MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
(A Component Unit of the Commonwealth of Massachusetts)

Financial Statements and Required Supplementary Information

June 30, 2023

(With Independent Auditors' Report Thereon)

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
(A Component Unit of the Commonwealth of Massachusetts)

Table of Contents

Crowe

Crowe LLP
Independent Member Crowe Global

INDEPENDENT AUDITOR'S REPORT

Board of Directors
Massachusetts Bay Transportation Authority
Boston, Massachusetts

Report on the Audit of the Financial Statements

Opinion

We have audited the financial statements of the Massachusetts Bay Transportation Authority (the Authority), as of and for the year ended June 30, 2023, 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 accompanying financial statements referred to above present fairly, in all material respects, the financial position of the Authority, as of June 30, 2023, and the changes in financial position and its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

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

Responsibilities of Management for the Financial Statements

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

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the 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.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. 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, the Schedule of Changes in the Net Pension Liability and Related Ratios, Schedule of Pension Contributions, and Schedule of Changes in Total OPEB Liability and Related Ratios, 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 auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards,* we have also issued our report dated December 22, 2023 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.

Crowe LLP

Crowe LLP

Boston, Massachusetts
December 22, 2023

Introduction

The following discussion and analysis of the financial performance and activity of the Massachusetts Bay Transportation Authority (the Authority) is intended to provide an overview and analysis of the basic financial statements of the Authority for the fiscal year ended June 30, 2023 (FY23) with selected comparative information for the fiscal year ended June 30, 2022 (FY22). The management of the Authority prepared this discussion, and it should be read in conjunction with the financial statements and the notes thereto, which follow this section.

Chapter 161A is referred to herein, together with Section 35T of Chapter 10 of Massachusetts General Laws, as the "Enabling Act".

The Authority receives a dedicated revenue stream consisting of the Assessments and the Dedicated Sales Tax (collectively, the Dedicated Revenues). The Dedicated Sales Tax is equal to the greater of the base revenue amount (as defined in the Enabling Act) and the amount raised by a 1% statewide sales tax, plus $160,000 annually, all to be funded from existing sales tax receipts, subject to upward adjustment under certain circumstances set forth in the Enabling Act.

Aggregate Assessments are adjusted annually for inflation but will not be permitted to increase by more than 2.5% per year. Under the Enabling Act, the Authority is required to meet all of its operating and capital expenditures from Dedicated Revenues, federal assistance and revenues generated from operation of the Authority's system, including without limitation fare revenues and non-fare revenues (e.g., parking and advertising). However, under the Enabling Act, the Authority's failure to provide transportation services at current levels would not affect the Commonwealth's or the assessed cities' and towns' obligation or ability to provide the Dedicated Revenues.

Financial Statements

The financial statements are prepared using proprietary fund (enterprise fund) accounting that uses the same basis of accounting as private-sector business enterprises. The Authority is operated under one enterprise fund. Under this method of accounting, an economic resources measurement focus and an accrual basis of accounting is used.

Revenue is recorded when earned and expenses are recorded when incurred. The financial statements include statements of net position, statement of revenues, expenses and changes in net position, and statement of cash flows. These are followed by notes to the financial statements. In addition to the financial statements, this report also contains required supplementary information pertaining to the retirement and other postemployment benefit plans (OPEB) of the Authority.

The Statement of Net Position presents information on the Authority's assets and deferred outflows of resources and liabilities and deferred inflows of resources, with the difference between the two reported as net position. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the Authority is improving or weakening.

The Statement of Revenue, Expenses and Changes in Net Position reports the operating revenues and expenses and nonoperating revenues and expenses of the Authority for the fiscal year with the difference – the change in net position – being combined with any capital grants and contributions to determine the net change in position for the fiscal year. That change combined with the net position from the end of the previous year equals the net position at the end of the fiscal year.

Continued

The Statement of Cash Flows report cash and cash equivalent activities for the fiscal year resulting from operating activities, capital and related financing activities, noncapital and related financing activities and investing activities. The net result of these activities added to the beginning of the year balance of cash and cash equivalents total to the cash and cash equivalent balance at the end of the fiscal year.

(a) **Financial Highlights – 2022 to 2023**

- The Authority's net position at June 30, 2023 was $7,603,147 an increase from the prior year of $920,453. The Authority's net position increased by $1,535,890 for the fiscal year ended at June 30, 2022. The $615,437 net position decrease year over year is primarily the result of the following:
  - During the year, the Authority's operating revenues, principally transportation revenues, totaled $452,973 as compared to operating revenues of $386,857 in fiscal year 2022, an increase of $66,116, primarily driven by revenue from transportation fares.
  - Total nonoperating revenues, net and capital grants and contributions, which includes sales tax receipts and federal and state operating and capital grants, decreased by $603,742 from $3,424,452 in FY22 to $2,820,710 in FY23. The decrease was due to a decrease in Federal Pandemic Assistance of $719,887, and a decrease of $76,204 in capital grants and contributions, partially offset by an increase in interest expense of $22,071, an increase of $75,101 in dedicated sales tax revenue, an increase of other nonoperating income of $65,725 and an increase of $65,692 in interest income.
  - Total operating expenses of $2,353,230 in FY23 increased by $77,811 as compared with FY22. The increase in operating expenses from FY22 to FY23 is primarily attributable to an increase in pensions of $47,161, an increase in commuter railroad and local subsidy expense of $52,744, an increase in wages expense of $23,998, an increase in depreciation and amortization of $35,471, and an increase in materials, supplies, and services of $21,098, partially offset by a decrease in other postemployment benefits of $111,072.
- Total bonds and notes payable outstanding at June 30, 2023 and 2022 were $5,514,840 and $5,364,979, respectively. During fiscal 2023, the Authority issued 2022 Subordinated Sales Tax Bonds Variable Rate Demand Obligation Bonds in the amount of $95,000 and Series A Senior Sales Tax Bonds comprised of Subseries 2023 A-1 in the amount of $509,655 and Subseries 2023 A-2 in the amount of $108,010. Additionally, the Authority drew down on the RRIF ATC Tranche for $297,000.
- As of June 30, 2023, the Authority's capital assets had a depreciated value of $15,739,534 made up of $25,181,731 in historical cost offset by $9,442,197 in accumulated depreciation and amortization. During FY23, the Authority spent $1,837,613 for additions to the system.

(Dollars in thousands)

Condensed Financial Information

Condensed financial information as of and for the years ended June 30, 2023 and 2022 is as follows:

Condensed Statements of Net Position:

	June 30 2023	June 30 2022
Current and other assets and deferred outflows	$ 3,417,629	$ 3,433,843
Capital assets, net	15,739,534	14,453,867
Total assets and deferred outflows	19,157,163	17,887,710
Current liabilities	1,060,137	1,005,076
Long-term liabilities and deferred inflows	10,493,879	10,199,940
Total liabilities and deferred inflows	11,554,016	11,205,016
Net position:		
Net investment in capital assets	10,634,606	10,037,135
Restricted	31,054	132,897
Unrestricted	(3,062,513)	(3,487,338)
Total net position	$ 7,603,147	$ 6,682,694

Continued

(Dollars in thousands)

Condensed Statements of Revenue, Expenses and Changes in Net Position:

	June 30	
	2023	**2022**
Operating revenue:		
Revenue from transportation	$ 376,357	$ 322,292
Other	76,616	64,565
Total operating revenues	452,973	386,857
Operating expenses:		
Transportation services	822,671	858,544
Other operating expenses	968,312	890,099
Total operating expenses, excluding depreciation	1,790,983	1,748,643
Depreciation and amortization	562,247	526,776
Total operating expenses, including depreciation and amortization	2,353,230	2,275,419
Operating loss	(1,900,257)	(1,888,562)
Nonoperating revenue, net	1,812,580	2,340,118
Gain/(Loss) before capital grants and contributions	(87,677)	451,556
Capital grants and contributions	1,008,130	1,084,334
Increase in net position	920,453	1,535,890
Beginning of year, net position	6,682,694	5,146,804
End of year, net position	$ 7,603,147	$ 6,682,694

The information contained in the condensed financial information table is used as the basis for the following discussion regarding the Authority's financial activities for the fiscal years ended June 30, 2023 and 2022.

Continued

(Dollars in thousands)

Financial Highlights for the fiscal years ended June 30, 2023 and 2022

- The Authority ended the years June 30, 2023 and 2022 with a net position of $7,603,147 and $6,682,694 of which $10,634,606 and $10,037,135 represented the Authority's net investment in capital assets, and ($3,062,513) and ($3,487,338) was unrestricted, respectively. The net position increased by $920,453 and $1,535,890 in FY23 and FY22, respectively. The $615,437 net position decrease year over year is primarily the result of a decrease in Federal Pandemic Assistance of $719,887, a decrease in capital grants and contributions of $76,204, an increase in commuter railroad and local subsidy expense of $52,744, an increase in pension expense of $47,161, and an increase in depreciation and amortization expense of $35,471, partially offset by a decrease in other postemployment benefits expense of $111,072, an increase in interest income of $65,692, an increase in dedicated sales tax revenue of $75,101, an increase in other nonoperating income of $65,725.
- The Authority incurred an operating loss for the year ended June 30, 2023 of $1,900,257. The operating loss was offset in accordance with the Enabling Act which provides the Authority a dedicated revenue stream consisting of the assessments on the communities in the Authority's service area and a Dedicated Sales Tax. For year ended June 30, 2023, the Authority recognized $1,424,006 of dedicated sales tax revenues from the Commonwealth of Massachusetts. Dedicated local assessments on cities and towns within the Authority's service area accounted for $183,790 in nonoperating revenue in FY23. The Authority also recognized $221,665 of contract assistance from the Commonwealth and $10,289 in Federal Pandemic Assistance to further offset the operating loss. The net loss before capital grants and contributions for FY23 is $87,677; a year-over-year decrease of $539,233.
- The Authority ended the years June 30, 2023 and 2022 with cash and investments of $2,121,560 and $2,320,897, respectively. Only $1,011,835 and $724,588 of this amount at June 30, 2023 and 2022, respectively, is available for operations as the bulk of these assets are restricted for specific purposes and unavailable for the Authority's general use.
- The statement of cash flows identifies the sources and uses of cash for each fiscal year. Cash and cash equivalents decreased by $211,737 in FY23.

Operating Revenue

The following charts show the major sources of operating revenue for the fiscal years ended June 30, 2023 and 2022:

	2023	Percent of total	2022	Percent of total
Bus	$ 76,549	17 %	$ 62,305	16 %
Subway	176,521	39 %	172,174	45 %
Commuter rail	112,801	25 %	80,784	21 %
Other passenger	10,486	2 %	7,029	2 %
Other operating	76,616	17 %	64,565	16 %
	$ 452,973	100 %	$ 386,857	100 %

(Dollars in thousands)

Passenger revenues make up 83% and 84% of the total operating revenues in FY23 and FY22, respectively. The Authority continues to work on increasing ridership through new equipment purchases, station upgrades and system expansion and will continue to pursue its policy of maximizing non-fare revenue opportunities.

Operating Expenses

The following chart shows the major sources of operating expenses for the fiscal years ended June 30, 2023, and 2022:

	2023	Percent of total	2022	Percent of total
Wages and benefits	$ 822,671	35 %	$ 858,544	38 %
Commuter rail	634,244	27 %	581,500	26 %
Depreciation and amortization	562,247	24 %	526,776	23 %
Material and supplies	304,646	13 %	283,548	12 %
Other operating	29,422	1 %	25,051	1 %
	$ 2,353,230	100 %	$ 2,275,419	100 %

Consistent with previous years, wages and benefits make up the largest portion of operating expenses. This is common in the public transportation industry as the provision of service is extremely labor intensive. Due to the significant investments the Authority has in capital assets, depreciation and amortization continues to be a significant operating expense. Unlike the other expenses listed, depreciation and amortization is not a cash expense. The Authority has and continues to pursue ways to reduce costs without impacting service.

Capital Assets

The Authority's capital assets as of June 30, 2023 and 2022 amounted to $15,739,534 and $14,453,867, (net of accumulated depreciation and amortization), respectively. This investment in capital assets includes land, construction work in progress, ways and structures, buildings and equipment, other capital assets, and lease right-of-use assets.

Net capital assets consisted of the following for the fiscal years ended June 30, 2023 and 2022:

	2023	2022
Land	$ 706,618	$ 451,637
Construction work in progress	4,358,277	3,063,483
Ways and structures	8,080,366	8,290,167
Buildings and equipment	2,484,178	2,554,906
Other and leases	110,095	93,674
	$ 15,739,534	$ 14,453,867

Continued

(Dollars in thousands)

The Authority primarily acquires its assets with the proceeds from governmental agencies capital grants and revenue bonds. Station improvements, new equipment purchases and system expansion are all part of the Authority's capital investment plan. See footnotes 6 and 8 for more information on the Authority's capital assets.

In 2023, the Authority reclassified the beginning balance of accumulated depreciation between Ways and Structures, Buildings and Equipment, and Other and leases. There was no impact to the total accumulated depreciation balance of $8,531,163.

Debt

Bonds and notes outstanding for the fiscal years ended June 30, 2023 and 2022:

	2023	2022
General Transportation System bonds	$ 99,470	$ 110,210
Revenue bonds, net	4,248,525	4,441,827
RRIFs	647,545	370,392
Commercial paper	125,000	40,000
BABs	394,300	402,550
	$ 5,514,840	$ 5,364,979

The total amount for these categories of debt increased by $149,861 for the fiscal year ended June 30, 2023.

In fiscal 2023, the Authority issued bonds totaling $1,009,665 as follows: Series A Senior Sales Tax Bonds comprised of Subseries 2023 A-1 in the amount of $509,655 and Subseries 2023 A-2 in the amount of $108,010, 2022A Subordinated Sales Tax Principal of $95,000, and RRIF ATC Tranche of $297,000. During 2023, the authority paid principal on all bonds in the amount of $276,797.

Additionally, to take advantage of market conditions, the Authority executed two defeasances in FY2023. On August 23, 2022, the Authority defeased $228,425 Senior Sales Tax Bonds consisting of: $85,955 Senior Sales Tax Bonds, 2014 Series A, $40,560 Senior Sales Tax Bonds, 2015 Series A and $101,910 Senior Sales Tax Bonds, 2015 Series B.

At the same time, the Authority executed a redemption of callable $94,200 Senior Sales Tax Bonds, Variable Rate Demand Obligations, 2018 Series A consisting of: $47,100 Senior Sales Tax Bonds, Variable Rate Demand Obligations, 2018 Subseries A-1 and $47,100 Senior Sales Tax Bonds, 2018 Subseries A-2.

On March 7, 2023, the Authority defeased $50,195 of federally taxable Subordinated Sales Tax Bonds, 2021 Series B for present value savings.

The Authority issued Commercial Paper Sales Tax Bond Anticipation Notes (CP) in the amount of $215,000 and paid down $130,000 during FY2023.

Requests for Information

This financial report is intended to provide an overview of the finances of the Authority for those with an interest in this organization. Questions concerning any information within this report may be directed to the General Manager, the Chief Administrative Officer or the Chief Financial Officer of the Authority.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
(A Component Unit of the Commonwealth of Massachusetts)

Statement of Net Position

June 30, 2023

(Dollars in thousands)

Assets and Deferred Outflows of Resources

Current assets:	
Unrestricted cash and temporary cash investments (Note 3)	$ 654,290
Other cash and temporary investments (Note 3)	357,545
Restricted cash and temporary cash investments (Note 3):	
Bond construction accounts	409,536
Accounts receivable:	
Commonwealth of Massachusetts - Dedicated Revenues	143,096
Federal grants	12,232
Other trade, net	99,253
Materials and supplies	71,112
Prepaid expenses	17,330
Short-term lease receivable (Note 5)	4,324
Total current assets	1,768,718
Noncurrent assets:	
Restricted cash and investments accounts (Note 3):	
Stabilization account	21,701
Forward delivery agreements	9,353
Lease deposits	62,085
Bond reserve accounts (Note 8)	607,050
Total restricted cash and investments accounts	700,189
Long-term lease receivables and interest (Note 5)	116,761
Other lease asset	27,860
Capital assets, at cost (Notes 5, 6, and 7):	
Transportation property, not being depreciated	5,064,894
Transportation property, being depreciated, net	10,632,701
Lease Right of Use ("ROU") Assets, net	40,116
Subscription ROU assets, net OR SBITA ROU assets, net	1,823
Capital assets, net	15,739,534
Total noncurrent assets	16,584,344
Total assets	18,353,062
Deferred outflows of resources:	
Debt refundings	99,074
Derivative related amounts	3,373
Pension related amounts (note 12)	329,901
Other postemployment related amounts (note 13)	371,753
Total deferred outflows of resources	804,101
Total assets and deferred outflows of resources	$ 19,157,163

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
(A Component Unit of the Commonwealth of Massachusetts)
Statement of Net Position
June 30, 2023
(Dollars in thousands)

Liabilities and Deferred Inflows of Resources

Current Liabilities	
Current maturities of bonds and notes payable (Note 8)	$ 399,166
Current lease and SBITA obligations (Notes 5 and 6)	7,326
Accounts payable	416,906
Accrued liabilities	
Payroll and vacation	58,901
Interest	107,639
Injuries, damage claims, and workers' compensation claims (Note 10)	45,972
Other accrued liabilities	24,227
Total current liabilities	1,060,137
Noncurrent liabilities, less current maturities:	
Bonds payable, net (Note 8)	5,593,458
Lease and SBITA obligations (Note 5 and 6)	99,350
Injuries, damage claims, and workers' compensation claims (Note 10)	97,333
Other accrued liabilities	7,001
Pension Liability (Note 12)	1,682,895
Other postemployment benefits (Note 13)	1,878,657
Liability for derivative instruments	3,373
Unearned revenue	66,516
Total noncurrent liabilities	9,428,583
Total liabilities	10,488,720
Deferred inflows of resources:	
Lease receivable (Note 5)	114,330
Pension related amounts (Note 12)	59,797
Other postemployment related amounts (Note 13)	891,169
Total deferred inflows of resources	1,065,296
Total liabilities and deferred inflows of resources	11,554,016
Net Position	
Net investment in capital assets	10,634,606
Restricted	31,054
Unrestricted	(3,062,513)
Total net position	$ 7,603,147

See accompanying notes to financial statements

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

(A Component Unit of the Commonwealth of Massachusetts)

Statement of Revenue, Expenses, and Changes in Net Position

Year Ended June 30, 2023

(Dollars in thousands)

Operating revenue:	
Revenue from transportation	$ 376,357
Other	76,616
Total operating revenue	452,973
Operating expenses:	
Wages and related employee benefits:	
Wages	559,979
Medical and dental insurance	65,038
Other postemployment benefits	(28,942)
Health and w elfare trust expenditures	22,502
Pensions	174,628
Social security taxes	52,436
Workers' compensation	18,131
Other	875
Capitalized costs	(41,976)
Total w ages and related employee benefits	822,671
Other operating expenses:	
Depreciation and amortization	562,247
Materials, supplies, and services	304,646
Injuries and damages	20,530
Commuter railroad and local subsidy expenses (Note 11)	634,244
Other	8,892
Total other operating expenses	1,530,559
Total operating expenses	2,353,230
Operating loss	(1,900,257)
Nonoperating revenue (expense):	
Dedicated sales tax revenue (Note 4)	1,424,006
Contract assistance – Commonw ealth of Massachusetts	221,665
Dedicated local assessments (Note 4)	183,790
Other nonoperating income	89,051
Fair Market Value Change in Forw ard Delivery Agreements	(12,417)
FEMA Emergency Assistance	10,289
Interest income	82,238
Interest expense	(186,042)
Nonoperating revenue, net	1,812,580
Loss before capital grants	(87,677)
Capital grants and contributions	1,008,130
Increase net position	920,453
Beginning of year net position	6,682,694
End of year net position	$ 7,603,147

See accompanying notes to financial statements.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
(A Component Unit of the Commonwealth of Massachusetts)

Statement of Cash Flows

Year Ended June 30, 2023

Cash flows from operating activities:		
Receipts from transit customers	$	395,555
Receipts from other operations		78,083
Payments to suppliers and vendors		(1,294,540)
Payments to employees		(716,643)
Net cash used in operating activities		(1,537,545)
Cash flows from capital and related financing activities:		
Additions to transportation property		(1,745,343)
Lease payments		(7,478)
Lease receipts		29,751
Interest paid		(213,045)
Change in deferred credits/charges		19,765
Commercial paper, net		85,000
Payments on debt		(786,663)
Proceeds from bond and note issuances		846,541
Proceeds from bond premiums		18,712
Capital grants		1,024,652
Other		(14,823)
Net cash used in capital and related financing activities		(742,931)
Cash flows from noncapital and related financing activities:		
Sales tax, contract assistance and local assessment		1,891,228
Net cash provided by noncapital and related financing activities		1,891,228
Cash flows from investing activity:		
Interest and other income		199,122
Net cash provided by investing activity		199,122
Net change		(190,126)
Cash and cash equivalents, beginning of year		1,654,810
Cash and cash equivalents, end of year	$	1,464,684
Adjustments to reconcile operating loss to net cash used in operating activities:		
Operating loss	$	(1,900,257)
Changes not requiring current expenditure of cash:		
Depreciation and amortization		562,247
Change in other postemployment benefits and related deferred outflows/inflows, net		
Outflows		(263,302)
Inflows		342,196
Liability		(136,783)
Total		(57,889)
Changes in all other working capital accounts except cash, temporary cash investments and		
Short-term debt		22,766
Receipts		22,002
Payments		(186,414)
Total		(141,646)
Net cash used in operating activities	$	(1,537,545)

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
(A Component Unit of the Commonwealth of Massachusetts)

Statement of Cash Flows

Year Ended June 30, 2023

Supplemental Disclosures of Non-Cash Activities:

Purchase of Capital assets in account payable at year end	$	92,270
Bonds refunded with proceed going directly to Escrow agents		163,124

Reconciliation of Cash and Cash Equivalents:

Deposits (Note 2)	$	82,107
Money market funds (Note 2)		322,737
MMDT (Note 2)		1,059,840
		1,464,684

See accompanying notes to financial statements.

(1) The Reporting Entity

The Massachusetts Bay Transportation Authority (the Authority or MBTA) was created in 1964 as a body politic and corporate and a political subdivision of the Commonwealth of Massachusetts (the Commonwealth) to finance and operate mass transportation facilities within, and, to a limited extent, outside of its territorial area within the Greater Boston Area of 176 cities and towns and is authorized to enter into agreements for providing mass transportation service by private companies, including railroads. The 176 cities and towns are grouped into three categories, based upon the weighting of each member's allocable percentage of population and assessments: (i) the inner 14 cities and towns; (ii) the outer 51 cities and towns; and (iii) the other 111 served communities.

Chapter 161A is referred to herein, together with Section 35T of Chapter 10 of Massachusetts General Laws, as the "Enabling Act." Under the Enabling Act, an Advisory Board, consisting of a representative of each of the cities and towns paying assessments, shall have certain specified powers, including the power to review the Authority's long term capital program and annual operating budget. The Enabling Act does not provide for the Authority to be a debtor under the federal bankruptcy code.

Effective July 29, 2021, Chapter 161A, Section 3 was amended by Chapter 29 of the Acts of 2021 creating a new Board of Directors (the Board) that shall consist of the following seven members: the Secretary of Transportation, who shall serve ex officio; one person to be appointed by the Advisory Board and five persons to be appointed by the governor, one of whom shall have experience in safety, one of whom shall have experience in transportation operations, one of whom shall have experience in public or private finance, one of whom shall be a rider and a resident of an environmental justice population and one of whom shall be selected from a list of three persons recommended by the President of the AFL-CIO.

On April 9, 2023, the Secretary of Transportation along with the Governor of Massachusetts, appointed Philip Eng as the new General Manager of the MBTA. The General Manager reports to and serves at the pleasure of the secretary of transportation.

In accordance with the requirements of Governmental Accounting Standards Board (GASB), the financial statements must present the Authority and its component units. Pursuant to this criterion, no component units were identified for inclusion in the accompanying financial statements.

Effective July 29, 2021, the Authority is a component unit of the Commonwealth of Massachusetts. Previously, the Authority was a component unit of MassDOT.

(2) Summary of Significant Accounting Policies

(a) Basis of Financial Reporting

The Authority applies U.S. generally accepted accounting principles (GAAP) as prescribed by GASB. The accompanying financial statements have been prepared using the economic resources measurement focus and the accrual basis of accounting and reflect transactions on behalf of the Authority, the reporting entity. The Authority accounts for its operations as an enterprise fund. Operating revenues and expenses result from providing transportation services to member communities. All other revenues and expenses are reported as nonoperating revenues and expenses.

(b) 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 amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

(c) Cash

Cash and cash equivalents include cash on deposit and money market funds.

(d) Investments

Investments are generally presented at fair value, other than certain investments that are recorded at amortized cost. The MBTA uses an independent pricing source to determine the fair value of investments at quoted market prices. Changes in fair value are included in nonoperating interest income in the Statement of Revenues, Expenses and Changes in Net Position.

The investments recorded at amortized cost are those outlined by GASB standards and include:

- the Massachusetts Municipal Depository Trust (MMDT), a pooled money market like investment fund, established under General Laws, Chapter 29, Section 38A. MMDT is an external investment pool that meets the criteria established by GASB 79 to report its investments at amortized cost. As such, the Authority reports its investment in MMDT at amortized cost which approximates the net asset value of $1.00 (one dollar) per share.
- Investments in state & local government series obligations at cost due to prohibition of transferability of the obligations.
- Investments in nonparticipating and participating interest-earning contracts that have a remaining maturity at the time of purchase of one year or less.

(e) Statement of Cash Flows

For purposes of the statement of cash flows, the Authority considers all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents, which are reported as temporary cash investments.

(f) Cash and Investment Accounts

Certain cash and investments are segregated from operating cash and investments and labeled restricted due to certain external restrictions as follows:

Bond Construction Accounts – represent unexpended bond proceeds

Stabilization Accounts – represent funds held in accordance with statutory requirements to be used when annual revenues are projected to be less than annual expenses, or if the Authority has insufficient funds on hand to pay current expenses

(Dollars in thousands)

Lease Deposits – represent investments (Treasury STRIPS) held by trustees that will be used to make scheduled equity payments on certain of the Authority's leases

Bond Reserve Accounts – represent funds required to be maintained by trust agreements and bond resolutions

Forward Delivery Agreements – represent investment derivatives associated with bond reserve accounts as more fully described in Note 3(g)

Unrestricted cash and temporary investments are free of any internal or external restrictions. Other cash and temporary investments represent internally restricted funds held for capital maintenance, debt service, and other expenses.

(g) Capital Assets

All capital assets (excluding right-of-use lease assets and subscription assets) exceeding $5, with a useful life of greater than one year, are stated at historical cost. These costs include the Authority's labor costs for employees working on capital projects, related fringe benefits, and an allocated share of general and administrative costs. Ordinary maintenance and repairs are charged to expense as incurred.

Depreciation of capital assets is computed using the straight-line method over the estimated useful life of the asset. The major categories of transportation property in service and their estimated useful lives are as follows at June 30, 2023:

	Estimated useful life
Ways and structures	10–60 years
Building and equipment	3–25 years
Capital assets - other	5–11 years
Right of use assets	1–99 years

(h) Construction in Progress

For the year ended June 30, 2023, approximately $1,813,000 was expended towards the completion of major construction projects and improvements in progress. The projects and improvements completed were transferred to the appropriate transportation property accounts. Major projects included transit service extensions, right of way improvements, and purchases of new rolling stock and other equipment.

(i) Right of Use Asset

Right-of-Use (ROU) assets are recognized at the lease commencement date and represent the Authority's right to use an underlying asset for the lease term. ROU assets are measured at the initial value of the lease liability plus any payments made to the lessor before commencement and initial direct costs. Amortization of the ROU asset is recorded on a straight-line basis over the shorter of the useful life or the lease term.

(j) Lease Liability

Lease liabilities represent the Authority's obligation to make lease payments arising from leases other than short term leases. Lease liabilities are recognized at the lease commencement date based on the present value of future lease payments over the remaining lease term. Present value of lease payments is discounted based on a borrowing rate determined by the Authority. Short term leases, those with a maximum period of 12 months, are expensed as incurred.

(k) Lease Receivable

Lease receivables are recorded by the Authority as the present value of lease payments expected to be received under all leases other than short term. Lease receivables are subsequently reduced over the life of the lease as cash is received in the applicable reporting period. Short term leases, those with a maximum period of 12 months, are recognized as collected. A deferred inflow of resources is recognized ratably over the life of the lease agreement.

(l) Subscription-Based Information Technology Arrangements (SBITAs)

MBTA recognizes a subscription liability and an intangible right of use subscription asset (subscription asset) in the statement of net position. MBTA reports SBITA current expenditures in the statement of revenues, expenditures, and changes in net position. MBTA recognizes subscription liabilities with an initial term greater than twelve months. Remaining subscription terms range from 1 to 5 years with fixed payments due monthly and annually. For SBITAs with a maximum possible term of twelve months or less at commencement, MBTA recognizes expenses based on the provisions of the arrangement.

At the commencement of a SBITA, MBTA initially measures the subscription liability at the present value of expected subscription payments to be made over the SBITA term. Subsequently, the subscription liability is reduced by the principal portion of subscription payments made. The subscription asset is initially measured as the initial measurement of the subscription liability, adjusted for payments associated with the SBITA contract made to the vendor at the commencement of the subscription term, plus any capitalizable initial implementation costs, less any vendor incentives received at the commencement of the subscription term. Subsequently, the subscription asset is amortized on a straight-line basis over the shorter of the useful life of the IT asset or subscription term.

Key estimates and judgments related to SBITAs include how MBTA determines (1) the discount rate it uses to discount the expected subscription payments to present value, (2) the subscription term, and (3) subscription payments.

If an interest rate is not stated in the contract, MBTA uses interest rates on subordinated sales tax bonds at the commencement date of the contract as the discount rate. The subscription term includes the noncancellable period during which MBTA has a noncancellable right to use the underlying IT assets. The subscription term also includes periods covered by an option to extend if reasonably certain MBTA or vendor will exercise that option or to terminate if it is reasonably certain that MBTA or vendor will not exercise that option. Subscription payments included in the measurement of the subscription liability are composed of fixed payments only.

MBTA monitors changes in circumstances that would require a remeasurement of a SBITA and will remeasure the subscription asset and subscription liability if certain changes occur that are expected to significantly affect the amount of the subscription liability.

Subscription assets are reported with noncurrent assets and subscription liabilities are reported with long term liabilities on the statement of net position.

(m) Materials and Supplies

Materials and supplies are stated at average cost and include items to support the Authority's operations.

(n) Self-Insurance

The Authority is fully self-insured for various risks including workers' compensation, and injuries and damages claims. The Authority also self-insures a portion of casualty, liability claims, and property losses.

(o) Revenue Recognition

The Authority realizes revenue from a variety of different sources including but not limited to dedicated sales tax revenue and dedicated assessment revenue (collectively referred to as Dedicated Revenues, state contract assistance appropriated funds, fare revenue, and non-fare revenue such as real estate, parking, and advertising revenues.

Under the Enabling Act, the Dedicated Revenues are impressed with a trust for the benefit of Authority bondholders. Furthermore, the Commonwealth covenants that while any Authority bonds or notes secured by the Dedicated Revenues are outstanding and remain unpaid, the Dedicated Revenues shall not be diverted, and, so long as the Dedicated Revenues are necessary for the purpose for which they have been pledged. The Authority recognizes the Dedicated Revenues as nonoperating revenue.

The Dedicated Sales Tax is equal to the greater of the base revenue amount (as defined in the Enabling Act) and the amount raised by a 1% statewide sales tax to be funded from existing sales tax receipts, subject to adjustment under certain circumstances set forth in the Enabling Act, plus $160,000 annually. The dedicated assessment revenue consists of the obligation of 176 cities and towns in the Authority's expanded district to pay assessments for transportation services and benefits rendered. The Commonwealth deducts the assessments from each municipality's local aid payments; as such, these payments are received from the Commonwealth.

The dedicated assessments shall be adjusted each July 1 by the growth rate of the inflation index over the preceding 12 months not to exceed 102.5% of the previous year's assessment.

The 2009 Transportation Reform Act established the Commonwealth Transportation Fund (CTF), a budgetary fund of the Commonwealth for transportation related purposes, to receive essentially the same revenue previously deposited into the Highway Fund, including gasoline tax receipts and registry fee revenue. The Transportation Finance Act also provided funding for various transportation services and infrastructure needs within the various units of MassDOT. The Commonwealth appropriated the amount of $187,000 from the CTF to the Authority for fiscal 2023. The Authority recognizes the state appropriated funds from the CTF on an accrual basis as nonoperating revenue.

(Dollars in thousands)

The Authority generates significant revenue from the operation of its transportation system, including both fare revenue and nonfare revenue such as those derived from real estate, parking, and advertising. Fare revenue is recorded on an accrual basis as operating revenue when fare media is purchased by riding customers through fare vending equipment and pass programs administered by the Authority. Real estate, parking, and advertising revenue is recorded on an accrual basis as operating revenue upon reporting of independent contractors managing these revenue streams on behalf of the Authority. Such activity is reflected as operating revenue in the accompanying financial statements.

(p) Capital Grants and Contributions

The Authority receives capital grants from certain governmental agencies to be used for various purposes connected with the planning, modernization, and expansion of transportation facilities and equipment.

(q) Compensated Absences

The Authority accrues for vacation pay when it is earned by employees. The amount of vacation pay accrued as of June 30, 2023 was $27,946.

	Beginning balance July 1, 2022	Increases	Decreases	Ending balance June 30, 2023
Accrued Vacation Liability	$ 20,265	$ 47,325	$ (39,644)	$ 27,946

(r) Postemployment Benefits

(i) The Authority has the following defined benefit postemployment plans:

Pension: The Authority sponsors six defined benefit pension plans, three of which have significant net/total pension liabilities that are recorded on the accompanying financial statements (the MBTA Retirement Fund, the MBTA Police Association Retirement Plan and the MBTA Deferred Compensation Plan). The remaining three plans (the MBTA Executive Deferred Compensation Plan, the MBTA Executive Deferred Compensation Annuity Plan and the MBTA Excess Benefit Annuity Plan) have less than ten active and retired participants and are considered immaterial and are not reflected in the accompanying financial statements.

Other Postemployment Benefits (OPEB): The Authority sponsors one defined benefit OPEB plan.

For purposes of measuring the net/total pension and OPEB liabilities, deferred outflows of resources and deferred inflows of resources related to these liabilities and related expenses, information about the fiduciary net position and additions to/deductions from the fiduciary net position have been determined on the same basis as they are reported by the applicable defined benefit plans. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments held by the plans, where applicable, are measured at fair value.

(ii) The Authority has the following defined contribution postemployment plans:

Pension: The Authority sponsors one defined contribution plan, the MBTA Deferred Compensation Saving plan.

OPEB: The Authority sponsors one defined contribution Transit Employees Health and Welfare Trust.

See footnotes 12 and 13 for more information on the Authority's postemployment benefit plans.

In accordance with GASB Statement No. 84, Fiduciary Activities, the Authority determined that none of its postemployment plans meet the criteria for being reported as a fiduciary activity because none of the plans were determined to be component units of the Authority and the Authority was not deemed to have control of the plans' assets.

(s) Environmental and other Remediation Obligations

The Authority recognizes pollution remediation liabilities in accordance with GASB Statement No. 49, *Accounting and Financial Reporting for Pollution Remediation Obligations* and GASB Statement No. 83, *Certain Asset Retirement Obligations.* At June 30, 2023 the Authority recorded a long-term liability of $4,001 related to simple ownership of historical rights of way and property located within industrial areas, and the operation and maintenance of our transportation facilities.

(t) Derivatives

The Authorities derivative activities included various forward delivery agreements (FDA) and various interest rate swaps which are recorded at fair value. At June 30, 2023, the fair value of the FDA which are considered investment derivatives totaled $9,353. At June 30, 2023, the fair value of the interest rate swaps which are considered as hedge instruments totaled $3,373.

Derivative instruments are reported as assets or liabilities at fair value on the statement of net position. Fair value is determined using a market approach that considers benchmark interest rates.

Changes in fair value may be reported in the statement of revenue, expenses, and changes in net position, or as deferred inflows or deferred outflows of resources in the statement of net position depending upon whether the derivative instrument qualifies for hedge accounting.

(u) Available Unrestricted Resources

The Authority's policy is to utilize available unrestricted resources prior to restricted resources.

(v) Deferred Inflows and Outflows

The Authority accounts for certain transactions that result in the consumption or acquisition of one period that are applicable to future periods as deferred outflows and deferred inflows, respectively, to distinguish them from assets and liabilities. Deferred outflows of resources increase net position, similar to assets and deferred inflows of resources decrease net position similar to liabilities.

(w) Statement of Net Position

The statement of net position presents all of the Authority's assets, deferred outflows of resources, liabilities and deferred inflows of resources, with the difference reported as net position. Net position is reported in three categories:

Net investment in capital assets consists of capital assets, net of accumulated depreciation and amortization and reduced by outstanding balances for bonds, notes and other debt that are attributed to the acquisition, construction or improvement of those assets.

Restricted net position result when constraints placed on net position use are either externally imposed by creditors, grantors, contributors, and the like, or imposed by law through enabling legislation.

Unrestricted net position consists of net position which does not meet the definition of the two preceding categories.

(x) Recently Adopted Accounting Standards

GASB Statement No. 94, Public-Private and Public-Public Partnerships and Availability Payment Arrangements, was issued in March 2020. The primary objective of this Statement is to improve financial reporting by addressing issues related to public-private and public-public partnership arrangements (PPPs). As used in this Statement, a PPP is an arrangement in which a government (the transferor) contracts with an operator (a governmental or nongovernmental entity) to provide public services by conveying control of the right to operate or use a nonfinancial asset, such as infrastructure or other capital assets (the underlying PPP asset), for a period of time in an exchange or exchange-like transaction. Some PPPs meet the definition of a service concession arrangement (SCA), which is defined in this Statement as a PPP in which (1) the operator collects and is compensated by fees from third parties; (2) the transferor determines or has the ability to modify or approve which services the operator is required to provide to, to whom the operator is required to provide the services, and the prices or rates that can be charged for the services and (3) the transferor is entitled to significant residual interest in the service utility of the underlying PPP asset at the end of the arrangement.

This Statement also provides guidance for accounting and financial reporting for availability arrangements (APAs). As defined in this Statement, an APA is an arrangement in which a government compensates an operator for services that may include designing, constructing, financing, maintaining, or operating an underlying nonfinancial asset for a period of time in an exchange or exchange-like transaction.

The adoption of the statement and related guidance during the year ended June 30, 2023 did not have a material impact on the financial statements of the Authority.

GASB Statement No. 96, Subscription-Based Information Technology Arrangements, was adopted during the year ended June 30, 2023. The retrospective adjustment made to the basic financial statements to comply with the new accounting standard has been reported as an adjustment of a prior period, and the financial statements presented for the period affected has been restated.

The adoption of the standard at July 1, 2022, required recognition of $2,712 of subscription assets and $2,712 of long-term subscription liabilities. There was no impact on net position as a result of the adoption of the standard.

(3) Deposits and Investments

The Authority's investment policy is to only invest in securities named in the respective trust agreements.

The Authority is authorized by its board of directors to make deposits into checking and savings accounts and to invest in direct obligations of the U.S. Treasury, its agencies and instrumentalities, bankers' acceptances, investment agreements, municipal bonds, repurchase agreements secured by U.S. government and agency obligations, and certain other investments permitted under the trust indentures.

Obligations of any agency or instrumentality of the United States of America including, but not limited to, the following may be acceptable as collateral to secure certificates of deposit or other instruments:

(A) Federal Home Loan Banks

(B) Federal Land Banks

(C) Federal Intermediate Credit Banks

(D) Bank for Cooperatives

(E) Federal National Mortgage Association

(F) Federal Farm Credit Banks

The Authority may invest in prime commercial paper of corporate issuers with a minimum quality rating of P 1 by Moody's Investors Service (Moody's) or A 1 by S&P Global (S&P). These instruments can vary in maturity; however, no more than 10% of the investment funds shall be invested in the commercial paper of a single corporation.

Additionally, the Authority is authorized to invest in Massachusetts Municipal Depository Trust (MMDT).

(Dollars in thousands)

Deposits and investments consisted of the following at June 30, 2023:

		2023
Restricted:		
Bond construction accounts	$	409,536
Bond reserve accounts		607,050
Stabilization accounts		21,701
Forward delivery agreements		9,353
Lease deposits		62,085
Subtotal		1,109,725
Unrestricted cash and temporary cash investments		1,011,835
Total	$	2,121,560

(a) Custodial Credit Risk – Deposits

The custodial credit risk for deposits is the risk that, in the event of a bank failure, the Authority's deposits may not be recovered. The deposits in the bank in excess of the insured amount and collateralized amount are uninsured and uncollateralized. The carrying amount of the Authority's deposits at June 30, 2023 was $82,107. The bank balances at June 30, 2023 were $90,233. Of this amount, $0 was exposed to custodial credit risk as uninsured and uncollateralized. These amounts reflect the Federal Deposit Insurance Corporation limit of $250 per institution at June 30, 2023.

(b) Interest Rate Risk – Investments

Interest rate risk is the risk that changes in interest rates of debt investments will adversely affect the fair value of an investment. The Authority follows the guidelines in the Authority's trust agreements and does not have a formal investment policy that limits investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates.

(Dollars in thousands)

The Authority's fixed income investments at June 30, 2023 are presented below. All investments are presented by investment type and maturity.

	2023				
		Investment maturities (in years)			
Investment type	**Amount**	**Less than 1 year**	**1–3**	**4–8**	**More than 8**
Money market funds	$ 322,737	$ 322,737	$	$	$
MMDT	1,059,840	1,059,840			
Guaranteed investment contracts	2,658	583		1,244	831
U.S. Treasury STRIPS	71,438			38,521	32,917
U.S. Treasury securities	309,180	309,180			
U.S. government-sponsored enterprises	171,146	166,023		1,823	3,300
Municipal bonds	18,058	1,980	1,000	8,501	6,577
State and Local Government	84,396	35,820		41,185	7,391
Investments and cash equivalents	2,039,453	$ 1,896,163	$ 1,000	$ 91,274	$ 51,016
Deposits	82,107				
Total	$ 2,121,560				

(c) Credit Ratings

The Authority has $1,059,840 invested in MMDT as of June 30, 2023, a state investment pool managed by Federated Hermes, Inc. as agent for the Commonwealth and shareholders of the MMDT. MMDT is unrated.

The Authority has $404,844 invested in money market funds as of June 30, 2023. These investments are not rated.

The Authority holds guaranteed investment contracts with a fair value of $2,658 as of June 30, 2023. These investments are not rated.

The Authority had $483,072 in U.S. Treasury STRIPS, U.S. Treasury securities, State and local government series and municipal bonds as of June 30, 2023. The investments in Treasury STRIPS, U.S. Treasury Securities and State and local government series obligations are backed by the full faith and credit of the U.S. government. The municipal bonds have an implied credit rating of AAA.

The Authority has $171,146 invested in U.S. government-sponsored enterprises as of June 30, 2023. These investments have an implied credit rating of Aaa/AA+ or they have been collateralized to AAA.

(d) Fair Value Hierarchy

Investments are measured at fair value on a recurring basis. Recurring fair value measurements are those that are required to be made at the end of each reporting period. Fair value measurements are categorized based on the valuation inputs used to measure the fair value.

- Level 1 inputs are quoted market prices in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date.
- Level 2 inputs are other than quoted prices in Level 1 that are observable for the asset or liability or similar assets or liabilities either directly or indirectly through corroboration with the observable market data.
- Level 3 inputs are significant unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

The following is a description of the valuation methodologies used for assets measured at fair value. There have been no changes in the methodologies used at June 30, 2023.

Institutional Money Market Funds – Valued at fair value, which is represented by the quoted price for the fund generally $1.00 (one dollar). Institutional Money market funds are generally classified as Level 1.

U.S. Treasury Strips – Treasury strips are typically valued based on pricing sources with reasonable level of price transparency or derived from a treasury curve. Treasury strips are generally categorized as Level 2 of the fair value hierarchy.

U.S. Treasury Securities – Securities issued by the U.S. Government, its agencies, authorities and instrumentalities are valued using quoted prices, documented trade history in the security and a pricing model maximizing the use of observable inputs determined by investment managers.

- U.S. Treasury Securities consist principally of U.S. Treasury bills, notes and bonds are generally classified as Level 2 of the fair value hierarchy
- U.S. Government sponsored enterprises securities consist principally of U.S. Government agency obligations including agency-issued debt, agency mortgage pass-through securities, and agency collateralized mortgage obligation are generally categorized in Level 2 of the fair value hierarchy.

Municipal Bonds – State and municipal bonds are generally valued based on the independent prices obtained from third party valuation services. Where prices of recently executed market transactions of similar securities and of comparable size are easily observed, those are taken into consideration for arriving at the fair value. When independent prices are available for state and municipal bonds, these are categorized as Level 2 of the fair value hierarchy.

International Bank Notes – International bank notes are generally valued based on independent prices obtained from third party valuation services and are categorized as Level 2 of the fair value hierarchy.

(Dollars in thousands)

Derivative Instruments – The Authority's interest rate swaps and forward delivery agreements are classified as Level 2 as valued using a market approach that considers benchmark interest rates.

The Authority has no securities classified as Level 3.

(e) Fair Value and Amortized Cost Measurements

The Authority categorizes its investments within the fair value hierarchy as of June 30, 2023 as follows:

	2023		
	Total	**Fair value Level 1**	**Fair value Level 2**
Investments by fair value level:			
Money market funds	$ 322,737	$ 322,737	$
U.S. Treasury STRIPS	71,438		71,438
U.S. Treasury securities	309,180		309,180
U.S. government sponsored enterprises	171,146		171,146
Municipal bonds	18,058		18,058
Total Investments by fair value level	892,559	322,737	569,822
Investments measured at amortized cost:			
MMDT	1,059,840		1,059,840
State & Local Government Series	84,396		84,396
Guaranteed investment contracts	2,658		2,658
Total Investments measured at amortized cost	1,146,894		1,146,894
Total investments	$ 2,039,453	$ 322,737	$ 1,716,716
Interest rate swaps	$ 3,373	$	$ 3,373
Forward delivery agreements	$ 9,353	$	$ 9,353

(f) Forward Delivery Agreements

The Authority has entered into several forward delivery agreements (FDAs) with various counterparties related to its debt service and debt service reserve funds (collectively, the Funds). These FDAs provide for the counterparties to pay the Authority a fixed rate of return on the amounts on deposit in the Funds in exchange for the Authority's obligation to purchase securities at specified dates in the future. Under the FDAs, the Authority receives fixed return rates ranging from 4.000% to 6.735% and commits to purchase the securities at their market value on the specified future dates through June 30, 2037. The credit ratings of the counterparties to the FDAs as of June 30, 2023, as determined by S&P Global, were from "A–" to "AA".

(4) Pledged Revenues

The Authority has pledged, as security for Sales Tax Bonds issued, Assessment Bonds issued, Federal Bonds (TIFIA and RRIF), and Build America Bonds (BABs) a portion of the Commonwealth sales tax (excluding meals tax) that is restricted for purposes of providing a dedicated revenue source to the Authority and a portion of the assessments obligated to be paid by cities and towns for which the Authority provides specified transportation services. Such bonds, issued by the Authority, provide financing for a portion of the capital improvement projects included in the Authority's approved Capital Investment Plan (CIP), and are payable through fiscal year ended June 30, 2053. The pledge of dedicated sales tax receipts and assessments from local communities remains in place until all bonds outstanding are retired and paid. The Authority generally issues bonds annually to fund its CIP, and these funds will continue to be pledged as security for the bonds until such time as the Authority no longer finances its CIP through the issuance of bonds secured by such pledged revenues and all such Authority bonds issued and outstanding have been retired. The total amount of dedicated sales tax revenues and local assessment revenues received in fiscal year 2023 was $1,424,006 and $183,790, respectively, a total of $1,607,796. Total annual debt service (principal and interest) paid during fiscal year 2023 on outstanding Sales Tax Bond Series and Assessment Bonds was $465,003 representing 29.0% of pledged revenues.

Total principal and interest remaining on Sales Tax Series Bonds and Assessment Bonds outstanding as of June 30, 2023 are approximately $7,916,506.

(5) Leases

(a) Lease Overview

The Authority has entered various leases for land, building, equipment, easement and other arrangements. The Authority has recognized a lease liability and an intangible right-to-use lease asset for lessee arrangements and a lease receivable and a deferred inflow of resources for lessor arrangements.

(b) Lessee Arrangements

A summary of changes in the Right-of-Use Assets, displayed by the nature of underlying assets, is as follows for the year ended June 30, 2023:

(Dollars in thousands)

	Beginning balance July 1, 2022	Increases	Decreases	Ending balance June 30, 2023
Land and Building Leases	$ 16,848	$ 21,844	$	$ 38,692
Equipment Leases	6,014	10,812		16,826
Easement Leases	1,224			1,224
Total Lease Assets	24,086	32,656		56,742
Less accumulated amortization:	(7,212)	(9,414)		(16,626)
Lease Assets, net	$ 16,874	$ 23,242	$	$ 40,116

A summary of principal changes in the related lease liabilities is as follows for the year ended June 30, 2023:

	Beginning balance July 1, 2022	Increases	Decreases	Ending balance June 30, 2023	Amounts due within one year
Lease Liability	$ 17,139	32,849	(7,176)	42,812	$ 6,472

The principal and interest expense for the next five years and beyond are as follows for lease obligations:

	Principal	Interest	Total
Fiscal year(s):			
2024	$ 6,472	$ 1,057	$ 7,529
2025	5,032	883	5,915
2026	5,184	743	5,927
2027	5,204	601	5,805
2028	4,630	460	5,090
2029-2033	16,290	852	17,142
Total	$ 42,812	$ 4,596	$ 47,408

(Dollars in thousands)

(c) Other Lessee Arrangements

In fiscal 2006, the Authority entered into two Sale - in/Lease – out (SILO) transactions – with lease end dates of December 15, 2029, and December 15, 2035. Because the transaction did not meet the "in-substance defeasance" criteria, the lease liability and the related refunding trust established to pay off the lease payments as they come due are included in the accompanying financial statements. The refunded trust's investments in U.S. Treasury STRIPs and corresponding lease liability were valued at $62,085 at June 30, 2023.

(d) Lessor Arrangements

The Authority has lease arrangements which call for payments that are partially or completely variable and were not included in lease receivables or deferred inflows of resources. These variable payments were a result of the underlying lease measured not on a fixed rate, but rather variable due to the underlying payments derived from a percentage of sales, use of a capital asset, or changes in an index rate.

The principal and interest receivable for the next five years and beyond are as follows for lease receivables:

		Principal	Interest	Total
Fiscal year(s):				
2024	$	4,324	4,198	8,522
2025		3,269	4,115	7,384
2026		3,285	4,015	7,300
2027		3,136	3,915	7,051
2028		2,589	3,826	6,415
2029 -2033		3,697	18,518	22,215
2034 - 2038		1,638	18,203	19,841
2039 - 2043		919	17,927	18,846
2044 - 2048		100	17,883	17,983
2049 - 2053		121	17,853	17,974
Thereafter		94,643	190,672	285,315
Total	$	117,721	301,125	418,846

(Dollars in thousands)

The Authority also entered into a lease related to the underground parking garage structure located at Nashua Street and Legends Way in the city of Boston effective on June 6, 2012. The lease is for a subsurface building area with five levels of parking with a capacity for 1,275 automobiles (unaudited). The lease agreement is for a 75 year term with an initial rent payment of $50,000 paid on the commencement date of the lease. Future annual base rent payments will commence on the eleventh anniversary of the lease, June 6, 2023, and continue for a 30 year period.

For the year ended June 30, 2023, the Authority earned approximately $7.7 million in lease revenue and $4.3 million in lease interest revenue related to all its lessor leasing activities.

(6) Software Subscriptions

MBTA is party to seven SBITA's as of June 30, 2023. The total subscription assets related to these agreements were $1,823, net of accumulated amortization of $889, as of June 30, 2023.

MBTA has a subscription liability of $1,779 as of June 30, 2023. The following is a schedule by year of future minimum SBITA payments as of June 30, 2023:

	Payment	Interest	Principal
Fiscal year(s):			
2024	$ 888	$ 34	$ 854
2025	616	17	599
2026	333	7	326
Total	$ 1,837	$ 58	$ 1,779

(Dollars in thousands)

(7) Capital Assets

A summary roll-forward of capital assets at June 30, 2023 is as follows:

	Beginning balance June 30, 2022	Increases	Decreases	Ending balance June 30, 2023
Capital assets not being depreciated				
Land	$ 451,637	$ 254,981	$ —	$ 706,618
Construction work in progress	3,063,483	1,812,548	(517,754)	4,358,277
Total capital assets not being depreciated	3,515,120	2,067,529	(517,754)	5,064,895
Capital assets being depreciated:				
Ways and structures	14,109,776	103,232	—	14,213,008
Buildings and equipment	5,389,279	159,541	(83,061)	5,465,759
Capital assets - other	378,616	—	—	378,616
Total capital assets being depreciated	19,877,671	262,773	(83,061)	20,057,383
Less accumulated depreciation for:				
Ways and structures	5,819,609	313,033	—	6,132,642
Buildings and equipment	2,834,373	230,269	(83,061)	2,981,581
Capital Assets - other	301,816	8,644	—	310,460
Total	8,955,798	551,946	(83,061)	9,424,683
Depreciable capital assets, net	10,921,873	(289,173)	—	10,632,700
Capital assets, net excluding lease assets	14,436,993	1,778,356	(517,754)	15,697,595
Subscription ROU assets, net (Note 6)	2,712	—	(889)	1,823
Lease ROU assets, net (Note 5)	16,873	32,656	(9,413)	40,116
Total capital assets	$ 14,456,578	$ 1,811,012	$ (528,056)	$ 15,739,534

In 2023, the Authority reclassified the beginning balances between certain categories for both Capital assets being depreciated as well as accumulated depreciation. There was no impact to the Total capital asset of $14,453,866.

(8) Long-Term Debt

(a) Bonds Payable

Debt issued by the Authority prior to and outstanding as of July 1, 2000 (the Prior Obligations) is backed by the full faith and credit of the Commonwealth to the extent revenues collected by the Authority are insufficient to pay the debt, until the debt is paid off. Principal and interest payments on that debt were subsidized by the Commonwealth prior to June 30, 2000. As of June 30, 2023, Prior Obligations in the amount of $99,470 are outstanding.

Principal on General Transportation System (GTS) bonds, all issued prior to July 1, 2000, is payable in annual installments on March 1st and interest is payable semiannually on March 1st and September 1st. The GTS bonds were issued to provide funds for the financing of the Authority's transportation properties.

Debt issued by the Authority after June 30, 2000 (new debt) is not supported by the Commonwealth's guarantee. Additionally, the Authority is not expected to receive any principal or interest subsidies from the Commonwealth, for the repayment of the prior obligations and new debt of the Authority, unless authorized by special legislation.

In September 2022, the Authority issued $95,000 Subordinated Sales Tax Bonds, Variable Rate Demand Obligations 2022 Series A with the interest reset weekly. The bonds, which are subject to optional tender, are supported by a standby bond purchase agreement. Principal payments are made based on sinking funds from July 1, 2046 to July 1, 2048, and again in July 1, 2051 and the final maturity date of July 1, 2052. The 2022 Series A Subordinated Sales Tax Bonds were issued to fund a portion of the Authority's Capital Investment Plan and to pay costs of issuance of the bonds.

In March 2023, the Authority issued $617,665 Senior Sales Tax Bonds, 2023 Series A comprised of Subseries 2023 A-1 in the amount of $509,655 and Subseries 2023 A-2 (Sustainability Bonds) in the amount of $108,010. The 2023 A-1 Subseries has four Term Bonds, two Term Bonds have sinking funds from July 1, 2044 through final maturity on July 1, 2048, one with a coupon rate of 4.00% and the other with a coupon rate of 5.25%. The other two Term Bonds have sinking funds from July 1, 2049 through final maturity on July 1, 2053, one with a coupon rate of 4.00% and the other with a coupon rate of 5.25%. The Subseries 2023 A-2 has annual principal payments beginning July 1, 2025 through July 1, 2030 then again from July 1, 2032 to the final maturity date of July 1, 2038. The Senior Sales Tax Bonds, 2023 Series A were issued to provide financing for capital projects.

In December 2017, the Authority entered into a TIFIA loan and a RRIF loan with the United States Department of Transportation secured by subordinated sales tax bonds.. In July 2020, the Authority refinanced the TIFIA and RIFF loans. The two loans were consolidated under the RRIF program and the total loan amount increased to $851,150. The new RIFF loan program consists of three tranches: (a) a PTC Tranche for $382,000; (b) an ATC Tranche for $369,065; and (c) a Resiliency Tranche for $100,085. The PTC Tranche has an annual interest rate of 1.15%; the ATC Tranche has an annual interest rate of 1.29%; and the Resiliency Tranche has an annual interest rate of 1.45%. On December 1, 2021, the Authority drew down on the PTC Tranche for $382,000. The Authority drew on the ATC Tranche for $297,000 on June 1, 2023. Principal and interest payments are made semi-annually on January 1 and July 1 beginning January 1, 2022 through the maturity date of January 1, 2039. Amortization commences on July 1 or January 1 after the draw date. The final maturity on the remaining Tranches is as follows: (a) ATC Tranche final maturity occurs on July 1, 2042; and (b) Resiliency Tranche final maturity occurs on July 1, 2054. Principal and interest payments will be made on January 1 and July 1. In June 2023, the Authority defeased a portion of its 2021 Bond Anticipation Notes. The BANs were issued in 2021 as a temporary use of funds in a favorable interest rate market and were economically defeased by the draw on the ATC Tranche of the RRIF loan. Of the original $325,000 BAN, there remains $24,830 in principal due on May 1, 2025, the balance of the BAN will be paid from proceeds previously established escrow account.

To take advantage of market conditions, the Authority executed two additional defeasances in FY2023. On August 23, 2022, the Authority defeased $228,425 Senior Sales Tax Bonds consisting of: $85,955 Senior Sales Tax Bonds, 2014 Series A, $40,560 Senior Sales Tax Bonds, 2015 Series A and $101,910 Senior Sales Tax Bonds, 2015 Series B.

At the same time, the Authority executed a redemption of callable $94,200 Senior Sales Tax Bonds, Variable Rate Demand Obligations, 2018 Series A consisting of: $47,100 Senior Sales Tax Bonds, Variable Rate Demand Obligations, 2018 Subseries A-1 and $47,100 Senior Sales Tax Bonds, 2018 Subseries A-2.

On March 7, 2023, the Authority defeased $50,195 of federally taxable Subordinated Sales Tax Bonds, 2021 Series B for present value savings.

The Authority issued Commercial Paper Sales Tax Bond Anticipation Notes (CP) in the amount of $215,000 and paid down $130,000 during FY2023. As of June 30, 2023, $125,000 in commercial paper was outstanding. The Authority has authorization to issue up to $400,000 in commercial paper.

The Authority also has an unused, unsecured letter of credit in the amount of $50,000 with UBS.

(Dollars in thousands)

The Authority's bonds payable outstanding at June 30, 2023 are as follows:

	Final fiscal year of maturity	Interest rates	Outstanding principal as of June 30, 2023	Due in fiscal year 2024
General transportation system bonds:				
2000 Series Variable Rate Demand Obligation dated March 10, 2000[(a)]	2030	Variable	$ 99,470	$ 11,495
			99,470	11,495
Revenue bonds:				
2003 Series C Senior Sales Tax dated February 3, 2004	2024	5.25 %	9,060	9,060
2004 Series B Senior Sales Tax dated March 9, 2004	2031	4.00%–5.25%	42,300	16,595
2004 Series C Senior Sales Tax dated December 22, 2004	2025	4.00%-5.50%	26,575	8,685
2005 Series A Senior Sales Tax dated March 24, 2005	2032	5.00 %	656,010	88,515
2005 Series B Senior Sales Tax dated December 21, 2005	2030	4.10%–5.50%	91,475	9,890
2006 Series A Senior Sales Tax dated March 2, 2006	2035	5.25 %	224,890	—
2006 Series B Senior Sales Tax dated December 5, 2006	2024	5.25 %	24,905	24,905
2006 Series A Assessment dated September 13, 2006[(b)]	2036	Variable and Fixed	147,170	—
2007 Series A-1 Senior Sales Tax dated May 24, 2007	2035	5.25 %	205,675	19,480
2008 Series B Senior Sales Tax dated April 30, 2008	2034	3.75%–5.25%	25,950	1,810

(Dollars in thousands)

	Final fiscal year of maturity	Interest rates		Outstanding principal as of June 30, 2023		Due in fiscal year 2024
2014 Series A Senior Sales Tax dated April 23, 2014	2045	3.00%-5.00%	$	74,985	$	6,640
2015 Series A Senior Sales Tax dated October 14, 2015	2046	2.00%–5.00%		133,200		4,285
2015 Series B Senior Sales Tax dated October 14, 2015	2036	4.00%–5.00%		67,185		—
2016 Series A Senior Sales Tax dated July 19,2016	2034	Zero coupon		245,530		21,820
2016 Series A Assessment dated July 19,2016	2029	2.00%–5.00%		115,665		—
2017 Series A-1 Subordinated Sales Tax dated October 12, 2017	2047	5.00 %		99,170		—
2017 Series A-2 Subordinated Sales Tax dated October 12, 2017	2047	5.00 %		130,930		—
2020 Series B-1 Subordinated Sales Tax dated June 11, 2020	2051	5.00 %		331,325		4,865
2021 Series A-1 Subordinated Sales Tax dated April 15, 2021	2052	2.50%–5.00%		539,440		—
2021 Series A-2 Subordinated Sales Tax dated April 15, 2021	2043	5.00%		56,265		—
2021 Bond Anticipation Notes (BANs) dated August 10, 2021	2025	4.00%		24,830		—
2022 Series A-1 Assessment dated April 13, 2022	2042	3.125%–5.00%		197,970		17,530
2022 Series A-2 Assessment dated April 13, 2022	2053	5.00%		97,200		—
2022A Sales Tax Principal [c] dated April 13, 2022	2053	Variable		95,000		—
2023 Series A-1 Sales Sales Tax dated March 29, 2023	2053	4.0% - 5.25%		509,655		—
2023 Series A-2 Senior Sales Tax dated March 29, 2023	2038	5.00%		108,010		—
			$	4,280,370	$	234,080

(Dollars in thousands)

	Final fiscal year of maturity	Interest rates	Outstanding principal as of June 30, 2023	Due in fiscal year 2024
Railroad Rehabilitation and Improvement Financing (RRIF)				
RRIF ATC Tranche	2042	1.29%	$ 297,000	$ —
RRIF PTC Tranche	2039	1.15%	350,545	20,081
			647,545	20,081
Revenue Build America Bonds (BABs)				
2009 Series C Senior Sales Tax dated October 29, 2009	2040	4.75%–5.569%	194,300	8,510
2010 Series D Senior Sales Tax dated December 8, 2010	2041	4.546%–5.869%	200,000	—
			394,300	8,510
Commercial Paper	2023		125,000	125,000
Total outstanding principal			5,546,685	$ 399,166
Unamortized capital appreciation			(31,845)	
Total bonds and note payable			5,514,840	
Less current maturities			399,166	
Plus unamortized bond premiums/discounts, net			477,784	
Total long-term bonds and note payable			$ 5,593,458	

(a) The bonds were issued as variable rate demand obligations (VRDO) and their variable interest is based on a weekly reset.

(b) The 2024 maturity in the amount of $19,260 and $5,000 of the 2025 maturity amount is variable debt based on the MUNI CPI rate, plus 123 basis points.

(c) These bonds were issued as VRDOs and their variable interest is based on a weekly reset.

(Dollars in thousands)

The contractual principal and interest maturities of the bonds and notes payable as of June 30, 2023 are as follows[1]:

	Notes from Direct Borrowings[1]		All Other Debt		Total	
	Principal	**Interest**	**Principal**	**Interest**	**Principal**	**Interest**
Fiscal year(s):						
2024	$ 20,081	$ 6,209	$ 379,085	$ 200,913	$ 399,166	$ 207,122
2025	34,609	7,537	245,295	200,858	279,904	208,395
2026	35,039	7,107	267,750	188,711	302,789	195,818
2027	35,463	6,683	237,690	176,440	273,153	183,122
2028	35,901	6,244	238,735	164,619	274,636	170,864
2029-2033	186,087	24,642	1,149,948	664,974	1,336,035	689,615
2034-2038	197,648	13,080	791,440	443,362	989,088	456,443
2039-2043	102,717	2,768	625,230	272,379	727,947	275,147
2044-2048	—	—	439,515	156,019	439,515	156,019
2049-2053	—	—	453,585	60,187	453,585	60,187
2054	—	—	39,022	931	39,022	931
Total	$ 647,545	$ 74,270	$ 4,867,295	$ 2,529,393	$ 5,514,840	$ 2,603,663

A summary roll-forward of bonds payable for the year ended June 30, 2023 is as follows:

	2023					
	Balance 2022	**Bonds issued**	**Principal payments**	**Refunded/ redeemed principal**	**Capital appreciation bond accretion**	**Balance 2023**
GTS	$ 110,210	$ —	$ (10,740)	$ —	$ —	$ 99,470
Revenue	4,441,827	712,665	(237,960)	(672,990)	4,983	4,248,525
RRIFs	370,392	297,000	(19,847)	—	—	647,545
BABs	402,550	—	(8,250)	—	—	394,300
Commercial Paper	40,000	215,000	(130,000)	—	—	125,000
	$ 5,364,979	$ 1,224,665	$ (406,797)	$ (672,990)	$ 4,983	$ 5,514,840

[1] Notes from direct borrowings consists of the Railroad Rehabilitation and Improvement Financing (“RRIF”) notes.

(Dollars in thousands)

A roll-forward of the 2016A capital appreciation bonds for the year ended June 30, 2023 is as follows:

	Balance at June 30, 2022	Appreciation	Principal Payments	Balance at June 30, 2023
Zero coupon bond	$ 266,835	$ —	$ (21,305)	$ 245,530
Accretion	(36,828)	4,983	—	(31,845)
Balance, net	$ 230,007	$ 4,983	$ (21,305)	$ 213,685

The following funds, excluding the fair value of any forward delivery agreements, are included in restricted assets at June 30, 2023 in connection with the Authority's revenue bond trust agreements and bond resolutions:

	Assessment bonds	Sales tax bonds	Outstanding balance
Debt service	$ 63,608	$ 388,016	$ 451,624
Debt service reserve	—	155,426	155,426
	$ 63,608	$ 543,442	$ 607,050

The minimum required balances in the debt service reserve funds at June 30, 2023 was $132,191 for the Sales Tax Series Bonds. The Authority no longer has a minimum required balance for the Assessment Bonds as this requirement was removed as part of the April 13, 2022 Series A Assessment Bond issuance. The Authority has complied with its financial bond covenants by maintaining sufficient cash and investments in the debt service reserve funds.

(Dollars in thousands)

Debt Refundings

In June 2023, the Authority made a draw on the ATC Tranche of its Railroad Rehabilitation & Improvement Financing (RRIF) Loan with USDOT to defease $300,170 of the Subordinated Sales Tax Bond Anticipation Notes, Series 2021 (Sustainability Bonds) outstanding.

In March 2023, the Authority used funds on hand to defease $50,195 of the Subordinated Sales Tax Bonds, 2021 Series B (Federally Taxable) outstanding.

In August 2022, the Authority used funds on hand to defease $85,955 of the Senior Sales Tax Bonds, 2014 Series A, $40,560 of the Senior Sales Tax Bonds, 2015 Series A and $101,910 of the Senior Sales Tax Bonds, 2015 Series B outstanding.

In April 2022, the Authority used funds on hand to defease $14,170 of the Assessment Bonds, 2006 Series A and $3,595 of the Assessment Bonds, 2016 Series A outstanding.In the year ended June 30, 2023, the Authority defeased $578,790 debt by placing the proceeds of new bonds, loan proceeds or available cash in an irrevocable trust fund to provide for future debt service payments on the old debt.

As of June 30, 2023, there are $596,555 of defeased par currently outstanding in irrevocable trust funds.

Description	Redemption dates	Redemption price	Outstanding Principal amount
2006 Series A Assessment Bonds	2026 and 2027	100	$ 14,170
2014 Series A Senior Sales Tax Bonds	2024	100	85,955
2015 Series A Senior Sales Tax Bonds	2025	100	40,560
2015 Series B Senior Sales Tax Bonds	2025	100	101,910
2016 Series A Assessment Bonds	2026	100	3,595
2021 Subordinated Sales Tax Bonds	2025-2027 and 2031-2034	100	50,195
2021 Bond Anticipation Notes (BANs)	2025	100	300,170
Total			$ 596,555

(b) Standby Purchase Agreements

The GTS 2000 Series Bonds issued March 10, 2000 were issued as a Variable Rate Demand Obligation. The Authority's obligation to purchase these Bonds in the event of a failed remarketing is secured by a Standby Bond Purchase Agreement (SBPA) with TD Bank, which will expire in March 2030.

The 2018 Subseries A-1 and 2018 Subseries A-2 Series Bonds were issued on July 2, 2018 as Variable Rate Demand Obligations. The Authority's obligation to purchase these Bonds in the event of a failed remarketing is secured by a Standby Bond Purchase Agreement (SBPA) with State Street Bank and Trust Company, a nationally recognized financial institution. These bonds were defeased in August 2022.

(Dollars in thousands)

The 2022 Sales Tax Bonds were issued on September 28, 2022 as Variable Rate Demand Obligations. The Authority's obligation to purchase these Bonds in the event of a failed remarketing is secured by a Standby Bond Purchase Agreement (SBPA) with TD Bank, which will expire in September 2027.

(9) Commitments and Contingencies

(a) Capital Investment Plan (CIP)

The Authority's continuing CIP for mass transportation has projects in service and in various stages of approval, planning, and implementation. The following tables show, as of June 30, 2023, capital project costs approved, expenditures against these projects, and estimated costs to complete these projects, as well as the major funding sources:

Funding souce	Approved project cost	Expenditures through 30-Jun-23	Unexpended costs
Federal grants	$ 11,162,207	$ 10,616,533	$ 545,674
State and local sources	6,963,490	6,039,499	923,991
Authority bonds	12,559,822	9,316,122	3,243,700
Total	$ 30,685,519	$ 25,972,154	$ 4,713,365

The terms of the federal grant contracts require the Authority to, in part, utilize the equipment and facilities for the purposes specified in the grant agreement, maintain these items in operation for a specified time period, which normally approximates the useful life of the equipment, and comply with the Equal Employment Opportunity and Affirmative Action programs required by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users. Failure to comply with these terms may jeopardize future funding and require the Authority to refund a portion of these grants to the Federal Transit Administration. In management's opinion, no events have occurred that would result in the termination of these grants or require the refund of a significant amount of funds received under these grants.

Other cases and claims include disputes with contractors and others arising out of the Authority's CIP. In the opinion of the general counsel to the Authority, amounts reasonably expected to be paid by the Authority would be within the scope of grant funds and other funds available to the Authority for the respective projects.

The Authority has entered into several long-term contracts to purchase coaches, locomotives, buses, rapid transit cars, and other transportation equipment. Unexpended amounts under these contracts total approximately $862,098 at June 30, 2023.

(b) Automated Fare Collection Commitment

In March 2018, the Authority entered into an agreement with a third-party System Implementor (SI) to design, implement, integrate, test, finance, operate, maintain and manage a new automated fare collection (AFC 2.0) system (the Project). The agreement hereafter referred to as the Project Agreement was amended and restated in June 2020. The Project Agreement's initial term is approximately 13.5 years and can be extended at the Authority's discretion for up to two additional five-year periods.

Upon satisfaction of the Project Agreements terms and conditions, the Authority is obligated to make milestone payments to the SI totaling approximately $219,000 through the Full Service Commencement Date, as defined. Thereafter, for the remainder of the initial term, the Authority is obligated to make availability payments to the SI for capital (APC) and availability payments for operations (APO) totaling approximately $368.7 million and $270.9 million, respectively. In addition to the APC and APO, the Authority is also required to make availability payments to the SI for transactions (APT) as defined in the Project Agreement.

The Project is expected to become operational in fiscal 2024 with the initial term expiring in fiscal 2034. The Authority will capitalize all milestone and APC payments and will expense all APO and APT payments when made. As of June 30, 2023, the Authority has made five (5) milestone payments with an aggregate value of $18.5 million.

(c) Legal and Other

The Authority is involved in numerous lawsuits, claims, and grievances arising in the normal course of business, including claims for personal injury and personnel practices, property damage, and disputes over eminent domain proceedings. In the opinion of the general counsel to the Authority, payments of claims by the Authority, for amounts not covered by insurance, in the aggregate, are not expected to have a material adverse effect on the Authority's financial position.

The Authority participates in a number of federally assisted grant programs. These programs are subject to financial and compliance audits by the grantors or their representatives. In the opinion of the Authority's management, liabilities resulting from such disallowed expenditures, if any, will not be material to the accompanying financial statements.

(10) Risk Management

The Authority is exposed to various risks of loss related to general liability, property and casualty, workers' compensation, and unemployment.

Buildings are fully insured to the extent that losses exceed the self-insured retention of $25,000 effective March 1, 2022. The Authority is self-insured for workers' compensation, unemployment claims and vehicle damage and loss. Beginning July 1, 2015, the Authority provided all its employees with health insurance through the health insurance plans administered by the Group Insurance Commission of the Commonwealth (GIC) and was no longer self-insured. Under GIC, the Authority pays 75% to 80% of all healthcare premiums for active employees within the health insurance plans administered by GIC; and pays 80% to 90% of all health premiums for retired employees within the health insurance plans administered by the GIC.

(Dollars in thousands)

Supplemental postemployment benefits for certain retirees are provided by the Authority as well. See Note 12.

The Authority self-funds a $7,500 per occurrence deductible for general liability and $10,000 per occurrence for Bus Liability. The Authority has a program of excess public liability insurance to provide for $92,500 of layered coverage on a per occurrence and annual aggregate basis. In the opinion of the general counsel to the Authority, payments of claims by the Authority for amounts not covered by insurance, in the aggregate, are not expected to have a material adverse effect on the Authority's financial position.

Payments for claims and judgments and workers' compensation were $2,844 and $15,260 respectively for the year ended June 30, 2023.

The requirements of GASB, Statements require that liabilities for self-insured claims be reported if it is probable that a loss has been incurred and the amount can be reasonably estimated. These losses include an estimate of claims that have been incurred but not reported. The Authority reserves such liabilities, which consist of workers' compensation, and injuries and damages (legal claims) as accrued expenses as of June 30, 2023 and 2022. Changes in the self-insurance liabilities in FY23 were as follows:

	2023	2022
Liability, beginning of year	$ 140,032	$ 136,693
Provisions for claims	21,377	20,882
Payments	(18,104)	(17,543)
Liability, end of year	$ 143,305	$ 140,032

(11) Commuter Railroad

Under the Enabling Act, the Authority may enter into agreements with private transportation companies, railroads, and other concerns providing for joint or cooperative operation of any mass transportation facility and for operation and use of any mass transportation facility and equipment for the account of the Authority.

In February, 2014 the Authority and Keolis Commuter Services (Keolis) entered into an operating agreement (the "Base Agreement") effective July 1, 2014 to provide commuter railroad service over the Authority's rail lines for a period of eight (8) years, through June 30, 2022. On July 1, 2020, the Authority entered into an Amendment and Extension of the Commuter Operating Agreement to extend the term to June 30, 2026. The Authority has the option to terminate the Agreement on June 30, 2025 provided that notice is given to Keolis by December 31, 2023. The Authority has a fixed annual payment schedule with a total contract amount of approximately $1,207,000 over the remaining three years of the agreement, of which approximately $1,121,000 relates to services established within the Base Agreement. The payments for all commuter rail costs incurred by Keolis totaled $534,839 in FY23. Under review of GASB Statement No. 94, the agreement with Keolis is identified as a PPP, however, MBTA must continue to account for these assets as capital assets, at their carrying value as of the commencement of the PPP term, and apply the related guidance for depreciation and impairment, as applicable. The identified PPP does not have terms in the underlying agreements requiring installment payments. The transferor does not receive any payments from the operators, rather they are paying the operators for services provided. No accounting adjustment is required for year ended June 30, 2023 under GASB Statement No. 94.

(Dollars in thousands)

(12) Pension Plans

The MBTA Retirement Fund, a single employer defined benefit plan, covers all employees except the MBTA police, who are covered separately, and certain executives who elect coverage under an alternate plan. The MBTA Retirement Fund and the MBTA Police Association Retirement Plan, a single employer defined benefit plan, both provide retirement, disability, and death benefits to their members. The MBTA Retirement Fund issues separately audited financial statements that may be obtained by writing to One Washington Mall, Boston, Massachusetts 02108, or by calling (617) 316-3800. The MBTA Police Association Retirement Plan also issues separately audited financial statements that may be obtained by writing to the Board of Directors, MBTA Police Association Retirement Plan, P.O. Box 35, Grafton, Massachusetts 01519.

The MBTA Deferred Compensation Plan, a single employer defined benefit plan, provides supplemental pension benefits for certain Local 453, Steelworkers, Transit Employee Administrators (collective bargaining units) and executive employees after retirement. Employees may participate in both the MBTA Retirement Fund and the MBTA Deferred Compensation Plan. The MBTA Deferred Compensation Plan is unfunded and does not issue separately audited financial statements.

Employees Covered by Benefit Terms

At December 31, 2022, the following employees were covered by the benefit terms:

	MBTA Retirement Fund	MBTA Police Association Retirement Fund	MBTA Deferred Compensation Plan
Retired employees or beneficiaries receiving benefits	6,783	140	903
Active employees	5,555	204	675
Inactive employees entitled to, but not yet receiving benefits	307	72	—
Total	12,645	416	1,578

(Dollars in thousands)

(a) Funding Policy and Annual Pension Cost

The pension agreements between the Authority and Local 589, dated July 1, 2014 for the MBTA Retirement Fund and the MBTA Police Association dated June 30, 2003, designates that the board of trustees of each retirement plan establish the contribution requirements.

The historical MBTA Retirement Fund contribution rates are as follows:

		Contribution percentage		
Valuation date	**Effective date**	**Employer**	**Employee**	**Total**
12/31/2020	7/1/2021	26.66 %	9.12 %	35.78 %
12/31/2021	7/1/2022	25.82	9.05	34.87
12/31/2022	7/1/2023	25.95	9.10	35.05

Actual contributions made were in accordance with these contribution requirements.

The historical MBTA Police Association Retirement Plan contribution rates are as follows:

		Contribution percentage		
Valuation date	**Effective date**	**Employer**	**Employee**	**Total**
12/31/2020	7/1/2020	14.09 %	8.38 %	22.47 %
12/31/2021	7/1/2022	13.74	8.71	22.45
12/31/2022	7/1/2023	13.73	8.35	22.08

Contributions are not required to be made for the MBTA Deferred Compensation Plan. Rather, benefit payments are made on a “pay as you go” basis.

(i) Net Pension Liability

The Authority’s June 30, 2023 net pension liability for each retirement plan was measured as of December 31, 2022, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of December 31, 2022.

(Dollars in thousands)

Actuarial assumptions. The total pension liability for the MBTA Retirement Fund and the MBTA Police Association Plan as of December 31, 2022 was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Pension	Fund	Plan
Actuarial assumptions		
Inflation rate	2.75 %	2.72 %
Salary increase	2.75 - 14.0	3.25
Investment rate of return *	7.25	7.00

* Net of pension plan investment expense, including inflation

For the December 31, 2022 MBTA Retirement Fund actuarial valuation, mortality rates were as follows:

Active and Deferred Mortality: The PRI-2012 Amount Weighted Blue Collar Mortality Tables with fully generational projection using Scale MP-2021

Retired Mortality: 101.1% of the PRI-2012 Amount Weighted Blue Collar Mortality Tables with fully generational projection using Scale MP-2021

Surviving Spouse Mortality: 98.3% of the PRI-2012 Amount Weighted Blue Collar Mortality Tables with fully generational projection using Scale MP-2021

Disabled Mortality: The PRI-2012 Amount Weighted Blue Collar Mortality Tables with fully generational projection using Scale MP-2021

Among pre-retirement deaths, 7.5% are assumed to qualify for accidental death benefits

An experience study of the MBTA Retirement Fund was conducted based on the period from January 1, 2018 to December 31, 2022.

For the December 31, 2022 MBTA Police Association Plan actuarial valuation, mortality rates were as follows: for non-disabled participants mortality is based on the PubS-2010 (Below Median) Amount-Weighted Safety Mortality Tables with generational projection using Scale MP-2019, except for current and future beneficiaries of deceased participants. For current and future beneficiaries of deceased participants, mortality is based on the Pub-2010 (Below Median) Amount-Weighted Contingent Survivor table with generational projection using Scale MP-2019. The PubS-2010 Amount-Weighted Safety Disabled Retiree table with generational projection using Scale MP-2019 is used for the period after disability retirement. Among pre-retirement deaths, 25% are assumed to qualify for accidental death benefits.

An experience study of the MBTA Police Association Retirement Plan was conducted based on the period from January 1, 2014 to December 31, 2019.

(Dollars in thousands)

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 target allocation as of December 31, 2022 are summarized in the following tables:

	MBTA Retirement Fund	
	Target allocation	Long term expected real rate of return
Equity	43 %	7.61 %
Fixed income	23	2.12
Alternative Investments	32	6.92
Cash	2	0.51
Total	100 %	

	MBTA Police Association Plan	
	Target allocation	Long term expected real rate of return
Equity	39 %	7.51 %
Fixed income	45	1.74
Alternatives	16	14.32
Total	100 %	

Actuarial assumptions. The total pension liability for the MBTA Deferred Compensation Plan as of December 31, 2022 was determined using same actuarial assumptions for inflation, salary increases and mortality as described above for members covered by the MBTA Retirement Fund and the MBTA Police Association Retirement Plan.

(Dollars in thousands)

Discount rate: The discount rate used to measure the total pension liability was 7.25% for the MBTA Retirement Fund (no change from prior year) while the discount rate for the MBTA Police Association Retirement Plan was 7.00% (no change from prior year). The projection of cash flows used to determine the discount rate assumed that employee contributions will continue to be made in accordance with the current funding policy. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current MBTA Retirement Fund and MBTA Police Association Retirement Plan members. The discount rate used to measure the total pension liability for the MBTA Deferred Compensation Plan was 7.25% (no change from prior year). Since this plan is unfunded, the assumed discount rate has been determined in accordance with the method prescribed by GASB No. 67 and is based on the S&P Municipal Bond 20 Year Grade Rate Index, whose yield to maturity was 4.31% as of December 31, 2022.

(ii) Change in the Net Pension Liability – MBTA Retirement Fund

	Increase (decrease)		
	Total pension liability (a)	**Plan fiduciary net position (b)**	**Net pension liability (a)-(b)**
Balances at December 31, 2021	$ 3,101,704	$ 1,939,942	$ 1,161,762
Changes for the year:			
Service cost	55,163		55,163
Interest	220,641		220,641
Difference between expected and actual experience	66,600		66,600
Changes in assumptions	(45,499)		(45,499)
Contributions – employer		129,973	(129,973)
Contributions – employee		45,511	(45,511)
Net investment Income		(257,255)	257,255
Benefit payments, including refund of employee contributions	(231,138)	(231,138)	
Administrative expense		(4,485)	4,485
Net changes	65,767	(317,394)	383,161
Balances at December 31, 2022	$ 3,167,471	$ 1,622,548	$ 1,544,923

(Dollars in thousands)

(iii) Change in the Net Pension Liability – MBTA Police Association Retirement Plan

	Increase (decrease)		
	Total pension liability (a)	Plan fiduciary net position (b)	Net pension liability (a)-(b)
Balances at December 31, 2021	$ 118,288	$ 108,267	$ 10,021
Changes for the year:			
Service cost	2,071		2,071
Interest	8,186		8,186
Contributions – employer		2,320	(2,320)
Contributions – employee		1,410	(1,410)
Net investment Income		(14,873)	14,873
Difference between expected and actual experience	7,250		7,250
Benefit payments, including refund of employee contributions	(6,938)	(6,938)	
Administrative expense		(213)	213
Net changes	10,569	(18,294)	28,863
Balances at December 31, 2022	$ 128,857	$ 89,973	$ 38,884

(iv) Change in the Total Pension Liability – MBTA Deferred Compensation Plan

	liability
Balances at December 31, 2021	$ 114,837
Changes for the year:	
Service cost	3,470
Interest	2,591
Differences between expected and actual experience	7,670
Changes in assumptions	(23,095)
Benefit payments, including refund of employee contributions	(6,385)
Net changes	(15,749)
Balances at December 31, 2022	$ 99,088

(Dollars in thousands)

Sensitivity of Net Pension Liability to Changes in the Rate

The following presents the net pension liability of the Authority, calculated using the discount rates disclosed as well as what the Authority's net pension liability would be if it were calculated using a discount rate that is one percentage point lower or one percentage point higher than the current rate as of December 31, 2022.

	Current rate	1% Decrease of current rate	Current discount rate	1% Increase of current rate
MBTA Retirement Fund	7.25 %	$ 1,862,112	$ 1,544,923	$ 1,274,657
MBTA Police Assoc. Retirement Plan	7.00 %	55,010	38,884	25,429
MBTA Deferred Compensation	4.31 %	109,633	99,088	90,154

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

For the year ended June 30, 2023 the Authority recognized pension expense of $154,335; $7,163; and $7,277; for the MBTA Retirement Fund, the MBTA Police Association Retirement Plan and the MBTA Deferred Compensation Plan, respectively.

(Dollars in thousands)

At June 30, 2023, the Authority reported deferred outflows of resources and deferred inflows of resources related to pension amounts from the following sources:

	MBTA Retirement Fund	MBTA Police Assoc. Retirement Plan	MBTA Deferred Compensation Plan	Total
Deferred outflows of resources:				
Changes in assumptions	$ —	$ —	$ (1,436)	$ (1,436)
Contributions subsequent to the measurement date	65,424	1,829	3,321	70,574
Differences between expected and actual experience	54,368	8,054	6,971	69,393
Net difference between projected and actual earnings	177,461	13,909	—	191,370
Total deferred outflows of resources	297,253	23,792	8,856	329,901
Deferred inflows of resources:				
Differences between expected and actual experience	(2,938)	(1,050)	—	(3,988)
Changes in assumptions	(38,433)	(1,978)	(15,397)	(55,808)
Total deferred inflows of resources	(41,371)	(3,028)	(15,397)	(59,796)
Less contributions subsequent to the measurement date	(65,424)	(1,829)	(3,321)	(70,574)
Net deferred outflows and and inflows of resources exclusive of employer specific deferrals	$ 190,458	$ 18,935	$ (9,862)	$ 199,531

Amounts reported as deferred outflows of resources related to pensions resulting from the Authority contributions subsequent to the measurement date will be recognized as a reduction in the net pension liability in the subsequent year.

(Dollars in thousands)

Other amounts reported as deferred outflows and inflows of resources related to pensions will be recognized/(amortized) into pension expense as follows:

	MBTA Retirement Fund	MBTA Police Assoc. Retirement Plan	MBTA Deferred Compensation Plan
Year ended June 30:			
2023	$ 7,818	$ 3,452	$ (4,720)
2024	37,475	4,684	(5,142)
2025	61,793	4,816	—
2026	83,372	5,983	—
2027	—	—	—
Totals	$ 190,458	$ 18,935	$ (9,862)

Payable to the Pension Plans

At June 30, 2023 the Authority reported a payable for $5,301 for the outstanding amount of contributions to pension plans required for the year ended June 30, 2023.

(b) The MBTA Deferred Compensation Savings Plan

The Authority provides a defined contribution retirement plan for nonunion and certain grandfathered union management not participating in the MBTA Retirement Fund. Authority employee trustees administer the plan and recommend benefit amendments that require approval from the Authority's general manager. The plan requires members to contribute 8.8% of total covered payroll for the years ended June 30, 2023, with the Authority contributing 8.0%. The Plan had 675 members as of June 30, 2023. The cost of the Plan was $3,429 for the year ended June 30, 2023. Member contributions vest to plan members immediately, while contributions made by the Authority vest to plan members as follows: 50% after three years, 75% after four years, and 100% after five years of credited service. The total asset balances of $64,340 as of June 30, 2023, were held by a third-party administrator who allocates the assets of fully funded member account balance at the direction of individual member discretion.

(13) Other Postemployment Benefits (OPEB)

In addition to providing the pension benefits described, the Authority provides OPEB for eligible retired employees under two arrangements through the Postretirement Medical and Life Insurance Plan, which is a single employer defined benefit plan. The Authority participates in the Commonwealth of Massachusetts' Group Insurance Commission (GIC) plan which provides health and other benefits to both Medicare and Non-Medicare eligible retirees. The Authority also provides eligible retirees with additional nonduplicative supplemental life insurance and Medicare Part B premium benefits through the Transit Employees Health and Welfare Fund. The benefits, benefit levels, employee contributions, and employer contributions are governed by the Authority, collective bargaining agreements, and state statute. Plan membership as of July 1, 2022 is as follows:

(Dollars in thousands)

Retirees or beneficiaries currently receiving benefits payments	6,271
Active employees	6,205
	12,476

Through the GIC, 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 can receive these benefits.

(a) Funding Policy

Retiree contributions to the GIC plan vary based on the date of retirement. Pre- and post-65 retirees with a retirement date on or before July 1, 1994 contribute 10% to the cost of the health plan. Retirees who retired after July 1, 1994 and filed for retirement prior to August 10, 2009 contribute 15% of the cost of the health plan. Retirees who retired after July 1, 1994 and filed for retirement on or after August 10, 2009 but on or before October 1, 2009 with a retirement date on or before January 31, 2010 contribute 15% of the cost of the health plan. Retirees who file for retirement after October 1, 2009 contribute 20% of the cost of the health plan. The Authority contributes the remainder of the health plan costs on a pay-as-you-go basis.

(b) Total OPEB Liability

The Authority’s total OPEB liability of $1,878,657 was measured as of June 30, 2022 and was determined by an actuarial valuation as of June 30, 2022.

Actuarial assumptions and other inputs: The total OPEB liability as of June 30, 2022 was determined using the same actuarial assumptions for inflation, salary increases and mortality as described in Note 12(a)(i) for members covered by the MBTA Retirement Fund and the MBTA Police Association Retirement Plan. Other Actuarial assumptions used to determine total OPEB liability as of June 30, 2022 are as follows:

Discount Rate	4.09% based on the S&P Municipal Bond 20 Year High Grade Rate Index
Healthcare cost trend rate	Pre-Medicare and Medicare, 8.0% decreasing to an ultimate trend rate of 4.5% Medicare Part B, 5.0% remaining constant

Discount rate: The discount rate used to measure the total OPEB liability was 4.09% (previously 2.18%). Since OPEB is unfunded, the assumed discount rate has been determined in accordance with the method prescribed by GASB No. 74 and is based on the S&P Municipal Bond 20 Year Grade Rate Index, whose yield to maturity was 4.09% as of June 30, 2022.

(i) Change in Total OPEB Liability

		Increase (decrease)
Balances at June 30, 2021	$	2,411,715
Changes for the year:		
Service cost		96,206
Interest		54,027
Differences between expected and actual experience		164,491
Changes of assumptions		(788,192)
Benefit payments, including refund of employee contributions		(59,590)
Net changes		(533,058)
Balances at June 30, 2022	$	1,878,657

Sensitivity of the net OPEB liability to changes in the discount rate. The following presents the total OPEB liability of the Authority, as well as what the Authority's total OPEB liability would be if it were calculated using a discount rate that is 1-percentage-point lower (3.09%) or 1-percentage-point higher 5.09%) than the current discount rate (in thousands):

		1% Decrease		Discount rate		1% Increase
Total OPEB liability	$	2,176,472	$	1,878,657	$	1,639,633

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

		1% Decrease		Discount rate		1% Increase
Total OPEB liability	$	1,626,208	$	1,878,657	$	2,196,975

(Dollars in thousands)

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

For the year ended June 30, 2023 the Authority recognized OPEB expense of ($16,079). At June 30, 2023, the Authority reported deferred outflows of resources and deferred inflows of resources related to OPEB amounts from the following sources:

Deferred outflows of resources:		
Change in assumptions	$	176,187
Difference between expected and actual experience		134,746
Contributions subsequent to the measurement date		60,820
Total deferred outflows of resources		371,753
Deferred inflows of resources:		
Difference between expected and actual experience		(210,144)
Changes in assumptions		(681,025)
Total deferred inflows of resources		(891,169)
Net deferred outflows and inflows of resources		(519,416)
Less contributions subsequent to the measurement date		(60,820)
Net deferred outflows and inflows of resources exclusive of employer specific deferrals	$	(580,236)

Amounts reported as deferred outflows of resources related to OPEB resulting from the Authority contributions subsequent to the measurement date will be recognized as a reduction in the total OPEB liability in the year ending June 30, 2023.

Other amounts reported as deferred outflows and inflows of resources related to OPEB will be recognized/(amortized) into OPEB expense/(benefit) as follows:

Year ended June 30:		
2024	$	(159,481)
2025		(142,937)
2026		(118,916)
2027		(99,126)
2028		(59,776)
Totals	$	(580,236)

For the year ended June 30, 2023 the Authority recognized OPEB expense of $60,417 for Medicare, non-Medicare eligible retirees, additional nonduplicative supplemental life insurance and Medicare part B premium for eligible retirees, respectively.

(c) Transit Employees Health and Welfare Trust

In fiscal 2015 the Authority and Local 589 (Local Union 589, Amalgamated Transit union, AFL-CIO and CLC) as a result of an arbitration award established a separate trust fund, the Transit Employee Health and Welfare Trust Fund (the Trust Fund), to address legislative changes impacting healthcare and other coverage (medical, dental, vision and life insurance) for Local 589 active and retired employees (collectively, the employees). The Authority and the employees are required to make contributions to the Trust Fund based on the rates agreed to in the Collective Bargaining Agreement. Contributions, once received by the Trust Fund, must be used exclusively "to provide benefits to eligible participants and/or appropriate administrative or operating expenditures." The Trust allows participation of any Authority employee or retiree and provides pre and post retiree benefits to those individuals through the Trust Fund. As such the Trust Fund does not meet the definition of a qualifying trust under the requirements of GASB 75 and its assets cannot be used to reduce the Authority's total OPEB liability.

In fiscal 2023, the Authority made contributions to the Trust Fund of $22,502. The liability for the Authority's obligation for the benefits administered by this Trust Fund is recorded as part of the Authority's total OPEB liability. All operating activities of the Trust Fund have been excluded from the accompanying financial statements.

(14) SUBSEQUENT EVENTS

On December 1, 2023, the Authority drew down on the ATC Tranche for $59,000.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
(A Component Unit of the Commonwealth of Massachusetts)

Required Supplementary Information – MBTA Retirement Fund

Schedule of Changes in Net Pension Liability and Related Ratios

June 30, 2023

(Dollars in thousands)
(Unaudited)

		December 31 (measurement date)								
Total Pension Liability		**2022**	**2021**	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**
Service cost	$	55,163	55,417	52,010	47,943	46,101	31,850	31,897	37,305	34,501
Interest		220,641	217,508	214,773	214,112	207,498	204,780	195,768	191,392	184,667
Differences between expected and actual experience		66,600	1,812	(7,346)	(3,179)	11,599	44,627	90,068	31,325	48,560
Change in assumptions		(45,499)	(3,390)		69,299	43,927	128,688		(6,762)	—
Benefit payments, including refunds of employee contributions		(231,138)	(224,768)	(225,423)	(223,865)	(221,710)	(212,815)	(197,562)	(188,906)	(184,130)
Net change in total pension liability		65,767	46,579	34,014	104,310	87,415	197,130	120,171	64,354	83,598
Total pension liability – beginning		3,101,704	3,055,125	3,021,111	2,916,801	2,829,386	2,632,256	2,512,085	2,447,731	2,364,133
Total pension liability – ending		3,167,471	3,101,704	3,055,125	3,021,111	2,916,801	2,829,386	2,632,256	2,512,085	2,447,731
Plan Fiduciary Net Position										
Contributions – employer		129,973	123,494	116,286	103,264	92,013	83,383	77,239	73,374	70,603
Contributions – employees		45,511	43,224	40,774	36,366	32,606	29,775	27,792	26,511	25,318
Net investment income		(257,255)	232,418	228,671	253,731	(52,073)	221,691	86,782	4,712	73,543
Benefit payments, including refunds of employee contributions		(231,138)	(224,768)	(225,423)	(223,865)	(221,710)	(212,815)	(197,562)	(188,906)	(184,130)
Administrative expenses		(4,485)	(4,369)	(4,510)	(5,046)	(4,317)	(4,464)	(6,493)	(5,808)	(4,053)
Net change in plan fiduciary net position		(317,394)	169,999	155,798	164,450	(153,481)	117,570	(12,242)	(90,117)	(18,719)
Plan fiduciary net position – beginning		1,939,942	1,769,943	1,614,145	1,449,695	1,603,176	1,485,606	1,497,848	1,587,965	1,606,684
Plan fiduciary net position – ending		1,622,548	1,939,942	1,769,943	1,614,145	1,449,695	1,603,176	1,485,606	1,497,848	1,587,965
Authority's net pension liability	$	1,544,923	1,161,762	1,285,182	1,406,966	1,467,106	1,226,210	1,146,650	1,014,237	859,766
Plan fiduciary net position as a percentage of the total pension liability		51.2 %	62.5 %	57.9 %	53.4 %	49.7 %	56.7 %	56.4 %	59.6 %	64.9 %
Covered payroll	$	496,468	458,857	460,922	436,828	425,862	428,830	446,741	443,238	417,957
Net pension liability as a percentage of covered payroll		311.2 %	253.2 %	278.8 %	322.1 %	344.5 %	285.9 %	256.7 %	228.8 %	205.7 %

Notes: Information provided for Required Supplementary Information will be provided for 10 years as it becomes available.

See accompanying independent auditors' report.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

(A Component Unit of the Commonwealth of Massachusetts)

Required Supplementary Information – MBTA Police Retirement Plan

Schedule of Changes in Net Pension Liability and Related Ratios

June 30, 2023

(Dollars in thousands)
(Unaudited)

		December 31 (measurement date)								
Total Pension Liability		**2022**	**2021**	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**
Service cost	$	2,071	2,172	2,147	2,074	2,019	2,042	2,177	1,879	1,772
Interest		8,186	7,927	7,774	7,525	7,137	6,958	6,538	6,490	6,173
Differences between expected and actual experience		7,250	397	(1,595)	4,118		(1,769)	1,646	(5,058)	(60)
Change in assumptions					(4,616)	1,346			784	
Benefit payments, including refunds of employee contributions		(6,938)	(6,440)	(5,908)	(5,343)	(4,675)	(4,636)	(3,850)	(3,542)	(3,417)
Net change in total pension liability		10,569	4,056	2,418	3,758	5,827	2,595	6,511	553	4,468
Total pension liability – beginning		118,288	114,232	111,815	108,057	102,230	99,635	93,124	92,571	88,103
Total pension liability – ending		128,857	118,288	114,233	111,815	108,057	102,230	99,635	93,124	92,571
Plan Fiduciary Net Position										
Contributions – employer		2,320	2,490	2,554	3,309	2,727	2,492	2,550	2,512	2,280
Contributions – employees		1,410	1,538	1,594	2,013	1,702	1,504	1,570	1,513	1,337
Net investment income		(14,873)	11,050	7,208	11,815	(3,316)	9,371	5,313	403	3,966
Other			123							
Benefit payments, including refunds of employee contributions		(6,938)	(6,440)	(5,908)	(5,343)	(4,675)	(4,636)	(3,850)	(3,542)	(3,417)
Administrative expenses		(213)	(201)	(284)	(262)	(242)	(180)	(184)	(138)	(122)
Net change in plan fiduciary net position		(18,294)	8,560	5,164	11,532	(3,804)	8,551	5,399	748	4,044
Plan fiduciary net position – beginning		108,267	99,707	94,544	83,012	86,816	78,265	72,866	72,118	68,074
Plan fiduciary net position – ending		89,973	108,267	99,708	94,544	83,012	86,816	78,265	72,866	72,118
Authority's net pension liability	$	38,884	10,021	14,525	17,271	25,045	15,414	21,370	20,258	20,453
Plan fiduciary net position as a percentage of the total pension liability		69.8 %	91.5 %	87.3 %	84.6 %	76.8 %	84.9 %	78.6 %	78.2 %	77.9 %
Covered payroll	$	16,892	17,657	17,850	18,207	16,736	16,123	16,289	16,478	18,207
Net pension liability as a percentage of covered payroll		230.2 %	56.8 %	81.4 %	94.9 %	149.6 %	95.6 %	131.2 %	122.9 %	112.3 %

Notes: Information provided for Required Supplementary Information will be provided for 10 years as it becomes available.

See accompanying independent auditors' report.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
(A Component Unit of the Commonwealth of Massachusetts)

Required Supplementary Information – MBTA Deferred Compensation Plan

Schedule of Changes in Total Pension Liability and Related Ratios

June 30, 2023

(Dollars in thousands)
(Unaudited)

	December 31 (measurement date)								
Total Pension Liability	**2022**	**2021**	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**
Service cost	$ 3,470	3,523	2,767	2,417	2,099	2,039	2,035	1,382	1,715
Interest	2,591	2,210	3,140	3,352	2,887	3,142	2,687	2,615	2,592
Differences between expected and actual experience	7,670	5,572	2,604	672	2,155	2,206	5,423	4,482	2,767
Change in assumptions	(23,095)	(4,307)	15,784	3,777	(578)	5,122	(4,681)	1,260	
Other changes		(577)						(195)	
Benefit payments, including refunds of employee contributions	(6,385)	(6,306)	(6,249)	(6,358)	(5,940)	(5,889)	(5,679)	(5,648)	(5,517)
Net change in total pension liability	(15,749)	115	18,046	3,860	623	6,620	(215)	3,896	1,557
Authority's total pension liability – beginning	114,837	114,722	96,676	92,816	92,193	85,573	85,788	81,892	80,335
Authority's total pension liability – ending	$ 99,088	114,837	114,722	96,676	92,816	92,193	85,573	85,788	81,892
Covered-employee payroll	$ 79,426	66,252	70,206	65,207	61,986	56,848	60,454	56,540	56,042
Total pension liability as a percentage of covered employee payroll	124.8 %	173.3 %	163.4 %	148.3 %	149.7 %	162.2 %	141.6 %	151.7 %	146.1 %

Notes: Information provided for Required Supplementary Information will be provided for 10 years as it becomes available.
The Deferred Compensation Plan has no assets accumulated in a trust for purposes of making future pension payments.

See accompanying independent auditors' report.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
(A Component Unit of the Commonwealth of Massachusetts)

Required Supplementary Information – MBTA Retirement Fund

Schedule of Pension Contributions

June 30, 2023

(Dollars in thousands)
(Unaudited)

	December 31 (measurement date)								
	2022	**2021**	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**
Actuarially determined contribution	$ 126,389	123,494	116,286	103,264	92,013	83,383	77,239	73,359	77,594
Contributions in relation to the actuarially determined contribution	129,973	123,494	116,286	103,264	92,013	83,383	77,239	73,374	70,603
Contribution deficiency (excess)	$ (3,584)							(15)	6,991
Covered employee payroll	$ 496,468	458,857	460,922	436,828	425,862	428,830	446,741	443,238	417,957
Contributions as a percentage of covered employee payroll	26.2 %	26.9 %	25.2 %	23.6 %	21.6 %	19.4 %	17.3 %	16.6 %	16.9 %

Notes: Information provided for Required Supplementary Information will be provided for 10 years as it becomes available.

See accompanying independent auditors' report

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
(A Component Unit of the Commonwealth of Massachusetts)

Required Supplementary Information – MBTA Police Retirement Plan

Schedule of Pension Contributions

June 30, 2023

(Dollars in thousands)
(Unaudited)

	December 31 (measurement date)								
	2022	**2021**	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**
Actuarially determined contribution	$ 2,320	2,457	2,554	3,309	2,727	2,492	2,550	2,512	2,279
Contributions in relation to the actuarially determined contribution	2,320	2,490	2,554	3,309	2,727	2,492	2,550	2,512	2,279
Contribution deficiency (excess)	$	(33)							
Covered employee payroll	$ 16,892	17,657	17,850	18,207	16,736	16,123	16,289	16,478	18,207
Contributions as a percentage of covered employee payroll	13.7 %	14.1 %	14.3 %	18.2 %	16.3 %	15.5 %	15.7 %	15.2 %	12.5 %

Notes: Information provided for Required Supplementary Information will be provided for 10 years as it becomes available.

See accompanying independent auditors' report.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
(A Component Unit of the Commonwealth of Massachusetts)

Required Supplementary Information – MBTA OPEB Plan

Schedule of Changes in Total OPEB Liability and Related Ratios

June 30, 2023

(Dollars in thousands)
(Unaudited)

		June 30 (measurement date)					
Total OPEB Liability		**2022**	**2021**	**2020**	**2019**	**2018**	**2017**
Service cost	$	96,206	86,445	82,707	87,346	71,286	82,886
Interest		54,027	58,350	66,510	74,941	70,435	63,600
Difference between expected and actual experience		164,491	(32,287)	(216,297)	(304,320)	(98,131)	
Change in assumptions		(788,192)	221,061	(69,802)	75,199	265,990	(171,163)
Benefit payments, including refunds of employee contributions		(59,590)	(57,685)	(56,488)	(62,397)	(59,917)	(60,630)
Net change in total OPEB liability		(533,058)	275,884	(193,370)	(129,231)	249,663	(85,307)
Total OPEB liability – beginning		2,411,715	2,135,831	2,329,201	2,458,432	2,208,769	2,294,076
Total OPEB liability – ending	$	1,878,657	2,411,715	2,135,831	2,329,201	2,458,432	2,208,769
Covered-employee payroll	$	513,359	476,514	473,597	461,393	462,807	460,328
Total OPEB liability as a percentage of covered employee payroll		366.0 %	506.1 %	451.0 %	504.8 %	531.2 %	479.8 %

Notes: Information provided for Required Supplementary Information will be provided for 10 years as it becomes available.

See accompanying independent auditors' report.