

**BOSTON WATER AND SEWER COMMISSION**

Financial Statements, Required Supplementary Information  
and Other Supplemental Information

December 31, 2018

(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 the Financial Statements

We have audited the accompanying financial statements of Boston Water and Sewer Commission (the "Commission"), which comprise the statement of net position for the year ended December 31, 2018, the related statements of revenues, expenses and change in net position and cash flows for the year 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 audit. We conducted our audit 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 audit 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 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, 2018, and the respective change in net position and cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

## **Emphasis of Matter**

As discussed in Note 2 to the financial statements, GASB Statement 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, is effective for the year ended December 31, 2018 and required the Commission to recognize the net postemployment benefits other than pension obligations determined for the Commission. Our opinion is not modified with respect to that matter.

## **Other Matters**

### *Required Supplementary Information*

Accounting principles generally accepted in the United States of America require that Management's Discussion and Analysis and the required supplementary information listed in the table of contents 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 Supplementary 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 listed in the table of contents 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.

### **Other Reporting Required by Government Auditing Standards**

In accordance with *Government Auditing Standards*, we have also issued our report dated August 19, 2019 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'Connor and Drew, P.C.

**Certified Public Accountants  
Braintree, Massachusetts**

August 19, 2019

## BOSTON WATER AND SEWER COMMISSION

### Management's Discussion and Analysis

### Required Supplementary Information

December 31, 2018 and 2017

(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 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)

	<b>2018</b>	<b>2017</b>
Current assets	\$ 332,759	304,384
Capital assets, net	1,416,709	1,377,447
Total assets	<u>1,749,468</u>	<u>1,681,831</u>
Total deferred outflows	<u>122,720</u>	<u>96,321</u>
Current liabilities	61,726	84,338
Noncurrent liabilities	671,319	597,192
Total liabilities	<u>733,045</u>	<u>681,530</u>
Total deferred inflows	<u>747,028</u>	<u>706,348</u>
Net position:		
Invested in capital assets	800,309	823,307
Restricted	111,813	105,601
Unrestricted net deficit	<u>(520,007)</u>	<u>(538,634)</u>
Total net position	<u>\$ 392,115</u>	<u>390,274</u>

## **BOSTON WATER AND SEWER COMMISSION**

### Management's Discussion and Analysis

#### Required Supplementary Information

December 31, 2018 and 2017

(Unaudited)

During the year, the Commission saw an increase in total assets and an increase in total liabilities, resulting in an increase in total net position of \$1.8 million, or 0.4%. In 2017, net position totaled \$390.3 million, a decrease of \$3.0 million, or 0.8% from 2016. The Commission's 2018 operations resulted in a rate basis surplus of \$558,206 compared to \$570,607 in 2017.

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 \$1.4 billion at December 2018, which is 2.9% higher than in 2017. In 2017, these investments also totaled \$1.4 billion, an increase of \$40.1 million, or 3.0% over the 2016 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 2018 were \$379.9 million, which is 4.6% greater than in 2017. Total operating revenues in 2017 were \$363.1 million, which is 0.4% greater than 2016. Operating revenues consist of water and sewer revenue, late charge revenue, fire pipe revenue and other income. Water and sewer revenue in 2018 and 2017 represented 96.7% and 95.7% of total operating revenues, respectively. The increases in 2018 and 2017 operating revenues were primarily driven by a 4.75% and 2.4% average rate increase, respectively.

Total operating expenses in 2018 were \$335.8 million, which represents an increase of 5.2% from 2017. The increase in 2018 operating expenses was primarily due to a combined additional spending of 5.0%, or \$15.0 million in three-line items (operations, maintenance and Massachusetts Water Resources Authority ("MWRA") assessment) coupled with a reduction of pension and OPEB income related to GASB 68 and GASB 75. Total operating expenses in 2017 were \$319.2 million, which represents an increase of 1.6% from 2016. This increase in 2017 expenses was driven primarily due to a combined additional spending of 2.1%, or \$6.1 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 67.6% and 68.4% in 2018 and 2017, respectively, of total operating expenses.

In both 2018 and 2017; 85% 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, 2018 and 2017

(Unaudited)

**Condensed Financial Information**  
(in thousands)

	<b>2018</b>	<b>2017</b>
Operating revenues:		
Water and sewer usage	\$ 367,443	347,601
Other	12,418	15,456
Operating expenses	<u>(335,799)</u>	<u>(319,247)</u>
Excess operating revenues	44,062	43,810
Investment income	5,491	4,382
Interest expense	<u>(21,690)</u>	<u>(20,900)</u>
Total nonoperating net expense	<u>(16,199)</u>	<u>(16,518)</u>
Excess revenues before capital grants, contributions and transfer requirements	27,863	27,292
Capital grants and contributions	5,983	1,797
Excess revenues used to fund reserves and other deferrals	<u>(32,017)</u>	<u>(32,224)</u>
Change in accumulated revenues used to offset future rates	12	118
Change in net position	1,841	(3,017)
Net position, beginning of year	<u>390,274</u>	<u>393,291</u>
Net position, end of year	<u>\$ 392,115</u>	<u>390,274</u>

**Capital Assets**

In fiscal year 2018, major Commission project additions totaled \$49.2 million, of which \$28.4 million was financed with bond proceeds. Major project expenditures (in millions) are as follows:

Relay of water mains	\$ 25.9
Rehabilitation/replacement of sewers or storm drains	16.9
Interceptor improvements	1.0
Separation of combined sewers	3.6
Meter replacement	0.4
Stormwater	1.4
	<u>\$ 49.2</u>

## BOSTON WATER AND SEWER COMMISSION

### Management's Discussion and Analysis

### Required Supplementary Information

December 31, 2018 and 2017

(Unaudited)

The Commission's 2019-2021 capital budget includes projected expenditures of \$220.3 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. Most 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 5 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 2018-2020 capital budget, which totals \$220.3 million, anticipates that projects totaling \$119.6 million, or 54.3% of the Commission's 2019-2021 capital budget, will be funded from bond proceeds. The 2019 budget for debt service is \$52.9 million. Please refer to footnote 6 for more detailed long-term debt information.

The Commission currently has ten series of General Revenue Bonds outstanding at the end of 2018, totaling approximately \$541.0 million as follows (in millions):

1993 Series A	\$ 5.1
1994 Series A	14.8
2009 Series A	5.1
2009 Series B	15.8
2010 Series A	5.6
2012 Series A	99.4
2014 Series A	99.8
2015 Series A	72.8
2016 Series A	60.2
2016 Series B	84.0
2018 Series A	78.4
	<u>\$ 541.0</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 requirement during such

## **BOSTON WATER AND SEWER COMMISSION**

Management's Discussion and Analysis

Required Supplementary Information

December 31, 2018 and 2017

(Unaudited)

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 because 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 2018 and 2017, the Commission increased its water and sewer rates by an average of 4.75% and 2.4% 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, 2019, the Commission increased its water and sewer rates by an average of 2.85%.

### **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 for all bonds issued before 2016.

### **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](http://www.bwsc.org).

**BOSTON WATER AND SEWER COMMISSION**

Statement of Net Position

December 31, 2018

<b>Assets</b>	
Current assets:	
Cash and cash equivalents	\$ 10,190,861
Restricted cash and investments (Notes 6 and 12)	274,126,177
Accounts receivable, net:	
Customers, less allowances of \$2,730,865 (Note 1)	21,960,323
Unbilled revenues, less allowances of \$1,702,361 (Note 1)	25,840,574
Prepaid expenses	640,799
	332,758,734
<b>Total current assets</b>	
Noncurrent assets:	
Capital assets (Note 5):	
Depreciable, net	1,300,971,224
Nondepreciable	115,737,613
	1,416,708,837
<b>Total noncurrent assets</b>	
<b>Total Assets</b>	1,749,467,571
<b>Deferred Outflows of resources</b>	
Deferred charges (Note 3)	122,720,100
<b>Liabilities</b>	
Current liabilities:	
Payable from current assets:	
Accounts payable	16,827,302
Other accrued liabilities	10,079,462
Current portion of long-term notes (Note 6)	6,215,529
Current portion of revenue bonds (Note 6)	28,604,116
	61,726,409
<b>Total current liabilities</b>	
Noncurrent liabilities:	
Long-term notes (Note 6)	30,596,053
Revenue bonds, net (Note 6)	550,984,202
Net pension liability (Note 10)	40,448,003
Net OPEB liability (Note 11)	47,844,621
Other insurance reserves (Note 14)	1,445,682
	671,318,561
<b>Total noncurrent liabilities</b>	
<b>Total Liabilities</b>	733,044,970
<b>Deferred Inflows of resources</b>	
Deferred credits and reserves (Note 4)	747,028,185
Commitments and contingencies (Notes 13, and 15)	
<b>Net Position</b>	
Net position:	
Invested in capital assets, net of related debt	800,308,937
Restricted for debt service	56,128,652
Restricted for capital assets	202,791
Restricted for debt covenants	55,480,676
Unrestricted net deficit	(520,006,540)
	\$ 392,114,516
<b>Total Net Position</b>	

See accompanying notes to financial statements.

**BOSTON WATER AND SEWER COMMISSION**  
 Statement of Revenues, Expenses and Change in Net Position  
 Year ended December 31, 2018

Operating revenues:	
Water and sewer usage (Note 1)	\$ 367,443,214
Fire pipe	4,869,306
Other	7,549,162
<b>Total operating revenues</b>	<b><u>379,861,682</u></b>
Operating expenses:	
Operations	79,642,725
Maintenance	8,107,578
MWRA assessment (Note 8)	227,082,053
Depreciation and amortization	20,966,778
<b>Total operating expenses</b>	<b><u>335,799,134</u></b>
<b>Excess operating revenues</b>	<b><u>44,062,548</u></b>
Nonoperating revenue (expense):	
Investment income (loss):	5,490,570
Interest expense	(21,690,195)
<b>Total nonoperating net expense</b>	<b><u>(16,199,625)</u></b>
<b>Excess revenues before capital grants and contributions and transfer requirements</b>	<b>27,862,923</b>
Capital grants and contributions: (Note 1)	<u>5,982,540</u>
<b>Excess revenues before transfer requirements</b>	<b>33,845,463</b>
Excess revenues used to fund reserves and other deferrals (Note 4)	(32,017,189)
Change in accumulated revenues used to offset future rates (Note 4)	12,401
<b>Change in net position</b>	<b>1,840,675</b>
Net position, beginning of year	<u>390,273,841</u>
<b>Net position, end of year</b>	<b><u>\$ 392,114,516</u></b>

See accompanying notes to financial statements.

**BOSTON WATER AND SEWER COMMISSION**

Statement of Cash Flows

Year ended December 31, 2018

Cash flows from operating activities:	
Receipts from customers	\$ 381,169,225
Payments to suppliers	(255,800,158)
Payments to employees	(62,988,901)
<b>Net cash provided by operating activities</b>	<b>62,380,166</b>
Cash flows from investing activities:	
Investment income	5,490,570
Sales of investments	210,210,888
Purchases of investments	(241,355,673)
<b>Net cash provided by (applied to) investing activities</b>	<b>(25,654,215)</b>
Cash flows from capital and related financing activities:	
Purchase of capital assets	(63,326,093)
Proceeds from long-term notes	14,487,977
Proceeds from revenue bonds	80,772,193
Payment of long-term notes	(5,693,737)
Payment of revenue bonds	(22,615,000)
Payment of commercial paper	(25,000,000)
Capital grants and contributions	5,982,540
Payment of interest	(23,063,347)
<b>Net cash applied to capital and related financing activities</b>	<b>(38,455,467)</b>
<b>Net decrease</b>	<b>(1,729,516)</b>
Cash and cash equivalents, beginning of year	98,796,331
<b>Cash and cash equivalents, end of year</b>	<b>\$ 97,066,815</b>
Reconciliation of operating income to net cash provided by operating activities:	
Excess operating revenues	\$ 44,062,548
Adjustment to reconcile operating income to net cash:	
Depreciation and amortization	20,966,778
Deferred outflows of resources	(19,477,359)
Change in assets and liabilities:	
Accounts receivable, net	(451,017)
Unbilled revenues	1,511,786
Prepaid expenses	(20,285)
Accounts payable	354,347
Other accrued liabilities	(46,791)
Other long-term liabilities	249,948
Net pension activity	14,471,466
Net OPEB activity	758,746
<b>Net cash provided by operating activities</b>	<b>\$ 62,380,166</b>
Noncash capital and related financing activities:	
Bond issuance costs	\$ 246,774
Retainage	\$ 153,236
Cash and cash equivalents are comprised of the following:	
Cash and cash equivalents	\$ 10,190,861
Money market in restricted cash and investments	36,335,734
Cash in restricted cash and investments	50,540,220
Total	\$ 97,066,815

See accompanying notes to financial statements.

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements

December 31, 2018

#### (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 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 is 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, 2018 is provided below:

	<b>Revenues</b>	<b>Expenses</b>
As presented in the statements of revenues and expenses:		
Operating revenues/expenses	\$ 379,861,682	335,799,134
Investment income/interest expense	<u>5,490,570</u>	<u>21,690,195</u>
Total	385,352,252	357,489,329
Reclassifications and deferrals:		
Contributions to reserves	—	4,474,113
GAAP adjustments	(13,242,211)	(13,242,211)
Excess bond payments over depreciation and amortization	—	6,126,205
Investment income (escrowed funds)	(1,154,074)	—
Capital expenditures	—	12,625,420
Excess revenue used to offset current rates	570,607	—
Other deferrals	—	3,495,512
As presented in the supplemental schedule of revenues and expenses - rate basis	<u>\$ 371,526,574</u>	<u>370,968,368</u>

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### **(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 \$558,206 for the year ended December 31, 2018 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 number of total billings. The total customer bills outstanding as of December 31, 2018 was approximately \$24.7 million. These net billing amounts are reduced by an allowance for uncollectible accounts of approximately \$2.7 million 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 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 12.

##### ***(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 2018.

##### ***(d) Compensated Absences***

Employees of the Commission accumulate unused sick time (subject to certain limitations) to be used later 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.

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

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

##### (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 relating to 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 of Resources and Deferred Outflows of Resources*

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.

##### (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.

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

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

##### (j) *Other Post-Employment Benefits ("OPEB")*

For purposes of measuring the net OPEB liability, deferred outflows of resources and deferred inflows of resources related to OPEB, and OPEB expense, information about the fiduciary net position of the Other Postemployment Benefit ("OPEB") Trust plan (the "Plan") and additions to/deductions from Plan's fiduciary net position have been determined on the same basis as they are reported by the Plan. For this purpose, the Plan recognizes benefit payments when due and payable in accordance with the benefit terms. Investments are generally reported at fair value.

##### (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 estimating an allowance for doubtful accounts, depreciation, amortization, net pension and OPEB liabilities, and the recoverability of long-lived assets.

##### (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.

##### (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.

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

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

##### (n) New Government Accounting Pronouncements

GASB Statement 83, *Certain Asset Retirement Obligations* ("AROs") is effective for periods beginning after June 15, 2018. Early adoption is permitted. 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.

GASB Statement 87, *Leases* is effective for periods beginning after December 15, 2019. Early adoption is permitted. Implementation of this standard will require lessees to recognize on their statement of net position the rights and obligations resulting from leases categorized as operating leases as assets, liabilities, or deferred inflows / outflows of resources. It provides for an election on leases with terms of less than twelve months to be excluded from this Standard. Management is in the process of evaluating this standard and has not yet determined its impact on the financial statements.

GASB Statement 88, *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements* is effective for periods beginning after June 15, 2018. Early adoption is permitted. The primary objective of this Statement is to improve the information that is disclosed in notes to government financial statements related to debt, including direct borrowings and direct placements. It also clarifies which liabilities governments should include when disclosing information related to debt. Management is in the process of evaluating this standard and has not yet determined its impact on the financial statements.

GASB Statement 89 – *Accounting for Interest Costs Incurred before the End of a Construction Period* is effective for reporting periods beginning after December 15, 2019. Early adoption is permitted. The objectives of this Statement are (1) to enhance the relevance and comparability of information about capital assets and the cost of borrowing for a reporting period and (2) to simplify accounting for interest cost incurred before the end of a construction period. Management has not completed its review of the requirements of this standard and its applicability.

#### (2) Implementation of Newly Effective Accounting Standard

As a result of implementing GASB Statement No. 75 (GASB 75), Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions, net OPEB liabilities and the related deferred outflows of resources related to other postemployment benefits were increased from \$0 at December 31, 2017 to \$47,085,875. As described in Note 1, the Commission follows the accounting standards set forth in GASB 62 and, accordingly, there is no change to net position due to the implementation of GASB 75.

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### (3) 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, like 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, 2018:

##### Costs to be recovered through future revenues:

Pension obligation	\$ 40,448,003
OPEB obligation	47,844,621

##### Pension related:

Differences between projected and actual earnings on pension plan investments	10,211,013
Differences between expected and actual experience in the total pension liability	452,032
Changes in assumptions	3,692,844
Contributions made after the plan measurement date	1,650,000

##### OPEB related:

Differences between projected and actual earnings on OPEB plan investments	1,600,013
Contributions made after the plan measurement date	2,650,000
Deferred loss on defeasance	<u>14,171,574</u>
Total	\$ <u>122,720,100</u>

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### (4) Deferred Inflows of Resources

In accordance with Governmental Accounting Standards Board Statement No. 62 ("GASB 62"), certain revenues and expenditures that would otherwise be included in the statement of revenues and expenses, may be applied to future operations. These items are identified on the statement of revenues and expenses as excess revenues used to fund reserves and other deferrals and are included on the statement of net position in deferred credits and reserves and are as follows for the year ended December 31, 2018:

Contributions to reserves	\$ 4,474,113
Principal payments on long-term debt	28,308,737
Capital expenditures	12,625,420
Depreciation and amortization	(15,591,459)
Investment income on project and escrow funds	(1,814,029)
Other	<u>4,014,407</u>
	<u>\$ 32,017,189</u>

The components of deferred credits and reserves for the year ended December 31, 2018 have been designated as follows:

Debt service	\$ 165,182,213
Capital improvements	567,876,295
Pension related	11,561,389
Differences between expected and actual experience - pension	2,794,500
OPEB related	1,600,013
Working capital	(4,784,431)
Self-insurance	<u>2,240,000</u>
	<u>746,469,979</u>
Reduction of future Rates	<u>558,206</u>
Total	<u>\$ 747,028,185</u>

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### **(5) Capital Assets**

The cost and activities of water and sewer capital assets and their related accumulated depreciation at December 31, 2018 is as follows:

	<b>Balance at December 31, 2017</b>	<b>Additions</b>	<b>Disposals</b>	<b>Reclassifications</b>	<b>Balance at December 31, 2018</b>
<b>Capital assets, not being depreciated:</b>					
Land	\$ 5,884,243	—	—	—	5,884,243
Construction in progress	111,981,613	59,209,387	—	(61,337,630)	109,853,370
Total capital assets, not being depreciated	<u>117,865,856</u>	<u>59,209,387</u>	<u>—</u>	<u>(61,337,630)</u>	<u>115,737,613</u>
<b>Capital assets, being depreciated:</b>					
Buildings and improvements	68,112,671	—	—	—	68,112,671
Machinery and equipment	30,874,022	4,259,588	—	—	35,133,610
Infrastructure	1,538,534,108	10,354	—	61,337,630	1,599,882,092
Total capital assets, being depreciated	<u>1,637,520,801</u>	<u>4,269,942</u>	<u>—</u>	<u>61,337,630</u>	<u>1,703,128,373</u>
<b>Less: accumulated depreciation for:</b>					
Buildings and improvements	30,562,624	1,626,684	—	—	32,189,308
Machinery and equipment	20,975,036	3,225,372	—	—	24,200,408
Infrastructure	326,402,006	19,365,427	—	—	345,767,433
Total accumulated depreciation	<u>377,939,666</u>	<u>24,217,483</u>	<u>—</u>	<u>—</u>	<u>402,157,149</u>
Total capital assets being depreciated, net	<u>1,259,581,135</u>	<u>(19,947,541)</u>	<u>—</u>	<u>61,337,630</u>	<u>1,300,971,224</u>
Capital assets, net	<u>\$ 1,377,446,991</u>	<u>39,261,846</u>	<u>—</u>	<u>—</u>	<u>1,416,708,837</u>

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### **(6) 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 year ended December 31, 2018 (amounts in thousands).

Description	Balance at December 31, 2017	Additions	Reductions	Balance at December 31, 2018	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	\$ 13,360	—	8,205	5,155	5,155
1994 Series A, bearing a variable interest rate based on the daily Municipal Market Data scale issued August 20, 1994, maturing 1995 to 2024	16,800	—	2,000	14,800	2,100
2009 Series A, bearing interest ranging from 3.0% to 5.0% issued March 26, 2009, maturing 2010 to 2028	9,465	—	4,380	5,085	4,400
2009 Series B, bearing interest ranging from 3.0% to 5.0% issued March 26, 2009, maturing 2009 to 2021	20,475	—	4,635	15,840	8,340
2010 Series A, bearing interest ranging from 2.5% to 5.0% issued January 26, 2010, maturing 2010 to 2031	5,565	—	—	5,565	165
2012 Series A, bearing interest ranging from 3.0% to 5.0% issued June 6, 2012, maturing 2015 to 2037	102,240	—	2,795	99,445	2,970
2014 Series A, bearing interest ranging from 3.0% to 5.0% issued July 22, 2014, maturing 2017 to 2044	99,900	—	100	99,800	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	84,460	—	500	83,960	500
2018 Series A, bearing interest ranging from 3.0% to 5.0% issued May 30, 2018, maturing 2020 to 2048	—	78,400	—	78,400	—
	485,180	78,400	22,615	540,965	23,730
Less unamortized issue premiums/discounts	40,943	2,619	4,939	38,623	4,874
Net revenue bonds	<u>\$ 526,123</u>	<u>81,019</u>	<u>27,554</u>	<u>579,588</u>	<u>28,604</u>

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### (6) Long-Term Obligations - Continued

##### (a) Revenue Bonds - Continued

Debt principal and interest maturities for future years as of December 31, 2018 are as follows (amounts in thousands):

	Revenue bonds	
	Principal	Interest
2019	\$ 23,730	22,646
2020	23,710	21,453
2021	24,790	20,368
2022	24,005	19,638
2023	25,585	18,950
2024-2028	130,230	71,792
2029-2033	97,360	48,332
2034-2038	83,450	30,749
2039-2043	68,825	15,687
2044-2048	39,280	3,830
	<hr/> <u>\$ 540,965</u>	<hr/> <u>273,446</u>

Amortization expense for losses on bond refunding and amortization of bond issuance premiums for the year ended December 31, 2018 totaled \$(3,250,705).

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, 2018, approximately \$47.2M, has been deposited into the Senior Debt Service Reserve Account. This account is included with restricted cash and investments on the Statement of Net Position.

During 2018, the Commission completed the issuance of \$78,400,000 General Revenue Bonds, 2018 Series A (the "Bonds"). The net proceeds of \$80,772,193 (after issuance costs of \$246,774, plus premium of \$2,618,967) were used 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, 2020, through and including November 1, 2048.

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

In the aggregate, \$273,260,000 remains outstanding at December 31, 2018, on bond issues that were defeased "in-substance" in prior years.

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### (6) Long-Term Obligations - Continued

##### (c) *Restricted Cash and Investments*

The Commission has established both trustee and nontrustee 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 nontrustee investments at December 31, 2018 is as follows:

###### Trusted:

U.S. Government agency obligations	\$ 148,501,070
Money market	35,981,961
Repurchase agreements	<u>8,416,250</u>
	<u>192,899,281</u>

###### Nontrusteed:

U.S. Government agency obligations	2,594,196
Cash	50,540,220
Money market	353,773
Open-ended mutual funds	<u>27,738,707</u>
	<u>81,226,896</u>
Restricted cash and investments	274,126,177
Less nontrusteed cash	<u>(50,540,220)</u>
Trusted and nontrusteed investments	\$ <u>223,585,957</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.

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, 2018, the Commission does not anticipate any future MCWT payments will be recognized as capital grants.

**BOSTON WATER AND SEWER COMMISSION**

Notes to Financial Statements - Continued

December 31, 2018

**(6) Long-Term Obligations - Continued**

*(d) Long-Term Notes Payable - Continued*

The following is a summary of long-term note activities with MWRA and MCWT for the year ended December 31, 2018:

Description	Balance at December 31, 2017	Additions	Reductions	Balance at December 31, 2018	Amounts due within one year
MWRA I/I Program Phase VIII, interest free, due May 15, 2022	\$ 1,367,852	—	543,766	824,086	206,022
MWRA I/I Program Phase IX, interest free, due May 15, 2022	1,773,302	358,593	354,660	1,777,235	390,520
MWRA S.A.P. Program, interest free, due November 15, 2027	21,434,229	14,129,384	3,104,471	32,459,142	4,517,410
MWRA P.A.P. Program, interest free, due August 15, 2020	3,441,959	—	1,690,840	1,751,119	1,101,577
Total long-term notes	<u>\$ 28,017,342</u>	<u>14,487,977</u>	<u>5,693,737</u>	<u>36,811,582</u>	<u>6,215,529</u>

Debt principal for future years as of December 31, 2018 are as follows (amounts in thousands):

2019	\$ 6,216
2020	5,764
2021	5,114
2022	4,713
2023	3,659
2024-2028	<u>11,346</u>
	<u>\$ 36,812</u>

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### (7) Short-Term Obligations

The Commission issues commercial paper notes for financing capital expenditures. The following represents the Commission's commercial paper notes outstanding as of December 31, 2018:

Description	Balance at December 31, 2017	Additions	Reductions	Balance at December 31, 2018
Commercial paper notes, Bank of America program due September 25, 2017 through January 3, 2018	\$ 25,000,000	—	25,000,000	—
Total short-term notes	\$ 25,000,000	—	25,000,000	—

#### (8) 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, 2018 is as follows:

	<u>2018</u>
Assessments based on:	
Water usage	\$ 88,328,954
Wastewater usage	<u>138,753,099</u>
Total	<u>\$ 227,082,053</u>

#### (9) Transactions with the City of Boston

Departments of the City of Boston were billed approximately \$4.2 million during 2018, 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 \$1,345,000 during the year ended December 31, 2018, and capital costs billed by the City were approximately \$1,700,000 during the year ended December 31, 2018.

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### (10) 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, 2018).

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 - Continued

December 31, 2018

#### (10) 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 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 actual contributions to the plan for the years ended December 31, 2018, 2017 and 2016 amounted to \$7,507,131, \$4,129,227, and \$11,057,791, respectively, representing its annual required contribution ("ARC") for each year along with additional funds to reduce the unfunded liability. Employer contributions, based on actuarially determined amounts, aggregated \$4,868,286, \$4,667,585 and \$4,918,577, or 13.7%, 13.4% and 14.7% of covered payroll in 2018, 2017 and 2016, 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:

Hire Date	Percentage of Compensation
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

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

At December 31, 2018, the Commission reported a liability of \$40.4 million for its proportionate share of the net pension liability related to its participation in SBRS. The net pension liability as of December 31, 2018, the reporting date, was measured as of December 31, 2018, the measurement date, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of January 1, 2018 rolled forward to December 31, 2018. At December 31, 2018 the Commission's proportion was 4.3%.

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### (10) Pension Benefits - Continued

##### (d) *Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources - Continued*

For the year ended December 31, 2018, the Commission recognized pension income of \$150,000 which makes up the increase in accrued pension expense. 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, 2018, the Commission reported deferred outflows of resources and deferred inflows of resources related to pensions as follows:

##### Deferred Outflows of Resources

Contributions subsequent to the measurement date	\$ 1,650,000
Net difference between projected and actual earnings on pension plan investments	10,211,013
Net difference between expected and actual experience	452,032
Changes in assumptions	3,692,844
Total	\$ <u>16,005,889</u>

##### Deferred Inflows of Resources

Net difference between expected and actual experience	\$ <u>2,794,500</u>
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Contributions of \$1,650,000 are reported as deferred outflows of resources related to pensions resulting from contributions in calendar year 2018 after the measurement date and will be recognized as a reduction of the net pension liability for the year ended December 31, 2018.

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,

2019	\$ 3,586,904
2020	1,723,282
2021	2,095,732
2022	3,289,695
2023	121,150
2024	680,050
2025	64,576
	<hr/>
	\$ <u>11,561,389</u>

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### (10) 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%
Salary increases	4.5%
Investment rate of return	7.25%
Post-retirement cost of living adjustment	3% of first \$14,000

Mortality rates for pre-retirees, healthy retirees and disabled retirees were based on pre-retirement of RP-2014 Blue Collar Mortality Table projected generationally using Scale MP-2017 set forward 1 year for females.

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, 2018 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic equity	23.00%	6.16%
International developed markets equity	16.00%	6.69%
International emerging markets equity	8.00%	9.47%
Core fixed income	21.00%	1.89%
High-yield fixed income	15.00%	4.00%
Real Estate	5.00%	4.58%
Hedge fund, GTAA, Risk parity	7.00%	3.68%
Private equity	5.00%	10.00%
Total	100.00%	

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### (10) Pension Benefits - Continued

##### (g) *Discount Rate*

The discount rate used to measure the total pension liability was 7.25% for 2018. 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 7.25% for the year ended December 31, 2018 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:

2018		
Current Discount		
<b>1.00% Decrease</b>	<b>Rate</b>	<b>1.00% Increase</b>
<b><u>(6.25%)</u></b>	<b><u>(7.25%)</u></b>	<b><u>(8.25%)</u></b>
\$58,026,268	\$40,448,003	\$25,540,401

#### (11) Postemployment Benefits other than Pensions (OPEB)

##### (a) *Plan Description*

The Commission sponsors and participates in the Other Postemployment Benefit ("OPEB") Trust plan, a single-employer defined benefit healthcare plan ("OPEB Plan"), that provides healthcare and insurance benefits to participating retirees and their beneficiaries. The OPEB Plan provides healthcare benefits to current and future retirees, and their dependents/beneficiaries in accordance with Massachusetts General Law Chapter 32B.

The OPEB Plan is administered by the Commission and does not issue stand-alone financial statements.

##### (b) *Benefits Provided*

Medical and prescription drug benefits are provided to all eligible retirees not enrolled in Medicare through a variety of third-party insurers. Medical and prescription drug benefits are provided to retirees enrolled in Medicare through supplemental and Medicare Advantage plans offered by a variety of third-party insurers.

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### (11) Postemployment Benefits other than Pensions (OPEB) - Continued

##### *(b) Funding Policy and Benefits Paid - Continued*

Eligibility for retirees classified as Group 1 or 2 is age 55 or any age, depending upon whether they have completed at least 10 years or 20 years of creditable service, respectively. Group 4 retirees with at least 10 years or 20 years of creditable service are eligible at age 45 or any age, respectively. Retirees on accidental disability retirement are eligible at any age, while ordinary disability requires 10 years of creditable service. The surviving spouse is eligible to receive pre and post retirement death benefits, as well as medical and prescription drug coverage.

Employer and employee contribution rates are governed by the respective collective bargaining agreements. The OPEB Plan is currently funded on a pay-as-you-go basis plus periodic advance funding contributions as amounts are available. The employers and plan members share the cost of benefits. As of December 31, 2017, the valuation date, the plan members contribute 12.0% to 29.5% of the monthly premium cost, depending on the plan in which they are enrolled. The Commission contributes the balance of the premium cost. For the year ended December 31, 2018, the Commission's average contribution rate was 17.77% of covered-employee payroll.

##### *(c) Employees Covered by Benefit Terms*

The following employees were covered by the benefit terms as of December 31, 2018:

Actives employees	242
Inactive Plan members entitled to but not yet receiving benefits	-
Retirees and beneficiaries	<u>401</u>
Total	<u>643</u>

##### *(d) Net OPEB Liability and Actuarial Assumptions*

The Commission's net OPEB liability of \$47,844,621 was measured as of December 31, 2018 and was determined by an actuarial valuation as of December 31, 2017. The total OPEB liability in the most recent actuarial valuation was determined using the following key actuarial assumptions applied to all periods included in the measurement, unless otherwise specified:

Payroll Growth:	3.00%
Salary Increases:	4.00%
Discount Rate:	6.50%
Investment Rate of Return:	6.50%

Health care trend rates for Medicare and non-Medicare are 6.75% decreasing by 0.5% for four years and then by 0.25% for one year to an ultimate level of 4.5% per year. For Medicare Part B a health care trend rate of 4.5% per year was used. Retiree contributions are expected to increase with health care trend rates.

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### (11) Postemployment Benefits other than Pensions (OPEB) - Continued

##### *(d) Total OPEB Liability and Actuarial Assumptions - Continued*

The mortality rates for pre-retired participants is calculated using RP-2014 Blue Collar Employee Mortality Table projected generationally with Scale MP-2017 set forward 1 year for females. Mortality rates for retirees and disabled participants is calculated using RP-2014 Blue Collar Annuitant Mortality Table projected generationally with Scale MP-2017 set forward 1 year for females.

The long-term expected rate of return on OPEB plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of OPEB plan investment expense and inflation) 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 real rates of return by the target asset allocation percentage and by adding expected inflation subtracting expected investment expenses and a risk margin. The target allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

<b>Asset Class</b>	<b>Allocation</b>	<b>Long-Term Expected Real Rate of Return</b>
Domestic equity	24.80%	6.16%
International developed markets equity	17.32%	6.69%
International emerging markets equity	4.68%	9.47%
Core fixed income	31.20%	1.89%
Hedge fund, GTAA, risk parity	22.00%	3.68%
Total	<u>100.00%</u>	

The discount rate used to measure the total OPEB liability was 6.50% as of December 31, 2018. The OPEB plan's fiduciary 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 OPEB plan investment was applied to all periods of projected benefit payments to determine the total OPEB liability.

There were no changes to key assumptions since this is the first year of implementation of OPEB for the Commission.

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### **(11) Postemployment Benefits other than Pensions (OPEB) - Continued**

##### **(e) Net OPEB Liability**

The components of the net OPEB liability for the Plan as of December 31, 2018 are as follows:

Total OPEB liability	\$ 70,747,343
Fiduciary net position	<u>(22,902,722)</u>
Commission's net OPEB liability	<u><u>\$ 47,844,621</u></u>

Fiduciary net position as a percentage of the total OPEB liability	<u><u>32.37%</u></u>
---	----------------------

##### **(f) Change in the Net OPEB Liability**

	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability
Balances at December 31, 2017	\$ 66,763,531	\$ 19,677,656	\$ 47,085,875
<b>Changes for the year:</b>			
Service cost	2,069,043	-	2,069,043
Interest	4,394,786	-	4,394,786
Contributions - employer	-	6,301,842	(6,301,842)
Net investment income	-	(596,759)	596,759
Benefit payments	<u>(2,480,017)</u>	<u>(2,480,017)</u>	<u>-</u>
Net changes	<u>3,983,812</u>	<u>3,225,066</u>	<u>758,746</u>
Balances at December 31, 2018	<u><u>\$ 70,747,343</u></u>	<u><u>\$ 22,902,722</u></u>	<u><u>\$ 47,844,621</u></u>

##### **(g) Sensitivity Analysis**

The following presents the Commission's net OPEB liability as well as what the Commission's net OPEB liability would be if it were calculated using a discount rate that is 1% lower or 1% higher than the current discount rate as well as if the healthcare cost trend rates are 1% lower or higher than the current healthcare cost trend rates (the health care rate is disclosed on page 30):

	Discount Rate		
	1% Decrease (5.5%)	Current Rate (6.5%)	1% Increase (7.5%)
Net OPEB Liability	\$ 57,966,744	\$ 47,844,621	\$ 39,530,440
<b>Health Care Rate</b>			
	1% Decrease	Trend Rate (page 30)	1% Increase
Net OPEB Liability	\$ 38,224,648	\$ 47,844,621	\$ 59,837,268

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### (11) Postemployment Benefits other than Pensions (OPEB) - Continued

##### (h) *OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB*

For the year ended December 31, 2018, the Commission recognized OPEB income of \$2,650,000. The Commission follows the accounting standards set forth in GASB 62, and therefore provides for recovery of these OPEB liability costs as a deferred outflow of resources to be collected over the life of the liability to which it relates. At December 31, 2018, the Commission reported deferred outflows of resources and deferred inflows of resources related to OPEB as follows:

Deferred Outflows of Resources		
Contributions subsequent to measurement date	\$	2,650,000
Net difference between projected and actual		
earnings on OPEB trust investments		1,600,013
Total	\$	<u>4,250,013</u>

The Commission's contribution of \$2,650,000 reported as deferred outflows of resources related to OPEB resulting from Commission contributions subsequent to the measurement date will be recognized as a reduction of the net OPEB liability in the following year. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

Years Ending	
<u>June 30,</u>	
2019	\$ 400,003
2020	400,003
2021	400,003
2022	400,004
Total	\$ <u>1,600,013</u>

#### (12) 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, 2018, the cash balances of uninsured and uncollateralized deposits totaled \$36,335,734. All the Commission's investments are held by a third party in the name of the Commission.

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### (12) Deposit and Investment Risks - Continued

##### *(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.
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.

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### **(12) Deposit and Investment Risks - Continued**

##### **(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, 2018:

<b>Investment type</b>	<b>Fair value</b>	<b>Less than 1</b>	<b>1 – 5</b>	<b>6 – 10</b>	<b>More than 10</b>
U.S. Government agencies	\$ 151,095,266	26,026,191	50,944,403	38,581,141	35,543,531
Guaranteed investment contract	8,416,250	—	—	8,416,250	—
Money market	36,335,734	36,335,734	—	—	—
Open ended mutual funds	27,738,707	27,738,707	—	—	—
	<hr/> <u>\$ 223,585,957</u>	<hr/> <u>90,100,632</u>	<hr/> <u>50,944,403</u>	<hr/> <u>46,997,391</u>	<hr/> <u>35,543,531</u>

##### **(d) Credit Risk**

The Commission follows its investment policy listed above in regard to the credit worthiness of its investments. The Commission's fixed income investments as of December 31, 2018 was 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:

<b>Investment type</b>	<b>Fair value</b>	<b>AAA</b>	<b>AA</b>	<b>Not rated</b>
U.S. Government agencies	\$ 151,095,266	131,479,943	—	19,615,323
Guaranteed investment contract	8,416,250	—	—	8,416,250
Money market	36,335,734	—	36,335,734	—
Open ended mutual funds	27,738,707	27,738,707	—	—
	<hr/> <u>\$ 223,585,957</u>	<hr/> <u>159,218,650</u>	<hr/> <u>36,335,734</u>	<hr/> <u>28,031,573</u>

As of December 31, 2018, the Commission had \$19,615,323, of unrated investments that are explicitly guaranteed by the U.S. Government.

The Commission's investment policy does not offer specific limitations in regard 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, 2018. Individually these investments in money market funds range between \$11 million and \$19 million for 2018. In the aggregate, they approximate \$55 million for the year ended December 31, 2018.

## BOSTON WATER AND SEWER COMMISSION

### Notes to Financial Statements - Continued

December 31, 2018

#### **(13) Commitments**

The Commission has committed to capital improvement projects of approximately \$176.2 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 \$139.2 million represents extension and improvement projects and \$37.0 million represents renewal and replacement projects. The extension and improvement projects will be 21% 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.

#### **(14) Risk Management and Other Insurance Reserves**

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, \$2.6 million multi-line liability aggregate stop loss and is supplemented by \$10 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:

<b>Policy type</b>	<b>Coverage</b>
Vehicles	Combined single limit of \$1 million/accident, supplemented with Excess coverage of \$10 million.
Property	Aggregate limit of \$250 million blanket building and contents per occurrence based \$25,000 deductible on most perils.
Public officials	Coverage of \$5 million annual aggregate; \$100,000 self-insurance retention.
Employment Practices	Coverage of \$5 million annual aggregate; \$150,000 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	\$2 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 - Continued

December 31, 2018

#### (14) Risk Management and Other Insurance Reserves - Continued

Changes for the year ended December 31, 2018 is as follows:

Beginning balance of reserves	\$ 1,195,734
Payment of claims attributable to events of both current and prior years:	
Workers' compensation	-
General liability	736,882
Incurred claims	<u>(486,934)</u>
Ending balance of reserves	<u>\$ 1,445,682</u>

#### (15) 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, 2018, as well as, the PRO payments made during 2018 were not material to the Commission's financial statements.

##### (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 2018, the Commission achieved the goals set forth in the decree. In accordance with GASB 49, the achievement of these goals is 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, 2018, and the related notes to the financial statements, which collectively comprise the Commission's basic financial statements, and have issued our report thereon dated August 19, 2019.

### **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**

August 19, 2019

# **REQUIRED SUPPLEMENTARY INFORMATION**

**BOSTON WATER AND SEWER COMMISSION**

Schedule of Proportionate Share of the Net Pension Liability (Unaudited)

State Boston Retirement System

Year ended	December 31, 2018	December 31, 2017	December 31, 2016	December 31, 2015
Valuation date	January 1, 2018	January 1, 2016	January 1, 2016	January 1, 2014
Measurement date	December 31, 2018	December 31, 2017	December 31, 2016	December 31, 2015
Commission's proportion of the net pension liability		4.28%	4.07%	4.20%
Commission's proportionate share of the net pension liability	\$ 40,448,003	25,976,537	26,503,599	38,931,280
Commission's covered payroll	\$ 36,120,553	34,743,437	33,407,151	31,361,504
Commission's proportionate share of the net pension asset as a percentage of its covered-employee payroll		111.98%	74.77%	79.34%
Plan fiduciary net position as a percentage of the total pension liability		72.89%	81.49%	79.44%
				69.20%

Notes:

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, information is presented for those years in which information is available.

*See accompanying notes to the required supplemental information.*

**BOSTON WATER AND SEWER COMMISSION**

Schedule of Pension Contributions (Unaudited)

State Boston Retirement System

For the Year Ended December 31,

	2018	2017	2016	2015
Contractually required contribution	\$ 4,868,286	4,667,585	4,918,577	3,994,268
Contributions in relation to the contractually required contribution	7,507,131	4,129,227	11,057,791	7,907,306
Contribution deficiency (excess)	\$ (2,638,845)	538,358	(6,139,214)	(3,913,038)
Commission's covered payroll	\$ 36,120,553	34,743,437	33,407,151	31,361,504
Contribution as a percentage of covered-employee payroll	20.8%	11.9%	33.1%	25.2%

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.

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, information is presented for those years in which information is available.

*See accompanying notes to the required supplemental information.*

**BOSTON WATER AND SEWER COMMISSION**

Notes to Required Supplementary Information -  
State Boston Retirement System (Unaudited)

December 31, 2018

Note 1 - **Change in Assumptions**

**Fiscal year June 30, 2018**

None

**Fiscal year June 30, 2017**

The investment return assumption was reduced from 7.50% to 7.25%.

**Fiscal year June 30, 2016**

None

**Fiscal year June 30, 2015**

None

**BOSTON WATER AND SEWER COMMISSION**

Schedule of the Changes in Total OPEB Liability and Related Ratios (Unaudited)

Other Postemployment Benefit ("OPEB") Trust

Year ended	December 31, 2018
Total OPEB liability:	
Service cost	\$ 2,069,043
Interest	4,394,786
Benefit payments	<u>(2,480,017)</u>
Net change in total OPEB liability	3,983,812
Total OPEB liability. beginning of year	<u>66,763,531</u>
Total OPEB liability. end of year	<u>\$ 70,747,343</u>
Plan fiduciary net position:	
Contributions - employer	\$ 6,301,842
Net investment income	(596,759)
Benefit payments	<u>(2,480,017)</u>
Net change in plan fiduciary net position	3,225,066
Plan fiduciary net position. beginning of year	<u>19,677,656</u>
Plan fiduciary net position. end of year	<u>\$ 22,902,722</u>
Net OPEB liability, end of year	<u>\$ 47,844,621</u>
Plan fiduciary net position as a percentage of the total OPEB liability	32.37%
Covered payroll	\$ 35,472,896
Net OPEB liability as a percentage of covered payroll	134.88%

Notes:

There were no changes to key assumptions for 2018 since this is the first year of implementation of OPEB for the Commission.

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, information is presented for those years in which information is available.

This schedule is presented using the optional format of combining the required schedules in paragraphs 57a and 57b of GASB 75.

## BOSTON WATER AND SEWER COMMISSION

### Schedule of OPEB Contributions (Unaudited)

#### Other Postemployment Benefit ("OPEB") Trust

For the Year Ended December 31, 2018

Actuarily determined contribution	\$ 4,688,044
Contribution in relation to the actuarially determined contribution	<u>6,301,842</u>
Contribution surplus	<u>\$ 1,613,798</u>
 Covered payroll	 \$ 35,472,896
Contributions as a percentage of covered-employee payroll	17.77%

#### Notes:

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, information is presented for those years in which information is available.

The actuarial methods and assumptions used to calculate the total OPEB liability are described in Note 11 to the financial statements.

# **SUPPLEMENTAL SCHEDULES**

**BOSTON WATER AND SEWER COMMISSION**

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

For the Year Ended December 31, 2018

Revenues:	
Water revenue	\$ 154,570,890
Sewer revenue	211,774,201
Subtotal	<u>366,345,091</u>
Less:	
Adjustments	10,879,886
Discounts	1,250,369
Bad debt	1,111,957
Subtotal	<u>13,242,212</u>
Net billed charges	353,102,879
Prior year surplus	570,607
Miscellaneous revenues:	
Late charge revenue	1,098,123
Investment income	4,336,497
Fire pipe revenue	4,869,306
Other income	7,549,162
Total revenues	<u>371,526,574</u>
Direct operating expenses:	
Salaries and wages	49,686,397
Overtime wages	911,159
Fringe benefits	8,100,581
Supplies and materials	2,111,561
Repairs and maintenance	8,107,578
Utilities	1,430,558
Professional services	3,304,198
Space and equipment rentals	236,964
Other services	1,822,935
Insurance	491,401
Travel and training	79,542
Damage claims	286,008
Inventory	15,104
Capital outlay	40,060
Total direct operating expenses	<u>76,624,046</u>
Nonoperating expenses:	
MWRA assessment	227,082,053
Capital improvements	12,585,360
Principal payments	28,308,737
Interest expense	21,690,195
Deposits to reserve funds	4,474,113
SDWA assessment	203,864
Total nonoperating expenses	<u>294,344,322</u>
Total current expenses	<u>370,968,368</u>
Current year rate surplus	<u>\$ 558,206</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.