MASSACHUSETTS WATER RESOURCES AUTHORITY

Financial Statements and Supplemental Schedules
and Required Supplementary Information

June 30, 2022 and 2021

(With Independent Auditors' Report Thereon)

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MASSACHUSETTS WATER RESOURCES AUTHORITY

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INDEPENDENT AUDITORS' REPORT

Board of Directors
Massachusetts Water Resources Authority
Boston, Massachusetts

Report on the Audits of the Financial Statements

Opinions

We have audited the accompanying financial statements of the business-type activities and fiduciary activities of the Massachusetts Water Resources Authority (Authority) as of and for the years ended June 30, 2022 and 2021, and the related notes to the financial statements, which collectively comprise the Authority'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 activities and fiduciary activities of the Authority as of June 30, 2022 and 2021, and the respective changes in financial position, and, where applicable, cash flows thereof for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinions

We conducted our audits 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 Auditors' Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the Authority and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Emphasis of Matter

As discussed in Note 2 to the financial statements, effective July 1, 2020, the Authority adopted new accounting guidance for leases. The guidance requires lessees to recognize a right-to-use lease asset and corresponding lease liability and lessors to recognize a lease receivable and corresponding deferred inflow of resources for all leases with lease terms greater than twelve months. Our opinion is not modified with respect to this matter.

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.

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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 Authority'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.

Auditors' 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 auditors' 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 Authority'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 Authority'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 certain pension and other postemployment benefits schedules, 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 required supplementary information in accordance with GAAS, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audits of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audits were conducted for the purpose of forming opinions on the financial statements that collectively comprise the Authority's basic financial statements. The Schedule of Accounts Established by the General Revenue Bond Resolution, Combining Statements of Net Position, Combining Statements of Revenues, Expenses, and Changes in Net Position, Combining Statements of Fiduciary Net Position, and Combining Statements of Changes in Fiduciary Net Position (Supplemental Schedules) are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audits of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with GAAS. In our opinion, the Supplemental Schedules are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated November 9, 2022, on our consideration of the Authority'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 Authority'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 the Authority's internal control over financial reporting and compliance.

CliftonLarsonAllen LLP

CliftonLarsonAllen LLP

Boston, Massachusetts
November 9, 2022

This section of the Authority's annual financial report presents our discussion and analysis of the Authority's financial performance during the fiscal years ended June 30, 2022 and 2021. Please read it in conjunction with the Authority's financial statements, which immediately follow this section.

Financial Highlights – Fiscal Year 2022

The fiscal year 2022 customer service revenues were approximately $805.7 million. Of this amount, rate revenues represent approximately 98.3%, or $792.1 million, and were $22.7 million higher than fiscal year 2021. This was due to an increase in assessments.

Total operating expenses, excluding depreciation, were approximately $281.3 million in fiscal year 2022. The 3.5% decrease in total operating expenses over fiscal year 2021 is the result of decreases in pension expense of $5.7 million, OPEB expense of $5.8 million, personnel cost of $3.6 million and Harbor Energy Electric Company (HEEC) capacity and O & M charges of $3.5 million. These decreases were offset by increases in utility costs of $7.5 million.

Net non-operating expenses increased $8.8 million, or 5.4%, primarily due to a $11.4 million reduction in interest expense offset by a $20.1 million decrease in investment income. Interest expense decreased due to a combination of principal repayments and refunding/defeasance of outstanding debt. Interest income decreased due to a decrease in the unrealized gain on investments ($21.1 million) offset by an increase in actual interest earned on investments ($1.0 million).

Total assets at June 30, 2022 were approximately $6.8 billion, a $242.3 million, or 3.4%, decrease over total assets at June 30, 2021.

On December 9, 2021, the Authority issued General Revenue Bonds, 2021 Series B for $60,635 and General Revenue Refunding Bonds (Federally Taxable), 2021 Series C for $687,395.

The proceeds from the Series B bonds were used to permanently finance outstanding tax-exempt commercial paper of $75,000. The interest rate on these bonds are 5%.

The proceeds from the Series C bonds were used to refund $53,885 of General Revenue Bonds 2014 Series D, $47,590 of General Revenue Bonds 2016 Series B, $43,830 of General Revenue Refunding Bonds 2013 Series A and $72,870 of General Revenue Refunding Bonds 2014 Series F, $317,700 of General Revenue Refunding Bonds 2016 Series C, $52,190 of General Revenue Refunding Bonds 2016 Series D. The interest rate of these bonds range from 0.53% to 2.97%.

Total capital assets (net of depreciation) were approximately $5.6 billion at June 30, 2022, an $89.8 million, or 1.6%, decrease over June 30, 2021. The decrease was primarily due to the rate of depreciation being higher than the rate of capitalization.

Financial Highlights – Fiscal Year 2021

The fiscal year 2021 customer service revenues were approximately $781.4 million. Of this amount, rate revenues represent approximately 98.5%, or $769.4 million, and were $8.5 million higher than fiscal year 2020. This was due to an increase in assessments.

Total operating expenses, excluding depreciation, were approximately $291.4 million in fiscal year 2021. The 0.8% decrease in total operating expenses over fiscal year 2020 is the result of decreases in pension expense of

$10.2 million, OPEB expense of $6.4 million and utilities expense of $1.3 million. These decreases were offset by increases in personnel costs of $2.8 million, Harbor Energy Electric Company (HEEC) capacity and O & M charges of $5.8 million and reimbursements to the Commonwealth of $3.8 million.

Net non-operating expenses increased $8.1 million, or 5.2%, primarily due to an $11.8 million reduction in interest expense offset by a $20.3 million decrease in investment income. Interest expense decreased due to a combination of principal repayments and refunding/defeasance of outstanding debt. Interest income decreased due to a decrease in the unrealized gain on investments ($11.7 million) and a decrease in actual interest earned on investments ($8.6 million).

Total assets at June 30, 2021 were approximately $7.1 billion, a $129.6 million, or 1.8%, decrease over total assets at June 30, 2020.

During fiscal year 2021, the Authority issued General Revenue Bonds, 2020 Series B for $160 million. The proceeds from these bonds will be used to finance new construction projects. The interest rate on these bonds is 5%.

Total capital assets (net of depreciation) were approximately $5.7 billion at June 30, 2021, a $96.5 million, or 1.7%, decrease over June 30, 2020. The decrease was primarily due to the rate of depreciation being higher than the rate of capitalization.

Overview of the Financial Statements

The financial section of this annual report consists of four parts: management's discussion and analysis (this section), the financial statements and related notes to the financial statements, required supplementary information, and other supplementary information.

The financial statements provide both long-term and short-term information about the Authority's overall financial status. The financial statements also include notes that explain some of the information in the financial statements and provide more detailed data. The statements are followed by a section of required supplementary information and other supplementary information that further explains and supports the information in the financial statements.

Financial Analysis of the Authority

Net Position

The Authority's total net position at June 30, 2022 was approximately $1.6 billion, a $79.0 million increase from June 30, 2021. Total assets decreased $242.3 million, or 3.4%, to $6.8 billion, and total liabilities decreased $400.6 million, or 7.2%, to $5.1 billion.

The Authority's total net position at June 30, 2021 was approximately $1.5 billion, a $40.0 million decrease from June 30, 2020. Total assets decreased $129.6 million, or 1.8%, to $7.1 billion, and total liabilities decreased $400.7 million, or 7.2%, to $5.1 billion.

Net Position

(Dollars in thousands)

	2022	2021	2020	Percentage change 2022–2021	Percentage change 2021–2020
Current assets	$ 903,848	$ 1,015,387	$ 915,651	(11.0%)	10.9%
Capital assets	5,569,082	5,658,876	5,755,377	(1.6)	(1.7)
Other noncurrent assets	346,849	387,852	520,681	(10.6)	(25.5)
Total assets	6,819,779	7,062,115	7,191,709	(3.4)	(1.8)
Deferred outflows from pension	30,846	44,083	33,219	(30.0)	32.7
Deferred outflows from OPEB	4,223	-	1,946	100.0	(100.0)
Deferred outflows from derivative instruments	8,832	29,923	42,543	(70.5)	(29.7)
Deferred outflows from refunded debt	8,467	8,965	9,464	(5.6)	(5.3)
Current liabilities	428,672	482,637	473,853	(11.2)	1.9
Noncurrent liabilities	4,712,110	5,058,796	5,191,892	(6.9)	(2.6)
Total liabilities	5,140,782	5,541,433	5,665,745	(7.2)	(2.2)
Deferred inflows from pension	66,076	39,360	15,887	67.9	147.7
Deferred inflows from OPEB	48,128	36,018	37,410	33.6	(3.7)
Deferred inflows from regulated activities	52,124	42,251	33,860	23.4	24.8
Net position:					
Net investment in capital assets	1,057,624	957,356	894,437	10.5	7.0
Restricted					
Construction	115,764	228,037	141,521	(49.2)	61.1
Debt service	241,371	131,239	186,277	83.9	(29.5)
Operating	55,376	54,144	52,446	2.3	3.2
Revenue	38,254	48,146	39,765	(20.5)	21.1
Unrestricted	56,648	67,102	211,533	(15.6)	(68.3)
Total net position	$ 1,565,037	$ 1,486,024	$ 1,525,979	5.3%	(2.6%)

Changes in Net Position

The increase in net position at June 30, 2022 was $79.0 million, or 5.3%, as compared with June 30, 2021. The Authority's total operating revenues increased by 3.3% to $811.9 million and total operating expenses decreased 3.5% to $281.3 million.

The decrease in net position at June 30, 2021 was $40.0 million, or 2.6%, as compared with June 30, 2020. The Authority's total operating revenues increased by 1.0% to $786.1 million and total operating expenses decreased 0.8% to $291.4 million.

Changes in Net Position

(Dollars in thousands)

	2022	2021	2020	Percentage change 2022–2021	Percentage change 2021–2020
Operating revenues:					
Customer service revenues	$ 805,741	$ 781,399	$ 773,242	3.1%	1.1%
Other revenues	6,113	4,720	5,084	29.5	(7.2)
Total operating revenues	811,854	786,119	778,326	3.3	1.0
Operating expenses:					
Operations	126,065	116,455	113,284	8.3	2.8
Maintenance	28,842	30,661	29,737	(5.9)	3.1
Payments in lieu of taxes	8,469	8,368	8,330	1.2	0.5
Engineering, general, and administrative	117,916	135,886	142,276	(13.2)	(4.5)
Total operating expenses	281,292	291,370	293,627	(3.5)	(0.8)
Depreciation and amortization	215,079	214,478	211,214	0.3	1.5
Operating income	315,483	280,271	273,485	12.6	2.5
Nonoperating items:					
Regulatory accounting provisions	(70,700)	(164,293)	(165,792)	(57.0)	(0.9)
Net nonoperating expenses	(172,009)	(163,187)	(155,095)	5.4	5.2
Changes in derivative related accounts	2,940	2,940	2,940	-	-
Total nonoperating items	(239,769)	(324,540)	(317,947)	(26.1)	2.1
Capital grants and contributions	3,299	4,314	4,354	(23.5)	(0.9)
Change in net position	79,013	(39,955)	(40,108)	(297.8)	(0.4)
Total net position – beginning of year	1,486,024	1,525,979	1,566,087	(2.6)	(2.6)
Total net position – end of year	$ 1,565,037	$ 1,486,024	$ 1,525,979	5.3%	(2.6%)

During fiscal year 2022, the increases in customer service revenues were primarily due to the 2.95% increase in the rate revenue requirement ($22.7 million).

During fiscal year 2021, the increases in customer service revenues were primarily due to the 1.0% increase in the rate revenue requirement ($8.5 million).

Operating Costs by Functionality
(Dollars in thousands)

	2022	2021	2020	Percentage change 2022–2021	Percentage change 2021–2020
Wastewater treatment and transport	$ 107,476	$ 101,884	$ 103,627	5.5%	(1.7%)
Water treatment and transport	39,922	39,982	38,040	(0.2)	5.1
Water and wastewater quality	9,975	10,678	10,433	(6.6)	2.3
Metering and monitoring	6,672	6,694	6,420	(0.3)	4.3
Facilities planning, design, and construction	11,388	12,289	12,712	(7.3)	(3.3)
Management information systems	12,573	13,219	12,225	(4.9)	8.1
Administration and support	54,109	54,721	52,281	(1.1)	4.7
Total direct operating costs	242,115	239,467	235,738	1.1	1.6
Indirect operating costs	39,177	51,903	57,889	(24.5)	(10.3)
Total operating costs	$ 281,292	$ 291,370	$ 293,627	(3.5%)	(0.8%)

Increases in wastewater treatment and transport were mainly due to the increase in the contracted O & M costs at the palletization plant. Water and wastewater quality costs decreased due to increases in vacant positions. Facilities planning, design and construction costs also decreased due to an increase in vacant positions. MIS costs decreased as costs associated with the initial outlay of expenses related to teleworking decreased.

Retirement Benefits

The Massachusetts Water Resources Authority Employees' Retirement System (System) was established to provide pension benefits to Massachusetts Water Resources Authority (Authority) employees and their beneficiaries. The System is governed by a five-member board comprised of the Secretary of the Authority's Board (ex-officio), two members elected by the System's participants, one member appointed by the Authority's Board and one member appointed by the System's Board members.

The System has total plan assets of $729 million and $649 million at December 31, 2021 and 2020, respectively.

Other Post-Employment Benefits (OPEB) Irrevocable Trust

In April 2015, the Authority established the MWRA Other Post-Employment Benefits (OPEB) Irrevocable Trust. The Trust was established for the sole purpose of providing for the advance funding of future costs of retired employee health insurance and other benefits provided to retirees. It is intended that the Trust shall constitute a "Qualified OPEB Trust" according to the standards set forth in GASB Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions* and the standards of GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions.* The Authority's Board of Directors appointed a five-member Board of Trustees, made up of Authority senior managers, to control and manage the trust.

An initial deposit of $10.8 million was made to the trust upon establishment of the trust. The balance of the trust at June 30, 2022 and 2021 was $63.9 million and $61.8 million, respectively.

Capital Assets and Debt Administration

Capital Assets

As of June 30, 2022 and 2021, the Authority had $5.6 and $5.7 billion of capital assets (net of depreciation), respectively. This includes land, construction in progress, plant and equipment for the water and sewer systems, leased building, furniture and fixtures, leasehold improvements, and motor vehicles and equipment. The Authority's net capital assets decreased approximately $89.8 million, or 1.6%, during fiscal year 2022, primarily due to the rate of depreciation being higher than the rate of capitalization.

Capital Assets
(Net of depreciation, dollars in thousands)

	2022	2021	2020	Percentage change 2022–2021	Percentage change 2021–2020
Land	$ 30,058	$ 30,058	$ 29,936	-	0.4%
Construction in progress	172,476	228,033	214,102	(24.4)	6.5
Plant and equipment, water, and sewer systems	5,347,916	5,380,198	5,489,566	(0.6)	(2.0)
Leased building	12,377	13,615	14,853	(9.1)	(8.3)
Furniture and fixtures	30	36	42	(16.7)	(14.3)
Leasehold improvements	231	243	255	(4.9)	(4.7)
Motor vehicles and equipment	5,994	6,693	6,623	(10.4)	1.1
Total	$ 5,569,082	$ 5,658,876	$ 5,755,377	(1.6%)	(1.7%)

Additional information on the Authority's capital assets can be found in Note 8 of this financial report.

Debt Administration

The Authority's bond sales must be approved by its board of directors (the Board) and must comply with rules and regulations of the United States Treasury Department. Neither the Commonwealth of Massachusetts (the Commonwealth) nor any political subdivision thereof shall be obligated to pay the principal of, or premium or interest on, any debt outstanding and neither the faith and credit nor the taxing power of the Commonwealth or any political subdivision thereof is pledged to such payment.

Bond Resolutions

Pursuant to its general bond resolution, the Authority must comply with a rate covenant that requires it to set rates to maintain revenues sufficient to pay current expenses; debt service on indebtedness; required deposits to reserves; costs of maintenance, replacement, and/or improvements to the wastewater and water systems that are considered current expenses and any additional amounts the Authority may be required to pay by any law or contract.

In addition to the rate covenant, the Authority is required to meet two covenants with respect to debt service coverage. The primary debt service coverage requires that the Authority fix and adjust rates and charges to provide revenues available for bond debt service in an amount equal to 1.2 times that is required for debt service on all outstanding bonds, not including subordinated bonds. The subordinated debt service coverage requires that the Authority fix and adjust rates and charges to provide revenues available for bond debt service in an amount equal to 1.1 times that is required for debt service on all outstanding bonds, including subordinated bonds.

Additional information on the Authority's long-term debt can be found in Note 6 of this financial report.

Credit Rating

The Authority's $3.1 billion Senior Lien General Revenue Bonds are rated Aa1 from Moody's Investors Service, AA+ by S&P Global Ratings and AA+ from Fitch Ratings. The $532.8 million Subordinate Lien General Revenue Bonds are rated Aa2 from Moody's Investors Service, AA by S&P Global Ratings and AA from Fitch Ratings. Some of the Authority's revenue bonds are enhanced by bond insurance. The credit ratings of these bond series will be the higher rating of either the Authority or the firm providing the enhancement. In the case of bonds enhanced by a letter of credit, the rating will be the highest of the Authority's, the provider or, if available, a joint rating. The subordinated debt of $822 million with the Massachusetts Clean Water Trust is not rated as the Authority's debt.

Economic Factors and Next Year's Budget

In June 2022, the Board approved the fiscal year 2023 Current Expense Budget (CEB), which totals $840.2 million in expenses.

The $840.2 million expense total is comprised of $506 million (60.2%) in capital financing costs and $334.2 million (39.8%) in operating expenses, of which $273.7 million (81.9%) is for direct expenses and $60.5 million (18.1%) is for indirect expenses. The total represents an increase of $51.4 million from fiscal year 2022 spending, which is comprised of $37.3 million in higher operating costs and $14.1 million in higher debt service costs.

The fiscal year 2023 rate revenue requirement approved by the Board is $814.6 million; an increase of 2.85% compared with the fiscal year 2022 budget.

Fiscal year 2023 budgeted nonrate revenue totals $25.6 million, a decrease of $2.1 million from actual fiscal year 2022 nonrate revenue. The nonrate revenue budget is comprised of $8.6 million in investment income, $15.8 million in other user charges and other revenue, $0.98 million in use of rate stabilization and $0.2 million in entrance fees.

Covid-19 Response

In May 2020, the Board also approved allocation of Commonwealth of Massachusetts Debt Service Assistance, $0.9 million, to offset June 2020 community assessment payments. The Board further approved a one-time exemption to community loan program guidelines to defer loan repayments in fiscal years 2021 and 2022.

CIP 10 Year Plan

The Authority's planned spending for capital improvements in future years reflects the Authority's ongoing efforts to upgrade and maintain the system and to align its project prioritization process with the Master Plan.

Major planned and ongoing projects include:

- Commitment to long-term redundancy plan for the metropolitan water tunnel system.

- Improvement and replacement of equipment on Deer Island and at major headworks facilities to ensure continued efficient and effective operations.

- Continued asset protection projects for both wastewater and water systems (pump stations and pipelines).

- Dedication to using resources efficiently, responding to climate change and reducing the environmental impacts of the Authority's daily operations by installing alternative energy sources and promotion of improved self-generation.

- Enhanced commitment to the community assistance programs for both the sewer and water systems to improve local infrastructure, including an initiative to provide interest-free loans to assist communities in replacing lead service lines.

- Continued investment for the upgrade of Management Information Systems to ensure the availability, integrity and security of data.

- Continue the Residuals Asset Protection program for maintaining and improving the operations and infrastructure of the biosolids processing in the long term.

- Improvement and replacement of equipment at CWTP to ensure continued efficient and effective operations.

Contacting the Authority's Financial Management

This report is designed to provide our bondholders, member communities and other interested parties with a general overview of the Authority's finances and to demonstrate the Authority's accountability for the revenue it receives. If you have questions about this report or need additional information, contact the Massachusetts Water Resources Authority, Finance Division, 100 First Avenue, Boston, MA 02129.

MASSACHUSETTS WATER RESOURCES AUTHORITY

Statements of Net Position

June 30, 2022 and 2021

(Dollars in thousands)

Assets	**2022**	**2021**
Current assets:		
Cash and cash equivalents (note 4)	$ 73,231	$ 69,931
Investments (note 4)	4,226	4,743
Restricted investments (note 4)	786,109	897,125
Intergovernmental loans (note 7)	37,581	35,926
Accounts receivable	1,892	1,466
Interest receivable	809	863
Other	-	5,333
Total current assets	903,848	1,015,387
Noncurrent assets:		
Capital assets:		
Capital assets – not being depreciated (note 8)	202,534	258,091
Capital assets – being depreciated – net (note 8)	5,354,171	5,387,170
Lease asset (note 8)	12,377	13,615
Regulatory assets (note 3)	-	59,415
Other assets, net (note 7)	346,849	328,437
Total noncurrent assets	5,915,931	6,046,728
Total assets	6,819,779	7,062,115
Deferred Outflows of Resources		
Deferred outflows from pension (note 10)	30,846	44,083
Deferred outflows from OPEB (note 11)	4,223	-
Deferred outflows from derivative instruments (note 6)	8,832	29,923
Deferred outflows from refunding debt	8,467	8,965
Liabilities		
Current liabilities:		
Accounts payable and accrued expenses	47,063	68,655
Accounts payable for construction	27,309	17,592
Commercial paper notes (note 6)	-	75,000
Current portion of long-term debt (note 6)	288,903	247,882
Accrued interest on bonds payable	65,397	73,508
Total current liabilities	428,672	482,637
Noncurrent liabilities:		
Reserves (note 5)	65,278	63,866
Retainage on construction in progress	5,958	10,889
Long-term debt – less current portion (note 6)	4,540,047	4,791,028
Lease liability (note 9)	22,138	23,561
Net pension liability (note 10)	20,029	64,488
Net OPEB liability (note 11)	49,828	75,041
Liability for derivative instruments (note 6)	8,832	29,923
Total noncurrent liabilities	4,712,110	5,058,796
Total liabilities	5,140,782	5,541,433
Deferred Inflows of Resources		
Deferred inflows from pension (note 10)	66,076	39,360
Deferred inflows from OPEB (note 11)	48,128	36,018
Deferred inflows from regulated activities (note 3)	52,124	42,251
Net Position		
Net investment in capital assets	1,057,624	957,356
Restricted		
Construction	115,764	228,037
Debt service	241,371	131,239
Operating	55,376	54,144
Revenue	38,254	48,146
Unrestricted	56,648	67,102
Total net position	$ 1,565,037	$ 1,486,024

Commitments and contingencies (notes 9,10,11,12 and 13)

See accompanying Notes to Financial Statements

MASSACHUSETTS WATER RESOURCES AUTHORITY

Statements of Revenues, Expenses, and Changes in Net Position

Years ended June 30, 2022 and 2021

(Dollars in thousands)

	2022	2021
Operating revenues (note 2):		
Customer services	$ 805,741	$ 781,399
Other	6,113	4,720
Total operating revenues	811,854	786,119
Operating expenses:		
Operations	126,065	116,455
Maintenance	28,842	30,661
Payments in lieu of taxes	8,469	8,368
Engineering, general, and administrative	117,916	135,886
Total operating expenses	281,292	291,370
Income from operations before depreciation	530,562	494,749
Depreciation and amortization	215,079	214,478
Operating income	315,483	280,271
Regulatory accounting provisions:		
Change in reserves (note 5)	(1,412)	(1,815)
Change in regulatory provisions, net (note 3)	(69,288)	(162,478)
Total regulatory accounting provisions	(70,700)	(164,293)
Nonoperating revenues (expenses):		
Debt service grant	1,182	1,288
Investment loss	(22,743)	(2,658)
Interest expense	(150,448)	(161,817)
Changes in derivative related accounts	2,940	2,940
Total nonoperating expenses	(169,069)	(160,247)
Net gain (loss) before capital grants and contributions	75,714	(44,269)
Capital grants and contributions	3,299	4,314
Increase (decrease) in net position	79,013	(39,955)
Total net position - beginning of year	1,486,024	1,525,979
Total net position - end of year	$ 1,565,037	$ 1,486,024

See accompanying Notes to Financial Statements

MASSACHUSETTS WATER RESOURCES AUTHORITY

Statements of Cash Flows

Years ended June 30, 2022 and 2021

(Dollars in thousands)

	2022	2021
Cash flows from operating activities:		
Cash received from customers	$ 805,316	$ 781,376
Cash paid to suppliers for goods and services	(173,659)	(129,810)
Cash paid to employees for services	(137,262)	(143,631)
Cash paid in lieu of taxes	(8,469)	(8,368)
Other operating receipts	6,134	4,701
Net cash provided by operating activities	492,060	504,268
Cash flows from capital and related financing activities:		
Proceeds from sale of revenue bonds, loans, and notes	94,961	224,205
Capital grants for construction	3,299	4,314
Debt service grant	1,182	1,288
Principal paid on leases payable	(1,423)	(1,210)
Interest paid on leases payable	(1,794)	(1,739)
Repayment of debt	(368,679)	(294,686)
Interest paid on debt	(164,783)	(186,396)
Plant expenditures	(140,366)	(152,344)
Net cash used for capital and related financing activities	(577,603)	(406,568)
Cash flows from investing activities:		
Purchases of short-term investments	(33,541)	(208,415)
Sales and maturities of short-term investments	31,950	59,863
Changes in restricted money market investments	85,008	45,508
Interest received	5,426	4,417
Net cash provided (used) for investing activities	88,843	(98,627)
Net increase (decrease) in cash and cash equivalents	3,300	(927)
Cash and cash equivalents - beginning of year	69,931	70,858
Cash and cash equivalents - end of year	$ 73,231	$ 69,931
Reconciliation of operating income to net cash provided by operating activities:		
Operating income	315,483	$ 280,271
Adjustments to reconcile operating income to net cash provided by operating activities:		
Depreciation and amortization	215,079	214,478
Change in net pension liability	(44,458)	(10,171)
Change in deferred outflows from pension	13,237	(10,864)
Changed in deferred inflows from pension	26,716	23,473
Change in net OPEB liability	(25,213)	(14,049)
Change in deferred outflows from OPEB	(4,223)	1,946
Change in deferred inflows from OPEB	12,110	(1,392)
Change in other accounts	4,909	5,312
Change in accounts payable	(21,580)	15,264
Net cash provided by operating activities	$ 492,060	$ 504,268

NONCASH CAPITAL AND RELATED FINANCING ACTIVITIES
In fiscal 2022, general revenue refunding bonds in the aggregate principal amount of $687,395 were issued to refund $588,065 of bonds outstanding.

See accompanying Notes to Financial Statements

MASSACHUSETTS WATER RESOURCES AUTHORITY

Statements of Fiduciary Net Position

June 30, 2022 and 2021

(Dollars in thousands)

	2022	2021
	Pension (and Other Employee Benefit) Trust Funds	**Pension (and Other Employee Benefit) Trust Funds**
Assets		
Cash and cash equivalents (note 4)	$ 24,026	$ 13,730
Investments: (note 4)		
Fixed income	163,159	168,937
Equities	366,453	321,132
Real estate	59,604	50,075
Private equity	52,703	50,667
Hedge funds	28,071	24,243
External investment pool	92,498	81,356
Total investments	762,488	696,410
Accounts receivable	6,407	652
Total assets	792,921	710,792
Liabilities		
Current liabilities:		
Accounts payable and accrued expenses	147	269
Due to primary government	-	78
Payables for securities purchased	172	305
Total liabilities	319	652
Fiduciary Net Position		
Restricted		
Pensions	728,673	648,376
Postemployment benefits other than pensions	63,929	61,764
Total fiduciary net position	$ 792,602	$ 710,140

See accompanying Notes to Financial Statements

MASSACHUSETTS WATER RESOURCES AUTHORITY

Statements of Changes in Fiduciary Net Position

Years ended June 30, 2022 and 2021

(Dollars in thousands)

	2022	2021
	Pension (and Other Employee Benefit) Trust Funds	**Pension (and Other Employee Benefit) Trust Funds**
Additions		
Contributions:		
Employer	$ 20,734	$ 21,506
Plan members	9,892	10,188
Total contributions	30,626	31,694
Investment income:		
Interest and dividends	14,672	9,480
Net realized and unrealized gains	77,804	80,962
Less: investment fees	(5,966)	(3,526)
Net investment income	86,510	86,916
Reimbursements and transfers from other systems	1,994	2,096
Total additions	119,130	120,706
Deductions		
Benefits paid to participants or beneficiaries	35,855	32,588
Reimbursements and transfers to other systems	487	261
Administrative expenses	326	403
Total deductions	36,668	33,252
Change in fiduciary net position	82,462	87,454
Total fiduciary net position - beginning of year	710,140	622,686
Total fiduciary net position - end of year	$ 792,602	$ 710,140

See accompanying Notes to Financial Statements

(1) Organization

The Massachusetts Water Resources Authority (the Authority) was established in January 1985 pursuant to Chapter 372 (the Enabling Act) of the Act of 1984 of the Commonwealth of Massachusetts (the Commonwealth). The Authority, a successor agency to certain functions of the Metropolitan District Commission (the MDC) (which became part of the Department of Conservation and Recreation (the DCR) in July 2003), is a public instrumentality and, effective July 1, 1985, provides water supply services and sewage collection, treatment, and disposal services to areas of the Commonwealth.

The Authority is governed by an 11-member board of directors (the Board) chaired by the Secretary of Energy and Environmental Affairs for the Commonwealth. The Secretary and two other members are appointed by the Governor. Three members of the Board are appointed by the Mayor of Boston and three are appointed by the Authority's Advisory Board. One member is appointed by the Mayor of Quincy and one by the Winthrop Council President.

The Authority has also considered all component units for which it is financially accountable as well as other organizations for which the nature and /or significance of their relationship with the Authority are such that exclusion would cause the Authority's basic financial statements to be misleading or incomplete. As required by GAAP, these basic financial statements present the Authority (primary government) and its component units.

The Authority has included entities as fiduciary fund component units in the reporting entity because of the significance of their operational and financial relationship with the Authority. Component units are entities that are legally separate from the Authority, but are so closely related that they are, in substance, the same as the Authority or entities providing services entirely or almost entirely for the benefit of the Authority.

<u>Fiduciary Fund Component Units</u>

The Massachusetts Water Resources Authority Employees' Retirement System (Pension Trust) was established to provide pension benefits to Authority employees and their beneficiaries. The Pension Trust is governed by a five-member board comprised of the Secretary of the Authority's Board (ex-officio), two members elected by the Pension Trust's participants, one member appointed by the Authority's Board and one member appointed by the Pension Trust's Board members. The Pension Trust is presented using the accrual basis of accounting and is reported in the Pension (and Other Employee Benefit) Trust Funds in the fiduciary funds financial statement. The Pension Trust's year end is December 31st.

The Massachusetts Water Resources Authority Irrevocable OPEB Trust (OPEB Trust) is a single-employer other post-employment benefits (OPEB) plan, for the purpose of accumulating and investing assets to fund certain post-retirement medical and life insurance for retirees of the Authority. The Board of Trustees is composed of five members including the following Authority employees: Executive Director, Director of Finance, Treasurer, Budget Director and Director of Human Resources. The OPEB Trust is presented using the accrual basis of accounting and is reported in the Pension (and Other Employee Benefit) Trust Funds in the fiduciary funds financial statement. The OPEB Trust's year end is June 30th.

Complete financial statements for the Trusts can be obtained from the Authority's administrative offices at Charlestown Navy Yard, 100 First Avenue, Boston, MA 02129.

(2) Summary of Significant Accounting Policies

The accounting policies of the Authority conform to U.S. generally accepted accounting principles as applicable to government enterprises. The following is a summary of the Authority's significant accounting policies:

(a) Basis of Presentation

The Authority is required by the Enabling Act to establish user rates for its water and sewer services which provide sufficient funds to recover the costs of operations (excluding depreciation), debt service, maintenance, replacements, improvements to its facilities, and appropriate reserves. The Authority's financial statements are reported on the accrual basis of accounting and the economic measurement focus as specified by the Governmental Accounting Standards Board's (GASB) requirements for an enterprise fund.

The Authority distinguishes operating revenues and expenses from non-operating items. Operating revenues and expenses generally result from providing water and sewer services to its member communities. All revenues and expenses not meeting this definition are reported as non-operating revenues and expenses, with the exception of regulatory provisions as discussed below. All operating revenues are pledged for repayment of outstanding debt service.

In addition, the Authority applies the provisions of GASB Statement No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements*, to provide a better matching of revenues and expenses. The effect of this policy has been to defer certain outflows of resources, which will be recovered through future revenues in accordance with the Authority's rate model, and to record deferred inflows of resources for revenue collected through current rates for costs expected to be incurred in the future. The effects of the Authority's accounting policies are discussed further in Note 3.

In fiscal year 2021, the Authority implemented GASB Statement No. 84, *Fiduciary Activities*. This statement resulted in reporting fiduciary funds financial statements with the Authority's financial statements.

In fiscal year 2022, the Authority implemented GASB Statement No. 87, *Leases*. This standard requires the recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and as inflows of resources or outflows of resources recognized based on the payment provisions of the contract. It establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Under this standard, 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 Authority adopted the requirements of the guidance effective July 1, 2021 and has applied the provisions of this standard to the beginning of the earliest comparative period presented.

(b) Capital Assets

On July 1, 1985, ownership of the MDC's sewer and waterworks personal property was transferred to the Authority. Pursuant to the Enabling Act, ownership of the real property of the MDC sewer and waterworks systems was not transferred from the Commonwealth to the Authority; however, the Authority has the right to use, improve, maintain, and manage that property. In addition, ownership of the real and personal property of the watershed system remains with the Commonwealth; however, the Authority has the right to utilize the water therefrom for water supply purposes.

The personal property, together with the rights to the real property and watershed system, was recorded at its estimated fair value of $2,331,465 (including certain construction projects which were in progress as of July 1, 1985), based upon an appraisal performed by valuation specialists. Property, plant, and equipment acquired or constructed since July 1, 1985, is stated at acquisition cost, and includes the expenditure of capital grants in aid of construction.

Betterments and major renewals are capitalized and included in capital asset accounts, while expenditures for maintenance and repairs are charged to expense when incurred. The cost of depreciable assets and related accumulated depreciation is eliminated from the accounts when such items are disposed of or otherwise retired.

The Authority's capitalization threshold is $100.

(c) Depreciation

The Authority provides for depreciation by use of the straight-line method. Depreciation is intended to distribute the cost of depreciable properties, including those financed by capital grants in aid of construction, over the following estimated average useful lives:

	Years
Plant and Equipment, Water and Sewerage Systems	5–100
Motor Vehicles and Equipment	5
Furniture and Fixtures	7
Leasehold Improvements	3–5

(d) Revenue Recognition

The Authority recognizes revenue as amounts become collectible from its customers for water and sewer services provided. The majority of the Authority's billings to cities and towns are subject to, in the event of nonpayment, the local aid intercept allowed by the Enabling Act.

(e) Net Position

When both restricted and unrestricted resources are available for use, it is the Authority's policy to use the restricted resources first, then unrestricted as they are needed.

(f) Cash and Cash Equivalents

Authority:

The Authority's policy is to treat unrestricted investments with a maturity date of three months or less when purchased as cash equivalents for purposes of the statements of cash flows. Restricted cash and cash equivalents are combined with investments on the statements of net position and shown separately on the statements of cash flows as an investing activity.

Pension and OPEB Trust:

Cash and cash equivalents is considered to be cash on hand, demand deposits and short-term investments with an original maturity of three months or less from the date of acquisition.

(g) Payments in Lieu of Taxes

The Enabling Act authorizes and directs the Authority to pay to the DCR (formerly the MDC) Division of Watershed Management, who in turn remits payment to each city or town in which land of the Quabbin watershed and Ware River watershed is located. Each such payment is equal to the amount which the respective city or town would receive in property taxes, based upon the fair value of such land if such land were not tax exempt.

(h) Investments

Authority:

Investments are recorded at fair value, other than certain investments that are recorded at net asset value (NAV). The Authority uses an independent pricing source to determine the fair value of investments at quoted market prices. Changes in fair value are included in non-operating investment income in the Statements of Revenues, Expenses, and Changes in Net Position. Investments that are measured at NAV are the investments in the Massachusetts Municipal Depository Trust (MMDT) which is a 2a7-like external investment pool that is overseen by the Massachusetts State Treasurer and whose fair value of each share is equal to the number of shares; thus NAV is equal to $1.00 per share.

Pension and OPEB Trusts:

Investments are reported at fair value. Fair values of investments are based on quotations from a national securities exchange, except for the Systems' investment in the Pension Reserves Investment Trust (PRIT), hedge funds, private equity and real estate investments, for which fair values are estimated as detailed below.

External Investment Pool (PRIT)

PRIT is an external investment pool comprised of securities measured at various fair value measurements. The investment pool is managed by the Pension Reserves Investment Management (PRIM) Board and the System's share of the pool is reported at fair value in the System's financial statements. A complete copy of PRIT's separately issued financial statements can be obtained from PRIM Board at 84 State Street, Boston, MA 02109, or by visiting the PRIM Board's website at http://www.mapension.com/public-records/records-of-interest/.

Hedge Funds, Private Equity, and Real Estate Investments

The fair values of these types of investments have been determined by third party investment managers using Net Asset Value (NAV) per share (or its equivalent) on the System's ownership interest in the pool or partner's capital.

(i) Compensated Absences

Employees of the Authority may accumulate unused sick time of which 30% will be paid in cash upon retirement from the Authority. 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. The liability for both amounts is calculated based on the pay or salary rates in effect at the statements of net position dates.

(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 Plan and additions to/deductions from the Plan's fiduciary net position have been determined on the same basis as they are reported by the Authority. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

(k) Postemployment Benefits Other Than Pensions (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 OPEB Trust and additions to/deductions from the OPEB Trust's fiduciary net position have been determined on the same basis as they are reported by the Authority. For this purpose, the Authority recognizes benefit payments when due and payable in accordance with the benefit terms. Investments are reported at fair value, except for money market investments and participating interest-earning investment contracts that have a maturity at the time of purchase of one year or less, which are reported at cost.

(l) Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenditures during the reporting period. Actual results could differ from those estimates.

(m) Reclassifications

Certain reclassifications were made to the fiscal year 2021 financial statements to conform to the fiscal year 2022 presentation.

(Dollars in thousands)

(3) Regulatory Assets and Deferred Inflows from Regulatory Activities

In accordance with GASB Statement No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements*, regulatory assets and deferred inflows from regulatory activities that result primarily from differences between depreciation on property, plant, and equipment not financed by grants or capital contributions, which is recovered through rates as principal payments on debt service, and from amounts determined by the Board to be utilized in a subsequent year to reduce customer billings (rate stabilization).

A summary of the activity of regulatory assets and deferred inflows for fiscal years 2022 and 2021 is as follows:

	Sewer	Water	Total
Balance - June 30, 2020 - net	$ 220,676	$ (41,034)	$ 179,642
Difference Between Depreciation of Capital Assets Not Financed by Grants or Capital Contributions, and Debt Service in Excess of Interest Expense	(89,762)	(64,325)	(154,087)
Other, Net	(9,007)	616	(8,391)
Balance - June 30, 2021 - net	121,907	(104,743)	17,164
Difference Between Depreciation of Capital Assets Not Financed by Grants or Capital Contributions, and Debt Service in Excess of Interest Expense	(144,324)	84,909	(59,415)
Other, Net	(7,371)	(2,502)	(9,873)
Balance - June 30, 2022 - net	$ (29,788)	$ (22,336)	$ (52,124)

The net balance at June 30, 2022 and 2021 is presented on the statements of net position as follows:

	2022	2021	Current year change
Regulatory Assets	$ -	$ 59,415	$ (59,415)
Deferred Inflows from Regulatory Activities	(52,124)	(42,251)	(9,873)
Net Change	$ (52,124)	$ 17,164	$ (69,288)

The balance in the rate stabilization reserve was $40,294 and $41,544 at June 30, 2022 and 2021, respectively.

(4) Deposits and Investments

(1) Authority (Excluding the Pension and OPEB Trusts):

The following represents essential risk information about the Authority's deposits and investments:

(a) Custodial Credit Risk – Deposits

The custodial credit risk for deposits and certificates of deposit is the risk that, in the event of a bank failure, the Authority's deposits may not be recovered. Per the Authority's policy, credit risk is minimized by diversifying portfolio of funds and ensuring the amounts held in deposits is adequate to accommodate the reasonable cash needs of the Authority.

The bank deposits at June 30, 2022 and 2021 were $73,634 and $70,419, respectively. Of these amounts, $73,384 and $70,169, were exposed to custodial credit risks as uninsured and uncollateralized.

(b) Investments

The Authority is authorized by its general bond resolution to invest in obligations of the U.S. Treasury, its agencies and instrumentalities, bonds, or notes of public agencies or municipalities, bank time deposits, guaranteed interest contracts, Massachusetts Municipal Depository Trust (MMDT) accounts, interest rate swap agreements, and repurchase agreements. All investments are held by a third-party in the Authority's name. These investments are recorded at fair value.

(c) Credit Ratings

All debt securities purchased, such as FNMA, FHLMC, and FHLB issues have historically had a credit rating of AAA or they have been collateralized to AAA. On August 8, 2011, Standard & Poor's reduced the credit rating for these agencies to AA+. The reduction in credit rating did not affect the Authority's bond covenants or escrow requirements.

The Massachusetts Municipal Depository Trust funds are not rated.

The general bond resolution limits the Authority to investing in securities that are rated in the three highest rating categories as defined by S&P and Moody's or other rating agencies.

(d) Concentration Risk

At June 30, 2022 and 2021, the Authority had investments with the issuer, Federal Home Loan Bank (FHLB), which totaled 5.9% and 6.4%, respectively, of the total investments.

At June 30, 2022 and 2021, the Authority had investments with the issuer, Federal Farm Credit Banks (FFCB), which totaled 8.3% and 7.9%, respectively, of the total investments.

At June 30, 2022 and 2021, the Authority had investments with the issuer, Federal National Mortgage Association (FNMA), which totaled 9.3% and 9.2%, respectively of total investments.

(Dollars in thousands)

(e) Interest Rate Risk

The following is a listing of the Authority's fixed income investments and related maturity schedule as of June 30, 2022 and 2021:

June 30, 2022

		Investment maturities (in years)			
Investment Type	Fair Value	<1	1–3	4–8	>9
Mass Municipal Depository Trust	$ 549,956	$ 549,956	$ -	$ -	$ -
U.S. Agency Obligations	218,423	-	49,872	168,551	-
U.S. Treasury Bills	21,956	21,956	-	-	-
Total	$ 790,335	$ 571,912	$ 49,872	$ 168,551	$ -

June 30, 2021

		Investment maturities (in years)			
Investment Type	Fair Value	<1	1–3	4–8	>9
Mass Municipal Depository Trust	$ 630,964	$ 630,964	$ -	$ -	$ -
U.S. Agency Obligations	248,556	4,067	41,543	136,836	66,110
U.S. Treasury Bills	22,348	-	22,348	-	-
Total	$ 901,868	$ 635,031	$ 63,891	$ 136,836	$ 66,110

The majority of the Authority's investments are held in short-term money market funds and long-term investments in U.S. agency obligations that are held in the debt service reserve funds where the intent is to hold until maturity.

(f) Investment Values

The Authority categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. Debt securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities. Debt securities classified in Level 2 of the fair value hierarchy are valued using a matrix pricing technique. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices. The Authority has no securities classified in Level 3. The investment in MMDT, an external investment pool, is measured at $1.00 per share – the net asset value determined by the pool.

The Authority has the following recurring fair value measurements as of June 30, 2022 and 2021: U.S. Government agency obligations $218,423 and $248,556 (Level 2), respectively, U.S. Treasury Bills $21,956 and $22,348 (Level 2), respectively, and MMDT $549,956 and $630,9641 (NAV), respectively. There are no withdrawal restrictions or unfunded commitments related to the MMDT investment.

(Dollars in thousands)

(g) Restricted Investments by Fund

The following summarizes restricted investments as of June 30, 2022 and 2021 by various funds and accounts established by the Authority for debt covenants and other purposes:

	2022	2021
Restricted Investments:		
Construction	$ 115,765	$ 228,037
Debt Service Reserves	138,932	155,383
Debt Service Principal and Interest	351,900	322,062
Debt Service - Revenue Redemption	22,588	25,532
Operating Reserve	47,274	45,861
Rate Stabilization Reserve	40,294	41,544
Revenue	38,257	48,146
Combined Reserves - Renewal and Replacement Reserve	10,000	10,000
Combined Reserves - Insurance Reserve	13,806	13,141
Insurance Related Escrow Deposits	7,293	7,419
Total Restricted Investments	$ 786,109	$ 897,125

No funds were withdrawn from the Operating Reserve, Renewal and Replacement Reserve or Insurance Reserve during the fiscal year. Changes in investment balances reflect changes in fair value.

(2) Pension Trust:

(a) Deposits – Custodial Credit Risk

Custodial credit risk for deposits is the risk that, in the event of a bank failure, the Pension Trust's deposits may not be recovered. The Pension Trust's policy for custodial credit risk of deposits is to rely on FDIC insurance. As of December 31, 2021 and 2020, the Pension Trust was not exposed to custodial credit risk. The carrying value of the Pension Trust's deposits totaled $10 and $10 at December 31, 2021 and 2020, respectively.

(b) Investment Summary

The Pension Trust's investments at December 31, 2021 and 2020 are presented below. All investments are presented by investment type, with debt securities presented by maturity (using segmented time distribution).

(Dollars in thousands)

December 31, 2021

Investment maturities (in years)

Investment Type	Fair Value	<1	1–5	6-10	>10
Debt Securities:					
Money market mutual funds	$ 19,159	$ 19,159	$ -	$ -	$ -
Fixed income securities	163,159	134,587	2,088	8,147	18,337
Total Debt Securities	182,318	$ 153,746	$ 2,088	$ 8,147	$ 18,337
Other Investments:					
Equity Securities	366,453				
External Investment Pools (PRIT)	33,426				
Hedge Funds	28,071				
Real Estate	59,604				
Private Equity	52,703				
Total Other Investments	540,257				
Total Investments	$ 722,575				

December 31, 2020

Investment maturities (in years)

Investment Type	Fair Value	<1	1–5	6-10	>10
Debt Securities:					
Money market mutual funds	$ 7,485	$ 7,485	$ -	$ -	$ -
Fixed income securities	168,937	96,928	24,850	40,121	7,038
Total Debt Securities	176,422	$ 104,413	$ 24,850	$ 40,121	$ 7,038
Other Investments:					
Equity Securities	321,132				
External Investment Pools (PRIT)	25,827				
Hedge Funds	24,243				
Real Estate	50,075				
Private Equity	50,667				
Total Other Investments	471,944				
Total Investments	$ 648,366				

(c) Investments – Interest Rate Risk of Debt Securities

Interest rate risk for debt securities is the risk that changes in interest rates of debt securities will adversely affect the fair value of an investment. The Pension Trust's policy for interest rate risk is the duration of the portfolio should be consistent with the appropriate indices. Unless otherwise agreed to, the duration of the portfolio must be within 25% of the appropriate benchmark.

(d) Investments – Custodial Credit Risk

Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty, the Pension Trust will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. The Pension Trust's policy for custodial credit risk of investments intends that all investments are either insured and/or registered in the name of the Pension Trust. As of December 31, 2021 and 2020, the Pension Trust was not exposed to custodial credit risk.

(Dollars in thousands)

(e) *Investments – Credit Risk of Debt Securities*

Credit risk for debt securities is the risk that an issuer or other counterparty to a debt security will not fulfill its obligations. The Pension Trust's policies for credit risk of debt securities include the minimum quality rating at the time of purchase cannot be below a rating of CCC. Non-rated securities may comprise 10% of the portfolio, provided that the applicable manager determines that, if such an issue was rated, it would be allowed under the above limitation and that the non-rated issue is deemed to be below BAA (investment grade). Compliance with credit ratings provided by Moody's, Standard & Poor's and Fitch is not sufficient for an issue to be deemed an appropriate investment. The managers are responsible for making an independent analysis of the credit-worthiness of securities.

As of December 31, 2021 and 2020, the credit quality ratings of the Pension Trust's money market mutual funds are unrated by any nationally recognized statistical rating organization. As of December 31, 2021 and 2020, the credit quality ratings of the Pension Trust's fixed income securities, excluding U.S. Treasury securities of $27,328 and $56,623 respectively, are as follows:

Quality Ratings *	2021 Fixed income securities	2020 Fixed income securities
A+	$ 781	$ -
A	734	3,441
A-	2,723	10,094
BBB+	6,778	10,667
Unrated	124,815	88,112
Total	$ 135,831	$ 112,314

*Per Standard and Poors, a nationally recognized statistical rating organization.

(f) *Deposits and Investments – Foreign Currency Risk*

Foreign currency risk is the risk that fluctuations in exchange rates will adversely affect the fair value of an investment or a deposit. The Pension Trust does not have a policy regarding foreign currency risk. As of December 31, 2021 and 2020, the Pension Trust had indirect exposure to foreign currency risk for certain equity investments issued by foreign countries in the amount of $131,027 and $122,551, respectively.

(g) *Investments – Concentration of Credit Risk*

Concentration of credit risk is the risk of loss attributed to the magnitude of the Pension Trust's investment in a single issuer. The Pension Trust's policy for concentration of credit risk is that not more than 5% of the fair value of the Pension Trust's portfolio can be invested in the debt obligations of any one issuer, with the exception of securities issued by the U.S. Government, or its agencies, which may be held without limitation. As of December 31, 2021 and 2020, the Pension Trust was not exposed to concentration of credit risk.

(Dollars in thousands)

(h) Fair Value Measurements

The Pension Trust categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs. The Pension Trust has the following recurring fair value measurements as of December 31, 2021 and 2020:

December 31, 2021

		Fair Value Measurements Using	
Investments by Fair Value Level	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)
Debt Securities:			
Money market mutual funds	$ 19,159	$ 19,159	$ -
Fixed income securities	38,344	27,328	11,016
Total Debt Securities	57,503	46,487	11,016
Equity Securities	159,254	159,254	-
Total Investments by Fair Value Level	216,757	$ 205,741	$ 11,016
Investments measured at Net Asset Value (NAV)			
Pooled Equity Funds	207,199		
Pooled Fixed Income Funds	124,815		
Private Equity	52,703		
Real Estate	59,604		
Hedge Funds	28,071		
Investments measured at NAV	472,392		
Other investments measured at fair value			
External Investment Pool (PRIT)	33,426		
Total Investments	$ 722,575		

December 31, 2020

		Fair Value Measurements Using	
Investments by Fair Value Level	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)
Debt Securities:			
Money market mutual funds	$ 7,485	$ 7,485	$ -
Fixed income securities	168,937	144,734	24,203
Total Debt Securities	176,422	152,219	24,203
Equity Securities	321,132	280,170	40,962
Total Investments by Fair Value Level	497,554	$ 432,389	$ 65,165
Investments measured at Net Asset Value (NAV)			
Private Equity	50,667		
Real Estate	50,075		
Hedge Funds	24,243		
Investments measured at NAV	124,985		
Other investments measured at fair value			
External Investment Pool (PRIT)	25,827		
Total Investments	$ 648,366		

(Dollars in thousands)

Debt and equity securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities. Equity securities classified in Level 2 of the fair value hierarchy are valued using a matrix pricing technique. Matrix pricing is used to value securities based on the securities relationship to benchmark quoted prices.

The valuation method for investments measured at the net asset value (NAV) per share (or its equivalent) is presented on the following table.

December 31, 2021

	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Private equity (1)	$ 52,703	27,944	N/A[(1)]	N/A[(1)]
Real estate (2)	59,604	4,639	N/A[(2)]	N/A[(2)]
Hedge funds (3)	28,071	-	Quarterly	90-100 days
Pooled Equity Funds (4)	207,199	-	1-30 days	1 - 60 days
Pooled Fixed Income Funds (5)	124,815	-	1-30 days	1 - 15 days
Total Investments Measured at the NAV	$ 472,392			

December 31, 2020

	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Private equity (1)	$ 50,667	32,600	N/A[(1)]	N/A[(1)]
Real estate (2)	50,075	4,805	N/A[(2)]	N/A[(2)]
Hedge funds (3)	24,243	-	Quarterly	90-100 days
Total Investments Measured at the NAV	$ 124,985			

(1) Private Equity Funds: This type includes 24 private equity funds that consist primarily of limited partnership interests in corporate finance and venture capital funds. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the Pension Trust’s ownership interest in partners’ capital. The investments can never be redeemed with the funds. Distributions from each of these funds will be received as the underlying investments of the funds are liquidated. It is expected that the underlying assets of the funds will be liquidated over the next 1 to 10 years.

(2) Real Estate Funds: This type includes 10 real estate funds that invest primarily in U.S. commercial real estate and value added opportunities. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the Pension Trust’s ownership interest in partners’ capital. There are two investments with approximate values of $25,600 and $24,500 at December 31, 2021, and $20,600 and $20,100 at December 31, 2020, for which the investments can be redeemed quarterly, with a redemption notice period of 90 days. The remaining investments can never be redeemed with the funds. Distributions from each of these funds will be received as the underlying investments of the funds are liquidated. It is expected that the underlying assets of the funds will be liquidated over the next 1 to 12 years.

(3) Hedge Funds: This type includes 3 hedge funds that pursue multiple strategies to diversify risks and reduce volatility. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the Pension Trust's ownership interest in partners' capital. There are three investments with approximate values of $700, $13,200 and $14,100 at December 31, 2021 and $800, $11,500 and $12,000 at December 31, 2020. The investments can be redeemed quarterly, with a redemption notice period of 90 days, 90 days, and 100 days, respectively.

(4) Pooled Equity Funds: This type includes 7 funds with capital pooled from multiple investors in order to achieve mutual return objectives through investments in various types of equity securities. The fair value of pooled equity funds is measured at NAV by multiplying the pool's share price by the number of shares held.

(5) Pooled Fixed Income Funds: This type includes 5 funds with capital pooled from multiple investors in order to achieve mutual return objectives through investments in fixed income securities. The fair value of pooled fixed income funds is measured at NAV by multiplying the pool's share price by the number of shares held.

(3) <u>OPEB Trust:</u>

(a) Deposits – Custodial Credit Risk

The custodial credit risk for deposits and certificates of deposit is the risk that, in the event of a bank failure, the OPEB Trust's deposits may not be recovered.

The bank deposits at June 30, 2022 and 2021 were $4,857 and $6,235, respectively. Of these amounts, $4,607 and $5,985, were exposed to custodial credit risks as uninsured and uncollateralized.

(b) Investments Summary

The Trustees have adopted a formal cash and investment policy. All funds will be invested with the Commonwealth of Massachusetts Pension Reserves Investment Trust (PRIT) fund through the State Retiree Benefits Trust Fund.

The investment in the PRIT fund is not subject to custodial or concentration risk and the Trust does not have policies to address such risks. The investment in PRIT is subject to foreign currency risk to the extent exchange rates will adversely affect the fair value of PRIT's international investments. The Trust does not have a policy to address this risk. The PRIT fund is unrated. PRIT does not place any limitations or restrictions on withdrawals.

(Dollars in thousands)

Investments are recorded at fair value. The Trust categorizes its fair value measurements with the fair value hierarchy established by generally accepted accounting principles. Debt securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities. Debt securities classified in Level 2 of the fair value hierarchy are valued using a matrix pricing technique. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices. The Trust has no debt securities classified in Level 3.

The OPEB Trust's investment in the PRIT fund, totaling $59,072 and $55,529 at June 30, 2022 and 2021, respectively, is classified as Level 2.

(5) Bond Resolution Reserves

The components of the reserves funded from revenues and required by the general and supplemental bond resolutions at June 30, 2022 and 2021 are as follows:

			Total	
Reserves	**Sewer**	**Water**	**2022**	**2021**
Renewal and Replacement	$ 2,544	$ 1,457	$ 4,001	$ 4,001
Insurance	7,000	7,000	14,000	14,000
Operating	30,653	16,624	47,277	45,865
Total	$ 40,197	$ 25,081	$ 65,278	$ 63,866

A renewal and replacement reserve of $6,000 was established through grant receipts transferred from the Commonwealth in 1985 and is included in restricted net position at June 30, 2022 and 2021.

(Dollars in thousands)

(6) Notes Payable and Long-Term Debt

Long-term debt at June 30, 2022 and 2021 consisted of the following:

	2022	2021
General Revenue Bonds:		
2002 Series J, 5 1/2%, issued December 18, 2002, due 2022	$ 22,395	$ 73,205
2011 Series B, 5%, issued May 19, 2011	-	3,030
2012 Series A, 5%, issued April 19, 2012, due 2022	3,505	3,505
2014 Series D, 5%, issued November 19, 2014	-	55,340
2016 Series B, 4% to 5%, issued May 12, 2016, due 2023 to 2030	13,180	60,770
2017 Series B, 5%, issued May 18, 2017, due 2025 to 2042	60,470	60,470
2018 Series B, 5%, issued May 16, 2018, due 2025 to 2043	99,705	99,705
2019 Series B, 5%, issued May 22, 2019, due 2024 to 2044	118,765	121,265
2019 Series E, 1 9/10% to 3 1/5%, issued November 1, 2019, due 2024 to 2044	50,000	50,000
2020 Series B, 5% issued August 20, 2020, due 2022 to 2045	154,675	156,175
2021 Series B, 5%, issued December 22, 2021, due 2022 to 2041	60,635	-
Total	583,330	683,465
General Revenue Refunding Bonds:		
2007 Series B, 5 1/4%, issued February 1, 2007, due 2023 to 2038	647,950	647,950
2013 Series A, 5%, issued March 27, 2013, due 2022 to 2023	50,185	94,015
2014 Series F, 5%, issued November 19, 2014, due 2024 to 2027	17,370	138,755
2016 Series C, 4% to 5%, issued May 12, 2016, due 2022 to 2040	343,610	672,445
2016 Series D, 3% to 5%, issued August 24, 2016, due 2025 to 2042	48,745	103,425
2017 Series C, 4% to 5%, issued May 18, 2017, due 2022 to 2032	206,380	220,120
2018 Series C, 5%, issued May 16, 2018, due 2023 to 2026	17,500	17,500
2019 Series C, 5%, issued May 22, 2019, due 2022	7,630	19,190
2019 Series F, 1 7/10% to 3 1/10%, issued November 1, 2019, due 2022 to 2039	529,750	537,250
2021 Series C, 1/2% to 2 9/10%, issued December 22, 2021, due 2022 to 2044	687,395	-
Total	2,556,515	2,450,650

(Dollars in thousands)

	2022	2021
General Revenue Bonds with the Massachusetts Clean Water Trust - Direct Borrowings:		
1999 Series E Sewer, 4 3/4%, issued October 6, 1999, due 2022 to 2029	$ 3,967	$ 4,393
1999 Series F, 5 3/4% to 6%, issued November 3, 1999, due 2022 to 2029	105,050	124,940
2000 Series E Sewer, 5 1/2%, issued November 1, 2000, due 2022 to 2030	32,693	35,759
2001 Series D Sewer, 5 3/8% to 5 1/2%, issued July 26, 2001, due 2022 to 2029	403	446
2002 Series H Sewer, 5%, issued October 31, 2002, due 2022 to 2032	44,585	47,880
2002 Series H Water, 5%, issued October 31, 2002, due 2022	2,205	4,370
2002 Series I Sewer, 5 1/2%, issued October 31, 2002, due 2022 to 2030	1,142	1,247
2003 Series A Water, 5%, issued October 31, 2002, due 2022	102	200
2003 Series C Sewer, 5% to 5 1/4%, issued November 6, 2003, due 2022 to 2033	16,838	17,932
2003 Series C Water, 4 3/4% to 5%, issued November 6, 2003, due 2022 to 2023	2,795	4,135
2004 Series C Sewer, 5% to 5 1/4%, issued October 26, 2004, due 2022 to 2033	5,697	6,074
2004 Series C Water, 5%, issued October 26, 2004, due 2022	57	113
2004 Series D Sewer,5%, issued November 29, 2004, due 2022 to 2034	31,715	33,540
2004 Series D Water, 5%, issued November 29, 2004, due 2022 to 2024	2,810	3,660
2005 Series C Sewer, 5% to 5 1/4%, issued November 3, 2005, due 2022 to 2033	3,160	3,490
2005 Series C Water, 5%, issued November 3, 2005, due 2022 to 2023	146	217
2005 Series D Sewer, 2 3/10%, issued November 16, 2005, due 2022 to 2035	35,352	37,466
2005 Series D Water, 0% to 2%, issued November 16, 2005, due 2022 to 2025	3,120	3,888
2005 Series E Sewer, 2%, issued November 16, 2005, due 2022 to 2025	94	117

(Dollars in thousands)

	2022	2021
General Revenue Bonds with the Massachusetts Clean Water Trust - Direct Borrowings (Continued):		
2005 Series E Water, 2%, issued November 16, 2005, due 2022 to 2025	$ 22	$ 26
2006 Series C Sewer, 5%, issued October 26, 2006, due 2022 to 2034	4,123	4,512
2006 Series D Sewer, 2 3/10%, issued December 14, 2006, due 2022 to 2036	34,432	36,325
2006 Series D Water, 0% to 2%, issued December 14, 2006, due 2022 to 2026	7,788	9,319
2006 Series E Sewer, 2%, issued December 14, 2006, due 2022 to 2026	109	129
2006 Series E Water, 2%, issued December 14, 2006, due 2022 to 2026	48	57
2007 Series C Sewer, 2% to 2 3/10%, issued November 9, 2007, due 2022 to 2035	1,347	1,536
2007 Series C Water, 2%, issued November 9, 2007, due 2022 to 2025	618	772
2007 Series D Sewer, 2 3/10%, issued November 9, 2007, due 2022 to 2036	14,122	14,901
2007 Series E Sewer, 2 2/5%, issued December 18, 2007, due 2022 to 2037	34,773	36,532
2007 Series E Water, 2%, issued December 18, 2007, due 2022 to 2027	6,861	7,927
2008 Series G Sewer, 2%, issued December 9, 2008, due 2022 to 2026	1,731	2,069
2008 Series G Water, 2%, issued December 9, 2008, due 2022 to 2026	375	447
2009 Series C Sewer, 2% to 2 2/5%, issued March 18, 2009, due 2022 to 2038	44,522	47,141
2009 Series C Water, 2%, issued March 18, 2009, due 2022 to 2028	12,028	13,613
2009 Series D Sewer, 2% to 2 2/5%, issued December 15, 2009, due 2022 to 2037	5,719	6,208
2009 Series D Water, 2%, issued December 15, 2009, due 2022 to 2027	473	547
2010 Series D Sewer, 2% to 2 2/5%, issued July 8, 2010, due 2022 to 2040	16,762	17,734
2010 Series D Water, 2%, issued July 8, 2010, due 2022 to 2030	11,537	12,695
2011 Series A Sewer, 2% to 2 2/5%, issued March 15, 2011, due 2022 to 2038	3,066	3,292
2011 Series A Water, 2%, issued March 15, 2011, due 2022 to 2028	2,308	2,615
2012 Series C Sewer, 2% to 2 2/5%, issued June 6, 2012, due 2022 to 2040	4,189	4,605
2012 Series C Water, 2%, issued June 6, 2012, due 2022 to 2030	2,068	2,274

(Dollars in thousands)

	2022	2021
General Revenue Bonds with the Massachusetts Clean Water Trust - Direct Borrowings (Continued):		
2012 Series D Sewer, 2% to 2 2/5%, issued June 13, 2012, due 2022 to 2042	$ 26,085	$ 28,267
2012 Series D Water, 2%, issued June 13, 2012, due 2022 to 2032	5,176	5,588
2013 Series B Sewer, 2% to 2 2/5%, issued May 22, 2013, due 2023 to 2043	17,451	19,209
2013 Series B Water, 2%, issued May 22, 2013, due 2023 to 2033	5,189	5,603
2014 Series C Sewer, 2% to 2 2/5%, issued May 30, 2014, due 2022 to 2042	3,452	3,650
2014 Series C Water, 2%, issued May 30, 2014, due 2022 to 2032	3,505	3,808
2015 Series A Sewer, 2% to 2 2/5%, issued January 7, 2015, due 2023 to 2045	36,837	38,537
2015 Series A Water, 2%, issued January 7, 2015, due 2023 to 2035	11,029	11,756
2015 Series B Sewer, 2% to 2 2/5%, issued May 14, 2015, due 2022 to 2043	2,045	2,209
2015 Series B Water, 2%, issued May 14, 2015, due 2022 to 2033	1,370	1,490
2016 Series A Sewer, 2% to 2 2/5%, issued March 11, 2016, due 2023 to 2046	31,916	33,219
2016 Series A Water, 2%, issued March 11, 2016, due 2023 to 2036	10,177	10,793
2017 Series A Sewer, 2%, issued April 13, 2017, due 2023 to 2036	6,896	7,282
2017 Series A Water, 2%, issued April 13, 2017, due 2023 to 2037	19,574	20,668
2018 Series E Sewer, 2%, issued September 12, 2018, due 2022 to 2038	15,230	15,964
2018 Series E Water, 2%, issued September 12, 2018, due 2022 to 2038	28,570	29,947
2019 Series D Sewer, 2%, issued October 24, 2019, due 2022 to 2039	30,090	31,445
2019 Series D Sewer, 2%, issued October 24, 2019, due 2022 to 2039	18,107	18,922
2021 Series A Sewer, 2%, issued May 11, 2021, due 2023 to 2041	24,131	25,148
2021 Series A Water, 2%, issued May 11, 2021, due 2023 to 2041	24,267	25,290
Total	822,049	893,938

(Dollars in thousands)

	2022	2021
General Revenue Bonds (Variable Rates):		
1999 Series B, 0.01% to 1.03%, issued January 29, 1999, due 2022 to 2028	$ 37,500	$ 42,100
Total	37,500	42,100
General Revenue Refunding Bonds (Fixed Rates):		
2012 Series G, 1.38%, issued November 15, 2012, due 2022 to 2023 (Direct Borrowing)	5,590	8,780
Total	5,590	8,780
General Revenue Refunding Bonds (Variable Rates):		
2008 Series A, 0.02% to 0.93%, issued May 29, 2008, due 2022 to 2037	142,050	160,150
2008 Series C, 0.01% to 1%, issued May 29, 2008, due 2022 to 2026	39,330	44,120
2008 Series E, 0.02% to 0.94%, issued May 29, 2008, due 2022 to 2037	94,940	107,140
2012 Series E, 0.55% to 1.51%, issued November 15, 2012, due 2022 to 2031 (Direct Borrowing)	52,685	55,237
2014 Series A, 0.54% to 1.42%, issued May 20, 2014, due 2022 to 2025 (Direct Borrowing)	50,000	50,000
2014 Series B, 0.50% to 1.38%, issued May 20, 2014, due 2022 (Direct Borrowing)	13,130	31,505
2018 Series A, 0.40% to 1.19%, issued March 26, 2018, due 2023 to 2031 (Direct Borrowing)	47,530	47,530
2018 Series D, 0.42% to 1.38%, issued May 31, 2018, due 2025 to 2029 (Direct Borrowing)	50,000	50,000
Total	489,665	545,682
Revolving Loan:		
2015 Series C, issued November 1, 2015, due 2045	73,000	53,000
Total	4,567,649	4,677,615
Less:		
Unamortized Bond Premiums and Discounts	236,167	333,221
Current Portion of Long-Term Debt	(288,903)	(247,882)
Borrowings Associated with Derivative Instruments	25,134	28,074
Total	(27,602)	113,413
Long-Term Debt, Net	$ 4,540,047	$ 4,791,028

(Dollars in thousands)

Long-term obligations at June 30, 2022 and 2021 consisted of the following:

	2022 Beginning Balance	Additions	Reductions	2022 Ending Balance	Due Within One Year
General Revenue Bonds	$ 725,565	$ 60,635	$ 165,370	$ 620,830	$ 33,820
General Revenue Refunding Bonds	2,762,060	687,395	616,620	2,832,835	156,430
Refunding from Direct Borrowings	243,052	-	24,117	218,935	24,715
General Revenue Bonds with the Massachusetts Clean Water Trust - Direct Borrowings	893,938	-	71,889	822,049	73,938
Borrowings Associated with Derivative Instruments	28,074	-	2,940	25,134	-
Revolving Loan	53,000	20,000	-	73,000	-
Total	$ 4,705,689	$ 768,030	$ 880,936	$ 4,592,783	$ 288,903

	2021 Beginning Balance	Additions	Reductions	2021 Ending Balance	Due Within One Year
General Revenue Bonds	$ 629,000	$ 160,000	$ 63,435	$ 725,565	$ 61,395
General Revenue Refunding Bonds	2,897,335	-	135,275	2,762,060	90,485
Refunding from Direct Borrowings	263,135	-	20,083	243,052	24,117
General Revenue Bonds with the Massachusetts Clean Water Trust - Direct Borrowings	952,950	50,438	109,450	893,938	71,885
Borrowings Associated with Derivative Instruments	31,014	-	2,940	28,074	-
Revolving Loan	53,000	-	-	53,000	-
Total	$ 4,826,434	$ 210,438	$ 331,183	$ 4,705,689	$ 247,882

The Authority is required to establish water and sewer rates and charges at a level sufficient to provide, among other things, primary and subordinated debt service coverage ratios of 120% and 110%, respectively. For the year ended June 30, 2022, the Authority had primary and subordinated debt service coverage ratios of 233% and 124%, respectively.

Under the Authority's General Revenue Bond Resolution, all revenues, together with the investment earnings thereon, except to the extent that such earnings are required to be deposited in the Rebate Fund pursuant to a Supplemental Resolution, are pledged for payment of the Bonds.

The Act of 1984 imposes a limitation of $600,000 on the total amount of bonds and notes which may be outstanding at any one time. The Authority has requested increases in its debt limit as necessary to allow for issuances of bonds in amounts required to finance the capital program. The state legislature increased the debt limit to $6,450,000.

On December 22, 2021, the Authority issued General Revenue Bonds, 2021 Series B for $60,635 and General Revenue Refunding Bonds (Federally Taxable), 2021 Series C for $687,395.

The proceeds from the Series B bonds were used to permanently finance outstanding tax-exempt commercial paper of $75,000. The interest rate on these bonds are 5%.

The proceeds from the Series C bonds were used to advance refund $53,885 of General Revenue Bonds 2014 Series D, $47,590 of General Revenue Bonds 2016 Series B, $43,830 of General Revenue Refunding Bonds 2013 Series A and $72,870 of General Revenue Refunding Bonds 2014 Series F, $317,700 of General Revenue Refunding Bonds 2016 Series C, $52,190 of General Revenue Refunding Bonds 2016 Series D. The refunded bonds are considered defeased in-substance.

The interest rate of these bonds range from 0.53% to 2.97%. The cash flow required to make principal and interest payments on the funding bonds is approximately $82,027 less than the debt service requirements of the refunded bonds. The economic gain (the difference between the present values of the debt service payments on the old and new debt) obtained from this refunding is $65,908.

On August 20, 2020, the Authority issued General Revenue Bonds, 2020 Series B for $160,000. The proceeds from these bonds will be used to finance new construction projects. The interest rate on these bonds is 5%.

On November 1, 2015, the Authority entered into a revolving credit agreement with a bank. The Authority shall repay the loan at the Commitment Termination Date, December 29, 2023. The revolving loan automatically converts into a term loan if the Authority does not extend or refund the agreement by this date. Interest is payable at the Securities Industry and Financial Markets Association (SIFMA) index rate, beginning January 19, 2021 and, prior to this date, at 80% of the 1 month LIBOR rate. These rates were 0.98% and 0.10% at June 30, 2022 and 2021, respectively. Initial drawdown was $100,000, which was reduced to $79,000 at June 30, 2016. The balance was further reduced in fiscal year 2018 to $53,000 using the proceeds from the General Revenue Bonds, 2018 Series B. During fiscal year 2022, the balance was increased to $73,000.

Synthetic Fixed Rate Swap Transactions

In connection with several of its bond issues, the Authority has entered into various interest rate swap agreements to reduce the impact of changes in interest rates on its variable rate debt. Under these agreements, the Authority pays a fixed interest rate (ranging from 4.0% to 6.9%) and receives interest from the swap counterparties at a variable rate (either SIFMA rate or a percentage of LIBOR). The SIFMA rate is based on the seven-day high-grade market index of tax-exempt variable rate demand obligations.

(Dollars in thousands)

Item	Objective	Effective Date	Current Notional Amount	Termination Date	Fixed Payable Swap Rate	Variable Receivable Swap Rate	Fair Value at June 30, 2022	Fair Value at June 30, 2021
A	Hedge changes in cash flows on the 2008 Series A Bonds	April 4, 2011	$ 94,600	August 1, 2030	6.585%	67% LIBOR Plus 0.13%	$ (1,945)	$ (8,402)
B	Hedge changes in cash flows on the 2008 Series E Bonds	October 28, 2008	94,600	August 1, 2030	6.935	SIFMA	(4,122)	(13,182)
C	Hedge changes in cash flows on the 2008 Series A and 2008 Series E Bonds	August 1, 2030	70,400	August 1, 2037	6.585	67% LIBOR Plus 0.13%	(2,264)	(4,930)
D	Hedge changes in cash flows on the 2008 Series C Bonds	May 29, 2008	26,695	November 1, 2026	3.994	SIFMA	(734)	(2,797)
E	Hedge changes in cash flows on the 2008 Series C and 2012 Series G Bonds	May 29, 2008	17,800	November 1, 2026	4.033	SIFMA	233	(612)
	Total						$ (8,832)	$ (29,923)

All of the above are pay-fixed interest rate swap agreements. Under these interest rate swap agreements, the Authority incurred net interest expense of $14,025 and $16,652 in fiscal year 2022 and fiscal year 2021, respectively.

For the swap effective on April 4, 2011, with a current notional amount of $94,600, the fixed rate paid by the Authority is as follows: 4.120% from execution until August 2013, 5.144% from August 2013 until August 2019, and 6.585% from August 2019 until August 2030.

For the swap execution on October 28, 2008, with a current notional amount of $94,600, the fixed rate paid by the Authority is as follows: 4.470% from execution until August 2013, 5.494% from August 2013 until August 2019, and 6.935% from August 2019 until August 2030.

The aggregate fair value balance of the derivative instruments at June 30, 2022 and 2021 is $(8,832) and $(29,923), respectively, and is reflected on the Authority's statements of net position as a liability for derivative instruments. This liability is offset by deferred outflows from derivative instruments. The original notional amounts of the interest rate swaps totaled $535,895.

The fair values of the interest rate swaps were estimated using the zero-coupon method. This method calculates the future net settlement payments required by the swap, assuming that the current forward rates implied by the yield curve correctly anticipate future spot interest rates. These payments are then discounted using the spot rates implied by the current yield curve for hypothetical zero-coupon bonds due on the date of each future net settlement on the swaps. The interest rate swaps are classified in Level 2 of the fair value hierarchy, as outlined in Government Accounting Standards Board Statement No. 72, *Fair Value Measurement and Application*, as valued using a market approach that considers benchmark interest rates.

Risk Disclosure

Credit Risk - Because all of the Authority's swaps rely upon the performance of the third parties who serve as swap counterparties, the Authority is exposed to credit risk, or the risk that a swap counterparty fails to perform according to its contractual obligations. The appropriate measurement of this risk at the reporting date is the fair value of the swaps, as shown in the columns labeled Fair Value in the tables above. To mitigate credit risk, the Authority maintains strict credit standards for swap counterparties. The Authority monitors swap counterparties' credit ratings by the three rating agencies (Fitch Ratings, Moody's Investors Service, and S&P Global Ratings). Collateral may be obtained from any counterparty that does not maintain a set credit rating. Since all derivatives are in a liability position, there is no amount exposed to credit risk.

The following represents the credit ratings (Fitch) of the counterparties as of June 30, 2022:

Derivative instrument	Counterparty credit rating
Derivative A	A+
Derivative B	AA-
Derivative C	A+
Derivative D	A+
Derivative E	A

Basis Risk - The Authority is exposed to basis risk because the floating index the Authority receives on the swaps (SIFMA or 67% of LIBOR) may be different than the basis of the variable rate on the associated bonds. Should this occur, the expected savings may not be realized.

Termination Risk - The Authority or its counterparties may terminate a derivative instrument if the other party fails to perform under the terms of the contract. If, at the time of termination, a derivative is in a liability position, the Authority would be liable to the counterparty for a payment equal to the liability, subject to netting arrangements.

Rollover Risk - The Authority can be exposed to rollover risk on hedging derivative instruments that are hedges of debt that terminate prior to the maturity of the debt. The Authority currently has no rollover risk. When derivative instruments A and B terminate in 2030, those bond series will then be hedged by derivative instrument C.

(Dollars in thousands)

Swap Payments and Associated Bonds Outstanding

Bonds outstanding include certain variable rate bonds where the Authority pays a fixed interest rate and receives interest at a variable rate from the counterparty. The table below presents the debt service requirements and related net swap payments for these bonds. As rates vary, variable rate interest payments will vary.

Using rates as of June 30, 2022, debt service requirements of the hedged variable rate bonds and net swap payments, assuming current interest rates remain constant, were as follows:

	Variable-rate		Interest Rate	
Fiscal Year Ending June 30:	**Principal**	**Interest**	**Swaps, Net**	**Total**
2023	$ 67,300	$ 1,681	$ 9,409	$ 78,390
2024	15,100	1,208	5,791	22,099
2025	16,000	1,086	6,112	23,198
2026	16,600	958	5,316	22,874
2027	40,495	765	4,165	45,425
2028–2032	7,800	2,443	15,613	25,856
2033–2037	55,600	1,394	9,888	66,882
2038	14,800	8	323	15,131
Total	$ 233,695	$ 9,543	$ 56,617	$ 299,855

Demand Bonds

Included in variable rate long-term debt of $527,165 is $313,820 of subordinated variable rate demand obligations (VRDOs). The bonds were issued on various dates from 1999 through 2008. Subordinated VRDOs are subject to purchase on the demand of the holder at a price equal to principal plus accrued interest. The ability of the Authority to purchase such bonds, if not remarketed, is secured through letters of credit and standby bond purchase agreements with various nationally recognized financial institutions that expire between December 2023 and November 2026. The VRDOs are classified as long-term debt because the liquidity agreement for each series contains term out provisions that, if demand is made to repurchase the bonds, calls for a two to three year amortization to repay the bonds.

In 2014, $114,755 of 2014 Series A and B General Revenue Refunding Bonds were issued as direct-purchase bonds, to be held by the purchaser for a specific period of time and are not subject to purchase or remarketing at the demand of the holder and therefore do not require a letter of credit or standby bond purchase agreement. The $50,000 of Series A and $13,130 of Series B have been purchased through August 2025 and August 2022, respectively. In addition, the 2012 Series E General Revenue Refunding Bonds, totaling $52,685, has a three year term out provision beginning at the expiration date and the 2018 Series A & D General Revenue Refunding Bonds, totaling $97,530, have three year term out provisions beginning at the expiration dates.

(Dollars in thousands)

Defeased Debt

At June 30, 2022, the following bonds outstanding are considered defeased in-substance:

Description	Redemption date	Redemption price	Outstanding Principal amount
2012 Series A	2022	100	120,740
2012 Series B	2022	100	86,775
2013 Series A	2022 - 2023	100	53,255
2014 Series D	2022 - 2024	100	64,310
2014 Series F	2023 - 2024	100	100,140
2016 Series B	2026	100	47,590
2016 Series C	2022 - 2023 and 2026	100	334,575
2016 Series D	2024 and 2026	100	55,515
2017 Series B	2023 and 2026	100	3,735
2017 Series C	2022 - 2023 and 2026	100	18,555
2018 Series B	2024 and 2025	100	6,700
2018 Series C	2024	100	4,400
2019 Series B	2023 - 2026	100	6,235
2020 Series B	2024	100	3,825

The proceeds and available funds were deposited in irrevocable trusts with escrow agents in an amount which will provide for payment of interest due to the redemption date and redemption of the defeased bonds outstanding on such date. The defeased portion of such debt, accrued interest thereon, and related unamortized issuance and discount costs were removed from the statements of net position in an in-substance defeasance transaction.

In June 2022, the Authority used funds on hand to defease $15,740 of the 2014 Series F, $11,135 of the 2016 Series C, $2,490 of the 2016 Series D and $1,305 of the 2017 Series C General Revenue Refunding Bonds outstanding.

In September 2021, the Authority used funds on hand to defease $2,500 of the 2019 Series B General Revenue Bonds and $8,875 of the 2014 Series F General Revenue Refunding Bonds outstanding.

In June 2021, the Authority used funds on hand to defease $2,345 of the 2017 Series B, $6,700 of the 2018 Series B and $3,825 of the 2020 Series B General Revenue Bonds and $640 of the 2013 Series A and $12,500 of the 2017 Series C General Revenue Refunding Bonds outstanding.

In September 2020, the Authority used funds on hand to defease $1,690 of the General Revenue Bonds 2014 Series D and $2,655 of the 2014 Series F, $2,750 of the 2016 Series C, $4,750 of the 2017 Series C and $4,400 of the 2018 Series C General Revenue Refunding Bonds outstanding.

(Dollars in thousands)

At June 30, 2022, outstanding bonds that are redeemable before their scheduled due dates are as follows:

Description	Redemption date	Redemption price	Outstanding Principal amount
2014 Series F	August 2024	100	$ 4,270
2016 Series B	August 2026	100	7,185
2016 Series C	August 2026	100	292,950
2016 Series D	August 2026	100	46,235
2017 Series B	August 2027	100	55,775
2017 Series C	August 2027	100	114,795
2018 Series B	August 2025	100	20,430
2018 Series B	August 2028	100	75,940
2019 Series B	August 2029	100	70,265
2019 Series E	August 2029	100	23,625
2019 Series E	August 2044	100	14,770
2019 Series F	August 2029	100	180,180
2020 Series B	August 2030	100	118,325
2021 Series B	August 2031	100	21,500
2021 Series C	August 2041	100	312,520
2021 Series C	August 2044	100	11,920

The variable rate General Revenue Bonds are subject to redemption prior to maturity at the option of the Authority in whole or in part, on any interest payment date for bond Series 1999B and on any business day for bond Series 2008A, 2008C, 2008E, 2012G, 2014A, 2014B, 2018A and 2018D, respectively. Series 2012E is subject to redemption prior to maturity on any interest payment date after November 15, 2014.

During fiscal year 2021, the Authority executed loan agreements with the Massachusetts Clean Water Trust providing for 2021 Series A Sewer and Water loans in the principal amounts of $25,148 and $25,290, respectively. These loans replaced $25,148 of interim sewer loans and $15,000 of interim water loans executed in fiscal year 2020. All proceeds for these loans were received by June 30, 2021.

Federal and Commonwealth subsidies for purposes of offsetting principal payments aggregating $18,357 will be recognized as capital grants in aid of construction over the term of the loans.

Interest is payable semiannually on all debt, except on the commercial paper, on which interest is payable upon maturity and the General Revenue Bonds and General Revenue Refunding Bonds with variable interest rates on which interest is payable monthly. The Senior General Revenue Bonds and the Senior General Revenue Refunding Bonds are collateralized equally and ratably by a lien and pledge on substantially all of the Authority’s cash and revenues, except the operating fund.

(Dollars in thousands)

The subordinated debt series, including the commercial paper interest are collateralized equally and ratably by a subordinated pledge on substantially all of the Authority's revenues and cash and investments, except the operating, senior debt service, and debt service reserve funds. Premiums, discounts, issuance costs, and the excess of reacquisition price over the carrying amount of the defeased debt are being amortized over the lives of the respective issues.

The amounts of long-term debt, principal, and interest payable in future fiscal years are as follows:

Year Ending June 30:	Principal	Interest	Total
2023	$ 288,903	$ 160,844	$ 449,747
2024	296,694	151,324	448,018
2025	289,962	139,791	429,753
2026	294,181	128,972	423,153
2027	288,229	117,331	405,560
2028–2032	1,319,415	433,671	1,753,086
2033–2037	912,176	235,181	1,147,357
2038–2042	698,360	73,883	772,243
2043–2047	179,729	7,599	187,328
Total	$ 4,567,649	$ 1,448,596	$ 6,016,245

At June 30, 2022, the Authority had no commercial paper notes outstanding.

Commercial paper activity during fiscal years 2022 and 2021 consisted of the following:

	2022 Beginning balance	Additions	Reductions	2022 Ending balance
1.14% Commercial Paper	$ 75,000	$ -	$ 75,000	$ -
Total	$ 75,000	$ -	$ 75,000	$ -

	2021 Beginning balance	Additions	Reductions	2021 Ending balance
1.72% Commercial Paper	$ 75,000	$ -	$ 75,000	$ -
1.14% Commercial Paper	-	75,000	-	75,000
Total	$ 75,000	$ 75,000	$ 75,000	$ 75,000

(Dollars in thousands)

(7) Intergovernmental Loans

The Authority has entered into various interest-free loan agreements with certain member communities. Under these agreements, the Authority loaned these communities $69,689 and $51,845 in fiscal years 2022 and 2021, respectively, to be received in five or ten equal annual installments.

The long-term portion of these loans at June 30, 2022 and 2021 is $191,219 and $178,874, respectively, and is included in other assets. The loans due within one year total $37,581 and $35,926 at June 30, 2022 and 2021, respectively. This program is designed to assist member communities with sewer and water systems rehabilitation.

(8) Capital Assets

Capital assets at June 30, 2022 and 2021 consisted of the following:

	2021*	Additions	Disposals/ transfers	2022
Capital assets not being depreciated:				
Land	$ 30,058	$ -	$ -	$ 30,058
Construction in progress	228,033	101,826	(157,383)	172,476
Total capital assets not being depreciated	258,091	101,826	(157,383)	202,534
Capital assets being depreciated:				
Plant and equipment – water and sewage system	9,940,906	157,227	-	10,098,133
Leased building	37,134	-	-	37,134
Furniture and fixtures	17,561	-	-	17,561
Leasehold improvements	2,423	-	-	2,423
Motor vehicles and equipment	12,404	156	-	12,560
Total capital assets being depreciated	10,010,428	157,383	-	10,167,811
Less: accumulated depreciation for:				
plant and equipment – water and sewage system	4,560,708	189,509	-	4,750,217
Leased building	23,519	1,238	-	24,757
Furniture and fixtures	17,525	6	-	17,531
Leasehold improvements	2,180	12	-	2,192
Motor vehicles and equipment	5,711	855	-	6,566
Total accumulated depreciation	4,609,643	191,620	-	4,801,263
Total capital assets being depreciated, net	5,400,785	(34,237)	-	5,366,548
Total capital assets, net	$ 5,658,876	$ 67,589	$ (157,383)	$ 5,569,082

(Dollars in thousands)

Capital assets at June 30, 2021 and 2020 consisted of the following:

	2020*	Additions	Disposals/ transfers	2021*
Capital assets not being depreciated:				
Land	$ 29,936	$ 122	$ -	$ 30,058
Construction in progress	214,102	100,042	(86,111)	228,033
Total capital assets not being depreciated	244,038	100,164	(86,111)	258,091
Capital assets being depreciated:				
Plant and equipment – water and sewage system	9,855,893	85,013	-	9,940,906
Leased building	37,134	-	-	37,134
Furniture and fixtures	17,561	-	-	17,561
Leasehold improvements	2,423	-	-	2,423
Motor vehicles and equipment	11,428	976	-	12,404
Total capital assets being depreciated	9,924,439	85,989	-	10,010,428
Less: accumulated depreciation for:				
plant and equipment – water and sewage system	4,366,327	194,381	-	4,560,708
Leased building	22,281	1,238	-	23,519
Furniture and fixtures	17,519	6	-	17,525
Leasehold improvements	2,168	12	-	2,180
Motor vehicles and equipment	4,805	906	-	5,711
Total accumulated depreciation	4,413,100	196,543	-	4,609,643
Total capital assets being depreciated, net	5,511,339	(110,554)	-	5,400,785
Total capital assets, net	$ 5,755,377	$ (10,390)	$ (86,111)	$ 5,658,876

*As a result of the implementation of GASB 87, certain amounts have been reclassified for presentation purposes.

Depreciation and amortization for fiscal years 2022 and 2021 was $215,079 and $214,478, respectively.

(Dollars in thousands)

(9) Leases

The Authority has entered into a 30-year building lease related to the Chelsea maintenance facility. Annual installments range between $1,538 and $2,837, plus interest at 7.83%; due dates range from July 2022 through May 2032.

Maturity analysis of future lease payments at June 30, 2022 are as follows:

Fiscal Year Ending June	Interest Expense	Liability Reduction	Total
2023	$ 1,794	$ 1,538	$ 3,332
2024	1,554	1,663	3,217
2025	1,419	1,798	3,217
2026	1,273	1,944	3,217
2027	1,115	2,102	3,217
2028-2032	2,724	13,093	15,817
	$ 9,880	$ 22,138	$ 32,018

(10) Retirement Benefits

(a) Plan Description

The Enabling Act provided for the establishment of the Massachusetts Water Resources Authority Employees' Retirement System (the Plan), a contributory single-employer retirement system that is separate from the State Employees Retirement System. The Plan is a defined benefit pension plan covering those employees not employed by the MDC prior to July 1, 1985. Complete financial statements for the Plan can be obtained from the Authority's administrative offices at Charlestown Navy Yard, 100 First Avenue, Boston, MA 02129.

(b) Benefits Provided

The Plan provides retirement, disability and death benefits. For employees hired prior to April 2, 2012, the annual amount of the retirement allowance is based on the member's final three-year average salary multiplied by (1) the number of years and full months of creditable service at the time of retirement and (2) a percentage based on age at retirement in accordance with a schedule provided by state law. Assuming normal retirement at age 65, this percentage is 2.5%, which is reduced for individuals who retire prior to age 65 to reflect the longer pay out period.

For employees hired on or after April 2, 2012, the annual amount of the retirement allowance is based on the member's final five-year average salary multiplied by (1) the number of years and full months of creditable service at the time of retirement and (2) a percentage based on age at retirement in accordance with a schedule provided by state law. Assuming normal retirement at age 67, this percentage is 2.5%.

(Dollars in thousands)

Employees hired prior to April 2, 2012, may elect early retirement after 20 years of service or at any time after attaining age 55 with 10 years of eligible service. Plan members who become permanently and totally disabled may be eligible to receive a disability retirement allowance. The amount of benefits to be received depends on several factors, including the member's age, compensation, veteran status, years of service and whether or not the disability is work-related. In addition, certain death benefits exist for beneficiaries of employees who die in active service.

All MDC personnel who became employees of the Authority on July 1, 1985, and were members of the State Employees Retirement System, retained their membership in that system. The Authority is not liable for retirement allowances paid to or on account of these employees. Funding of the pension liability of the State Employees Retirement System is the obligation of the Commonwealth. Employees covered by this plan become 100% vested after 10 years of service.

(c) Employees Covered by Benefit Terms

At December 31, 2021 and 2020 (the date of the Plan's latest actuarial valuation), the following employees were covered by the benefit terms:

	2021	2020
Retired Participants and Beneficiaries Receiving Benefits	763	702
Inactive Participants Entitled to a Return of their Employee Contributions	104	89
Inactive Participants with a Vested Right to a Deferred or Immediate Benefit	39	34
Active Participants	1,044	1,103
Total	1,950	1,928

(d) Contributions

Contributions made by employees are based upon a percentage of employee base pay (5% for employees hired before December 31, 1974, 7% for employees hired between January 1, 1975 and December 31, 1983, 8% for employees hired between December 31, 1983, and June 30, 1996, and 9% for employees hired after July 1, 1996). Additionally, certain employees earning in excess of $30 contribute an extra 2% of their salary effective January 1, 1979. Employees receive full payment of contributions upon withdrawal from the Plan and 50% of interest earned for employees with five to nine years of service or 100% of interest earned for employees with 10 or more years of service.

The Authority's 2022 and 2021 contributions to the plan were based on an amount approved by the Retirement Board and the Authority's board of directors, which is based on an actuarially determined amount. The Authority's Enabling Act requires funding to be made in accordance with the Retirement Board's recommendation. In fiscal year 2022 the Authority made a $11.2 million required contribution. In fiscal year 2021 the Authority made a $10.0 million required contribution.

(Dollars in thousands)

(e) Net Pension Liability (Pension Trust Reporting)

Investment Policy:

Deposits and investments made by the Pension Trust are governed by Chapter 32 of the MGL. The Pension Trust has the ability to invest in equity securities, corporate bonds, annuities and other specified investments in accordance with state laws and regulations.

The Retirement Board has the authority for establishing and amending investment policy decisions. Based on the investment objectives and constraints of the Pension Trust, and based on an annual review of the asset allocation and asset classes, the Retirement Board will specify a long-term target allocation for each class of permissible assets. These targets will be expressed as a percentage of the total portfolio, and will have ranges surrounding them, allowing for the portfolio to maintain policy through market fluctuations.

The long-term target allocations are intended as strategic goals. Thus, it is permissible for the overall Pension Trust's asset allocation to deviate from the long-term target, as would likely occur during manager transitions, asset class restructurings, and other temporary changes in the Pension Trust. Surplus cash flows are utilized to maintain the asset management structure. Should these cash flows not be sufficient to reallocate the plan according to policy, the transfer of assets may occur between managers. At least annually, the Retirement Board reevaluates the portfolio weightings by asset class and adjustments are made accordingly. The following identifies the asset allocation policy as of December 31, 2021 and 2020:

	December 31, 2021	December 31, 2020
Asset Class	**Target Allocation**	**Target Allocation**
Domestic Equity	31%	26%
International Equity	19	21
Real Estate	10	10
Private Equity	10	10
Hedge Funds	6	6
Fixed Income	24	27
Total	100%	100%

Rates of Return:

For the years ended December 31, 2021 and 2020, the annual money-weighted rate of return on investments, net of investment expense, was 16.70% and 12.78%, respectively. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

The components of the net pension liability of the Pension Trust at December 31, 2021 and 2020, were as follows:

(Dollars in thousands)

	2021	2020
Total Pension Liability	$ 748,702	$ 712,864
Plan Fiduciary Net Position	728,673	648,376
Net Pension Liability	$ 20,029	$ 64,488
Plan's Fiduciary Net Position as Percentage of the Total Pension Liability	97.32%	90.95%

Actuarial assumptions: The total pension liability was determined by actuarial valuations as of January 1, 2022 and January 1, 2021, and update procedures were used to roll back the total pension liability to the December 31, 2021 and 2020 measurement dates. The following actuarial assumptions, applied to all periods included in the measurement, unless otherwise specified:

Inflation	3%
Salary Increases	Based on years of service, starting at 5.75% at 0 years of service decreasing to 4% after 9 years of service
Discount Rate	6.90% at December 31, 2021 and 2020, respectively
Cost of Living Adjustments	Adjusted to 3% of the first $15,000 at December 31, 2021 and 2020 as permitted under Massachusetts Chapter 188 of the Acts of 2010
Mortality Rates (January 1, 2022):	
Pre-Retirement:	Pub-2010 General Employee, Healthy Retiree and Contingent Survivor Amount - weighted Mortality Tables projected generationally using Scale MP-2021
Healthy Retiree:	Pub-2010 General Employee, Healthy Retiree and Contingent Survivor Amount - Weighted Mortality Tables projected generationally using Scale MP-2021
Disabled Retiree:	Pub-2010 General Disabled Retiree Amount - weighted Mortality Tables set forward one year projected generationally using Scale MP-2021
Mortality Rates (January 1, 2021):	
Pre-Retirement:	Pub-2010 General Employee, Healthy Retiree and Contingent Survivor Amount - weighted Mortality Tables projected generationally using Scale MP-2020
Healthy Retiree:	Pub-2010 General Employee, Healthy Retiree and Contingent Survivor Amount - Weighted Mortality Tables projected generationally using Scale MP-2020
Disabled Retiree:	Pub-2010 General Disabled Retiree Amount - weighted Mortality Tables set forward one year projected generationally using Scale MP-2020

(Dollars in thousands)

Rates of return on investments: 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 real rates of return (expected returns, net of pension 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. Best estimates of arithmetic real rates of return for each major asset class included in the Plan's target asset allocation are summarized as follows:

	Long-Term Expected Rate of Return (%)	
Asset Class	**December 31, 2021**	**December 31, 2020**
Domestic Equity	6.11	6.28
International Equity	6.49 - 8.12	7.00 - 8.82
Real Estate	3.72	3.5
Private Equity	9.93	10.11
Hedge Funds	2.63	2.35
Fixed Income	0.38 - 2.48	0.38 - 2.97

(f) Discount Rate

The discount rate used to measure the total pension liability was 6.90% for December 31, 2021 and 2020. The projection of cash flows used to determine the discount rate assumed that Plan member contributions will be made at the current contribution rate and that the Authority contributions will be made at rates equal to the actuarially determined contribution rates. Based on those assumptions, the 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 pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

(Dollars in thousands)

(g) Changes in the Net Pension Liability (Employer Reporting)

The Plan's net pension liability was measured as of December 31, 2021 and 2020 for the reporting dates June 30, 2022 and 2021, respectively. The total pension liability was determined by actuarial valuations as of January 1, 2022 and January 1, 2021, respectively, rolled back to the measurement dates.

	Increase (Decrease)		
	Total Pension Liability (a)	**Plan Fiduciary Net Position (b)**	**Net Pension Liability (a) - (b)**
Balances at June 30, 2020	$ 653,616	$ 578,957	$ 74,659
Changes for the Year:			
Service Cost	13,338	-	13,338
Interest	46,455	-	46,455
Differences Between Expected and actual experience	(263)	-	(263)
Contributions - employer	-	10,000	(10,000)
Contributions - employee	-	10,188	(10,188)
Net investment income	-	74,947	(74,947)
Benefit payments	(25,313)	(25,313)	-
Administrative expenses	-	(403)	403
Changes of assumptions	25,031	-	25,031
Net changes	59,248	69,419	(10,171)
Balances at June 30, 2021	712,864	648,376	64,488
Changes for the year:			
Service cost	14,330	-	14,330
Interest	49,159	-	49,159
Change of benefit terms	5,568	-	5,568
Differences between expected and actual experience	(4,886)	-	(4,886)
Contributions - employer	-	11,205	(11,205)
Contributions - employee	-	9,892	(9,892)
Net investment income	-	89,019	(89,019)
Benefit payments	(29,494)	(29,494)	-
Administrative expenses	-	(325)	325
Changes of assumptions	1,161	-	1,161
Net changes	35,838	80,297	(44,459)
Balances at June 30, 2022	$ 748,702	$ 728,673	$ 20,029

(Dollars in thousands)

(h) Sensitivity of the Net Pension Liability (Asset) to Changes in the Discount Rate

The following presents the net pension liability (asset), calculated using the discount rate of 6.90%, as well as what the net pension liability (asset) would be if it were calculated using a discount rate that is 1-percentage-point lower (5.90%) or 1-percentage-point higher (7.90%) than the current rate:

	1% Decrease (5.90%)	Discount (6.90%)	1% Increase (7.90%)
Net pension liability as of June 30, 2022	$ 109,511	$ 20,029	$ (55,830)

	1% Decrease (5.90%)	Discount (6.90%)	1% Increase (7.90%)
Net pension liability as of June 30, 2021	$ 150,983	$ 64,488	$ (8,904)

(i) Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

For the years ended June 30, 2022 and 2021, the Authority recognized pension expense of $6,700 and $12,437, respectively, and reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	June 30, 2022		June 30, 2021	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflow s of Resources
Differences between expected and actual experience	$ 2,848	$ 4,092	$ 3,978	$ 1,783
Changes of assumptions	27,998	-	40,105	-
Net difference between projected and actual earnings on pension plan investments	-	61,984	-	37,577
Total	$ 30,846	$ 66,076	$ 44,083	$ 39,360

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

Year Ending June 30:	Amount
2023	$ (1,879)
2024	(14,514)
2025	(9,176)
2026	(9,661)
Total	$ (35,230)

(Dollars in thousands)

(11) Other Postemployment Benefits (OPEB)

(a) Plan Description

In addition to providing the pension benefits described, the Authority provides postemployment health care and life insurance benefits for retired employees through the Group Insurance Commission (GIC). The GIC is a quasi-independent state agency that administers an agent multi-employer defined benefit OPEB plan. The benefits, benefit levels, employee contributions and employer contributions are governed by the Authority and can be amended by the Authority. The plan issues a separate financial report that can be obtained by contacting the Massachusetts Water Resources Authority, Finance Division, 100 First Avenue, Boston, MA 02129.

In April 2015, the Authority established the MWRA OPEB Irrevocable Trust. The Trust was established for the sole purpose of providing for the advance funding of future costs of retired employee health insurance and other benefits provided to retirees. An initial deposit of $10.8 million was made to the trust upon establishment of the trust. The balance of the trust was $63.9 million and $61.8 million at June 30, 2022 and June 30, 2021, respectively.

(b) Plan Membership

At June 30, 2022 and 2021, plan membership consisted of the following:

	2022	2021
Inactive plan members or beneficiaries currently receiving benefits	1,034	916
Inactive plan members entitled to but not yet receiving benefits	33	33
Active plan members	877	943
Total	1,944	1,892

(c) Benefits Provided

The Authority provides medical, prescription drug, mental health/substance abuse and life insurance to retirees and their covered dependents. All active employees who retire from the Authority and meet the eligibility criteria will receive these benefits.

(d) Contributions

Retirees who retired on or before July 1, 1994 contribute 10% of the cost of the health plans, as determined by the GIC. Those who retired after July 1, 1994 contribute 15% of the cost of the health plan and those who retired after October 1, 2009 contribute 20% of the cost of the health plan, as determined by the GIC. The Authority contributes the remainder of the health plan costs on a pay-as-you-go basis.

(Dollars in thousands)

(e) Investments

Investment policy. The assets are invested by the Trust with the Commonwealth of Massachusetts Pension Reserves Investment Trust (PRIT) fund. The Trust's Board of Trustees may vote to approve a different investment vehicle, at its discretion. The following was the PRIT fund's asset allocation at June 30, 2022 and 2021:

Asset Class	June 30, 2022 Target Allocation	June 30, 2021 Target Allocation
Domestic Equity	22%	22%
International Equity	16	17
Fixed Income	23	23
Private Equity	15	14
Real Estate	10	10
Other	14	14
Total	100 %	100 %

Concentrations. No investment in any one organization represented 5% or more of the Trust's investments.

Rate of return. For the year ended June 30, 2022 and 2021, the annual money-weighted rate of return on investments, net of investment expense was -4.06% and 27.37%, respectively. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for changing amounts actually invested.

(f) Net OPEB Liability (Trust Reporting)

The components of the net OPEB liability at June 30, 2022 and 2021, were as follows:

	2022	2021
Total OPEB Liability	$ 113,757	$ 136,805
Plan Fiduciary Net Position	63,929	61,764
Net OPEB Liability	$ 49,828	$ 75,041
Plan's Fiduciary Net Position as Percentage of the Total OPEB Liability	56.20%	45.15%

Actuarial assumptions. The total OPEB liability was determined by actuarial valuations as of December 31, 2021 and 2019, and update procedures were used to roll forward the total OPEB liability to June 30, 2022 and 2021 measurement dates, respectively. The following actuarial assumptions, applied to all periods included in the measurement, unless otherwise specified:

(Dollars in thousands)

Inflation	3.0%
Salary increases	5.75%, decreasing over 9 years to an ultimate level of 4.0%
Discount rate and investment rate of return	2022 - 6.75%, net of OPEB plan investment expense, including inflation; 2021 - 7.00%, net of OPEB plan investment expense, including inflation
Healthcare cost trend rates (2022)	Non-Medicare Medical and Prescription Drug: 6.52% for 2021, then 7.06%, then 6.83%, then 6.59%, then 6.36%, then 6% decreasing by 0.25% for 6 years to an ultimate rate of 4.50% Medicare Medical and Prescription Drug: 3%, then 4.49%, then 4.57%, then 4.66%, then 4.75%, then an ultimate rate of 4.50%
Healthcare cost trend rates (2021)	7.0% for 2019, decreasing 0.5% per year for 3 years to 5.5%, then decreasing by 0.5% each year to an ultimate rate of 4.5%
Mortality Rates (2022):	Mortality rates were based on the Pub-2010 General Employee, Healthy Retiree and Contingent Survivor Headcount- Weighted Mortality Tables projected generationally using Scale MP-2021 for retirees and Pub-2010 General Healthy Retiree Headcount-Weighted Mortality Tables set forward one year projected generationally using Scale MP-2021 for the disabled.
Mortality Rates (2021):	Mortality rates were based on the Pub-2010 General Employee, Healthy Retiree and Contingent Survivor Headcount- Weighted Mortality Tables projected generationally using Scale MP-2020 for retirees and Pub-2010 General Healthy Retiree Headcount-Weighted Mortality Tables set forward one year projected generationally using Scale MP-2020 for the disabled.

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 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. Best estimates of arithmetic real rates of return for each major asset class included in the target asset allocation as of June 30, 2022 and 2021 (see discussion of the Trust's investment policy) are summarized in the following table:

	Long-Term Expected Rate of Return (%)	
Asset Class	**June 30, 2022**	**June 30, 2021**
Domestic Equity	6.11%	6.28
International Equity	6.49 - 8.12	7.00 - 8.82
Fixed Income	0.38 - 2.48	0.38 - 2.97
Private Equity	9.93	10.11
Real Estate	3.72	3.50
Other	2.63 - 3.44	2.35 - 3.45

(Dollars in thousands)

Discount rate. The discount rate used to measure the total OPEB liability was 6.75% and 7.0% for June 30, 2022 and 2021, respectively. The projection of cash flows used to determine the discount rate assumed that Authority contributions will be made at rates equal to the actuarially determined contribution rates. Based on those assumptions, 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 investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

(g) Changes in the Net OPEB Liability (Employer Reporting)

	Increase (Decrease)		
	Total OPEB Liability (a)	**Plan Fiduciary Net Position (b)**	**Net OPEB Liability (a) - (b)**
Balances at June 30, 2020	$ 132,819	$ 43,729	$ 89,090
Changes for the year:			
Service cost	3,739	-	3,739
Interest	9,372	-	9,372
Differences between expected and actual experience	-	-	-
Contributions - employer	-	11,506	(11,506)
Net investment income	-	11,969	(11,969)
Benefit payments	(5,440)	(5,440)	-
Changes of assumptions	(3,685)	-	(3,685)
Net changes	3,986	18,035	(14,049)
Balances at June 30, 2021	136,805	61,764	75,041
Changes for the year:			
Service cost	3,771	-	3,771
Interest	9,673	-	9,673
Differences between expected and actual experience	3,613	-	3,613
Contributions - employer	-	9,529	(9,529)
Net investment income	-	(2,509)	2,509
Benefit payments	(4,855)	(4,855)	-
Changes of assumptions	(35,250)	-	(35,250)
Net changes	(23,048)	2,165	(25,213)
Balances at June 30, 2022	$ 113,757	$ 63,929	$ 49,828

(Dollars in thousands)

Sensitivity of the net OPEB liability to changes in the discount rate. The following presents the net OPEB liability of the Authority, as well as what the Authority's net OPEB liability would be if it were calculated using a discount rate that is 1-percentage-point lower (5.75%) or 1-percentage-point higher (7.75%) than the current discount rate:

	1% Decrease (5.75%)	Discount Rate (6.75%)	1% Increase (7.75%)
Net OPEB Liability as of June 30, 2022	$ 63,830	$ 49,828	$ 38,089

	1% Decrease (6.0%)	Discount Rate (7.0%)	1% Increase (8.0%)
Net OPEB Liability as of June 30, 2021	$ 91,860	$ 75,041	$ 60,872

Sensitivity of the net OPEB liability to changes in the healthcare cost trend rates. The following presents the net OPEB liability of the Authority, as well as what the Authority's net OPEB liability would be if it were calculated using healthcare cost trend rates that are 1-percentage-point lower or 1-percentage-point higher than the current healthcare cost trend rates:

	1% Decrease (5.52% - 3.5%)	Base Rate (6.52% - 4.5%)	1% Increase (7.52% - 5.5%)
Net OPEB Liability as of June 30, 2022	$ 36,337	$ 49,828	$ 66,313

	1% Decrease (6.0% - 3.5%)	Base Rate (7.0% - 4.5%)	1% Increase (8.0% - 5.5%)
Net OPEB Liability as of June 30, 2021	$ 57,705	$ 75,041	$ 96,238

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

For the years ended June 30, 2022 and 2021, the Authority recognized OPEB expense of ($7,798) and ($1,990), respectively, and reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	June 30, 2022		June 30, 2021	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 2,890	$ 4,322	$ -	$ 7,471
Changes of assumptions	-	43,806	-	23,040
Net difference between projected and actual earnings on OPEB Trust investments	1,333	-	-	5,507
Total	$ 4,223	$ 48,128	$ -	$ 36,018

(Dollars in thousands)

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

Year Ending June 30:	Amount
2023	$ (16,719)
2024	(14,853)
2025	(7,405)
2026	(4,928)
Total	$ (43,905)

(12) Commitments and Contingencies

(a) General

The Authority's capital improvement program continues to proceed. As part of this program, the Authority has entered into a number of contracts for the design and construction of infrastructure and improvements to its facilities. Commitments under these contracts aggregated approximately $773,532 at June 30, 2022.

The Authority's operating and construction plans are designed to comply with the Federal District Court's schedule of actions. The Authority has incurred capital expenditures of approximately $8,906,000 from fiscal years 1986 through 2022, including those projects required to comply with the Federal District Court's schedule. The Authority anticipates spending an additional $293,044 on these projects through fiscal year 2023. These capital expenditures have been forecasted based upon certain preliminary assumptions and estimates, which may change significantly as design and construction of the necessary facilities proceed. Funding is expected to come from various federal and state grants, as available and approved, and from the Authority's debt proceeds. To date, federal appropriations for the Boston Harbor Project have aggregated $810,000.

(b) Boston Harbor Case

The Authority continues to be a defendant in the federal Boston Harbor Case. The federal action was originally brought in 1985 by the United States on behalf of the United States Environmental Protection Agency (EPA) and by certain citizens' groups for Clean Water Act violations. As part of the Boston Harbor Case, the Authority was required to undertake certain corrective actions to meet wastewater treatment, discharge and combined sewer overflow (CSO) requirements, including the completion of new and improved primary and secondary treatment facilities at Deer Island. Beyond these major improvements to its wastewater treatment capabilities, the Authority also was required to improve water quality by its adoption of a Long Term CSO Control Plan (LTCP) which was comprised of 35 projects, the last three of which were completed on time by the close of calendar year 2015. In March 2016, the federal district court formally received the Authority's 2015 annual CSO project report, officially noting completion of LTCP projects.

In March 2006, the Authority had reached agreement with the United States and the Massachusetts Department of Environmental Protection (DEP) on the scope and schedule for the remaining CSO projects which was filed with the Court as part of a joint motion to amend the Court Schedule. In April 2006, the Court allowed the joint motion and issued an Order with a schedule. In addition to filing biannual compliance reports, the April 2006 court schedule required the Authority to conduct a post-construction performance assessment to verify whether the levels of CSO control included in the LTCP have been achieved.

The Authority commenced the performance assessment in 2017, with the final performance assessment report originally due in December 2020. At the request of the Authority, with the assent of EPA and DEP, the Court extended the time for the Authority to submit the final report to December 2021.

On December 30, 2021, the Authority filed its Performance Assessment Report and Interim Update ("Final Report") with the Court. The Final Report documents the substantial reduction in CSO discharge volumes over the last several decades. The Authority also reported that there are certain outfalls where CSO discharge estimates indicated higher CSO activity than the LTCP goals. As of the end of 2021, the LTCP goals for average annual CSO activation and volume were met, or materially met, at 70 of the 86 CSO outfalls for which performance targets were defined. Of the 16 remaining CSO outfalls that did not meet the LTCP goals, The Authority developed plans to enable six of these CSO outfalls to meet LTCP goals by 2024. With respect to the remaining 10 CSO outfalls, the Authority identified potentially feasible alternatives that may enable four of these outfalls to achieve LTCP volume and activation goals. There are at least six CSO outfalls that remain challenging.

Prior to the filing of the Final Report the Authority had commenced discussions with EPA, DEP and the Conservation Law Foundation ("CLF") to determine whether an agreement could be reached on a framework and path forward in the case. Ultimately, an agreement was reached between the parties for a three-year extension in the case, to December 2024. The agreement includes the following components for the three years: (i) completion of improvements at six outfalls that are expected to bring them into compliance with their respective LTCP goals by December 2024; and continued focused investigations by the Authority on the remaining 10 outfalls; (ii) filing annual reports by the Authority with the Court, and periodic meetings between the Authority and EPA/DEP, and the Authority and other stakeholders; and (iii) by December 2024, the filing of a supplemental performance assessment report by the Authority. On February 4, 2022, the Authority filed an assented-to motion with the Court seeking its approval of the agreement. The Court adopted the parties' recommendation and amended the Court schedule to add additional milestones through December 2024.

As part of the above referenced March 2006 agreement, DEP agreed to reissue and EPA agreed to approve five consecutive variances of no more than three years duration each, through the year 2020, for the Charles River and Alewife Brook/Upper Mystic River that are consistent with and limited to the requirements in the Authority's LTCP. Most recently, DEP issued (and EPA approved) new variances for the period of September 1, 2019, through August 31, 2024. Among other conditions, the variances require the development of an updated CSO control plan. On September 22, 2022, the Authority submitted a request to DEP for a 36-month extension to the schedule for submission of the deliverables associated with the updated plan. The Authority requested that DEP move forward with a process that would support the extension request and ensure that variances are in place for an appropriate period beyond submission of its final updated control plan - to at least August 2027. It is expected that the request will be subject to a full public review process.

There has been no imposition of penalties by the Court against the Authority on the merits of the claims originally asserted in the Boston Harbor Case to date. The Court always retains the right to order remedial action and to assess penalties.

(c) Deer Island Submarine Power Cable

In 2004, the United States Army Corps of Engineers (Corps) notified Boston Edison Co. (NSTAR), its subsidiary Harbor Energy Electric Company (HEEC), and the Authority of allegations that each, as permittees, were in violation of certain depth requirements contained in a permit (MA BOSS 198900530, dated August 31, 1989) which authorized the installation of a submarine electric power cable running under the channel bed of Boston Harbor extending from South Boston to Deer Island, used to provide electric power for Deer Island operations. The Corps alleged that the power cable, in places, had been installed at depths less than those required by the permit and would eventually interfere with a project of harbor dredging known as the Boston Harbor Deep Draft Navigation Improvement Project (the "Project") which would allow deep-draft cargo vessels to dock in Boston Harbor.

The Authority's position was that it is not the owner of the cable, that it was not involved in the planning, design, location or installation of the cable, that it had no meaningful knowledge, participation in or control over the misplacement of the cable and therefore should have no legal responsibility to move it or relocate it. The Authority also maintained that its status as a "permittee" in the Corps' permit differed substantially from that of NSTAR and HEEC as the former merely lent its name to an application for the permit solely because it would allow permit review by the Corps to be expedited. The cable is vitally important to The Authority as it provides the primary means by which electricity is delivered to Deer Island to power its wastewater operations.

Settlement Efforts

Efforts to resolve the dispute concerning compliance with the permit and responsibility for the cable protection costs date back to approximately 2005. Discussions during these prior years among the interested parties over the years produced only a proposed method intended by NSTAR and HEEC for protection of the cable from the Project which would have entailed carefully exposing the cable, placing concrete mats over it followed by backfilling of sediments over both the cable and mats without either moving it or burying the cable deeper in the channel. The Authority maintained that it has no financial responsibility whatsoever for the costs of either protecting or relocating the cable.

Litigation and Conditional Settlement

United States of America v. NSTAR Electric Company d/b/a Eversource Energy, Harbor Electric Energy Co., and Massachusetts Water Resources Authority, U.S. District Court, District of Massachusetts, C.A. No. 16-11470-RGS As a result of the need to achieve even deeper dredging depths than the Army Corps had initially recommended in 2016 and the likelihood that those depths might not be practicably reachable especially in light of the addition of the proposal to add protective concrete mats, the United States, acting on behalf of the Corps, commenced a lawsuit in July 2016 in the federal district court in Boston against the Authority, NSTAR and HEEC under the Rivers and Harbors Act and under the Clean Water Act asking the federal district court to determine the permittees' non-compliance with the 1990 permit and to assess penalties for the obstruction caused by the mis-located cable in two shipping channels of Boston Harbor. In that lawsuit, the Corps also asked that the Authority, NSTAR and HEEC, each named as permittees under the permit, be enjoined from further maintaining the cable in its present location.

The Authority filed its Answer to the Complaint, including cross claims against co-defendants NSTAR and HEEC, in August 2016. Following a failed motion to dismiss both the Complaint and the Authority's cross-claims, NSTAR and HEEC eventually filed their Answer to the Complaint and cross-claimed against the Authority upon a theory of indemnification that the Authority had the primary obligation as the sole customer of the cable to pay any and all expenses necessary to correct the location of the cable improperly installed by HEEC.

Resolution of the federal court litigation was conditionally accomplished over the period of May through July 2017 when it became imperative that the Corps be able to determine whether it would be able to save the federal appropriation dollars for the Project without the aid of or reliance upon the federal court's enforcement powers. The federal action was stayed by the Court in late summer 2017 as a result of a May 2017 agreement (the "Agreement") between the Authority and HEEC pursuant to which HEEC was to undertake the design and installation of a suitable replacement power cable for the Authority's exclusive use in conveying electric power to the Deer Island Treatment Plant. On the basis of the Agreement, the parties to the federal action entered into a stipulation, subsequently entered as an order of the Court in July 2017, which imposes obligations solely upon HEEC to complete the installation of the replacement power cable by December 31, 2019. HEEC completed the installation and energizing of the replacement power cable in August 2019, ahead of the deadline, and the old cable has been removed.

The Agreement stipulates that the Authority pay 50% of the cost of the cable, less a credit of $17,500, at the in-service date of the new cable or earlier if the parties mutually agree to such advance payment; The credit that is intended to compensate the Authority for the early decommissioning of the existing power cable and a $9 million cap for additional decommissioning costs. The credit will be applied at a rate of $2,500 over a period of seven years, commencing in 2020. The estimated cost of the replacement power cable project, as contained in the Agreement, is $114,000 and the remainder of the total cost of the cable will be paid by the Authority to HEEC in accordance with the provisions for electric service set forth in the tariff established by the Massachusetts Department of Public Utilities (DPU). As of July 2021, HEEC estimates the project costs to be approximately $119,300, exclusive of any project costs for unknown new conditions or requirements imposed on HEEC to close out the project or secure dismissal of the federal court action. The Authority and HEEC agreed, and DPU approved, project costs through August 31, 2021, of $116,458. The credit of $17,500 was provided by HEEC to the Authority. The Authority, upon agreement by HEEC, has prepaid $55,805 of its estimated share of the cost of the cable.

The Agreement provides that the cost recovery period for the new cable will be thirty years, at least the useful life of the cable. Annual tariff cost of the cable is estimated between $4,500 and $7,300 in the next ten years. In addition to the tariff cost, operating and maintenance costs will also be charged.

All claims of all parties to the federal court lawsuit have been stayed pending satisfaction of the obligations of HEEC and NSTAR under the Stipulation and Order. Completion of all obligations under the Stipulation and Order will result in the eventual dismissal with prejudice of all such claims. On September 23, 2022, HEEC filed a status report with the Court regarding outstanding permit issues with the Corps. The Court granted HEECs request for a thirty day extension to resolve any outstanding issues with the Authority.

(d) Industrial Pretreatment Program

On April 27, 2022, CLF filed a complaint in the United District Court of Massachusetts alleging violations by the Authority under the Clean Water Act, 33 U.S.C. §§ 1251-1376, its National Pollutant Discharge Elimination System (NPDES) Permit and EPA regulation 40 CFR Part 403, due to what CLF alleges are deficiencies in the administration of the Authority's Industrial Pretreatment Program from fiscal years 2017 through 2021 to ensure that the Industrial Users who discharge into the Authority's system remain in compliance. CLF alleges, among other things, that the Authority has failed to take appropriate enforcement action under its Industrial Pretreatment Program against Industrial Users. In the lawsuit, CLF seeks declaratory and injunctive relief, and civil penalties of up to $56 per day for each violation plus attorneys' fees and expenses, but no total amount was specified in the complaint. The Authority denies CLF's allegations and maintains that its Industrial Pretreatment Program complies with its NPDES Permit and with associated laws and regulations. The Authority believes that its pretreatment program is well run and that it takes well-reasoned, rational, and appropriate enforcement actions under its regulatory program. On July 19, 2022, the Authority filed a motion to reassign the case to Judge Stearns, who presides over the Boston Harbor Case, and on September 23, 2022, the Authority filed a motion to dismiss the case.

(e) Miscellaneous

The Authority is also a defendant in several legal actions and administrative proceedings arising out of its operation, maintenance, and improvement of the water and sewer systems under its care. It is the opinion of management that any judgments or settlements that may result from these actions will not have a materially adverse effect upon the Authority.

(13) Risk Management

The Authority is exposed to various risks of loss. The risk management program involves insurance and self-insurance related to property, general liability (including automobile, marine and employers' liability), excess liability, public officials' liability, workers' compensation, unemployment liability, and employee health care and life insurance.

Buildings, plants, and equipment are insured on an all risk replacement basis to the extent that losses exceed $2,500 per occurrence, up to an aggregate limit of $300,000. The Authority maintains insurance coverage for general liability, automobile liability, marine liability, and employers' liability to the extent that losses exceed $2,500 per occurrence, up to a limit of $25,000. In addition to the primary liability insurance, the Authority maintains excess liability policies with additional limits of $75,000. The Authority is self-insured for workers' compensation claims up to $1,000 per occurrence and maintains excess workers' compensation insurance coverage with a limit of $25,000 per occurrence. The Authority also maintains public officials' liability insurance with a limit of $5,000 per occurrence with a $1,000 self-insured retention. All insurance policies are renewed on an annual basis. The amount of claim settlements has not exceeded insurance coverage in any of the previous three fiscal years.

(14) Subsequent Events

In July 2022, the Authority drew an additional $17 million from the 2015C revolving loan. Also, in October 2022 the Authority defeased $27 million of outstanding debt from available funds and issued $50 million in commercial paper.

MASSACHUSETTS WATER RESOURCES AUTHORITY

Schedules of Employer Contributions – Last Ten Years

Required Supplementary Information – GASB No. 67 and 68

(Unaudited)

(Dollars in Thousands)

Plan, Year Ended December 31,	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Employer, Year Ended June 30,	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Actuarially Determined Contribution	$ 11,205	$ 10,000	$ 7,315	$ 7,000	$ 3,277	$ 3,133	$ 8,159	$ 7,808	$ 5,919	$ 5,766
Contributions in Relation to the Actuarially Determined Contribution	11,205	10,000	7,315	7,000	3,277	4,633	8,159	12,630	12,447	10,490
Contribution Deficiency (Excess)	$ -	$ -	$ -	$ -	$ -	$ (1,500)	$ -	$ (4,822)	$ (6,528)	$ (4,724)
Covered Payroll	$ 99,689	$ 99,988	$ 97,814	$ 95,819	$ 92,975	$ 89,755	$ 89,169	$ 88,646	$ 84,829	$ 84,829
Contributions as a Percentage of Covered Payroll	11.24%	10.00%	7.48%	7.31%	3.52%	5.16%	9.15%	14.25%	14.67%	12.37%

Notes to Required Supplementary Information

Valuation Date	Actuarial determined contributions for fiscal year 2022 are determined with the January 1, 2020 actuarial valuation.
Actuarial Cost Method	Entry age normal
Amortization Method	Total appropriation increases 12.05% per year.
Remaining Amortization Period	As of July 1, 2020, 10 years for the remaining unfunded liability
Asset Valuation Method	Market value of assets as reported in the Plan's annual statement less unrecognized return in each of the last five years. Unrecognized return is equal to the difference between the actual market value return and the expected market value return and is recognized over a five-year period, further adjusted, if necessary, to be within 10% of the market value.

Actuarial Assumptions:	
Investment Rate of Return	7.10%
Discount Rate	7.10%
Inflation Rate	3.00%
Projected Salary Increases	Based on years of service, ranging from 5.75% at 0 years of service decreasing to 4.00% after 9 years of service.
Cost of Living Adjustments	3% on first $15,000

Plan Membership:	
Retired Participants and Beneficiaries Receiving Benefits	672
Inactive Participants Entitled to a Return of their Employee Contributions	75
Inactive Participants with a Vested Right to a Deferred or Immediate Benefit	37
Active Participants	1,105
Total	1,889

See accompanying independent auditors' report

MASSACHUSETTS WATER RESOURCES AUTHORITY

Schedules of Changes in the Net Pension Liability and Related Ratios – Last Ten Years

Required Supplementary Information – GASB No. 67 and 68

(Unaudited)

(Dollars in Thousands)

	Measurement Date December 31,							
	2021	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability:								
Service cost	$ 14,330	$ 13,338	$ 12,735	$ 11,762	$ 11,308	$ 11,080	$ 10,638	$ 10,529
Interest	49,159	46,455	44,062	41,392	38,520	36,917	34,598	33,587
Differences between expected and actual experience	(4,886)	(263)	3,529	3,250	(146)	(9,143)	-	(8,380)
Changes of assumptions	1,161	25,031	10,507	16,401	7,977	13,298	-	4,921
Changes of benefit terms	5,568	-	-	5,027	-	2,050	-	-
Benefit payments, including refunds of employee contributions	(29,494)	(25,313)	(24,464)	(21,428)	(18,222)	(16,129)	(15,390)	(12,963)
Net change in total pension liability	35,838	59,248	46,369	56,404	39,437	38,073	29,846	27,694
Total pension liability - beginning	712,864	653,616	607,247	550,843	511,406	473,333	443,487	415,793
Total pension liability - ending	$ 748,702	$ 712,864	$ 653,616	$ 607,247	$ 550,843	$ 511,406	$ 473,333	$ 443,487
Plan Fiduciary Net Position:								
Contributions - employer	$ 11,205	$ 10,000	$ 7,315	$ 7,000	$ 3,277	$ 4,633	$ 8,159	$ 12,630
Contributions - employee	9,892	10,188	9,722	9,484	9,091	8,757	8,402	8,245
Net investment income	89,019	74,947	79,557	(17,114)	70,517	24,183	(530)	20,484
Benefit payments, including refunds of employee contributions	(29,494)	(25,313)	(24,464)	(21,428)	(18,222)	(16,129)	(15,390)	(12,963)
Administrative expenses	(325)	(403)	(464)	(469)	(447)	(426)	(412)	(408)
Other - military service fund contribution	-	-	-	-	-	-	-	16
Net change in fiduciary net position	80,297	69,419	71,666	(22,527)	64,216	21,018	229	28,004
Plan fiduciary net position - beginning	648,376	578,957	507,291	529,818	465,602	444,584	444,355	416,351
Plan fiduciary net position - ending	$ 728,673	$ 648,376	$ 578,957	$ 507,291	$ 529,818	$ 465,602	$ 444,584	$ 444,355
Net Pension Liability (Asset) - Ending	$ 20,029	$ 64,488	$ 74,659	$ 99,956	$ 21,025	$ 45,804	$ 28,749	$ (868)
Plan's Fiduciary Net Position as a Percentage of the Total Pension Liability	97.32%	90.95%	88.58%	83.54%	96.18%	91.04%	93.93%	100.20%
Covered Payroll	$ 99,689	$ 102,143	$ 98,145	$ 95,819	$ 92,975	$ 89,755	$ 89,169	$ 88,646
Net Pension Liability (Asset) as a Percentage of Covered Payroll	20.09%	63.14%	76.07%	104.32%	22.61%	51.03%	32.24%	(0.98%)

This schedule is intended to present 10 years of data. Additional years will be presented when available.

See accompanying independent auditors' report

MASSACHUSETTS WATER RESOURCES AUTHORITY

Schedules of Investment Returns – Last Ten Years

Required Supplementary Information – GASB No. 67

(Unaudited)

	Year ended December 31,							
	2021	2020	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of investment expenses	16.70%	12.78%	15.58%	-10.03%	15.02%	5.81%	-0.24%	4.40%

This schedule is intended to present 10 years of data. Additional years will be presented when available.

See accompanying independent auditors' report

MASSACHUSETTS WATER RESOURCES AUTHORITY

Schedules of Changes in the Employer's Net OPEB Liability and Related Ratios – Last Ten Years

Required Supplementary Information – GASB No. 74 and 75

(Unaudited)

(Dollars in Thousands)

	2022	2021	2020	2019	2018	2017
Total OPEB Liability						
Total OPEB Liability - Beginning	$ 136,805	$ 132,819	$ 161,064	$ 150,978	$ 154,254	$ 146,143
Service Cost	3,771	3,739	4,604	4,463	2,820	2,705
Interest	9,673	9,372	11,424	10,705	10,821	10,253
Differences between expected and actual experience	3,613	-	(5,862)	-	(11,860)	-
Change of assumptions	(35,250)	(3,685)	(33,488)	-	-	-
Benefit Payments	(4,855)	(5,440)	(4,923)	(5,082)	(5,057)	(4,847)
Net Change in total OPEB liability	(23,048)	3,986	(28,245)	10,086	(3,276)	8,111
Total OPEB Liability - Ending	113,757	136,805	132,819	161,064	150,978	154,254
Plan Fiduciary Net Position						
Plan fiduciary net position - beginning	61,764	43,729	37,072	29,774	22,782	16,123
Contributions - employer (claims + additional funding)	9,529	11,506	10,885	10,656	10,093	9,723
Net Investment Income	(2,509)	11,969	695	1,724	1,956	1,783
Benefit Payments	(4,855)	(5,440)	(4,923)	(5,082)	(5,057)	(4,847)
Net Change in plan fiduciary net position	2,165	18,035	6,657	7,298	6,992	6,659
Plan fiduciary net position - ending	63,929	61,764	43,729	37,072	29,774	22,782
Net OPEB Liability	$ 49,828	$ 75,041	$ 89,090	$ 123,992	$ 121,204	$ 131,472
Plan fiduciary net position as a percentage of the total OPEB liability	56.2%	45.1%	32.9%	23.0%	19.7%	14.8%
Covered payroll	$ 111,297	$ 106,879	$ 103,778	$ 98,238	$ 94,816	$ 86,475
MWRA's net OPEB liability as a percentage of covered-employee payroll	44.8%	70.2%	85.8%	126.2%	127.8%	152.0%

Notes to Schedule

Changes in Assumptions - June 30, 2022 : The generational mortality improvement scale was updated from Scale MP-2019 to Scale MP-2021. The per capita health costs and contributions were updated to reflect current premiums and the costs in the most recent Commonwealth OPEB valuation report. The trend assumptions were revised, per the most recent Commonwealth OPEB valuation report. The discount rate was lowered from 7.00% to 6.75%.

Changes in Assumptions - June 30, 2021 : mortality assumptions and retirement rates were updated in order to be consistent with the companion pension plan

Changes in Plan Provisions - June 30, 2022 : The Fallon plans are no longer offered by the GIC. The migration away from these plans has been accounted for through the medical trend assumption.

Data is being accumulated annually to present 10 years of the reported information.

See accompanying independent auditors' report

MASSACHUSETTS WATER RESOURCES AUTHORITY

Schedules of Employer Contributions - Last Ten Years

Required Supplementary Information – GASB No. 75

(Unaudited)

(Dollars in Thousands)

	Fiscal year ended June 30,									
	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Actuarially determined contribution	$ 5,772	9,144	8,997	11,812	11,400	10,948	14,996	14,564	15,621	14,482
Contributions in relation to the actuarially determined contribution	9,529	11,506	10,885	10,656	10,093	9,723	9,804	14,852	3,493	2,813
Contribution deficiency (excess)	$ (3,757)	(2,362)	(1,888)	1,156	1,307	1,225	5,192	(288)	12,128	11,669
Covered payroll	$ 111,297	106,879	103,778	98,238	94,816	86,475				
Contributions as a percentage of covered-employee payroll	8.6%	10.8%	10.5%	10.8%	10.6%	11.2%				

Notes to Schedule

Methods and assumptions used to determine contributions rates:

Actuarial cost method	Entry Age Normal
Amortization method	30 years (closed)
Asset valuation method	Market value of assets
Inflation	3%
Discount rate	6.75%
Healthcare cost trend rates	Non-Medicare Medical and Prescription Drug: 6.52% for 2021, then 7.06%, then 6.83%, then 6.59%, then 6.36%, then 6% decreasing by 0.25% for 6 years to an ultimate rate of 4.50% Medicare Medical and Prescription Drug: 3%, then 4.49%, then 4.57%, then 4.66%, then 4.75%, then an ultimate rate of 4.50%
Mortality	Mortality rates were based on the Pub-2010 General Employee, Healthy Retiree and Contingent Survivor Headcount- Weighted Mortality Tables projected generationally using Scale MP-2021 for retirees and Pub-2010 General Healthy Retiree Headcount-Weighted Mortality Tables set forward one year projected generationally using Scale MP-2021 for the disabled.

See accompanying independent auditors' report

MASSACHUSETTS WATER RESOURCES AUTHORITY

Schedules of Investment Returns - Last Ten Years

Required Supplementary Information – GASB No. 74

(Unaudited)

	Fiscal year ended June 30,					
	2022	2021	2020	2019	2018	2017
Annual money-weighted rate of return, net of investment expenses	-4.06%	27.37%	1.88%	5.80%	8.58%	10.58%

This schedule is intended to present 10 years of data. Additional years will be presented when available.

See accompanying independent auditors' report

MASSACHUSETTS WATER RESOURCES AUTHORITY

Accounts Established by the General Revenue Bond Resolution

June 30, 2022
(Comparative totals for June 30, 2021)

(Dollars in thousands)

	Construction	Debt Service	Operating	Rate Stabilization	Revenue	Combined Reserves	Total
Balance – June 30, 2021	$ 228,037	$ 502,977	$ 45,861	$ 41,544	$ 48,146	$ 23,141	$ 889,706
Proceeds from:							
Revenue Bonds and Loans	19,961	75,000	-	-	-	-	94,961
Cash Received from Customers	-	-	-	-	811,450	-	811,450
Investment Income (Loss)	(7,147)	(16,556)	-	-	394	666	(22,643)
Debt Service Grant	-	1,182	-	-	-	-	1,182
Grant Receipts	-	3,299	-	-	-	-	3,299
Construction Payments	(140,367)	-	-	-	-	-	(140,367)
Capital Lease Payments	(1,423)	(1,794)	-	-	-	-	(3,217)
Debt Service Payment	(930)	(488,035)	-	-	(44,498)	-	(533,463)
Other Commonwealth Payments	-	-	-	-	(25,561)	-	(25,561)
Interfund Transfers	16,422	435,553	1,413	(1,250)	(452,137)	(1)	-
Transfers from (to) Operating Account	1,212	1,794	-	-	(299,537)	-	(296,531)
Balance – June 30, 2022	$ 115,765	$ 513,420	$ 47,274	$ 40,294	$ 38,257	$ 23,806	$ 778,816

	Sewer	Water	Total 2022	Total 2021
Restricted Investments:				
Construction	$ 76,016	$ 39,749	$ 115,765	$ 228,037
Debt Service - Debt Service Reserves	82,967	55,965	138,932	155,383
Debt Service - Debt Service P & I	234,300	117,600	351,900	322,062
Debt Service - Revenue Redemption	4,797	17,791	22,588	25,532
Operating Reserve	31,205	16,069	47,274	45,861
Rate Stabilization Reserve	25,535	14,760	40,295	41,544
Revenue	24,241	14,015	38,256	48,146
Combined - Renewal and Replacement Reserve	5,000	5,000	10,000	10,000
Combined - Insurance Reserve	9,480	4,326	13,806	13,141
Total Restricted Investments	$ 493,541	$ 285,275	$ 778,816	$ 889,706

See accompanying independent auditors' report.

MASSACHUSETTS WATER RESOURCES AUTHORITY

Combining Statement of Net Position

June 30, 2022

(Dollars in thousands)

Assets	Sewer	Water	Combined Total
Current assets:			
Cash and cash equivalents	$ 50,472	$ 22,759	$ 73,231
Investments	1,981	2,245	4,226
Restricted investments	496,219	289,890	786,109
Intergovernmental loans	7,076	30,505	37,581
Accounts receivable	548	1,344	1,892
Interest receivable	463	346	809
Total current assets	556,759	347,089	903,848
Noncurrent assets:			
Capital assets:			
Capital assets – not being depreciated	101,625	100,909	202,534
Capital assets – being depreciated – net	3,124,512	2,229,659	5,354,171
Leased building	8,416	3,961	12,377
Regulatory assets	-	-	-
Other assets, net	166,598	180,251	346,849
Total noncurrent assets	3,401,151	2,514,780	5,915,931
Total assets	3,957,910	2,861,869	6,819,779
Deferred Outflows of Resources			
Deferred outflows from pension	20,500	10,346	30,846
Deferred outflows from OPEB	2,686	1,537	4,223
Deferred outflows from derivative instruments	7,937	895	8,832
Deferred outflows from refunding debt	5,804	2,663	8,467
Liabilities			
Current liabilities:			
Accounts payable and accrued expenses	44,129	2,934	47,063
Accounts payable for construction	14,442	12,867	27,309
Current portion of long-term debt	192,776	96,127	288,903
Accrued interest on bonds payable	42,790	22,607	65,397
Total current liabilities	294,137	134,535	428,672
Noncurrent liabilities:			
Reserves	40,197	25,081	65,278
Retainage on construction in progress	3,666	2,292	5,958
Long-term debt – less current portion	2,778,572	1,761,475	4,540,047
Lease liability	15,916	6,222	22,138
Net pension liability	13,187	6,842	20,029
Other postemployment benefits	32,320	17,508	49,828
Liability for derivative instruments	7,937	895	8,832
Total noncurrent liabilities	2,891,795	1,820,315	4,712,110
Total liabilities	3,185,932	1,954,850	5,140,782
Deferred Inflows of Resources			
Deferred inflows from pension	42,225	23,851	66,076
Deferred inflows from OPEB	30,956	17,172	48,128
Deferred inflows from regulated activities	29,788	22,336	52,124
Net Position			
Net investment in capital assets	490,112	567,512	1,057,624
Restricted			
Construction	76,016	39,748	115,764
Debt service	168,592	72,779	241,371
Operating	34,348	21,028	55,376
Revenue	24,241	14,013	38,254
Unrestricted	(87,373)	144,021	56,648
Total net position	$ 705,936	$ 859,101	$ 1,565,037

Commitments and contingencies

See accompanying independent auditors' report

MASSACHUSETTS WATER RESOURCES AUTHORITY

Combining Statement of Net Position

June 30, 2021

(Dollars in thousands)

Assets	**Sewer**	**Water**	**Combined Total**
Current assets:			
Cash and cash equivalents	$ 47,586	$ 22,345	$ 69,931
Investments	2,223	2,520	4,743
Restricted investments	562,479	334,646	897,125
Intergovernmental loans	6,866	29,060	35,926
Accounts receivable	469	997	1,466
Interest receivable	490	373	863
Other	-	5,333	5,333
Total current assets	620,113	395,274	1,015,387
Noncurrent assets:			
Capital assets:			
Capital assets – not being depreciated	193,357	64,734	258,091
Capital assets – being depreciated – net	3,113,882	2,273,288	5,387,170
Leased building	9,258	4,357	13,615
Regulatory assets	144,324	(84,909)	59,415
Other assets, net	157,715	170,722	328,437
Total noncurrent assets	3,618,536	2,428,192	6,046,728
Total assets	4,238,649	2,823,466	7,062,115
Deferred Outflows of Resources			
Deferred outflows from pension	28,920	15,163	44,083
Deferred outflows from derivative instruments	27,002	2,921	29,923
Deferred outflows from refunding debt	6,129	2,836	8,965
Liabilities			
Current liabilities:			
Accounts payable and accrued expenses	64,548	4,107	68,655
Accounts payable for construction	14,500	3,092	17,592
Commercial paper notes	21,000	54,000	75,000
Current portion of long-term debt	167,445	80,437	247,882
Accrued interest on bonds payable	48,150	25,358	73,508
Total current liabilities	315,643	166,994	482,637
Noncurrent liabilities:			
Reserves	39,616	24,250	63,866
Retainage on construction in progress	8,957	1,932	10,889
Long-term debt – less current portion	2,965,238	1,825,790	4,791,028
Lease liability	16,770	6,791	23,561
Net pension liability	41,467	23,021	64,488
Other postemployment benefits	48,357	26,684	75,041
Liability for derivative instruments	27,002	2,921	29,923
Total noncurrent liabilities	3,147,407	1,911,389	5,058,796
Total liabilities	3,463,050	2,078,383	5,541,433
Deferred Inflows of Resources			
Deferred inflows from pension	25,231	14,129	39,360
Deferred inflows from OPEB	23,253	12,765	36,018
Deferred inflows from regulated activities	22,417	19,834	42,251
Net Position			
Net investment in capital assets	457,377	499,979	957,356
Restricted			
Construction	141,183	86,854	228,037
Debt service	80,587	50,652	131,239
Operating	33,839	20,305	54,144
Revenue	33,390	14,756	48,146
Unrestricted	20,373	46,729	67,102
Total net position	$ 766,749	$ 719,275	$ 1,486,024

Commitments and contingencies

See accompanying independent auditors' report

MASSACHUSETTS WATER RESOURCES AUTHORITY

Combining Statement of Revenues, Expenses, and Changes in Net Position

Year Ended June 30, 2022

(Dollars in thousands)

	Sewer	Water	Combined Total
Operating revenues:			
Customer services	$ 517,786	$ 287,955	$ 805,741
Other	4,243	1,870	6,113
Total operating revenues	522,029	289,825	811,854
Operating expenses:			
Operations	73,038	53,027	126,065
Maintenance	19,897	8,945	28,842
Payments in lieu of taxes	-	8,469	8,469
Engineering, general, and administrative	74,178	43,738	117,916
Total operating expenses	167,113	114,179	281,292
Income from operating before depreciation	354,916	175,646	530,562
Depreciation and amortization	152,985	62,094	215,079
Operating Income	201,931	113,552	315,483
Regulatory accounting provisions:			
Change in reserves	(581)	(831)	(1,412)
Change in regulatory provisions, net	(151,695)	82,407	(69,288)
Total regulatory accounting provisions	(152,276)	81,576	(70,700)
Nonoperating revenues (expenses):			
Debt service grant	1,077	105	1,182
Investment loss	(13,520)	(9,223)	(22,743)
Interest expense	(102,507)	(47,941)	(150,448)
Changes in derivative related accounts	2,528	412	2,940
Total nonoperating expenses	(112,422)	(56,647)	(169,069)
Net gain (loss) before capital grants and contributions	(62,767)	138,481	75,714
Capital grants and contributions	1,954	1,345	3,299
Increase (decrease) in net position	(60,813)	139,826	79,013
Total net position - beginning of year	766,749	719,275	1,486,024
Total net position - end of year	$ 705,936	$ 859,101	$ 1,565,037

See accompanying independent auditors' report

MASSACHUSETTS WATER RESOURCES AUTHORITY

Combining Statement of Revenues, Expenses, and Changes in Net Position

Year Ended June 30, 2021

(Dollars in thousands)

	Sewer	Water	Combined Total
Operating revenues:			
Customer services	$ 504,293	$ 277,106	$ 781,399
Other	3,033	1,687	4,720
Total operating revenues	507,326	278,793	786,119
Operating expenses:			
Operations	65,519	50,936	116,455
Maintenance	21,501	9,160	30,661
Payments in lieu of taxes	-	8,368	8,368
Engineering, general, and administrative	86,619	49,267	135,886
Total operating expenses	173,639	117,731	291,370
Income from operating before depreciation	333,687	161,062	494,749
Depreciation and amortization	153,282	61,196	214,478
Operating Income	180,405	99,866	280,271
Regulatory accounting provisions:			
Change in reserves	(1,217)	(598)	(1,815)
Change in regulatory provisions, net	(98,769)	(63,709)	(162,478)
Total regulatory accounting provisions	(99,986)	(64,307)	(164,293)
Nonoperating revenues (expenses):			
Debt service grant	1,172	116	1,288
Investment loss	(1,621)	(1,037)	(2,658)
Interest expense	(107,385)	(54,432)	(161,817)
Changes in derivative related accounts	2,528	412	2,940
Total nonoperating expenses	(105,306)	(54,941)	(160,247)
Net loss before capital grants and contributions	(24,887)	(19,382)	(44,269)
Capital grants and contributions	2,573	1,741	4,314
Decrease in net position	(22,314)	(17,641)	(39,955)
Total net position - beginning of year	789,063	736,916	1,525,979
Total net position - end of year	$ 766,749	$ 719,275	$ 1,486,024

See accompanying independent auditors' report

MASSACHUSETTS WATER RESOURCES AUTHORITY

Combining Statement of Fiduciary Net Position

June 30, 2022

(Dollars in thousands)

	December 31, 2021 MWRA Employees' Retirement System	June 30, 2022 MWRA OPEB Trust	2022 Total
Assets			
Cash and cash equivalents (note 4)	$ 19,169	$ 4,857	$ 24,026
Investments: (note 4)			
Fixed income	163,159	-	163,159
Equities	366,453	-	366,453
Real estate	59,604	-	59,604
Private equity	52,703	-	52,703
Hedge funds	28,071	-	28,071
External investment pool	33,426	59,072	92,498
Total investments	703,416	59,072	762,488
Accounts receivable	6,407	-	6,407
Total assets	728,992	63,929	792,921
Liabilities			
Current liabilities:			
Accounts payable and accrued expenses	147	-	147
Due to primary government	-	-	-
Payables for securities purchased	172	-	172
Total liabilities	319	-	319
Fiduciary Net Position			
Restricted			
Pensions	728,673	-	728,673
Postemployment benefits other than pensions	-	63,929	63,929
Total fiduciary net position	$ 728,673	$ 63,929	$ 792,602

See accompanying independent auditors' report

MASSACHUSETTS WATER RESOURCES AUTHORITY

Combining Statement of Fiduciary Net Position

June 30, 2021

(Dollars in thousands)

	December 31, 2020 MWRA Employees' Retirement System	June 30, 2021 MWRA OPEB Trust	2021 Total
Assets			
Cash and cash equivalents (note 4)	$ 7,495	$ 6,235	$ 13,730
Investments: (note 4)			
Fixed income	168,937	-	168,937
Equities	321,132	-	321,132
Real estate	50,075	-	50,075
Private equity	50,667	-	50,667
Hedge funds	24,243	-	24,243
External investment pool	25,827	55,529	81,356
Total investments	640,881	55,529	696,410
Accounts receivable	652		652
Total assets	649,028	61,764	710,792
Liabilities			
Current liabilities:			
Accounts payable and accrued expenses	269	-	269
Due to primary government	78	-	78
Payables for securities purchased	305	-	305
Total liabilities	652	-	652
Fiduciary Net Position			
Restricted			
Pensions	648,376	-	648,376
Postemployment benefits other than pensions	-	61,764	61,764
Total fiduciary net position	$ 648,376	$ 61,764	$ 710,140

See accompanying independent auditors' report

MASSACHUSETTS WATER RESOURCES AUTHORITY

Combining Statement of Changes in Fiduciary Net Position

Year ended June 30, 2022

(Dollars in thousands)

	December 31, 2021	June 30, 2022	2022
	MWRA Employees' Retirement System	**MWRA OPEB Trust**	**Total**
Additions			
Contributions:			
Employer	$ 11,205	$ 9,529	$ 20,734
Plan members	9,892	-	9,892
Total contributions	21,097	9,529	30,626
Investment income:			
Interest and dividends	14,657	15	14,672
Net realized and unrealized gains (losses)	80,006	(2,202)	77,804
Less: investment fees	(5,644)	(322)	(5,966)
Net investment income	89,019	(2,509)	86,510
Reimbursements and transfers from other systems	1,994	-	1,994
Total additions	112,110	7,020	119,130
Deductions			
Benefits paid to participants or beneficiaries	31,000	4,855	35,855
Reimbursements and transfers to other systems	488	-	488
Administrative expenses	325	-	325
Total deductions	31,813	4,855	36,668
Change in fiduciary net position	80,297	2,165	82,462
Total fiduciary net position - beginning of year	648,376	61,764	710,140
Total fiduciary net position - end of year	$ 728,673	$ 63,929	$ 792,602

See accompanying independent auditors' report

MASSACHUSETTS WATER RESOURCES AUTHORITY

Combining Statement of Changes in Fiduciary Net Position

Year ended June 30, 2021

(Dollars in thousands)

	December 31, 2020	June 30, 2021	2021
	MWRA Employees' Retirement System	**MWRA OPEB Trust**	**Total**
Additions			
Contributions:			
Employer	$ 10,000	$ 11,506	$ 21,506
Plan members	10,188	-	10,188
Total contributions	20,188	11,506	31,694
Investment income:			
Interest and dividends	9,474	6	9,480
Net realized and unrealized gains	68,757	12,205	80,962
Less: investment fees	(3,284)	(242)	(3,526)
Net investment income	74,947	11,969	86,916
Reimbursements and transfers from other systems	2,096	-	2,096
Total additions	97,231	23,475	120,706
Deductions			
Benefits paid to participants or beneficiaries	27,148	5,440	32,588
Reimbursements and transfers to other systems	261	-	261
Administrative expenses	403	-	403
Total deductions	27,812	5,440	33,252
Change in fiduciary net position	69,419	18,035	87,454
Total fiduciary net position - beginning of year	578,957	43,729	622,686
Total fiduciary net position - end of year	$ 648,376	$ 61,764	$ 710,140

See accompanying independent auditors' report