less unamortized issue premiums/discounts	31,145	21,378	(4,478)	45,851	4,908
Net revenue bonds	<u>\$ 478,605</u>	<u>166,493</u>	<u>81,322</u>	<u>536,490</u>	<u>26,503</u>

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(5) Long-Term Obligations - Continued

(a) Revenue Bonds - Continued

Description	Balance at December 31, 2014	Additions	Reductions	Balance at December 31, 2015	Amounts due within one year
Revenue bonds:					
1993 Series A, bearing interest ranging from 2.2% to 5.25% issued September 17, 1993, maturing 1993 to 2019	\$ 33,455	—	4,900	28,555	7,405
1994 Series A, bearing a variable interest rate based on the daily Municipal Market Data scal issued August 20, 1994, maturing 1995 to 2024	21,900	—	1,600	20,300	1,700
2009 Series A, bearing interest ranging from 3.0% to 5.0% issued March 26, 2009, maturing 2010 to 2028	75,070	—	41,245	33,825	3,555
2009 Series B, bearing interest ranging from 3.0% to 5.0% issued March 26, 2009, maturing 2009 to 2021	39,465	—	10,375	29,090	4,200
2010 Series A, bearing interest ranging from 2.5% to 5.0% issued January 26, 2010, maturing 2010 to 2031	91,485	—	36,100	55,385	550
2012 Series A, bearing interest ranging from 3.0% to 5.0% issued June 6, 2012, maturing 2015 to 2037	107,970	—	425	107,545	2,585
2014 Series A, bearing interest ranging from 3.0% to 5.0% issued July 22, 2014, maturing 2017 to 2044	100,000	—	—	100,000	—
2015 Series A, bearing interest ranging from 3.0% to 5.0% issued August 05, 2015, maturing 2023 to 2028	—	72,760	—	72,760	—
	<u>469,345</u>	<u>72,760</u>	<u>94,645</u>	<u>447,460</u>	<u>19,995</u>
Less unamortized issue premiums/discounts	23,161	13,984	6,000	31,145	3,332
Net revenue bonds	<u>\$ 492,506</u>	<u>86,744</u>	<u>100,645</u>	<u>478,605</u>	<u>23,327</u>

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(5) Long-Term Obligations - Continued

(a) Revenue Bonds - Continued

Debt principal and interest maturities for future years as of December 31, 2016 are as follows (amounts in thousands):

	Revenue bonds	
	Principal	Interest
2017	\$ 21,595	25,111
2018	22,615	24,014
2019	23,730	22,860
2020	23,210	21,654
2021	24,290	20,414
2022-2026	125,175	79,752
2027-2031	104,145	46,817
2032-2036	69,730	23,287
2037-2041	53,475	10,940
2042-2046	38,810	3,020
	\$ 506,775	277,869

Amortization expense for losses on bond refunding and amortization of bond issuance premiums for the years ended December 31, 2016 and 2015 totaled \$(586,065) and \$(1,022,463), respectively.

The Commission is required to maintain a Senior Debt Service Reserve Fund of an amount at least equal to the sum of the maximum amount of principal, or sinking fund payments, and interest due in the current or immediately succeeding year on the outstanding senior bonds issued as "fixed rate bonds", net of any accrued interest from the sale of any such bonds. As of December 31, 2016 and 2015, approximately \$44.2 million and \$41.7 million, respectively, has been deposited into the Senior Debt Service Reserve Account. This account is included with restricted cash and investments on the Statements of Net Position.

During 2016, the Commission completed the issuance of \$145,115,000 General Revenue and Refunding Bonds, 2016 Series A and 2016 Series B (the "Bonds"). The net proceeds of \$166,036,408 (after issuance costs of \$456,543, plus premium of \$21,377,951) were used to refund \$17,240,000 and \$48,565,000 of the remaining \$33,825,000 and \$55,385,000 outstanding on the 2009 and 2010 Series A bonds (the "defeased bonds") respectively and to provide permanent financing for certain capital improvements previously financed by outstanding commercial paper; provide funding for other capital improvements; provide for a deposit to the Senior Debt Service Reserve Fund; and to pay the costs associated with the issuance of the Bonds. The Bonds have principal payable annually beginning November 1, 2017, through and including November 1, 2046. The refunding reduced the Commission's total debt service by approximately \$11.1 million and resulted in an economic gain (the difference between the present value of the debt service on the old and new bonds) of approximately \$9.0 million.

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(5) Long-Term Obligations - Continued

(a) *Revenue Bonds - Continued*

During 2015, the Commission completed the issuance of \$72,760,000 General Revenue and Refunding Bonds, 2015 Series A (the "Bonds"). The net proceeds of \$86,352,138 (after issuance costs of \$391,444, plus premium of \$13,983,582) were used to refund \$39,435,000 and \$36,100,000 of the remaining of \$75,070,000 and \$91,485,000 outstanding of the 2009 and 2010 Series A bonds (the "defeased bonds") respectively and to provide permanent financing for certain capital improvements previously financed by outstanding commercial; provide funding for other capital improvements; provide for a deposit to the Senior Debt Service Fund; and to pay the costs associated with the issuance of the Bonds. The Bonds have principal payable annually beginning November 1, 2023, through and including November 1, 2028. The refunding reduced the Commission's total debt service by approximately \$6.6 million and resulted in an economic gain (the difference between the present value of the debt service on the old and new bonds) of approximately \$5.4 million.

(b) *Prior Year Debt Refunding (Defeasements)*

In the aggregate, \$302,545,000 remains outstanding at December 31, 2016, on bond issues that were defeased "in-substance" in prior years.

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(5) Long-Term Obligations - Continued

(c) *Restricted Cash and Investments*

The Commission has established both trustee and non-trustee funds with investments, principally short-term securities, which are restricted for payment of specified liabilities, capital projects, or other costs of operations. The components of the trustee and non-trustee investments at December 31, are as follows:

	<u>2016</u>	<u>2015</u>
Trusted:		
U.S. government obligations	\$ 27,992,610	12,969,615
U.S. government agency obligations	97,089,915	98,285,469
Money market	57,008,738	71,684,025
Repurchase agreements	8,416,250	8,416,250
	<u>190,507,513</u>	<u>191,355,359</u>
 Nontrusted:		
U.S. government obligations	100,067	100,039
U.S. government agency obligations	1,479,315	1,423,425
Cash	53,872,660	19,328,055
Money market	2,140,881	2,557,451
Open-ended mutual funds	12,319,270	14,619,966
	<u>69,912,193</u>	<u>38,028,936</u>
Restricted cash and investments	260,419,706	229,384,295
Less trustee and non-trustee cash	<u>(53,872,660)</u>	<u>(19,328,055)</u>
Trustee and non-trustee investments	\$ <u>206,547,046</u>	\$ <u>210,056,240</u>

(d) *Long-Term Notes Payable*

The Commission has entered into various interest-free loan agreements with Massachusetts Water Resource Authority (the "MWRA"). Under these agreements, the Commission is required to repay these loans in annual installments as part of the MWRA's Infiltration/Inflow Local Financial Assistance Program (I/I), Pipeline Assistance Program (PAP) and System Assistance Program (SAP). These programs are designed to assist service area communities with sewer system rehabilitation.

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(5) Long-Term Obligations - Continued

(d) Long-Term Notes Payable - Continued

During 1996 and 1997, the Commission executed loan agreements with the Massachusetts Clean Water Trust (“MCWT”) to finance and refinance a portion of the Commission’s water pollution abatement projects. As part of the agreement, MCWT agreed to subsidize a portion of the annual loan repayments, which the Commission records as a capital grant. As of December 31, 2016, the Commission anticipates that approximately \$0.2 million of future MCWT payments will be recognized as capital grants. The following is a summary of long-term note activities with MWRA and MCWT for the years ended December 31.:

Description	Balance at December 31, 2015	Additions	Reductions	Balance at December 31, 2016	Amounts due within one year
MWRA I/I Program Phase VI, interest free, due August 15, 2017	\$ 1,400,497	—	940,158	460,339	460,339
MWRA I/I Program Phase VII, interest free, due November 15, 2017	2,493,040	—	1,246,520	1,246,520	1,246,520
MWRA I/I Program Phase VIII, interest free, due August 15, 2018	2,413,242	—	1,037,749	1,375,493	1,037,749
MWRA S.A.P. Program, interest free, due August 15, 2026	18,679,936	3,875,400	2,325,240	20,230,096	2,712,780
MWRA P.A.P. Program, interest free, due August 15, 2020	7,751,953	—	2,462,854	5,289,099	1,847,140
MWPAT Pool III, subsidized interest, due February 1, 2017	1,551,216	—	766,234	784,982	784,982
Total long-term notes	\$ <u>34,289,884</u>	<u>3,875,400</u>	<u>8,778,755</u>	<u>29,386,529</u>	<u>8,089,510</u>

Debt principal for future years as of December 31, 2016 are as follows (amounts in thousands):

2017	\$ 8,090
2018	4,742
2019	3,815
2020	3,363
2021	2,713
2022-2026	<u>6,664</u>
	\$ <u>29,387</u>

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(5) Long-Term Obligations - Continued

(d) Long-Term Notes Payable - Continued

<u>Description</u>	<u>Balance at December 31, 2014</u>	<u>Additions</u>	<u>Reductions</u>	<u>Balance at December 31, 2015</u>	<u>Amounts due within one year</u>
MWRA I/I Program Phase VI, interest free, due August 15, 2017	\$ 2,340,656	—	940,159	1,400,497	940,158
MWRA I/I Program Phase VII, interest free, due November 15, 2017	3,739,560	—	1,246,520	2,493,040	1,246,520
MWRA I/I Program Phase VIII, interest free, due August 15, 2018	3,450,990	—	1,037,748	2,413,242	1,037,749
MWRA S.A.P. Program, interest free, due November 15, 2024	16,742,236	3,875,400	1,937,700	18,679,936	2,325,240
MWRA P.A.P. Program, interest free, due August 15, 2020	10,830,519	—	3,078,566	7,751,953	2,462,854
MWPAT Pool II, subsidized interest, due August 1, 2015	685,714	—	685,714	—	—
MWPAT Pool III, subsidized interest, due February 1, 2017	2,288,495	—	737,279	1,551,216	766,234
Total long-term notes	\$ 40,078,170	3,875,400	9,663,686	34,289,884	8,778,755

(6) Short -Term Obligations

The Commission issues commercial paper notes for the purpose of financing capital expenditures. The following represents the Commission's commercial paper notes outstanding as of December 31,:

<u>Description</u>	<u>Balance at December 31, 2015</u>	<u>Additions</u>	<u>Reductions</u>	<u>Balance at December 31, 2016</u>
Commercial paper notes, Bank of America program due September 02, 2015 through January 1, 2016	\$ 25,000,000	—	25,000,000	—
Bank of America program due March 02, 2016 through September 15, 2016	—	25,000,000	25,000,000	—
Total long-term notes	\$ 25,000,000	25,000,000	50,000,000	—

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(6) Short -Term Obligations - Continued

<u>Description</u>	<u>Balance at December 31, 2014</u>	<u>Additions</u>	<u>Reductions</u>	<u>Balance at December 31, 2015</u>
Commercial paper notes, Bank of America program due September 02, 2015 through May 17, 2016	\$ —	25,000,000	—	25,000,000
Total long-term notes	\$ —	25,000,000	—	25,000,000

(7) Massachusetts Water Resources Authority

The Commission obtains water supply and sewer treatment services from MWRA and is assessed a portion of the MWRA's actual operating and capital expenses. The assessment is based on the MWRA's fiscal year (July 1 to June 30), and payments are due to MWRA in ten equal installments excluding the months of January and July. Details of the MWRA assessments included in the statement of revenue and expenses at December 31, are as follows:

	<u>2016</u>	<u>2015</u>
Assessments based on:		
Water usage	\$ 81,488,459	77,916,969
Wastewater usage	130,986,618	128,922,533
Total	\$ 212,475,077	206,839,502

(8) Transactions with the City of Boston

Departments of the City of Boston were billed approximately \$4.3 million and \$4.2 million during 2016 and 2015, respectively, based on actual consumption.

The City provides services to the Commission, including paving and facilities rental. Operating costs billed to the Commission by the City were approximately \$1,224,000 and \$1,196,000 during the years ended December 31, 2016 and 2015, respectively, and capital costs billed by the City were approximately \$2,600,000 during the years ended December 31, 2016 and 2015.

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(9) Pension Benefits

(a) *Description of the State-Boston Retirement System Plan*

The Commission contributes to the State-Boston Retirement System (“SBRS”), a cost-sharing, multi-employer qualified defined benefit public employee retirement system established under Chapter 32 of the MGL and a member of the Massachusetts Contributory Retirement System (the "System"). Under a cost-sharing plan, pension obligations for employees of all employers are pooled and plan assets are available to pay the benefits of the employees of any participating employer providing pension benefits through the plan, regardless of the status of the employers' payment of its pension obligation to the plan. The System provides retirement, disability, and death benefits to plan members and beneficiaries. Chapter 32 of the MGL assigns authority to establish and amend benefit provisions of the plan.

The System issues a publicly available financial report, which can be obtained through the Commonwealth of Massachusetts, Public Employee Retirement Administration Commission (PERAC), 5 Middlesex Avenue, Suite 304, Somerville, Massachusetts 02145.

(b) *Benefit Provisions*

Participation in the System is mandatory for all permanent, full time, and certain part-time employees immediately upon the commencement of employment. Participants who resign from employment, or are receiving workers' compensation benefits, and who are not eligible to receive a retirement allowance are entitled to request a refund of their total contributions. In addition, those participants that resign voluntarily with less than ten years of service are entitled to receive 3% per year interest; all others receive interest which has accrued on their cumulative deductions at the regular interest rate (0.1% at December 31, 2016 and 2015).

Employees with ten or more years of service having attained age 55 are entitled to pension benefits; an early retirement is allowed upon completion of twenty years of service. The System provides for retirement allowance benefits up to a maximum of 80% of a participant's highest consecutive three year average annual rate of regular compensation (highest consecutive five-year average for those members who join the System on or after April 2, 2012). Benefit payments are based upon a participant's age, length of creditable service, level of compensation, and group classification. Participants become vested after ten years of creditable service. Effective July 1, 1998 Chapter 32 of the MGL assigns authority to establish and amend benefits provisions and grant cost-of-living increases for the plan to the SBRS.

If a member in service dies due to causes unrelated to his or her job, the surviving spouse and/or surviving dependent children may receive benefits based on the length of service, contributions and age, either in a lump sum or in the form of an annuity. In the event there are no spouse and/or dependent children named, other beneficiaries may be entitled to a lump sum distribution. Participants who become permanently and totally disabled from further duty may be eligible to receive accident or ordinary disability retirement benefits.

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(9) Pension Benefits - Continued

(b) Benefit Provisions - Continued

Accident disability is provided to members with incapacitation resulting from a work-related injury or hazard. Generally, annual pension benefits are provided based on 72% of the annual rate of regular compensation. Ordinary disability is available to any member whose permanent incapacitation is not work related and has completed ten years of creditable service. Such benefits are provided as if the member had attained the age of 55 (or actual age if over 55) based on the amount of creditable service actually earned. Limits are placed on how much an employee receiving disability benefits can earn from other sources while collecting a disability retirement pension.

(c) Contributions

Plan members are required to contribute to the SBRS at rates ranging from 5% to 9% of annual covered compensation. The Commission is required to pay into the SBRS its share of the remaining system wide actuarially determined contribution accepted by PERAC plus administration costs, which are apportioned among the employers based on active covered payroll. The contributions of plan members and the Commission are governed by Chapter 32 of the MGL. The Commission's contributions to the plan for the years ended December 31, 2016, 2015 and 2014 amounted to \$11,083,375, \$7,955,018, and \$1,851,420, respectively, representing its annual required contribution for each year along with additional funds to reduce the unfunded liability. Employee contributions, based on actuarially determined amounts, aggregated \$4,918,577 and \$3,029,268, or 14.7% and 9.31% of covered payroll in 2016 and 2015, respectively.

The Commission's funding policies have been established by Chapter 32 of the MGL. The Legislature has the authority to amend these policies. The annuity portion of the Commission's retirement allowance is funded by employees, who contribute a percentage of their regular compensation. Costs of administering the plan are funded out of plan assets. Member contributions vary depending on their date of membership:

<u>Hire Date</u>	<u>Percentage of Compensation</u>
Prior to 1975	5% of regular compensation
1975-1983	7% of regular compensation
1984 to 6/30/1996	8% of regular compensation
7/1/1996 to present	9% of regular compensation

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(9) Pension Benefits - Continued

(d) Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources

At December 31, 2016 and 2015, the Commission reported a liability of \$27 million and \$39 million, respectively, for its proportionate share of the net pension liability related to its participation in SBRS. The net pension liability was measured as of December 31, 2016 and 2015 and was determined by an actuarial valuation as of January 1, 2016 and January 1, 2014 rolled forward to December 31, 2016 and December 31, 2015, respectively. The Commission's proportion of the net pension liability was based on its share of the plan's collective pension amounts allocated on the basis of actual pension contributions made by the Commission for calendar years 2016 and 2015. The Commission's proportionate share was based on actual employer contributions to the SBRS for fiscal years 2016 and 2015 relative to total contributions of all participating employers for that fiscal year. At December 31, 2016 and 2015, the Commission's proportion was 4.2% and 2.6%, respectively.

For the years ended December 31, 2016 and 2015, the Commission recognized pension income of \$12.4 million and pension expense of \$6.2 million, respectively. The Commission follows the accounting standards set forth in GASB 62, and therefore provides for recovery of these pension liability costs as a deferred outflow of resources to be collected over the life of the liability to which it relates. At December 31, 2016 and 2015, the Commission reported deferred outflows of resources and deferred inflows of resources related to pensions as follows:

	<u>2016</u>	<u>2015</u>
<u>Deferred Outflows of Resources</u>		
Net difference between projected and actual earnings		
on pension plan investments	\$ 4,101,066	\$ 7,454,492
<u>Deferred Inflows of Resources</u>		
Differences between expected and actual experience	\$ 3,912,300	\$ -

Contributions of \$11,083,375 and \$7,955,018 are reported as deferred outflows of resources related to pensions resulting from contributions in calendar years 2016 and 2015, respectively, subsequent to the measurement date and will be recognized as a reduction of the net pension liability for the years ended December 31, 2017 and 2016, respectively. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized as increases (decreases) in pension expense as follows:

Years Ended	
June 30,	
2017	\$ 932,272
2018	932,272
2019	932,272
2020	(931,350)
2021	(558,900)
2022	(558,900)
2023	<u>(558,900)</u>
Total	<u>\$ 188,766</u>

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(9) Pension Benefits - Continued

(e) Actuarial Assumptions

The total pension liability was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3.5% for 2015 – 2016, 4.0% thereafter
Salary increases	4.0% for 2015 – 2016, 4.5% thereafter
Investment rate of return	7.5%
Post-retirement cost of living adjustment	3% of first \$13,000

For 2016 and 2015, mortality rates were based on pre-retirement of RP-2000 Employees Mortality Table projected generationally using Scale BB2D from 2009 and post-retirement of Healthy Annuitant Mortality Table projected generationally using Scale BB2D from 2009. For disabled retirees, this table is set from 2015.

The actuarial assumptions used in the valuations involve estimates of the reported amounts and assumptions about probability of occurrence of events far into the future. Amounts determined regarding the net pension liability are subject to continual revision as actual results are compared with past expectations and new projections are made.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future rates of return are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future rates of return by the target asset allocation percentage.

Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of December 31, 2016 are summarized in the following table:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-Term Expected Real Rate of Return</u>
Domestic equity	25.0%	6.49%
International developed markets equity	19.0%	7.16%
Emerging markets equity	8.0%	9.46%
Core fixed income	11.0%	1.68%
High-yield fixed income	13.0%	4.76%
Hedge fund, GTAA, Risk parity	7.0%	3.60%
Private equity	7.0%	11.04%
Real estate	<u>10.0%</u>	4.37%
	100%	

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(9) Pension Benefits - Continued

(e) Actuarial Assumptions

Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of December 31, 2015 are summarized in the following table:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-Term Expected Real Rate of Return</u>
Domestic equity	23.0%	6.49%
International developed markets equity	16.0%	7.16%
International emerging markets equity	9.0%	9.46%
Core fixed income	10.0%	1.68%
High-yield fixed income	14.0%	4.76%
Real estate	10.0%	4.40%
Hedge fund, GTAA, Risk parity	8.0%	3.60%
Private equity	7.0%	11.04%
Cash	<u>3.0%</u>	1.11%
	100%	

(g) Discount Rate

The discount rate used to measure the total pension liability was 7.50% for 2016 and 2015. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rates and employer contributions will be made at the actuarially determined contractually required rates. Based on these assumptions, the net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the Net Pension Liability to changes in the Discount Rate

The following table illustrates the sensitivity of the net pension liability, calculated using the discount rate of 7.50% as well as what the net pension liability would be if it were calculated using a discount rate that is one-percentage-point lower or one-percentage-point higher than the current rate:

2016		
1.00% Decrease	Current Discount	1.00% Increase
<u>(6.5%)</u>	<u>Rate</u>	<u>(8.5%)</u>
<u>(6.5%)</u>	<u>(7.5%)</u>	<u>(8.5%)</u>
\$41,708,760	\$26,503,599	\$13,572,498
2015		
1.00% Decrease	Current Discount	1.00% Increase
<u>(6.5%)</u>	<u>Rate</u>	<u>(8.5%)</u>
<u>(6.5%)</u>	<u>(7.5%)</u>	<u>(8.5%)</u>
\$53,872,817	\$38,931,280	\$26,329,365

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(10) Post-Employment Benefits other than Pensions (OPEB)

Plan Description

The Commission participates in the City of Boston's (the "City") health insurance program, which is administered by the City as an agent multiple-employer defined benefit other post-employment benefits plan ("OPEB plan"). Participation in the City's plan was made via an agreement between the City and the Commission and may be amended with the agreement of both parties. The City provides postemployment healthcare and life insurance benefits, in accordance with state statute and City ordinance, to participating retirees and their beneficiaries. The OPEB plan is administered by the City and does not issue a stand-alone financial report.

Medical and prescription drug benefits are provided to all eligible retirees not enrolled in Medicare through a variety of plans offered by Blue Cross Blue Shield of Massachusetts, Harvard Pilgrim HealthCare, Tufts, and Neighborhood Health Plan. Medical and prescription drug benefits are provided to retirees enrolled in Medicare through supplemental and Medicare Advantage plans offered by Blue Cross Blue Shield of Massachusetts, Tufts and Harvard Pilgrim HealthCare. The Commission also pays 50% of the retiree life insurance premium and reimburses retirees 50% of their Medicare Part B premium. Retirees, who became members of SBRS before April 2, 2012, with at least 10 years of creditable service are eligible at age 55; retirees with 20 years of creditable service are eligible at any age. Retirees, who became members of SBRS on or after April 2, 2012, with at least 10 years of creditable service, are eligible at age 60. Retirees on accidental disability retirement are eligible at any age while ordinary disability retirement requires 10 years of creditable service. The surviving spouse is eligible to receive both pre- and post-retirement death benefits for life, as well as medical and prescription drug coverage.

In 2016 the Commission's Board of Commissioners elected, approved and adopted the Boston Water and Sewer Other Post-Employment Benefits (OPEB) Trust (the "Trust"), an irrevocable, tax-exempt trust for the purpose of funding the Commission's OPEB obligations and not for the purpose of providing benefits. The Trust was established to independently hold and administer Commission assets appropriated to pay benefits and costs associated with the OPEB plan along with reducing the unfunded actuarial liability related to post-employment benefits other than pensions. In accordance with provisions of GASB 45, the creation of the Trust allowed for the Commission's OPEB obligation recorded in previous years to be reduced to zero.

Funding Policy

The Commission funds the plan on a partially funded basis and shares the cost of health insurance with plan members. Contribution rates are regulated by the collective bargaining agreements. Plan members contribute 11.0% to 28.5% of the monthly premium cost, depending on the plan in which they are enrolled.

Participating in the City of Boston plan requires funding the actuarially determined annual required contribution ("ARC"). The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal costs each year and amortize any unfunded actuarial liabilities (or funding excess) over a period not to exceed thirty years. The Commission's contribution to the plan for the years ended December 31, 2016 and 2015 were \$2,610,336 and \$2,374,805, respectively, which represents 100% of the ARC. The Commission also elected to contribute an additional \$4.5 million and \$3.0 million to the Trust for the years ended December 31, 2016 and 2015, respectively.

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(11) Deposit and Investment Risks

(a) *Custodial Credit Risk*

Custodial credit risk is the risk that in the event of bank failure, the Commission's deposits may not be returned. Certain of the Commission's deposits are fully insured by FDIC insurance or collateralized with securities held by the Commission or the Commission's agent in the Commission's name. The Commission does not have a formal policy for managing custodial credit risk of deposits. As of December 31, 2016 and 2015, the cash balances of uninsured and uncollateralized deposits totaled \$59,149,618 and \$74,241,476, respectively. All of the Commission's investments are held by a third-party in the name of the Commission.

(b) *Investment Policy*

Investment of Commission funds is governed by federal and state laws and is restricted to permitted investments as defined by the Commission's General Revenue Bond Resolution and Supplemental Resolutions. Revenues generated from the investment of Commission funds reduce the amount the Commission must charge to its customers, while any investment losses would negatively affect the Commission's general rates and charges. Consequently, the Commission adheres to an investment policy that will maintain a fully invested, diversified portfolio with the objective of achieving the highest yield that is attainable in conjunction with a very low risk of loss of capital. The basic criteria that will be used in making investment decisions includes the evaluation of risk/reward tradeoffs, historical price spreads between different securities, the slope of the yield curve and the anticipated cash flows of the different investment accounts of the Commission.

Current permitted investments under the General Revenue Bond Resolution include:

1. Any bond or other obligation to which principal and interest are unconditionally guaranteed by the United States of America.
2. Any bond or other obligation of any state, agency or local government unit of any state which are:
 - A. Noncallable.
 - B. Fully collateralized by funds consisting of cash, bonds or obligations of one of the above.
3. Public Housing bonds secured by the United States of America, certain notes issued by public agencies or municipalities fully secured by the United States of America or obligations issued by State or public agencies or municipalities carrying the highest bond rating.
4. Obligations of any state to which the full faith and credit of the state is pledged and are within the two highest bond ratings.
5. Prime Commercial Paper rated A – 1 or P – 1.
6. Shares of a money market funds that are open ended and rated A or better, or money market funds of banks meeting specific criteria.

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(11) Deposit and Investment Risks - Continued

(b) Investment Policy - Continued

7. Certificates of Deposit issued by FDIC banks, which are fully secured by obligations described in 1 or 2 above.
8. Repurchase Agreements fully collateralized by obligations described in 1 or 2 above.
9. Futures contracts traded on an exchange for investments described in 1, 2, 3, and 4 above.

A single investment in commercial paper cannot be more than \$15 million and can only be purchased once. Further, all investments of the Commission are held in the Commission's name by a third-party.

(c) Interest Rate Risk

The Commission's guidelines do not specifically address limits on maturities as a means of managing its exposure to fair value losses arising from changing interest rates. The following is a listing of the Commission's fixed income investments and related maturity schedule (in years) as of December 31,:

Investment type	Fair value	2016			
		Less than 1	1 – 5	6 – 10	More than 10
U.S. Government obligations	\$ 28,092,677	26,102,357	1,990,320	—	—
U.S. Government agencies	98,569,230	6,806,160	18,649,596	28,267,168	44,846,306
Guaranteed investment contract	8,416,250	—	—	—	8,416,250
Money market	59,149,618	59,149,618	—	—	—
Open ended mutual funds	12,319,271	12,319,271	—	—	—
	<u>\$ 206,547,046</u>	<u>104,377,406</u>	<u>20,639,916</u>	<u>28,267,168</u>	<u>53,262,556</u>

Investment type	Fair value	2015			
		Less than 1	1 – 5	6 – 10	More than 10
U.S. government obligations	\$ 13,069,654	8,892,195	4,177,459	—	—
U.S. government agencies	99,708,894	23,858,728	10,276,314	12,144,125	53,429,727
Guaranteed investment contract	8,416,250	—	—	—	8,416,250
Money market	74,241,476	74,241,476	—	—	—
Open ended mutual funds	14,619,966	14,619,966	—	—	—
	<u>\$ 210,056,240</u>	<u>121,612,365</u>	<u>14,453,773</u>	<u>12,144,125</u>	<u>61,845,977</u>

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(11) Deposit and Investment Risks - Continued

(d) Credit Risk

The Commission follows its investment policy listed above in regards to the credit worthiness of its investments. The Commission's fixed income investments as of December 31, 2016 and 2015 were rated by Standard and Poor's rating scale and/or an equivalent national rating organization, and the ratings are presented below using the Standard and Poor's rating scale:

<u>Investment type</u>	<u>2016</u>			
	<u>Fair value</u>	<u>AAA</u>	<u>AA</u>	<u>Not rated</u>
U.S. Government obligations	\$ 28,092,677	28,092,677	—	—
U.S. Government agencies	98,569,230	72,842,957	—	25,726,273
Guaranteed investment contract	8,416,250	—	—	8,416,250
Money market	59,149,618	—	59,149,618	—
Open ended mutual funds	12,319,271	12,319,271	—	—
	<u>\$ 206,547,046</u>	<u>113,254,905</u>	<u>59,149,618</u>	<u>34,142,523</u>

<u>Investment type</u>	<u>2015</u>			
	<u>Fair value</u>	<u>AAA</u>	<u>AA</u>	<u>Not rated</u>
U.S. government obligations	\$ 13,069,654	13,069,654	—	—
U.S. government agencies	99,708,894	70,497,265	—	29,211,629
Guaranteed investment contract	8,416,250	—	—	8,416,250
Money market	74,241,476	—	74,241,476	—
Open ended mutual funds	14,619,966	14,619,966	—	—
	<u>\$ 210,056,240</u>	<u>98,186,885</u>	<u>74,241,476</u>	<u>37,627,879</u>

As of December 31, 2016 and 2015, the Commission had \$25,726,273 and \$29,211,629, respectively, of unrated investments that are explicitly guaranteed by the U.S. Government.

(e) Concentration Risk

The Commission's investment policy does not offer specific limitations in regards to the concentration of risk, except that a single investment in commercial securities cannot be more than \$15 million. The Commission has individual investments that at fair value exceed 5% of the total investments balance at December 31, 2016 and 2015. Individually these investments in money market funds range between \$10 million and \$15 million for 2016 and \$11 million and \$19 million for 2015. In the aggregate, they approximate \$37 million and \$52 million for the years ended December 31, 2016 and 2015, respectively.

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(12) Commitments

The Commission has committed to capital improvement projects of approximately \$166.7 million over the next three years, which are primarily related to enhance the operation of the water and sewer system, including reducing pollution to Boston Harbor and neighboring waterways. Of this amount, approximately \$131.5 million represents extension and improvement projects and \$35.2 million represents renewal and replacement projects. The extension and improvement projects will be 5% funded by federal, state and Massachusetts Water Resources Authority grants and loans. The remainder will be funded from the Commission's operating revenues and borrowings, as needed.

(13) Risk Management and Other Insurance

The Commission carries self-insured insurance for claims filed under workers' compensation and general liability, and completely self-insures for all unemployment benefits. The workers' compensation self-insured retention limit is \$750,000 per claim and is supplemented with excess coverage at statutory limits purchased through an outside carrier. For general liability, the Commission's self-insured limits are \$1 million per occurrence, \$2.5 million multi-line liability aggregate stop loss and is supplemented by \$9 million of excess coverage. Under the sections of the Model Water and Sewer Act, the Commission's maximum tort liability is \$100,000 per claimant.

The Commission maintains other insurance coverage as follows:

<u>Policy type</u>	<u>Coverage</u>
Vehicles	Combined single limit of \$1 million/accident.
Property	Aggregate limit of \$166.8 million blanket building and contents per occurrence based \$25,000 deductible.
Public officials	Coverage of \$1 million combined; \$100,000 self-insurance retention.
Fiduciary	\$5 million coverage; with \$10,000 deductible per claim.
Crime	Employee dishonesty coverage of \$5 million, with \$50,000 deductible.
Cyber Risk	\$25 million policy and program aggregate, with \$50,000 deductible.

Insurance claims for all policies have not exceeded coverage by a material amount in the past three years.

Liabilities for self-insured claims are reported if it is probable that a loss has been incurred and the amount can be reasonably estimated. The Commission has established a liability based on historical trends along with attorney's and independent insurance reserve appraiser's estimates of pending matters and lawsuits in which the Commission is involved.

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(13) Risk Management and Other Insurance - Continued

Changes for the years ended December 31, are as follows:

	<u>2016</u>	<u>2015</u>
Beginning balance of reserves	\$ 1,183,508	1,544,119
Payment of claims attributable to events of both current and prior years:		
Workers' compensation	-	-
General liability	(284,243)	(645,957)
Incurred claims	<u>269,334</u>	<u>285,346</u>
Ending balance of reserves	<u>\$ 1,168,599</u>	<u>1,183,508</u>

(14) Contingencies

(a) Legal

The Commission is involved in ordinary and routine litigation and other matters related to its operations and the establishment of rates. Management believes that the resolution of these matters will not materially affect the financial position of the Commission.

The Commission has received federal and state grants for specific purposes that are subject to review and audit by the grantor agencies. Such audits could lead to requests for reimbursement to the grantor agency for expenditures disallowed under terms of the grant. The Commission believes such disallowances, if any, will not be significant.

(b) Pollution Remediation Obligations

GASB Statement No. 49, *Accounting and Financial Reporting by Employers for Pollution Remediation Obligations*, requires governments to reasonably determine potential polluted sites and provide guidance to recognize Pollution Remediation Obligations ("PRO") components as liability. The Commission evaluated their pollution remediation events and determined that the PRO liability as of December 31, 2016 and 2015, as well as, the PRO payments made during 2016 and 2015 were not material to the Commission's financial statements.

BOSTON WATER AND SEWER COMMISSION

Notes to Financial Statements

December 31, 2016 and 2015

(14) Contingencies - Continued

(c) *Environmental Protection Agency*

During 2012, the Commission entered into a consent decree with the Conservation Law Foundation, Inc. ("CLF") and the United States Environmental Protection Agency in settlement of a suit originally brought by the CLF alleging violations of the Commission's National Pollution Discharge Elimination System Permit. The consent decree required the Commission to pay approximately \$374,000 of penalties and reimbursed legal fees and established specific annual compliance goals. Failure to meet each of these goals will subject the Commission to penalties calculated on a daily basis until the goal is achieved. The decree also calls for other payments if the Commission does not meet specific expenditure levels. For 2016, the Commission achieved the goals set forth in the decree. In accordance with GASB 49, the achievement of these goals is considered to be a part of the Commission's ongoing operations and is not accrued as a PRO.

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



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

To the Commissioners of
Boston Water & Sewer Commission
Boston, Massachusetts

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of Boston Water and Sewer Commission (the "Commission") as of and for the year ended December 31, 2016 and 2015, and the related notes to the financial statements, which collectively comprise the Commission's basic financial statements, and have issued our report thereon dated December 1, 2017.

Internal Control Over Financial Reporting

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

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

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

Compliance and Other Matters

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

Purpose of this Report

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

O'Connor and Drew, P.C.

Certified Public Accountants
Braintree, Massachusetts

December 1, 2017

REQUIRED SUPPLEMENTARY INFORMATION

BOSTON WATER AND SEWER COMMISSION
Schedule of Proportionate Share of the Net Position Liability

Valuation date Measurement date	January 1, 2016 December 31, 2016	January 1, 2014 December 31, 2015
Commission's proportion of the net pension liability	4.20%	2.60%
Commission's proportionate share of the net pension liability	\$ 26,503,599	38,931,280
Commission's covered-employee payroll	\$ 33,407,151	31,361,504
Commission's proportionate share of the net pension asset as a percentage of its covered-employee payroll	79.34%	124.14%
Plan fiduciary net position as a percentage of the total pension liability	79.44%	69.20%

Notes:

The GASB pronouncement requiring the presentation of the information on this schedule became effective for years beginning after June 15, 2014 and is intended to provide data for the most recent ten years

See accompanying notes to the required supplemental information.

BOSTON WATER AND SEWER COMMISSION
Schedule of Contributions

	<u>2016</u>	<u>2015</u>
Contractually required contribution	\$ 4,918,577	3,994,268
Contributions in relation to the contractually required contribution	<u>11,083,375</u>	<u>7,955,018</u>
Contribution excess	<u><u>\$(6,164,798)</u></u>	<u><u>\$(3,960,750)</u></u>
Commission's covered-employee payroll	\$ 33,407,151	31,361,504
Contribution as a percentage of covered-employee payroll	33.2%	25.4%

Notes:

Employers participating in the State Boston Retirement System are required by MA General Laws, Section 32, to contribute an actuarially determined contribution rate each year.

The GASB pronouncement requiring the presentation of the information on this schedule became effective for years beginning after June 15, 2014 and is intended to provide data for the most recent ten years.

See accompanying notes to the required supplemental information.

SUPPLEMENTAL SCHEDULES

BOSTON WATER AND SEWER COMMISSION

Supplemental Schedules of Revenues and Expenses – Rate Basis (Unaudited)

For the Years Ended December 31, 2016 and 2015

	<u>2016</u>	<u>2015</u>
Revenues:		
Water revenue	\$ 150,391,977	149,355,846
Sewer revenue	198,249,241	187,450,059
Subtotal	<u>348,641,218</u>	<u>336,805,905</u>
Less:		
Adjustments	7,915,384	8,366,706
Discounts	1,270,584	1,238,639
Bad debt	358,043	223,168
Subtotal	<u>9,544,011</u>	<u>9,828,513</u>
Net billed charges	339,097,207	326,977,392
Prior year surplus	521,428	389,063
Miscellaneous revenues:		
Late charge revenue	1,306,697	1,414,957
Investment income	3,732,740	2,824,294
Fire pipe revenue	4,601,031	4,486,066
Other income	7,093,016	6,294,690
Total revenues	<u>356,352,119</u>	<u>342,386,462</u>
Direct operating expenses:		
Salaries and wages	53,952,461	46,923,242
Overtime wages	752,156	789,500
Fringe benefits	8,405,801	7,710,203
Supplies and materials	2,252,917	2,295,723
Repairs and maintenance	7,289,132	6,686,471
Utilities	1,164,922	1,093,997
Professional services	3,634,430	2,724,914
Space and equipment rentals	271,702	251,778
Other services	1,639,759	1,560,244
Insurance	509,104	533,935
Travel and training	70,721	73,007
Damage claims	4,850	61,729
Inventory	21,871	10,778
Capital outlay	75,494	76,327
Total direct operating expenses	<u>80,045,320</u>	<u>70,791,845</u>
Nonoperating expenses:		
MWRA assessment	212,475,077	206,839,502
Capital improvements	12,490,025	8,939,628
Principal payments	28,549,800	28,412,734
Interest expense	19,594,358	19,692,998
Deposits to reserve funds	2,313,000	6,990,000
SDWA assessment	195,452	198,327
Total nonoperating expenses	<u>275,617,712</u>	<u>271,073,189</u>
Total current expenses	<u>355,663,032</u>	<u>341,865,034</u>
Current year rate surplus	<u>\$ 689,086</u>	<u>521,428</u>

This supplemental schedule presents the Commission's revenues and expenses on the basis that is presented in the Commission's budget and rate-setting documents. See Note 1 in the notes to the basic financial statements for the differences between this supplemental schedule and GAAP.

See accompanying independent auditors' report.