BOSTON WATER AND SEWER COMMISSION

Financial Statements, Required Supplementary Information
and Other Supplemental Information

December 31, 2022 and 2021

(With Independent Auditor's Report Thereon)

withum
ADVISORY TAX AUDIT

BOSTON WATER AND SEWER COMMISSION

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December 31, 2022 and 2021

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ADVISORY TAX AUDIT

INDEPENDENT AUDITOR'S REPORT

To the Commissioners of
Boston Water and Sewer Commission:

Report on the Audit of the Financial Statements

Opinions

We have audited the accompanying financial statements of the business-type activity and the aggregate remaining fund information of Boston Water and Sewer Commission as of and for the year ended December 31, 2022, and the related notes to the financial statements, which collectively comprise the Boston Water and Sewer Commission's basic financial statements as listed in the table of contents.

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the business-type activity and the aggregate remaining fund information of the Commission, as of December 31, 2022, and the respective changes in financial position, and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinions

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

Other Matter

The financial statements and supplementary information of the Commission as of and for the year ended December 31, 2021, were audited by O'Connor & Drew, P.C., who joined with WithumSmith+Brown, PC on January 1, 2023 and expressed unmodified opinions on those statements and supplementary information dated July 27, 2022.

Responsibilities of Management for the Financial Statements

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

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

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Auditor's Responsibilities for the Audit of the Financial Statements

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

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

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

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

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and the required supplementary information as listed in the table of contents be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the 2022 required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the 2022 information and comparing the 2022 information for consistency with management's responses to our inquiries, the 2022 basic financial statements, and other knowledge we obtained during our audit of the 2022 basic financial statements. We do not express an opinion or provide any assurance on the 2022 information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming opinions on the 2022 financial statements that collectively comprise the Boston Water and Sewer Commission's 2022 basic financial statements. The accompanying 2022 supplemental schedules listed in the table of contents are presented for purposes of additional analysis and are not a required part of the 2022 basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The 2022 information has been subjected to the auditing procedures applied in the audit of the 2022 basic financial statements and certain additional procedures, including comparing and reconciling such 2022 information directly to the underlying accounting and other records used to prepare the 2022 basic financial statements or to the 2022 basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the 2022 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 September 14, 2023, on our consideration of the 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 solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Boston Water and Sewer Commission's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering Boston Water and Sewer Commission's internal control over financial reporting and compliance.

WithumSmith+Brown, PC

September 14, 2023

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).

Overview of the Financial Statements

The Financial Statements: The financial statements are designed to provide readers with a broad overview of the Commission finances and are comprised of three basic statements.

The *Statements of Net Position* presents information on all of the Commission's assets, deferred outflows of resources, liabilities, and deferred inflows of resources with the difference reported as *net position*.

The *Statements of Revenues, Expenses and Changes in Net Position* presents information showing how the Commission's net position changed during the most recent fiscal year.

The *Statements of Cash Flows* is reported on the direct method. The direct method of cash flow reporting portrays net cash flows from operations as major classes of operating receipts and disbursements.

Fiduciary Funds – The Commission reports the other post-employment benefit ("OPEB") trust fund as separate statements of fiduciary net position and statements of changes in fiduciary net position. Fiduciary funds are used to account for resources held for the benefit of parties outside the Commission. Fiduciary funds are not reflected in the Commission's business type financial statements because the resources of these funds are not available to support the Commission's own programs. The Fiduciary Fund Financial Statements can be found immediately following the Statements of Cash Flows.

The financial statements can be found on pages 10 through 14 of this report.

Notes to the financial statements*:* The notes provide additional information that is essential to a full understanding of the data provided in the financial statements. The notes provide information regarding both the accounting policies and procedures the Commission has adopted as well as additional detail of certain amounts contained in the financial statements. The notes to the financial statements can be found on pages 15 through 49 of this report.

Condensed Financial Information
(in thousands)

		2022	2021	2020
Current assets	$	353,904	334,901	311,314
Capital assets, net		1,532,236	1,497,563	1,472,358
Total assets		1,886,140	1,832,464	1,783,672
Total deferred outflows		141,030	100,007	90,555
Current liabilities		118,499	86,286	112,449
Noncurrent liabilities		609,343	615,280	587,234
Total liabilities		727,842	701,566	699,683
Total deferred inflows		890,763	829,287	783,719
Net position:				
Net investment in capital assets		944,499	898,140	867,306
Restricted		118,764	114,057	114,653
Unrestricted net deficit		(654,698)	(610,579)	(591,134)
Total net position	$	408,565	401,618	390,825

During the year, the Commission saw an increase in total assets and in total liabilities, resulting in an increase in total net position of $6.9 million, or 1.7%. In 2021, net position totaled $401.6 million, an increase of $10.8 million, or 2.8% from 2020. The Commission's 2022 operations resulted in a rate basis surplus of $758,941 compared to $464,760 in 2021.

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 $1.5 billion at December 2022, which is 2.3% higher than in 2021. In 2021, these investments totaled $1.5 billion, an increase of $25.2 million, or 1.7% over the 2020 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 2022 were $458.9 million, which is 10.7% greater than in 2021. Total operating revenues in 2021 were $414.7 million, which is 5.4% greater than 2020. Operating revenues consist of water and sewer revenue, fire pipe revenue and other income. Water and sewer revenue in 2022 and 2021 represented 97.2% and 97.1% of total operating revenues, respectively. The increases in 2022 and 2021 operating revenues were primarily driven by a 4.5% and 8.90% average rate increase, respectively.

Total operating expenses in 2022 were $390.4 million, which represents an increase of 5.8% from 2021. The increase in 2022 operating expenses was primarily due to a combined additional spending of 6.9%, or $21.7 million in three-line items (operations, maintenance, and Massachusetts Water Resources Authority ("MWRA") assessment). Total operating expenses in 2021 were $369.0 million, which represents an increase of 3.5% from 2020. This increase in 2021 operating expenses was primarily due to a combined additional spending of 3.5%, or $7.4 million in three-line items (operations, maintenance and Massachusetts Water Resources Authority ("MWRA") assessment). Operating expenses consist of operations and maintenance, MWRA assessment, depreciation and amortization. The MWRA assessment is the largest expense incurred by the Commission, representing 63.4% and 66.0% in 2022 and 2021, respectively, of total operating expenses.

In 2022 and 2021, 84% and 83%, respectively, 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.

Condensed Financial Information
(in thousands)

		2022	2021	2020
Operating revenues:				
Water and sewer usage	$	445,984	402,667	363,852
Other		12,998	12,002	29,490
Operating expenses		(390,390)	(369,045)	(356,455)
Excess operating revenues		68,592	45,624	36,887
Investment income		6,992	4,075	2,514
Interest expense		(14,622)	(15,585)	(17,366)
Total nonoperating net expense		(7,630)	(11,510)	(14,852)
Excess revenues before capital grants, contributions and transfer requirements		60,962	34,114	22,035
Capital grants and contributions		13,666	17,803	2,560
Excess revenues used to fund reserves and other deferrals		(67,386)	(41,031)	(29,525)
Change in accumulated revenues used to offset future rates		(294)	(93)	318
Change in net position		6,947	10,793	(4,612)
Net position, beginning of year		401,618	390,825	395,437
Net position, end of year	$	408,565	401,618	390,825

Capital Assets

In fiscal year 2022, major Commission project additions totaled $42.4, of which $13.6 was financed with bond proceeds. Major project expenditures (in millions) are as follows:

Relay of water mains	$	15.9
Rehabilitation/replacement of sewers or storm drains		17.2
Separation of combined sewers		5.8
Meter replacement		0.3
Stormwater		3.2
	$	42.4

The Commission's 2022-2024 capital budget includes projected expenditures of $238.9 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 4 for more detailed capital asset activity.

Debt Plan

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

The Commission issues General Revenue Bonds to finance portions of its capital improvement projects. The Commission's 2022-2024 capital budget, which totals $238.9 million, anticipates that projects totaling $105.9 million, or 45% of the Commission's 2022-2024 capital budget, will be funded from bond proceeds. The 2022 budget for debt service is $49.7 million including $43.5 million for bonds. Please refer to footnote 5 for more detailed long-term debt information.

The Commission currently has nine series of General Revenue Bonds outstanding at the end of 2022, totaling approximately $496.2 as follows (in millions):

1994 Series A	$	5.6
2012 Series A		7.9
2014 Series A		58.0
2015 Series A		72.8
2016 Series A		40.6
2016 Series B		48.6
2018 Series A		66.9
2021 Series A		155.6
2021 Series B		40.2
	$	496.2

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 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 2022 and 2021, the Commission increased its water and sewer rates by an average of 4.50% and 8.90%, 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, 2023, the Commission increased its water and sewer rates by an average of 1.50%.

Credit Ratings

The Commission's revenue bonds are rated "Aa1" by Moody's Investors Service, "AAA" 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 at 617-989-7000, or on the web at www.bwsc.org.

BOSTON WATER AND SEWER COMMISSION

Statements of Net Position

December 31, 2022 and 2021

Assets		2022	2021
Current assets:			
Cash and cash equivalents	$	15,608,812	7,798,415
Restricted cash and investments (Notes 5 and 11)		270,886,915	264,988,651
Accounts receivable, net:			
Customers, less allowances of $2,465,797 in 2022 and in 2021, respectively (Note 1)		31,818,585	30,735,649
Unbilled revenues, less allowances of $1,702,361 in 2022 and 2021		34,335,488	30,454,280
Prepaid expenses		1,253,897	923,703
Total current assets		353,903,697	334,900,698
Noncurrent assets:			
Capital assets (Note 4):			
Depreciable, net		1,404,256,600	1,349,742,504
Nondepreciable		127,979,478	147,820,367
Total noncurrent assets		1,532,236,078	1,497,562,871
Total Assets		1,886,139,775	1,832,463,569
Deferred Outflows of Resources			
Deferred charges (Note 2)		141,030,508	100,007,054
Liabilities			
Current liabilities:			
Payable from current assets:			
Accounts payable		24,179,236	20,868,909
Other accrued liabilities		22,651,912	13,622,678
Commercial paper notes (Note 6)		35,000,000	15,000,000
Current portion of long-term notes (Note 5)		6,138,087	6,835,211
Current portion of revenue bonds (Note 5)		30,529,476	29,958,676
Total current liabilities		118,498,711	86,285,474
Noncurrent liabilities:			
Long-term notes (Note 5)		30,646,513	33,215,110
Revenue bonds, net (Note 5)		487,674,381	518,203,846
Net pension liability (Note 9)		46,855,560	21,656,915
Net OPEB liability (Note 10)		39,616,243	38,837,083
Other long-term liabilities (Note 13)		4,550,357	3,367,494
Total noncurrent liabilities		609,343,054	615,280,448
Total Liabilities		727,841,765	701,565,922
Deferred Inflows of Resources			
Deferred credits and reserves (Note 3)		890,763,421	829,286,671
Commitments and contingencies (Notes 12 and 14)			
Net Position			
Net position:			
Net investment in capital assets		944,498,467	898,139,925
Restricted for debt service		51,804,373	51,886,236
Restricted for capital assets		542,177	163,505
Restricted for debt covenants		66,418,203	62,007,142
Unrestricted net deficit		(654,698,123)	(610,578,778)
Total Net Position	$	408,565,097	401,618,030

See accompanying notes to financial statements.

BOSTON WATER AND SEWER COMMISSION

Statements of Revenues, Expenses and Changes in Net Position

Years Ended December 31, 2022 and 2021

		2022	2021
Operating revenues:			
Water and sewer usage (Note 1)	$	445,984,547	402,666,256
Fire pipe		5,327,520	5,222,027
Other		7,670,726	6,780,262
Total operating revenues		458,982,793	414,668,545
Operating expenses:			
Operations		104,906,679	85,250,673
Maintenance		12,480,425	12,958,569
MWRA assessment (Note 7)		245,958,491	243,396,224
Depreciation and amortization		27,044,814	27,439,948
Total operating expenses		390,390,409	369,045,414
Excess operating revenues		68,592,384	45,623,131
Nonoperating revenue (expense):			
Investment income		6,991,769	4,075,426
Interest expense		(14,622,176)	(15,585,193)
Total nonoperating net expense		(7,630,407)	(11,509,767)
Excess revenues before capital grants and contributions and transfer requirements		60,961,977	34,113,364
Capital grants and contributions: (Note 1)		13,665,469	17,803,560
Excess revenues before transfer requirements		74,627,446	51,916,924
Excess revenues used to fund reserves and other deferrals (Note 3)		(67,386,201)	(41,030,918)
Change in accumulated revenues used to offset future rates (Note 3)		(294,178)	(92,856)
Changes in net position		6,947,067	10,793,150
Net position, beginning of year		401,618,030	390,824,880
Net position, end of year	$	408,565,097	401,618,030

See accompanying notes to financial statements.

BOSTON WATER AND SEWER COMMISSION

Statements of Cash Flows

Years Ended December 31, 2022 and 2021

		2022	2021
Cash flows from operating activities:			
Receipts from customers	$	454,018,649	415,872,698
Payments to suppliers		(285,945,748)	(276,471,236)
Payments to employees		(80,686,907)	(59,164,947)
Net cash provided by operating activities		87,385,994	80,236,515
Cash flows from investing activities:			
Investment income		6,991,769	4,075,426
Sales of investments		208,835,273	130,473,346
Purchases of investments		(231,314,205)	(208,835,273)
Net cash applied to investing activities		(15,487,163)	(74,286,501)
Cash flows from capital and related financing activities:			
Purchase of capital assets		(61,205,541)	(53,264,952)
Proceeds from long-term notes		3,569,490	13,014,572
Proceeds from revenue bonds		—	205,896,394
Payment of long-term notes		(6,835,211)	(5,935,166)
Payment of revenue bonds		(26,140,000)	(169,525,000)
Proceeds from commercial paper		20,000,000	15,000,000
Payment of commercial paper		—	(50,000,000)
Capital grants and contributions		13,665,469	17,803,560
Payment of interest		(23,723,310)	(32,574,297)
Net cash applied to capital and related financing activities		(80,669,103)	(59,584,889)
Net decrease		(8,770,272)	(53,634,875)
Cash and cash equivalents, beginning of year		118,057,243	171,692,118
Cash and cash equivalents, end of year	$	109,286,971	118,057,243
Reconciliation of operating income to net cash provided by operating activities:			
Excess operating revenues	$	68,592,384	45,623,131
Adjustment to reconcile operating income to net cash:			
Depreciation and amortization		27,044,814	27,439,948
Bad debts		550,528	41,375
Deferred outflows of resources		(42,117,491)	802,385
Change in assets and liabilities:			
Accounts receivable, net		(1,633,464)	3,653,479
Unbilled revenues		(3,881,208)	(2,490,701)
Prepaid expenses		(330,195)	(63,478)
Accounts payable		2,797,847	3,083,350
Other accrued liabilities		9,202,111	5,162,910
Other long-term liabilities		1,182,863	1,370,761
Net pension activity		25,198,645	(7,354,968)
Net OPEB activity		779,160	2,968,323
Net cash provided by operating activities	$	87,385,994	80,236,515
Noncash capital and related financing activities:			
Retainage payable	$	—	(619,871)
Bond issuance costs	$	—	700,837
Cash and cash equivalents are comprised of the following:			
Cash and cash equivalents	$	15,608,812	7,798,415
Money market in restricted cash and investments		50,386,915	64,793,881
Cash in restricted cash and investments		43,291,244	45,464,947
Total	$	109,286,971	118,057,243

See accompanying notes to financial statements.

BOSTON WATER AND SEWER COMMISSION

Statements of Fiduciary Net Position

Other Post-Employment Benefits ("OPEB") Trust Fund

December 31, 2022 and 2021

Assets

	2022	2021
Cash and cash equivalents	$ —	177,935
Investments:		
Mutual funds	8,554,304	7,221,201
Equity	15,426,405	14,383,398
Fixed income	8,225,603	7,882,836
Pooled index fund	6,504,134	6,654,854
Receivable	3,500,000	2,503,712
Total Assets	42,210,446	38,823,936

Net Position

	2022	2021
Restricted for OPEB purposes	42,210,446	38,823,936
Total Net Position	$ 42,210,446	38,823,936

See accompanying notes to financial statements.

BOSTON WATER AND SEWER COMMISSION

Statements of Changes in Fiduciary Net Position

Other Post-Employment Benefits ("OPEB") Trust Fund

Years Ended December 31, 2022 and 2021

ADDITIONS:	2022	2021
Contributions:		
Employer	$ 10,373,789	6,958,809
Total Contributions	10,373,789	6,958,809
Investment earnings:		
Investment income	(3,683,330)	4,074,737
Less investment expenses	(54,040)	(118,892)
Total net investment income	(3,737,370)	3,955,845
Total additions	6,636,419	10,914,654
DEDUCTIONS:		
Benefit payments	3,249,909	3,064,401
Change in Net Position	3,386,510	7,850,253
Net Position Restricted for OPEB		
Beginning of Year	38,823,936	30,973,683
End of Year	$ 42,210,446	38,823,936

See accompanying notes to financial statements.

(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 schedules of revenues and expenses – rate basis are presented in the same format as utilized in the Commission's operational budgeting and rate-setting process. The revenues and expenses shown on the statements of revenues and expenses are presented on a GAAP basis. Reconciliation between the revenues and expenses of these two operating statements for the year ended December 31, 2022 is provided below:

	Revenues	Expenses
As presented in the statements of revenues and expenses:		
Operating revenues/expenses	$ 458,982,793	390,390,409
Investment income/interest expense	6,991,769	14,622,176
Total	465,974,562	405,012,585
Reclassifications and deferrals:		
Contributions to reserves	—	26,034,000
GAAP adjustments	(18,053,274)	(18,053,274)
Excess bond payments over depreciation and amortization	—	8,252,820
Investment income (escrowed funds)	(538,605)	—
Capital expenditures	—	21,021,614
Excess revenue used to offset current rates	464,760	—
Other deferrals	(4,575,866)	244,891
As presented in the supplemental schedule of revenues and expenses - rate basis	$ 443,271,577	442,512,636

(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 \$758,941 and \$464,760 for the years ended December 31, 2022 and 2021, respectively, to offset rates in the respective subsequent years.

(a) Revenue Billings

Water and sewerage fees are billed to users of the systems on a monthly-cycle basis. Revenues are accrued for periods between the termination of billings for the various cycles and the end of the year. Some adjustments are made on a post-billing basis that reduce the number of total billings. The total customer bills outstanding as of December 31, 2022 and 2021 were approximately \$34.3 and \$33.2 million, respectively. These net billing amounts are reduced by an allowance for uncollectible accounts of approximately \$2.5 million in 2022 and 2021, and to arrive at the net accounts receivable. Charges for water and sewer services provided, but unbilled, at year end are estimated based on historical usage. The calculation is reduced by an allowance for the adjustment of approximately \$1.7 million in 2022 and 2021 to arrive at the net accounts receivable.

(b) Investments

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

The Commission categorizes the fair value measurements of its investments based on the hierarchy established by generally accepted accounting principles as prescribed by the GASB. The fair value hierarchy, which has three levels, is based on the valuation inputs used to measure an asset's fair value: Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs. The Commission does not have any investments that are measured using Level 2 or 3 inputs as disclosed in Note 11.

(c) Capital Assets

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

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

(d) Compensated Absences

Employees of the Commission accumulate unused sick time (subject to certain limitations) to be used 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 and is included as other liabilities.

(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) Fiduciary Fund

The fiduciary fund financial statements are reported using the economic resources measurement focus on the accrual basis of accounting. Under this method, revenues are recognized when earned and expenses are recorded when liabilities are incurred. The Commission reports as a fiduciary fund the other post-employment benefit ("OPEB") trust fund which is used to account for contributions and investment income restricted to pay medical and life insurance benefits. Further information on the significant accounting policies for the OPEB trust fund may be found in Note 10 of the basic financial statements. Fiduciary funds are not reflected in the Commission's business type financial statements because the resources of these funds are not available to support the Commission's own programs.

(g) Depreciation

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

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

(h) 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 statements of cash flows.

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

(i) Deferred Inflows of Resources and Deferred Outflows of Resources

Deferred inflows and outflows represent the consumption or acquisition of net position 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 value.

(j) 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 Boston Retirement System ("BRS"), 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 BRS. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with benefit terms. Investments are reported at fair value.

(k) Other Postemployment 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 Boston Water and Sewer OPEB Trust (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.

(l) Net Position

Resources are classified for accounting purposes into the following categories:

Net Investment in Capital Assets: Capital assets, net of accumulated depreciation and outstanding principal balances of debt attributable to the acquisition, construction, or improvement of those assets. Deferred outflows of resources and deferred inflows of resources that are attributable to the acquisition, construction, or improvement of those assets or related debt are included in this component of net position.

Restricted – Expendable: Net position whose use is subject to externally imposed conditions that can be fulfilled by the actions of the Commission or by the passage of time.

Unrestricted: All other categories of net position. Unrestricted net position may be designated by the Commission.

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

(m) 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.

(n) 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.

(o) Capital Contributions

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

(p) New Government Accounting Pronouncements

GASB Statement 96 – *Subscription-Based Information Technology Arrangements (SBITA)* is effective for reporting periods beginning after June 15, 2022. The objective of this Statement is to provide accounting and financial reporting guidance for transactions in which a governmental entity contracts with another party for the right to use their software. A right to use asset and a corresponding liability would be recognized for SBITAs.

GASB Statement 99 – *Omnibus 2022* is effective for reporting periods beginning after June 15, 2022. The objectives of this Statement are to enhance comparability in accounting and financial reporting and to improve the consistency of authoritative literature by addressing (1) practice issues that have been identified during implementation and application of certain GASB Statements and (2) accounting and financial reporting for financial guarantees.

GASB Statement 100 – *Accounting Changes and Error Corrections* is effective for periods beginning after June 15, 2023. The objective of this Statement is to enhance accounting and financial reporting requirements for accounting changes and error corrections to provide more understandable, reliable, relevant, consistent, and comparable information for making decisions or assessing accountability.

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

(p) New Government Accounting Pronouncements – continued

GASB Statement 101 – *Compensated Absences* is effective for reporting periods beginning after December 15, 2023. The objective of this Statement is to better meet the information needs of financial statement users by updating the recognition and measurement guidance for compensated absences. That objective is achieved by aligning the recognition and measurement guidance under a unified model and by amending certain previously required disclosures.

Management has not completed its review of the requirements of these standards and their applicability.

(q) Adoption of new Accounting Pronouncements

As of January 1, 2022, the Commission implemented GASB 87, *Leases.* GASB 87 enhances the consistency for leasing activities and establishes requirements for lease accounting based on the principle that leases are financings of the right to use an underlying asset. A lessee is required to recognize a lease liability and an intangible right to use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources. The implementation of this standard did not have a material impact on the financial statements.

(2) Deferred Outflows of Resources

Deferred outflows of resources represent the consumption of net position 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 outflows of resources as of December 31,:

		2022	2021
Cost to be recovered through future revenues:			
Pension obligation	$	46,855,560	21,656,915
OPEB obligation		39,616,243	38,837,083
Pension:			
Pension related		-	10,974,837
Net difference between projected and actual earnings on pension plan investments		17,410,463	-
Differences between expected and actual experience in the total pension liability		3,529,506	258,304
Changes in assumptions		3,193,008	4,298,997
OPEB:			
Net difference between projected and actual earnings on OPEB plan investments		3,581,502	-
Differences between expected and actual experience in the total OPEB liability		5,228,503	-
Changes in assumptions		5,722,716	6,676,502
Deferred loss on defeasance		15,893,007	17,304,416
Total:	$	141,030,508	100,007,054

(3) Deferred Inflows of Resources

In accordance with GASB 62, certain revenues and expenditures that would otherwise be included in the statements of revenues and expenses may be applied to future operations.

These items are identified on the statements of revenues and expenses as excess revenues used to fund reserves and other deferrals and are included on the statements of net position in deferred credits and reserves and are as follows for the years ended December 31,:

		2022	2021
Contributions to reserves	$	26,034,000	16,889,000
Principal payments on long-term debt		32,975,211	31,100,167
Capital expenditures		21,021,614	10,577,512
Depreciation and amortization		(18,003,986)	(18,278,753)
Investment income on project and escrow funds		23,793,105	2,317,231
Other		(18,433,743)	(1,574,239)
	$	67,386,201	41,030,918

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

		2022	2021
Debt service	$	214,884,944	183,121,817
Capital improvements		662,898,266	649,935,884
Pension:			
Pension related		18,915,624	—
Differences between expected and actual experience - pension		4,781,624	6,396,205
Changes of assumptions		435,732	—
Net differences between expected and actual earnings on plan investments - pension		—	9,135,934
OPEB:			
OPEB Related		8,648,495	3,691,187
Differences between expected and actual experience in the total OPEB liability		603,605	724,326
Changes of assumptions		5,280,621	384,262
Net difference between projected and actual earnings on OPEB plan investments		—	1,876,727
Working capital		(28,684,431)	(28,684,431)
Self-insurance		2,240,000	2,240,000
		890,004,480	828,821,911
Reduction of future rates		758,941	464,760
Total	$	890,763,421	829,286,671

(4) Capital Assets

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

	Balance at December 31, 2021	Additions	Disposals	Reclassifications	Balance at December 31, 2022
Capital assets, not being depreciated:					
Land	$ 5,884,243	—	—	—	5,884,243
Construction in progress	141,936,124	56,992,316	—	(76,833,206)	122,095,234
Total capital assets, not being depreciated	147,820,367	56,992,316	—	(76,833,206)	127,979,477
Capital assets, being depreciated:					
Buildings and improvements	68,214,142	72,152	—	1,764,391	70,050,685
Machinery and equipment	48,976,794	4,306,962	—	—	53,283,756
Infrastructure	1,715,210,857	346,591	—	75,068,815	1,790,626,263
Total capital assets, being depreciated	1,832,401,793	4,725,705	—	76,833,206	1,913,960,704
Less: accumulated depreciation for:					
Buildings and improvements	37,052,762	1,645,725	—	—	38,698,487
Machinery and equipment	37,650,177	3,664,639	—	—	41,314,816
Infrastructure	407,956,350	21,734,450	—	—	429,690,800
Total accumulated depreciation	482,659,289	27,044,814	—	—	509,704,103
Total capital assets being depreciated, net	1,349,742,504	(22,319,109)	—	76,833,206	1,404,256,601
Capital assets, net	$ 1,497,562,871	34,673,207	—	—	1,532,236,078

(4) Capital Assets - Continued

	Balance at December 31, 2020	Additions	Disposals	Reclassifications	Balance at December 31, 2021
Capital assets, not being depreciated:					
Land	$ 5,884,243	—	—	—	5,884,243
Construction in progress	121,161,517	48,868,760	—	(28,094,153)	141,936,124
Total capital assets, not being depreciated	127,045,760	48,868,760	—	(28,094,153)	147,820,367
Capital assets, being depreciated:					
Buildings and improvements	68,112,671	44,110	—	57,361	68,214,142
Machinery and equipment	45,305,280	3,671,514	—	—	48,976,794
Infrastructure	1,687,113,368	60,697	—	28,036,792	1,715,210,857
Total capital assets, being depreciated	1,800,531,319	3,776,321	—	28,094,153	1,832,401,793
Less: accumulated depreciation for:					
Buildings and improvements	35,440,873	1,611,889	—	—	37,052,762
Machinery and equipment	33,116,370	4,533,807	—	—	37,650,177
Infrastructure	386,662,098	21,294,252	—	—	407,956,350
Total accumulated depreciation	455,219,341	27,439,948	—	—	482,659,289
Total capital assets being depreciated, net	1,345,311,978	(23,663,627)	—	28,094,153	1,349,742,504
Capital assets, net	$ 1,472,357,738	25,205,133	—	—	1,497,562,871

(5) Long-Term Obligations

Long-term liabilities at December 31, consist of:

		Balance at December 31, 2021	Additions	Reductions	Balance at December 31, 2022	Current Portion
Notes payable:						
Long-term notes	$	40,050,321	3,569,490	(6,835,211)	36,784,600	6,138,087
Revenue bonds		522,340,000	—	(26,140,000)	496,200,000	27,325,000
Revenue bonds premiums		25,822,522	—	(3,818,665)	22,003,857	3,204,476
Total notes payable and bonds		588,212,843	3,569,490	(36,793,876)	554,988,457	36,667,563
Other long-term liabilities:						
Net pension liability		21,656,915	25,198,645	-	46,855,560	—
Net OPEB liability		38,837,083	779,160	-	39,616,243	—
Other long-term liabilities		3,367,494	2,816,539	(1,633,676)	4,550,357	—
Total other long-term liabilities		63,861,492	28,794,344	(1,633,676)	91,022,160	—
Total long-term liabilities	$	652,074,335	32,363,834	(38,427,552)	646,010,617	36,667,563

		Balance at December 31, 2020	Additions	Reductions	Balance at December 31, 2021	Current Portion
Notes payable:						
Long-term notes	$	32,970,915	13,014,572	(5,935,166)	40,050,321	6,835,211
Revenue bonds		493,525,000	198,340,000	(169,525,000)	522,340,000	26,140,000
Revenue bonds premiums		28,994,234	8,257,231	(11,428,943)	25,822,522	3,818,676
Total notes payable and bonds		555,490,149	219,611,803	(186,889,109)	588,212,843	36,793,887
Other long-term liabilities:						
Net pension liability		29,011,883	—	(7,354,968)	21,656,915	—
Net OPEB liability		35,868,760	2,968,323	-	38,837,083	—
Other long-term liabilities		1,996,733	1,683,737	(312,976)	3,367,494	—
Total other long-term liabilities		66,877,376	4,652,060	(7,667,944)	63,861,492	—
Total long-term liabilities	$	622,367,525	224,263,863	(194,557,053)	652,074,335	36,793,887

(5) Long-Term Obligations - Continued

(a) Revenue Bonds

The Commission issues revenue bonds to support various projects. As set forth by the Commission's bond resolution, revenue bonds are secured by all revenues of the Commission as well as deposits held in certain reserve funds. The following is a summary of revenue bond activity for the year ended December 31, (amounts in thousands).

Description		Balance at December 31, 2021	Additions	Reductions	Balance at December 31, 2022	Amounts due within one year
Revenue bonds:						
1994 Series A, bearing a variable interest rate based on the daily Municipal Market Data scale issued August 20, 1994, maturing 1995 to 2024	$	8,100	—	2,500	5,600	2,700
2012 Series A, bearing interest ranging from 3.0% to 5.0% issued June 6, 2012, maturing 2015 to 2023		15,460	—	7,585	7,875	7,875
2014 Series A, bearing interest ranging from 3.0% to 5.0% issued July 22, 2014, maturing 2017 to 2044		58,700	—	700	58,000	1,000
2015 Series A, bearing interest ranging from 3.0% to 5.0% issued August 5, 2015, maturing 2023 to 2028		72,760	—	—	72,760	13,010
2016 Series A, bearing interest ranging from 3.0% to 5.0% issued September 13, 2016, maturing 2020 to 2031		52,820	—	12,220	40,600	—
2016 Series B, bearing interest ranging from 3.0% to 5.0% issued September 13, 2016, maturing 2017 to 2046		49,135	—	500	48,635	500
2018 Series A, bearing interest ranging from 3.0% to 5.0% issued May 30, 2018, maturing 2020 to 2048		67,400	—	500	66,900	500
2021 Series A, bearing interest ranging from 0.29% to 3.0% issued July 7, 2021, maturing 2021 to 2037		157,335	—	1,735	155,600	1,740
2021 Series B, bearing interest ranging from 2.0% to 5.0% issued July 7, 2021, maturing 2021 to 2051		40,630	—	400	40,230	—
		522,340	—	26,140	496,200	27,325
Unamortized issue premiums/discounts		25,822	—	3,819	22,003	3,204
Net revenue bonds	$	548,162	—	29,959	518,203	30,529

(5) Long-Term Obligations - Continued

(a) Revenue Bonds - continued

Description		Balance at December 31, 2020	Additions	Reductions	Balance at December 31, 2021	Amounts due within one year
Revenue bonds:						
1994 Series A, bearing a variable interest rate based on the daily Municipal Market Data scale issued August 20, 1994, maturing 1995 to 2024	$	10,500	—	2,400	8,100	2,500
2009 Series B, bearing interest ranging from 3.0% to 5.0% issued March 26, 2009, maturing 2009 to 2021		3,840	—	3,840	—	—
2012 Series A, bearing interest ranging from 3.0% to 5.0% issued June 6, 2012, maturing 2015 to 2023		86,685	—	71,225	15,460	7,585
2014 Series A, bearing interest ranging from 3.0% to 5.0% issued July 22, 2014, maturing 2017 to 2044		99,200	—	40,500	58,700	700
2015 Series A, bearing interest ranging from 3.0% to 5.0% issued August 5, 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		59,680	—	6,860	52,820	12,220
2016 Series B, bearing interest ranging from 3.0% to 5.0% issued September 13, 2016, maturing 2017 to 2046		82,960	—	33,825	49,135	500
2018 Series A, bearing interest ranging from 3.0% to 5.0% issued May 30, 2018, maturing 2020 to 2048		77,900		10,500	67,400	500
2021 Series A, bearing interest ranging from 0.29% to 3.0% issued July 7, 2021, maturing 2021 to 2037		—	157,710	375	157,335	1,735
2021 Series B, bearing interest ranging from 2.0% to 5.0% issued July 7, 2021, maturing 2021 to 2051		—	40,630	—	40,630	400
		493,525	198,340	169,525	522,340	26,140
Unamortized issue premiums/discounts		28,994	8,257	11,429	25,822	3,819
Net revenue bonds	$	522,519	206,597	180,954	548,162	29,959

(5) Long-Term Obligations - Continued

(a) Revenue Bonds - continued

Debt principal and interest maturities for future years as of December 31, 2022 are as follows (amounts in thousands):

		Revenue bonds	
		Principal	**Interest**
2023	$	27,325	16,147
2024		28,650	14,862
2025		29,235	13,801
2026		26,960	12,701
2027		27,370	11,633
2028-2032		118,190	45,223
2033-2037		93,935	31,303
2038-2042		77,610	18,246
2043-2047		57,185	5,778
2048-2051		9,740	414
	$	496,200	170,108

Amortization expense for losses on bond refunding and amortization income of bond issuance premiums which are recorded as interest for the years ended December 31, 2022 and 2021 totaled $(2,322,421) and $(2,972,395), respectively.

The Commission is required to maintain a Senior Debt Service Reserve Fund of an amount at least equal to the sum of the maximum amount of principal, or sinking fund payments, and interest due in the current or immediately succeeding year on the outstanding senior bonds issued as “fixed rate bonds", net of any accrued interest from the sale of any such bonds. As of December 31, 2022 and 2021, approximately $44.3M has been deposited into the Senior Debt Service Reserve Account. This account is included with restricted cash and investments on the statements of net position.

During 2021, the Commission completed the issuance of $198,340,000 General Revenue and Refunding Bonds, 2021 Series A and 2021 Series B (the “Bonds”). The net proceeds of $205,896,394 (after issuance costs of $700,837, plus premium of $8,257,231) were used to refund $61,035,000, $40,000,000, $33,325,000 and $10,000,000 outstanding on the 2012 Series A, 2014 Series A, 2016 Series B and 2018 Series A bonds (the “defeased bonds”), respectively, and to provide permanent financing for certain capital improvements previously financed by outstanding commercial paper; provide funding for other capital improvements; provide for a deposit to the Senior Debt Service Reserve Fund; and to pay the costs associated with the issuance of the Bonds. The Bonds have principal payable annually beginning November 1, 2022, through and including November 1, 2051. The refunding reduced the Commission’s total debt service by approximately $19.7 million and resulted in an economic gain (the difference between the present value of the debt service on the old and new bonds) of approximately $17.3 million.

(5) Long-Term Obligations - Continued

(b) Prior Year Debt Refunding (Defeasements)

In the aggregate, $340,430,000 and $358,695,000 remains outstanding at December 31, 2022 and 2021, respectively, on bond issues that were defeased "in-substance" in prior years.

(c) Restricted Cash and Investments

The Commission has established both trusteed and nontrusteed 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 trusteed and nontrusteed investments at December 31, are as follows:

		2022	2021
Trusteed:			
U.S. Government agency obligations	$	137,605,990	113,925,484
Money market		48,706,250	62,708,642
Repurchase agreements		8,416,250	8,416,250
		194,728,490	185,050,376
Nontrusteed:			
U.S. Government agency obligations		3,007,350	—
Cash		43,291,244	45,464,947
Money market		1,680,665	2,085,239
Open-ended mutual funds		28,179,166	32,388,089
		76,158,425	79,938,275
Restricted cash and investments		270,886,915	264,988,651
Less nontrusteed cash		(43,291,244)	(45,464,947)
Trusteed and nontrusteed investments	$	227,595,671	219,523,704

(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"), Lead Loan Program ("LLP"), and System Assistance Program ("SAP"). These programs are designed to assist service area communities with sewer system rehabilitation.

(5) Long-Term Obligations - Continued

(d) Long-Term Notes Payable - continued

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

Description	Balance at December 31, 2021	Additions	Reductions	Balance at December 31, 2022	Amounts due within one year
MWRA I/I Program Phase VIII, interest free, due May 15, 2022	$ 206,022	—	206,022	—	—
MWRA I/I Program Phase IX, interest free, due Aug 15, 2029	4,622,114	—	806,924	3,815,190	452,264
MWRA I/I Program Phase X, interest free, due May 15, 2032	—	2,706,990	—	2,706,990	270,699
MWRA SAP Program, interest free, due Aug 15, 2028	32,619,766	—	5,562,023	27,057,743	5,068,632
MWRA LLP. Program, interest free, due May 15, 2032	2,602,419	862,500	260,242	3,204,677	346,492
Total long-term notes	$ 40,050,321	3,569,490	6,835,211	36,784,600	6,138,087

Description	Balance at December 31, 2020	Additions	Reductions	Balance at December 31, 2021	Amounts due within one year
MWRA I/I Program Phase VIII, interest free, due May 15, 2022	$ 412,042	—	206,020	206,022	206,022
MWRA I/I Program Phase IX, interest free, due Aug 15, 2029	1,660,418	3,426,019	464,323	4,622,114	806,924
MWRA SAP Program, interest free, due Aug 15, 2028	30,898,455	6,986,134	5,264,823	32,619,766	5,562,023
MWRA LLP Program, interest free, due May 15, 2032	—	2,602,419	—	2,602,419	260,242
Total long-term notes	$ 32,970,915	13,014,572	5,935,166	40,050,321	6,835,211

(5) Long-Term Obligations - Continued

(d) Long-Term Notes Payable - continued

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

2023	$	6,138
2024		5,694
2025		5,095
2026		4,708
2027		4,320
2028-2032		10,830
	$	36,785

(6) 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 the year ended December 31,:

Description		Balance at December 31, 2021	Additions	Reductions	Balance at December 31, 2022
Commercial paper notes, Bank of America program due December 6, 2022 through March 6, 2023	$	15,000,000	20,000,000	—	35,000,000
Total short-term notes	$	15,000,000	20,000,000	—	35,000,000

Description		Balance at December 31, 2020	Additions	Reductions	Balance at December 31, 2021
Commercial paper notes, Bank of America program due December 3, 2021 through March 3, 2022	$	50,000,000	15,000,000	50,000,000	15,000,000
Total short-term notes	$	50,000,000	15,000,000	50,000,000	15,000,000

Subsequent to year end the Commission extended the due date of the outstanding commercial paper to November 14, 2023. Additionally in March and August 2023 the Commission issued an additional $10 million and $15 million, respectively, of commercial paper to finance capital expenditures.

(7) Massachusetts Water Resources Authority

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

		2022	2021
Assessments based on:			
Water usage	$	96,676,398	95,971,920
Wastewater usage		149,282,093	147,424,304
Total	$	245,958,491	243,396,224

(8) Transactions with the City of Boston

Departments of the City of Boston were billed approximately $5.7 million and $4.1 million during 2022 and 2021, respectively, based on actual consumption.

The City provides services to the Commission, including paving and facilities. Operating costs billed to the Commission by the City were approximately $418,000 and $633,000 during the years ended December 31, 2022 and 2021, respectively, and capital costs billed by the City were approximately $128,000 and $40,000 during the years ended December 31, 2022 and 2021, respectively.

(9) Pension Benefits

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

The Commission contributes to the Boston Retirement System ("BRS"), a cost-sharing, multi-employer qualified defined benefit public employee retirement system established under Chapter 32 of the Massachusetts General Laws ("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.

A complete set of financial statements for BRS for the fiscal year ended December 31, 2021 can be obtained through the BRS, Boston City Hall, Room 816, Boston, MA 02201 or by accessing the website www.boston.gov/departments/retirement#financials-and-investments.

(9) Pension Benefits - Continued

(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, 2022 and 2021).

Employees with ten or more years of service, having attained age 55, are entitled to pension benefits; an earlier 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 BRS.

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 member's 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.

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.

(9) Pension Benefits - Continued

(c) Contributions

Plan members are required to contribute to the BRS at rates ranging from 5% to 9% of annual covered compensation. Employees hired on or after January 1, 1979 contribute an additional 2% of earnings in excess of $30,000 per year. The Commission is required to pay into the BRS 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, 2022, 2021 and 2020 amounted to $15,723,881, $5,464,716, and $2,800,819, respectively, representing its contractually required contribution for each year along with any additional funds to reduce the unfunded liability. Employer required contributions, based on actuarially determined amounts, aggregated $6,744,090, $6,542,535, and $6,208,445, or 18.4%, 17.3% and 16.0% of covered payroll in 2022, 2021 and 2020, respectively.

The Commission's funding policies have been established by Chapter 32 of the MGL. The Legislature has the authority to amend these polices. 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, 2022 and 2021, the Commission reported a liability of $46.9 million and $21.7 million, respectively, for its proportionate share of the net pension liability related to its participation in BRS. The net pension liability as of December 31, 2022 and 2021, the reporting date, was measured as of December 31, 2022 and 2021, respectively, 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, 2022 and 2020, rolled forward to December 31, 2022 and 2021, respectively. At December 31, 2022 and 2021, the Commission's proportion was 3.61% and 3.77%, respectively.

The Commission follows the accounting standards set forth in GASB 62, and therefore provides for recovery of these pension liability costs as a deferred outflow of resources to be collected over the life of the liability to which it relates. At December 31, 2022 and 2021, the Commission reported deferred outflows of resources and deferred inflows of resources related to pensions as follows:

(9) Pension Benefits - Continued

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

		2022	2021
Deferred Outflows of Resources			
Net difference between projected and actual earnings on pension plan investments	$	17,410,463	—
Differences between expected and actual experience		3,529,506	258,304
Changes in assumptions		3,193,008	4,298,997
Total	$	24,132,977	4,557,301
Deferred Inflows of Resources			
Net difference between projected and actual earnings on pension plan investments	$	—	9,135,934
Changes in assumptions		435,732	—
Differences between expected and actual experience		4,781,624	6,396,205
Total	$	5,217,356	15,532,139

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 December 31,		
2023	$	2,221,198
2024		4,521,058
2025		4,909,145
2026		6,297,538
2027		483,341
Thereafter		483,341
	$	18,915,621

(9) Pension Benefits - Continued

(e) Actuarial Assumptions

The total pension liability as of December 31, 2022 and 2021 was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3.00%
Salary increases	4.00%
Investment rate of return	7.00%
Post-retirement cost of living adjustment	3% of first $15,000 ($14,000 in 2021)

For 2022 and 2021, mortality rates for pre-retirees, healthy retirees and disabled retirees were based on Pub-2010 General Employee, Healthy Retiree and Contingent Survivor Amount-Weighted Mortality Tables set forward one year projected generationally using Scale MP-2019.

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, 2022 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic equity	32.00%	6.59%
International developed markets equity	15.00%	6.87%
International emerging markets equity	6.00%	8.30%
Core fixed income	15.00%	1.53%
Emerging market debt	5.00%	3.54%
Real estate	10.00%	3.44%
TIPS	3.00%	1.44%
Hedge fund, GTAA, Risk parity	5.00%	3.06%
Private equity	9.00%	9.49%
Total	100.00%	

(9) Pension Benefits - Continued

(e) Actuarial Assumptions - continued

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, 2021 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic equity	29.00%	6.11%
International developed markets equity	15.00%	6.49%
International emerging markets equity	6.00%	8.12%
Core fixed income	8.00%	0.38%
Emerging market debt	5.00%	2.67%
Global multisector debt	10.00%	0.44%
Real Estate	7.00%	3.72%
TIPS	5.00%	0.29%
Hedge fund, GTAA, Risk parity	10.00%	2.63%
Private equity	5.00%	9.93%
Total	100.00%	

(f) Discount Rate

The discount rate used to measure the total pension liability was 7.00% for 2022 and 2021. 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 tables illustrate the sensitivity of the net pension liability, calculated using the discount rate of 7% for the years ended December 31, 2022 and 2021, respectively, 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:

	2022	
1.00% Decrease (6.00%)	**Current Discount Rate (7.00%)**	**1.00% Increase (8.00%)**
$67,027,387	$46,855,560	$29,685,081

(9) Pension Benefits - Continued

(f) Discount Rate - continued

1.00% Decrease (6.00%)	2021 Current Discount Rate (7.00%)	1.00% Increase (8.00%)
$40,917,738	$21,656,915	$5,319,573

(10) Postemployment Benefits other than Pensions (OPEB)

(a) Plan Description

The Commission sponsors and participates in an 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 Laws 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 plans offered by 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 Blue Cross Blue Shield of Massachusetts, Harvard Pilgrim HealthCare, and Tufts Health Plan.

Groups 1 and 2 retirees, with at least 10 years or 20 years of creditable service, are eligible at age 55 or any age, 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, 2021 and 2019, the valuation date for years ended December 31, 2022 and 2021, respectively, 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 years ended December 31, 2022 and 2021, the Commission's average contribution rate was 28.27% and 18.32%, respectively, of covered-employee payroll.

(10) Postemployment Benefits other than Pensions (OPEB) - Continued

(c) Employees Covered by Benefit Terms

As of December 31, 2021, the date of the latest actuarial valuation, plan participation consisted of:

Active employees	360
Retirees and beneficiaries	315
Total	675

(d) Net OPEB Liability and Actuarial Assumptions

The Commission's net OPEB liability of $39,616,243 and $38,837,083 was measured as of December 31, 2022 and 2021, respectively, and was determined by an actuarial valuation as of December 31, 2021 and 2019, respectively. 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% for both periods
Salary Increases:	4.00% for both periods
Discount Rate:	6.00% for both periods
Investment Rate of Return:	6.00% for both periods

Health care trend rates for Medicare and non-Medicare are 6.875%, decreasing by 0.25% for nine years to an ultimate level of 4.5% per year. For Medicare Part B, the valuation used a health care trend rate of 4.5% per year. Retiree contributions are expected to increase with health care trend rates.

For 2022 and 2021, mortality rates for pre-retirees, healthy retirees and disabled retirees were based on Pub-2010 General Employee, Healthy Retiree and Contingent Survivor Amount-Weighted Mortality Tables set forward one year projected generationally using Scale MP-2021 and MP-2019, respectively.

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.

(10) Postemployment Benefits other than Pensions (OPEB) - Continued

(d) Net OPEB Liability and Actuarial Assumptions - continued

The target allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

	2022	
Asset Class	**Target Allocation**	**Long-Term Expected Real Rate of Return**
Domestic equity	38.00%	6.59%
International developed markets equity	10.50%	6.87%
International emerging markets equity	4.50%	8.30%
TIPS	7.00%	1.44%
Core fixed income	20.00%	1.53%
Hedge fund, GTAA, risk parity	20.00%	3.06%
Total	100.00%	

	2021	
Asset Class	**Target Allocation**	**Long-Term Expected Real Rate of Return**
Domestic equity	35.00%	6.11%
International developed markets equity	13.00%	6.49%
International emerging markets equity	3.00%	8.12%
TIPS	7.00%	0.29%
Core fixed income	22.00%	0.38%
Hedge fund, GTAA, risk parity	20.00%	2.63%
Total	100.00%	

The discount rate used to measure the total OPEB liability was 6.00% as of December 31, 2022 and 2021, respectively. 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.

(10) Postemployment Benefits other than Pensions (OPEB) - Continued

(d) Net OPEB Liability and Actuarial Assumptions - continued

The components of the net OPEB liability for the Plan as of December 31, 2022:

Total OPEB liability	$	81,826,689
Fiduciary net position		(42,210,446)
Commission's net OPEB liability	$	39,616,243
Fiduciary net position as a percentage of the total OPEB liability		51.59%

The components of the net OPEB liability for the Plan as of December 31, 2021:

Total OPEB liability	$	77,661,019
Fiduciary net position		(38,823,936)
Commission's net OPEB liability	$	38,837,083
Fiduciary net position as a percentage of the total OPEB liability		49.99%

(e) Change in the Net OPEB Liability

	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability
Balances at December 31, 2021	$ 77,661,019	$ 38,823,936	$ 38,837,083
Changes for the year:			
Service cost	2,407,433	-	2,407,433
Interest	4,708,030	-	4,708,030
Contributions - employer	-	10,373,789	(10,373,789)
Net investment income	-	(3,737,370)	3,737,370
Differences between expected and actual experience	5,975,433		5,975,433
Changes of assumptions	(5,675,317)	-	(5,675,317)
Benefit payments	(3,249,909)	(3,249,909)	-
Net changes	4,165,670	3,386,510	779,160
Balances at December 31, 2022	$ 81,826,689	$ 42,210,446	$ 39,616,243

(10) Postemployment Benefits other than Pensions (OPEB) - Continued

(e) *Change in the Net OPEB Liability - continued*

	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability
Balances at December 31, 2020	$ 66,842,443	$ 30,973,683	$ 35,868,760
Changes for the year:			
Service cost	2,041,742	-	2,041,742
Interest	4,210,950	-	4,210,950
Contributions - employer	-	6,958,809	(6,958,809)
Net investment income	-	3,955,845	(3,955,845)
Changes of assumptions	7,630,285	-	7,630,285
Benefit payments	(3,064,401)	(3,064,401)	-
Net changes	10,818,576	7,850,253	2,968,323
Balances at December 31, 2021	$ 77,661,019	$ 38,823,936	$ 38,837,083

(f) *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 were 1% lower or higher than the current healthcare cost trend rates (the health care rate is disclosed on page 38):

2022

	Discount Rate		
	1.00% Decrease (5.00%)	**Current Rate (6.00%)**	**1.00% Increase (7.00%)**
Net OPEB Liability	$50,603,167	$39,616,243	$30,506,029

	Health Care Rate		
	1.00% Decrease	**Trend Rate**	**1.00% Increase**
Net OPEB Liability	$29,144,382	$39,616,243	$52,499,423

(10) Postemployment Benefits other than Pensions (OPEB) - Continued

(f) Sensitivity Analysis - continued

	2021		
		Discount Rate	
	1.00% Decrease (5.00%)	Current Rate (6.00%)	1.00% Increase (7.00%)
Net OPEB Liability	$49,573,509	$38,837,083	$29,989,459
		Health Care Rate	
	1.00% Decrease	Trend Rate	1.00% Increase
Net OPEB Liability	$27,989,255	38.837.083	$52,366,269

(g) OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB

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, 2022 and 2021, the Commission reported deferred outflows of resources and deferred inflows of resources related to OPEB as follows:

		2022	2021
Deferred Outflows of Resources			
Change in assumptions	$	5,722,716	6,676,502
Net difference between projected and actual earnings on OPEB plan investments		3,581,502	-
Difference between projected and actual earnings on OPEB plan investments		5,228,503	-
Total	$	14,532,721	6,676,502
Deferred Inflows of Resources			
Change in assumptions	$	5,280,621	384,262
Net difference between projected and actual earnings on OPEB plan investments		-	1,876,727
Difference between expected and actual experience		603,605	724,326
Total	$	5,884,226	2,985,315

(10) Postemployment Benefits other than Pensions (OPEB) - Continued

(g) OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB - continued

Amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

Years Ended December 31,		
2023	$	1,223,325
2024		1,827,691
2025		1,677,480
2026		2,057,138
2027		834,047
Thereafter		1,028,814
	$	8,648,495

(11) Deposit and Investment Risks

(a) Custodial Credit Risk

Custodial credit risk is the risk that in the event of bank failure, the Commission's deposits may not be returned. Certain of the Commission's deposits are fully insured by FDIC insurance or collateralized with securities held by the Commission or the Commission's agent in the Commission's name. The Commission does not have a formal policy for managing custodial credit risk of deposits. As of December 31, 2022 and 2021, the cash balances of uninsured and uncollateralized deposits totaled $50,386,915 and $64,793,881, respectively. All the Commission's investments are held by a third party in the name of the Commission.

(b) Investment Policy

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

(11) Deposit and Investment Risk - Continued

(b) Investment Policy - continued

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 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 banks insured by the FDIC, 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.

10. Investments in commercial paper cannot exceed $15 million per issuance.

Further, all investments of the Commission are held in the Commission’s name by a third party.

(c) Interest Rate Risk

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

(11) Deposit and Investment Risk - Continued

(c) Interest Rate Risk - continued

Investment type		2022 Fair value	Less than 1	1 – 5	6 – 10	More than 10
U.S. Government agencies	$	140,613,340	—	49,581,306	39,062,696	51,969,338
Guaranteed investment contract		8,416,250	—	—	8,416,250	—
Money market		50,386,915	50,386,915	—	—	—
Open ended mutual funds		28,179,166	28,179,166	—	—	—
	$	227,595,671	78,566,081	49,581,306	47,478,946	51,969,338

Investment type		2021 Fair value	Less than 1	1 – 5	6 – 10	More than 10
U.S. Government agencies	$	113,925,484	—	13,894,950	36,231,531	63,799,003
Guaranteed investment contract		8,416,250	—	—	8,416,250	—
Money market		64,793,881	64,793,881	—	—	—
Open ended mutual funds		32,388,089	32,388,089	—	—	—
	$	219,523,704	97,181,970	13,894,950	44,647,781	63,799,003

(d) Credit Risk

The Commission follows its investment policy listed above in regard to the creditworthiness of its investments. The Commission's fixed income investments as of December 31, 2022 and 2021 were rated by Standard and Poor's rating scale and/or an equivalent national rating organization, and the ratings are presented below using the Standard and Poor's rating scale:

Investment type		2022 Fair value	AAA	AA	Not rated
U.S. Government agencies	$	140,613,340	124,219,267	—	16,394,073
Guaranteed investment contract		8,416,250	—	—	8,416,250
Money market		50,386,915	—	50,386,915	—
Open ended mutual funds		28,179,166	28,179,166	—	—
	$	227,595,671	152,398,433	50,386,915	24,810,323

Investment type		2021 Fair value	AAA	AA	Not rated
U.S. Government agencies	$	113,925,484	72,909,841	—	41,015,643
Guaranteed investment contract		8,416,250	—	—	8,416,250
Money market		64,973,881	—	64,793,881	—
Open ended mutual funds		32,388,089	32,388,089	—	—
	$	219,523,704	105,297,930	64,793,881	49,431,893

(11) Deposit and Investment Risk - Continued

(d) Credit Risk - continued

As of December 31, 2022, and 2021, the Commission had $16,394,073 and $41,015,643, respectively, 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, 2022 and 2021. Individually, these investments in money market funds range between $18 million and $23 million for 2022 and $15 million and $36 million for 2021. In the aggregate, they approximate $62 million and $72 million for the years ended December 31, 2022 and 2021, respectively.

(e) OPEB Trust Fund

Custodial Credit Risk

As discussed in Note 11(a), all the OPEB Trust investments are held by a third party in the name of the Commission.

Interest Rate Risk

The following is a listing of the Commission's fixed income investments and related maturity schedule (in years) as of December 31,:

		2022				
Investment type		**Fair value**	**Less than 1**	**1 – 5**	**6 – 10**	**More than 10**
U.S. Government agencies	$	2,212,059	—	1,102,046	805,633	304,380
Open ended mutual funds		6,043,544	74,536	2,223,114	3,745,894	—
	$	8,255,603	74,536	3,325,160	4,551,527	304,380

		2021				
Investment type		Fair value	Less than 1	1 – 5	6 – 10	More than 10
U.S. Government agencies	$	2,509,087	—	1,250,028	913,809	345,250
Open ended mutual funds		5,373,749	50,815	1,783,936	3,538,998	—
	$	7,882,836	50,815	3,033,964	4,452,807	345,250

Credit Risk

As of December 31, 2022 and 2021, the OPEB Trust Fund all investments are held by issuers greater than 5% of total investments.

(11) Deposit and Investment Risk - Continued

(e) OPEB Trust Fund - continued

The OPEB Trust's fixed income investments as of December 31, 2022 and 2021 were rated by Standard and Poor's rating scale and/or an equivalent national rating organization, and the ratings are presented below using the Standard and Poor's rating scale:

		2022					
Investment type		**Fair value**	**AAA**	**AA**	**A**	**B**	**Not rated**
U.S. Government agencies	$	2,212,059	2,212,059	—	—	—	—
Open ended mutual funds		6,043,544	4,511,861	288,522	1,101,667	141,494	—
	$	8,255,603	6,723,920	288,522	1,101,667	141,494	—

		2021					
Investment type		**Fair value**	**AAA**	**AA**	**A**	**B**	**Not rated**
U.S. Government agencies	$	2,509,087	2,509,087	—	—	—	—
Open ended mutual funds		5,373,749	3,928,142	162,004	932,947	350,656	—
	$	7,882,836	6,437,229	162,004		350,656	—

Fair Value

The OPEB Trust Fund has the following fair value measurements as of December 31,:

Assets at Fair Value as of December 31, 2022

	Level 1	*Level 2*	*Level 3*	*Total*
Mutual funds	$ 8,554,304	$ -	$ -	$ 8,554,304
Equities	15,426,405	-	-	15,426,405
Fixed income	-	8,225,603	-	8,225,603
Pooled index funds	-	6,504,134	-	6,504,134
Total Assets at Fair Value	$ 23,733,979	$ 14,976,467	$ -	$ 38,710,446

Assets at Fair Value as of December 31, 2021

	Level 1	*Level 2*	*Level 3*	*Total*
Mutual funds	$ 7,221,201	$ -	$ -	$ 7,221,201
Equities	14,383,398	-	-	14,383,398
Fixed income	-	7,882,836	-	7,882,836
Pooled index	-	6,654,854	-	6,654,854
Cash and equivalents	177,935	-	-	177,935
Total Assets at Fair Value	$ 21,782,534	$ 14,537,690	$ -	$ 36,320,224

(12) Commitments

The Commission has an ongoing Capital Improvement Program. In connection therewith, the Commission has entered into various contracts for the design and construction of its infrastructure. Commitments under these contracts aggregate approximately $61.3 million as of December 31, 2022.

The Commission has committed to capital improvement projects of approximately $175.4 million for 2023 through 2024, 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 $120.7 million represents extension and improvement projects and $54.7 million represents renewal and replacement projects. The extension and improvement projects will be 32% funded by federal, state and Massachusetts Water Resources Authority grants and loans. The remainder will be funded from the Commission's operating revenues and borrowings, as needed.

(13) Risk Management and Other Insurance

The Commission is completely self-insured for unemployment benefits. The Commission's workers' compensation is self-insured with a self-insured retention of $750,000 per accident, supplemented with excess coverage at statutory limits purchased through an outside carrier. For general liability, the Commission's self-insured retention is $1 million per occurrence 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:

Policy type	Coverage
Automobile Liability	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 with a $25,000 deductible each occurrence on most perils.
Public Officials	Coverage of $5 million each act, $1,000,000 self-insurance retention each claim.
Employment Practices	Coverage of $5 million annual aggregate via layered policies, $500,000 self-insurance retention each claim.
Fiduciary	$5 million annual aggregate, with $10,000 deductible each claim.
Crime	Employee dishonesty coverage of $5 million, with $25,000 deductible each loss.
Cyber Risk	$4 million annual aggregate with $50,000 deductible each claim.

Insurance claims for all policies have not exceeded coverage 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 reserve based on historical trends along with attorney's and independent insurance reserve appraiser's estimate of pending matters and lawsuits in which the Commission is involved.

(13) Risk Management and Other Insurance - Continued

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

		2022	2021
Beginning balance of reserves	$	3,367,494	1,996,733
Payment of claims attributable to events of both current and prior years:			
Workers' compensation		-	-
General liability		1,663,275	1,683,737
Incurred claims		(480,412)	(312,976)
Ending balance of reserves	$	4,550,357	3,367,494

(14) Contingencies

(a) Legal

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

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

(b) *Pollution Remediation Obligations*

GASB Statement No. 49, *Accounting and Financial Reporting by Employers for Pollution Remediation Obligations*, requires governments to reasonably determine potential polluted sites and provide guidance to recognize Pollution Remediation Obligations ("PRO") components as liability. The Commission evaluated their pollution remediation events and determined that the PRO liability as of December 31, 2022, as well as the PRO payments made during 2022 and 2021, 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 goals. Failure to meet 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 2022, the Commission believes they have 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 Auditor's Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

To the Commissioners of
Boston Water and Sewer Commission:

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the business-type activity and the aggregate remaining fund information of Boston Water and Sewer Commission (the "Commission"), as of and for the year ended December 31, 2022 and the related notes to the financial statements, which collectively comprise the Commission's basic financial statements, and have issued our report thereon dated September 14, 2023.

Report on 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) as a basis for designing 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 or significant deficiencies may exist that were not identified.

Report on 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 financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

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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.

Withum Smith + Brown, PC

September 14, 2023

REQUIRED SUPPLEMENTARY INFORMATION

BOSTON WATER AND SEWER COMMISSION

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

Boston Retirement System

Year ended		December 31, 2022	December 31, 2021	December 31, 2020	December 31, 2019	December 31, 2018	December 31, 2017	December 31, 2016	December 31, 2015
Valuation date		January 1, 2022	January 1, 2020	January 1, 2020	January 1, 2018	January 1, 2018	January 1, 2016	January 1, 2016	January 1, 2014
Measurement date		December 31, 2022	December 31, 2021	December 31, 2020	December 31, 2019	December 31, 2018	December 31, 2017	December 31, 2016	December 31, 2015
Commission's proportion of the net pension liability		3.61%	3.77%	3.76%	4.13%	4.28%	4.20%	4.20%	2.60%
Commission's proportionate share of the net pension liability	$	46,855,560	21,656,915	29,011,883	34,808,595	40,448,003	25,976,537	26,503,599	38,931,280
Commission's covered payroll	$	36,695,765	37,976,646	38,809,388	35,533,839	35,472,896	34,743,437	33,407,151	31,361,504
Commission's proportionate share of the net pension asset as a percentage of its covered payroll		127.69%	57.03%	74.75%	97.96%	114.03%	74.77%	79.34%	124.14%
Plan fiduciary net position as a percentage of the total pension liability		74.06%	87.23%	82.04%	77.87%	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)

Boston Retirement System

For the Year Ended December 31,

		2022	2021	2020	2019	2018	2017	2016	2015
Contractually required contribution	$	6,744,090	6,542,535	6,208,445	5,951,949	4,868,286	4,667,585	4,918,577	3,994,268
Contributions in relation to the contractually required contribution		15,723,881	5,464,716	2,800,819	3,166,395	7,507,131	4,129,227	11,057,791	7,907,306
Contribution deficiency (excess)	$	(8,979,791)	1,077,819	3,407,626	2,785,554	(2,638,845)	538,358	(6,139,214)	(3,913,038)
Commission's covered payroll	$	36,695,765	37,976,646	38,809,388	35,533,839	35,472,896	34,743,437	33,407,151	31,361,504
Contribution as a percentage of covered-payroll		42.8%	14.4%	7.2%	8.9%	21.2%	11.9%	33.1%	25.2%

Notes:
Employers participating in the 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.

Note 1 - **<u>Change in Assumptions</u>**

Fiscal year December 31, 2022

- The generational mortality improvement scale was updated from Scale MP-2019 to Scale MP-2021

Fiscal year December 31, 2021

- None

Fiscal year December 31, 2020

- The net investment return assumption was lowered from 7.25% to 7.00%.
- The salary increase assumption was lowered from 4.50% to 4.00% per year.
- The wage inflation assumption was lowered from 3.50% to 3.00% per year.
- The mortality assumption for non-disabled participants was updated from RP-2014 Blue Collar Employee and Healthy Annuitant Mortality Tables set forward one year for female participant projected generationally using Scale MP-2017 to the Pub-2010 General Employee, Healthy Retiree and Contingent Survivor Amount-Weighted Mortality Tables set forward one year projected generationally using Scale MP-2019.
- The mortality assumption for disabled participants was updated from RP-2014 Blue Collar Employee and Healthy Annuitant Mortality Tables set forward one year projected generationally using Scale MP-2017 to the Pub-2010 General Employee, Healthy Retiree and Contingent Survivor Amount-Weighted Mortality Tables set forward one year projected generationally using Scale MP-2019.

Fiscal year December 31, 2019

- None

Fiscal year December 31, 2018

- None

Fiscal year December 31, 2017

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

Fiscal year December 31, 2016

- None

Fiscal year December 31, 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, 2022	December 31, 2021	December 31, 2020	December 31, 2019	December 31, 2018
Total OPEB liability:					
Service cost	$ 2,407,433	$ 2,041,742	$ 2,190,830	$ 2,134,311	$ 2,069,043
Interest	4,708,030	4,210,950	4,891,289	4,646,844	4,394,786
Change in benefit terms	-	-	(10,574,843)	-	-
Differences between expected and actual experience	5,975,433	-	(965,764)	-	-
Change in assumptions	(5,675,317)	7,630,285	(292,259)	(264,108)	-
Benefit payments	(3,249,909)	(3,064,401)	(2,887,704)	(2,783,496)	(2,480,017)
Net change in total OPEB liability	4,165,670	10,818,576	(7,638,451)	3,733,551	3,983,812
Total OPEB liability. beginning of year	77,661,019	66,842,443	74,480,894	70,747,343	66,763,531
Total OPEB liability. end of year	81,826,689	77,661,019	66,842,443	74,480,894	70,747,343
Plan fiduciary net position:					
Contributions - employer	10,373,789	6,958,809	3,867,341	4,200,341	6,301,842
Net investment income	(3,737,370)	3,955,845	1,155,302	4,519,177	(596,759)
Benefit payments	(3,249,909)	(3,064,401)	(2,887,704)	(2,783,496)	(2,480,017)
Net change in plan fiduciary net position	3,386,510	7,850,253	2,134,939	5,936,022	3,225,066
Plan fiduciary net position, beginning of year	38,823,936	30,973,683	28,838,744	22,902,722	19,677,656
Plan fiduciary net position, end of year	42,210,446	38,823,936	30,973,683	28,838,744	22,902,722
Net OPEB liability, end of year	$ 39,616,243	$ 38,837,083	$ 35,868,760	$ 45,642,150	$ 47,844,621
Plan fiduciary net position as a percentage of the total OPEB liability	51.59%	49.99%	46.34%	38.72%	32.37%
Covered payroll	$ 36,695,765	$ 37,976,646	$ 38,809,388	$ 35,533,839	$ 35,472,896
Net OPEB liability as a percentage of covered payroll	107.96%	102.27%	92.42%	128.45%	134.88%

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.

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 Years Ended December 31,

	2022	2021	2020	2019	2018
Actuarially determined contribution	$ 5,156,298	$ 4,256,512	$ 4,077,414	$ 4,859,090	$ 4,688,044
Contribution in relation to the actuarially determined contribution	10,373,789	6,958,809	3,867,341	4,200,341	6,301,842
Contribution deficiency (excess)	$ (5,217,491)	$ (2,702,297)	$ 210,073	$ 658,749	$ (1,613,798)
Covered payroll	$ 36,695,765	$ 37,976,646	$ 38,809,388	$ 35,533,839	$ 35,472,896
Contributions as a percentage of covered-payroll	28.27%	18.32%	9.96%	11.82%	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 10 to the financial statements.

Note 1 - **Change in Assumptions**

Fiscal year December 31, 2022

- The mortality projection scale was updated.
- Per capita health care costs, retiree contributions, and trends were updated.

Fiscal year December 31, 2021

- The discount rate was lowered from 6.25% to 6.00%.

Fiscal year December 31, 2020

- The per capita health care costs, retiree contributions, and trend assumptions were updated.
- The mortality assumptions were updated to the Pub-2010 headcount-weighted mortality tables related by the Society of Actuaries in 2019.
- The discount rate was lowered from 6.50% to 6.25%.

Fiscal year December 31, 2019

- The excise tax on high cost health plans was repealed effective December 20, 2019 and as such was removed from the valuation.

Fiscal year December 31, 2018

- None

SUPPLEMENTAL SCHEDULES

Schedule 1

BOSTON WATER AND SEWER COMMISSION

Supplemental Schedules of Revenues and Expenses – Rate Basis

For the Years Ended December 31,

		2022	2021
Revenues:			
Water revenue	$	179,012,241	170,438,964
Sewer revenue		262,396,440	232,227,292
Subtotal		441,408,681	402,666,256
Less:			
Adjustments		14,062,606	11,827,391
Discounts		3,440,140	3,015,493
Bad debt		550,528	41,375
Subtotal		18,053,274	14,884,259
Net billed charges		423,355,407	387,781,997
Prior year surplus		464,760	371,904
Miscellaneous revenues:			
Late charge revenue		2,082,882	1,976,793
Investment income		4,370,282	2,059,556
Fire pipe revenue		5,327,520	5,222,027
Other income		7,670,726	6,780,259
Total revenues		443,271,577	404,192,536
Direct operating expenses:			
Salaries and wages		63,762,998	49,672,729
Overtime wages		1,676,989	1,541,885
Fringe benefits		8,309,345	8,828,146
Supplies and materials		2,711,659	2,317,310
Repairs and maintenance		12,480,425	12,958,569
Utilities		1,535,354	1,452,560
Professional services		3,741,496	3,012,331
Space and equipment rentals		339,060	319,735
Other services		1,271,151	1,543,822
Insurance		1,101,718	981,380
Travel and training		64,899	33,995
Damage claims		2,374,320	315,847
Inventory		5,848	13,540
Capital outlay		81,320	46,492
Total direct operating expenses		99,456,582	83,038,341
Nonoperating expenses:			
MWRA assessment		245,958,491	243,396,224
Capital improvements		20,940,294	10,531,019
Principal payments		32,975,211	31,100,167
Interest expense		16,944,597	18,557,588
Deposits to reserve funds		26,034,000	16,889,000
SDWA assessment		203,461	215,437
Total nonoperating expenses		343,056,054	320,689,435
Total current expenses		442,512,636	403,727,776
Current year rate surplus	$	758,941	464,760

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

See accompanying Independent Auditor's Report.