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

Financial Statements, Required Supplementary Information and Supplementary Information

June 30, 2018

(With Independent Auditors' Report Thereon)

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

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KPMG LLP
Two Financial Center
60 South Street
Boston, MA 02111

Independent Auditors' Report

Fiscal Management and Control Board
Massachusetts Bay Transportation Authority:

Report on the Financial Statements

We have audited the accompanying financial statements of the Massachusetts Bay Transportation Authority, a component unit of the Massachusetts Department of Transportation, as of and for the year ended June 30, 2018, and the related notes to the financial statements, which collectively comprise the Massachusetts Bay Transportation Authority's (the Authority) basic financial statements for the year then ended as listed in the table of contents.

Management's Responsibility for the Financial Statements

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

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Massachusetts Bay Transportation Authority as of June 30, 2018, and the changes in its financial position and its cash flows for the year then ended, in accordance with U.S. generally accepted accounting principles.

Emphasis of Matter

Adoption of New Accounting Pronouncement

As discussed in Note 2(p) to the financial statements, effective July 1, 2017, the Authority adopted Governmental Accounting Standards Board (GASB) Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

U.S. generally accepted accounting principles require that the management's discussion and analysis and required supplementary information – Pension and OPEB Plans as listed in the accompanying table of contents (collectively, the required supplementary information) be presented to supplement the basic financial statements. Such information, 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 required supplementary information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Authority's basic financial statements. The Supplementary Information – Metropolitan Boston Transit Parking Corporation Schedule of Debt Service Coverage Schedule listed in the accompanying table of contents is presented for purposes of additional analysis and is not a required part of the basic financial statements.

The Supplementary Information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Supplementary Information is fairly stated in all material respects in relation to the basic financial statements as a whole.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated October 5, 2018 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.

KPMG LLP

Boston, Massachusetts
October 5, 2018

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 introduction to and an overview and analysis of the basic financial statements of the Authority for the fiscal year ended June 30, 2018 (FY18) with selected comparative information for the fiscal year ended June 30, 2017 (FY17). 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.

The Massachusetts Bay Transportation Authority (the Authority) was originally 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 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.

The Authority is governed and its corporate powers exercised by the board of directors (the Board of Directors or Board) of the Massachusetts Department of Transportation (MassDOT). However, as a result of the Control Board Act, Chapter 46 of the Acts of 2015 of the Commonwealth, effective July 17, 2015, the MBTA Fiscal Management and Control Board (FMCB or Control Board) was created within MassDOT and reports to the Secretary of Transportation (the Secretary). The Control Board is afforded all powers, responsibilities and obligations relative to the MBTA that are vested in the Board, with the exception of authorizing the issuance of debt, which remains the responsibility of the Board.

The FMCB consists of five members appointed by the Governor. Three members shall be members of the Board, one shall have experience in transportation finance and one shall have experience in mass transit operation. The FMCB was extended an additional two years prior to June 30, 2018, as the FMCB recommended to the Governor that such two-year period is in the best interest of the public and necessary to achieve operational stability and to establish performance metrics for the Authority. On May 25, 2017, the Governor accepted the FMCB's recommendation to extend its governance by two years as allowed under the authorizing statute. By extending the term, the Authority will maintain momentum toward improving service and investment for riders.

As part of its Fiscal 2000 annual appropriations act, Chapter 127 of the Acts of 1999 of the Commonwealth, as amended (Chapter 127) or the "Forward Funding Legislation", the Commonwealth repealed and restated the Prior Act effective July 1, 2000. The Prior Act as restated by Section 151 of Chapter 127, together with Section 35T of Chapter 10 of Massachusetts General Laws, also enacted as part of Chapter 127, as amended, are collectively referred to herein as the "Enabling Act".

Under 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.

Since 2006, 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 nonfare 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 deteriorating.

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 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.

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 – 2018 to 2017

- The Authority's net position at June 30, 2018 was $2,013,488, a decrease from the prior year of $706,549 primarily due to the restatement of the 2017 net position resulting from the implementation of GASB No. 75 – a $1,115,072 reduction offset by an increase in net position of $408,523 resulting from increases in operating (transportation and other) revenues of $34,003, sales tax, contract assistance and local assessment revenues of $47,554 and other nonoperating revenue of $76,466.

(Amounts in thousands)

- Total bonds and notes payable outstanding at June 30, 2018 and 2017 were $5,728,840 and $5,563,850, respectively. During fiscal 2018, the Authority, issued Subordinated Sales Tax Series Bond Anticipation Notes, Series 2017(Sustainability Bonds) in the amount of $271,095 and Subordinated Sales Tax Series Bond Anticipation Notes, Series 2017 Series A-1 (Sustainability Bonds) in the amount of $99,170 and Series A-2 in the amount of $130,930.
- During the year, the Authority's operating revenues, principally transportation revenues, totaled $764,421 as compared to operating revenues of $730,418 in fiscal year 2017, an increase of $34,003.
- Total nonoperating revenues and capital grants, which consists of sales tax receipts and federal and state operating grants, increased by $114,351 from $1,898,096 in FY17 to $2,012,447 in FY18. The increase was primarily due to an increase in intergovernmental revenues including dedicated sales tax revenue, contract assistance and local assessments of $47,554 offset by a decrease in capital grants and contributions of $18,180. The increase in nonoperating revenue was also due to an increase in other nonoperating income of $76,466. Interest expense increased slightly (an increase of $9,539) to $243,722 from FY2017.
- Total operating expenses of $2,124,623 in FY18 decreased $39,952 as compared with FY17. The decrease in operating expenses from FY17 to FY18 is attributable to a decrease in wages and benefits of $76,306 and depreciation expenses of $18,079 offset by an increase in materials/supplies/services of $33,761.
- As of June 30, 2018, the Authority's capital assets had a depreciated value of $9,931,906, made up of $17,304,019 in historical cost offset by $7,372,113 in accumulated depreciation. During FY18 the Authority spent $855,895 for additions to the system.

Condensed Financial Information

Condensed financial information as of and for the years ended June 30, 2018 and 2017 is as follows:

Condensed Statements of Net Position:

	June 30	
	2018	**2017**
Current and other assets and deferred outflows	$ 2,233,739	1,855,658
Capital assets, net	9,931,906	9,482,186
Total assets and deferred outflows	$ 12,165,645	11,337,844
Current liabilities	$ 882,596	949,630
Long-term liabilities and deferred inflows	9,269,561	7,668,177
Total liabilities and deferred inflows	$ 10,152,157	8,617,807

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
(A Component Unit of the Massachusetts Department of Transportation)
Management's Discussion and Analysis (Unaudited)
June 30, 2018
(Amounts in thousands)

		June 30	
		2018	**2017**
Net position:			
Net investment in capital assets	$	5,384,327	4,713,587
Restricted		20,024	19,711
Unrestricted		(3,390,863)	(2,013,261)
Total net position	$	2,013,488	2,720,037

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

		June 30	
		2018	**2017**
Operating revenue:			
Revenue from transportation	$	661,055	659,003
Other		103,366	71,415
Total operating revenues		764,421	730,418
Operating expenses:			
Transportation services		920,857	997,163
Other operating expenses		816,345	761,912
Total operating expenses, excluding depreciation		1,737,202	1,759,075
Depreciation and amortization		387,421	405,500
Total operating expenses, including depreciation		2,124,623	2,164,575
Operating loss		(1,360,202)	(1,434,157)
Net nonoperating revenue		1,275,219	1,119,234
Loss before capital grants		(84,983)	(314,923)
Capital grants and contributions		493,506	511,686
Increase in net position		408,523	196,763
Beginning of year net position*		1,604,965	2,523,274
End of year net position	$	2,013,488	2,720,037

*The beginning net position for fiscal 2018 was restated as a result of the implementation of GASB No. 75.

(Amounts in thousands)

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, 2018 and 2017.

Financial Highlights for the fiscal years ended June 30, 2018 and 2017

- The Authority ended the years June 30, 2018 and 2017 with a net position of $2,013,488 and $1,604,965 (restated) of which $5,384,327 and $4,713,587 represented the Authority's net investment in capital assets, and $(3,390,863) and $(2,013,261) was unrestricted, respectively. The net position increased by $408,523 and $196,763 in the FY18 and FY17, respectively. The increase in net position in FY18 is attributable to increased operating and nonoperating revenue growth and cost control management of controllable expenses offset by a decrease in capital grants.
- The Authority incurred an operating loss for the year ended June 30, 2018 of $1,360,202. 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, 2018 the Authority recognized $1,006,807 of sales tax revenues from the Commonwealth of Massachusetts. Local assessments on cities and towns within the Authority's service area accounted for $166,481 in nonoperating revenue in FY18. Increasing the operating loss was an increase in interest expense, net of investment and other income of $99,967 in FY18.
- The Authority ended the years June 30, 2018 and 2017 with cash and investments of $1,406,250 and $1,157,830, respectively. Only $256,492 and $338,403 of this amount at June 30, 2018 and 2017, 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 increased by $284,404 in FY18. The increase in FY18 is due principally to increases in sales tax and local assessments that exceeded the cash used for operations and capital improvements.

Operating Revenue

The following charts show the major sources of operating revenue for the fiscal years ended June 30, 2018 and 2017:

		2018	Percent of total		2017	Percent of total
Bus	$	117,594	15 %	$	110,791	15 %
Subway		313,738	41		311,870	43
Commuter rail		212,503	28		218,523	30
Other passenger		16,860	2		17,819	2
Other operating		103,726	14		71,415	10
	$	764,421	100 %	$	730,418	100 %

(Amounts in thousands)

Passenger revenues make up 86% and 90% of the total operating revenues in FY18 and FY17, 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 nonfare revenue opportunities.

Operating Expenses

The following charts show the major sources of operating expenses for the fiscal years ended June 30, 2018, and 2017:

	2018	Percent of total	2017	Percent of total
Wages and benefits	$ 920,857	43 %	$ 997,163	45 %
Commuter rail	518,329	25	514,626	24
Depreciation and amortization	387,421	18	405,500	19
Material and supplies	266,658	13	232,897	11
Other operating	31,358	1	14,389	1
	$ 2,124,623	100 %	$ 2,164,575	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 continues to be a significant operating expense. Unlike the other expenses listed, depreciation 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, 2018 and 2017 amounted to $9,931,906 and $9,482,186, (net of accumulated depreciation and amortization), respectively. This investment in capital assets includes land, construction work in progress, ways and structures and buildings and equipment.

Net capital assets consisted of the following for the fiscal years ended June 30, 2018 and 2017:

	2018	2017
Land	$ 390,431	359,946
Construction work in progress	2,040,030	1,812,287
Ways and structures	6,153,407	6,219,732
Buildings and equipment	1,348,038	1,090,221
	$ 9,931,906	9,482,186

(Amounts in thousands)

The Authority primarily acquires its assets with the proceeds from federal capital grants and revenue bonds. Station improvements, new equipment purchases and system expansion are all part of the Authority's capital investment program. Commitments on approved capital asset construction projects were $875,573 and $811,176, for the years ended June 30, 2018 and 2017, respectively. Commitments to invest in new transportation equipment were $199,841 and $393,965, as of June 30, 2018 and 2017, respectively.

Debt

Bonds and notes outstanding for the fiscal years ended June 30, 2018 and 2017:

		2018	2017
General Transportation System bonds	$	179,520	196,835
Revenue bonds		4,436,177	4,128,973
MBTPC bonds		304,585	304,585
Commercial Paper		—	167,300
BAB's		428,300	428,300
	$	5,348,582	5,225,993

The total amount for these categories of debt increased by $122,589 for the fiscal year ended June 30, 2018.

In fiscal 2018, the Authority issued Subordinated Sales Tax Series Bond Anticipation Notes, Series 2017 (Sustainability Bonds) in the amount of $271,095. Interest payments are made semiannually on January 1 and July 1 through the maturity date of December 1, 2021.

Also in fiscal 2018, the Authority issued Subordinated Sales Tax Series Bond Anticipation Notes, Series 2017 Series A-1 (Sustainability Bonds) in the amount of $99,170 and Series A-2 in the amount of $130,930, respectively. Amortization commences on July 1, 2025. Interest payments are made annually on July 1 until final maturity on July 1, 2046.

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 Administrator or the Chief Financial Officer of the Authority.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

(A Component Unit of the Massachusetts Department of Transportation)

Statement of Net Position

June 30, 2018

(Dollars in thousands)

Assets and Deferred Outflows of Resources		**2018**
Current assets:		
Unrestricted cash and temporary cash investments (note 3)	$	256,492
Restricted cash and temporary cash investments (note 3):		
Bond construction accounts		356,989
Stabilization accounts		20,024
Other cash and temporary investments		36,960
Accounts receivable:		
Commonwealth of Massachusetts		98,752
Federal grants		27,274
Other trade, net		66,190
Materials and supplies		57,583
Prepaid expenses		2,041
Total current assets		922,305
Noncurrent assets:		
Restricted cash and investments accounts (note 3):		
Forward delivery agreements (note 3h)		35,343
Lease deposits		58,470
Bond reserve accounts (note 8)		677,315
Total restricted cash and investments accounts		771,128
Net investment in direct financing lease (note 5)		26,853
Capital assets, at cost (notes 6, 7, and 9):		
Transportation property, being depreciated		14,873,558
Transportation property, not being depreciated		2,430,461
Less accumulated depreciation and amortization		(7,372,113)
Capital assets, net		9,931,906
Total noncurrent assets		10,729,887
Total assets		11,652,192
Deferred outflows of resources:		
Debt refundings		177,886
Derivative related amounts (note 8c)		—
Pension related amounts (note 13)		266,180
OPEB related amounts (note 14)		69,387
Total deferred outflows of resources		513,453
Total assets and deferred outflows of resources	$	12,165,645

See accompanying notes to financial statements.

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

Statement of Net Position

June 30, 2018

(Dollars in thousands)

Liabilities and Deferred Inflows of Resources		**2018**
Current liabilities:		
Current maturities of bonds and notes payable (note 8)	$	338,545
Accounts payable		307,052
Accrued liabilities:		
Payroll and vacation		45,733
Interest		127,310
Injuries and damage claims, workers' compensation claims, and other (note 10)		63,956
Total current liabilities		882,596
Noncurrent liabilities, less current maturities:		
Bonds payable, net (note 8)		5,390,295
Obligations under capital leases (note 6)		58,517
Accrued liabilities (notes 10 and 11)		104,755
Pension liability (note 13)		1,333,817
Other postemployment benefits (note 14)		2,208,769
Liability for derivative instruments (note 8)		220
Unearned revenue		14,104
Total noncurrent liabilities		9,110,477
Total liabilities		9,993,073
Deferred inflows of resources:		
Debt refundings		179
Pension related amounts (note 13)		16,033
OPEB related amounts (note 14)		142,872
Total deferred inflows of resources		159,084
Total liabilities and deferred inflows of resources		10,152,157
Net Position		
Net investment in capital assets		5,384,327
Restricted		20,024
Unrestricted		(3,390,863)
Total net position	$	2,013,488

See accompanying notes to financial statements.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

(A Component Unit of the Massachusetts Department of Transportation)

Statement of Revenue, Expenses, and Changes in Net Position

Year ended June 30, 2018

(Dollars in thousands)

		2018
Operating revenue:		
Revenue from transportation	$	661,055
Other		103,366
Total operating revenue		764,421
Operating expenses:		
Wages and related employee benefits:		
Wages		504,128
Medical and dental insurance		58,256
Other postemployment benefits		97,129
Health and welfare expenditures		12,292
Pensions		203,434
Social security taxes		42,473
Workers' compensation		15,157
Other		1,852
Capitalized costs		(13,864)
Total wages and related employee benefits		920,857
Other operating expenses:		
Depreciation and amortization		387,421
Materials, supplies, and services		266,658
Injuries and damages		23,743
Commuter railroad and local subsidy expenses (note 12)		518,329
Other		7,615
Total other operating expenses		1,203,766
Total operating expenses		2,124,623
Operating loss		(1,360,202)
Nonoperating revenue (expense):		
Dedicated sales tax revenue (note 4)		1,006,807
Contract assistance – Commonwealth of Massachusetts		201,898
Dedicated local assessments (note 4)		166,481
Fair value change in investment derivatives		
Other nonoperating income		116,899
Interest income		26,856
Interest expense		(243,722)
Nonoperating revenue, net		1,275,219
Loss before capital grants and contributions		(84,983)
Capital grants and contributions		493,506
Increase in net position		408,523
Beginning of year, net position		2,720,037
Impact of adoption of GASB No. 75 (Note 2(v))		(1,115,072)
End of year, net position	$	2,013,488

See accompanying notes to financial statements.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

(A Component Unit of the Massachusetts Department of Transportation)

Statement of Cash Flows

Year ended June 30, 2018

(Dollars in thousands)

		2018
Cash flows from operating activities:		
Receipts from transit customers	$	660,437
Receipts from other operations		90,801
Payments to suppliers and vendors		(982,903)
Payments to employees		(557,633)
Net cash used in operating activities		(789,298)
Cash flows from capital and related financing activities:		
Cash (used in) provided by:		
Additions to transportation property		(851,384)
Interest paid		(230,366)
Change in deferred credits/charges		(18,961)
Commercial paper retirements		(167,300)
Payments on debt		(217,105)
Proceeds from capital asset sales		297
Proceeds from bond and note issuances		501,195
Bond construction and reserve account receipts		35,404
Proceeds from bond premiums		74,748
Payments of capital lease activity		(4,628)
Capital grants		486,855
Other		5,118
Net cash used in capital and related financing activities		(386,127)
Cash flows from noncapital and related financing activities:		
Sales tax and local assessment		1,350,832
Net cash provided by noncapital and related financing activities		1,350,832
Cash flows from investing activity:		
Interest and other income		108,997
Net cash provided by investing activity		108,997
Net change		284,404
Cash, temporary cash investments, restricted, and other special accounts, beginning of year		386,061
Cash, temporary cash investments, restricted, and other special accounts, end of year	$	670,465
Adjustments to reconcile operating loss to net cash used in operating activities:		
Operating loss	$	(1,360,202)
Changes not requiring current expenditure of cash:		
Depreciation and amortization		387,421
Increase in pension amounts		104,798
Increase in other postemployment benefits		48,808
Changes in all other working capital accounts except cash, temporary cash investments, and short-term debt		29,877
Net cash used in operating activities	$	(789,298)

See accompanying notes to financial statements.

(1) The Reporting Entity

The Massachusetts Bay Transportation Authority (the Authority or MBTA) was originally 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 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."

The Authority is governed and its corporate powers exercised by the board of directors (the Board of Directors or Board) of the Massachusetts Department of Transportation (MassDOT). However, during its existence, the Fiscal Management Control Board (FMCB) is afforded all the powers, responsibilities, and obligations relative to the Authority that are vested in the Board with the exception of authorizing the issuance of debt, which remains the responsibility of the Board. Furthermore, the General Manager is hired and retained by the Secretary of Transportation (the Secretary), as the FMCB reports to the Secretary.

The Control Board Act is part of the Commonwealth Fiscal Year 2016 budget, Chapter 46 of the Acts of 2015 of the Commonwealth, effective July 17, 2015. The FMCB is within the MassDOT and reports to the Secretary.

In addition, the Control Board may (i) establish separate operating and capital budgets each with clearly designated revenue sources and uses and establish policies and procedures to ensure that no funds are commingled between operating and capital budgets; (ii) establish one-year and five-year operating budgets beginning with Fiscal Year 2018, which are balanced primarily through a combination of internal cost controls and increased own-source revenues and which facilitate the transfer of the majority of MBTA employees from the capital budget to the operating budget; (iii) establish five-year and 20-year capital plans that include a phased program for the complete restoration of the physical assets of the Authority including its vehicle fleet, a plan to address failings within the existing capital program and funding recommendations to meet the region's transit needs; (iv) establish a rigorous performance management system and performance metrics and targets that address, among other things, maximizing of own-source revenues, increasing ridership, reducing absenteeism, addressing vacancies and attrition, improving employee morale, achieving procurement and contracting improvements and improving customer focus and orientation; (v) review any contract for the provision of services entered into by the Authority, including contracts entered into before the establishment of the Control Board, including, but not limited to, commuter rail and paratransit service contracts, and amend those contracts, as necessary, in accordance with their terms; and (vi) establish, increase, or decrease any fare, fee, rate, or charge for any service, license or activity within the scope of the MBTA. The Control Board may: (i) reorganize or consolidate MBTA departments, divisions or entities, in whole or in part, except the Metropolitan Boston Transit Parking Corporation; (ii) establish any new departments, divisions, or entities as it considers necessary; and (iii) transfer the duties, powers, functions and appropriations of a department, division or entity, except the duties, powers, functions and appropriations of the Metropolitan Boston Transit Parking Corporation, to another. Any reorganization or consolidation that affects MassDOT shall be approved by the Board.

The Control Board consists of five members appointed by the Governor. Three members shall be members of the Board, one shall have experience in transportation finance and one shall have experience in mass transit operation. The Control Board term has been extended by the optional two years at the time of creation and will continue until June 30, 2020. On May 25, 2017, the Governor accepted the FMCB's recommendation to extend its governance by two years, and will continue until June 30, 2020, as allowed under the authorizing statute. By extending the term, the Authority will maintain momentum toward improving service and investment for riders. The Governor may not extend the Control Board term beyond June 30, 2020.

Following the dissolution of the Control Board, the MassDOT Board will resume sole governance of the Authority. The Board consists of 11-members. The Secretary of Transportation shall serve ex-officio as Chair and ten other members appointed by the Governor, one of whom shall be a rider, as defined in the Enabling Act; one of whom shall have experience in the field of public or private finance; one of whom shall have experience in transportation planning and policy; one of whom shall have experience in civil engineering; one of whom shall have experience in the field of public or private finance or transportation planning and policy; one of whom shall have municipal government experience in one of the fourteen cities and towns, as defined in the Enabling Act; one of whom shall have municipal government experience in one of the fifty-one cities and towns, as defined in the Enabling Act; one of whom shall have municipal government experience in one of the other served communities, as defined in the Enabling Act; one of whom shall have municipal government experience in a city or town not part of the area constituting the authority, as defined in the Enabling Act; and one of whom shall be a representative of a labor organization selected from a list of three nominees provided by the Massachusetts State Labor Council, AFL-CIO. Four of the members, other than the Chair, shall serve for terms that are coterminous with the Governor; provided, however, that at least three of the coterminous members shall have experience in transportation policy, public finance or civil engineering and at least one of the coterminous members shall be a rider. The six remaining members appointed by the Governor shall serve for terms of four years. No more than six of the eleven directors, except the ex-officio director, shall be members of the same political party.

Under the Enabling Act, the 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.

The Control Board shall appear before and provide updates to the Board not less than once per month.

On May 4, 2011, the Authority approved the establishment of Metropolitan Boston Transit Parking Corporation (MBTPC) a private Massachusetts nonprofit corporation organized under the provisions of Chapter 180 of Massachusetts General Laws, for the limited purpose of taking action necessary to provide for issuance of bonds on behalf of the Authority secured by the revenues from the parking system of the Authority. The MBTPC Systemwide Senior Lien Parking Revenue Bonds, Series 2011 were issued on June 22, 2011. The Authority is the sole member of MBTPC and the Board of Directors consists of three ex officio management employees of the Authority. MBTPC has no employees. MBTPC is authorized under the Systemwide Parking Revenue Bonds Resolution (the General Resolution) to issue debt payable and has assumed certain rights to receive gross revenues from the parking system of the Authority under a Transfer and Disposition Agreement. The obligations of the corporation, the bonds and Transfer and Disposition Agreement are limited obligations, payable solely from the assets of MBTPC, which are pledged under the General Resolution and recourse shall be limited to such assets. Due to its relationship with the Authority, the MBTPC is considered a blended component of the Authority.

In accordance with the requirements of Governmental Accounting Standards Board (GASB), Statements, of the financial statements must present the Authority (the primary government) and its component units. Pursuant to this criterion, no component units, other than the MBTPC, were identified for inclusion in the accompanying financial statements. Additionally, the accompanying financial statements are incorporated into the financial statements of MassDOT, as the Authority is 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: Investments held by the Authority in nonparticipating interest-earning investment contracts and money market investments and participating interest-earning contracts that have a remaining maturity at the time of purchase of one year or less. The Authority also records its investments in state & local government series obligations at cost due to prohibition of transferability of the obligations. The Authority invests in the

Massachusetts Municipal Depository Trust (MMDT), which is an external investment pool and is not SEC-registered. The fund is state-regulated and is valued at amortized cost.

(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.

Lease Deposits – represent investments (Treasury STRIPS and a collateralized investment agreement) held by trustees that will be used to make scheduled equity payments on the Authority's capital leases.

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

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.

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 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, 2018:

	Estimated useful life
Ways and structures	10–60 years
Building and equipment	3–25 years

(h) Construction in Progress

During FY18, $937,255 were 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.

In prior years, the interest on debt used to finance major construction/procurement projects was capitalized by aggregating the interest expense incurred from the date of the debt issuance until the entire drawdown of the proceeds, then offsetting that amount with interest earned over the same period by the invested proceeds. Over the past several years, the Authority substantially completed certain major projects whose interest costs were previously capitalized. These projects included the Automated Fare Collection System, the Greenbush Commuter Rail Line extension, the Silverline Transitway and several vehicle fleet procurements. Accordingly, in FY18, the Authority had no material capitalized interest.

(i) Materials and Supplies

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

(j) 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.

(k) Revenue Recognition

The Authority realizes revenue from a variety of different sources including but not limited to dedicated sales tax revenue, dedicated assessment revenue, state contract assistance appropriated funds, fare revenue, and nonfare 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 rate of the sales tax shall not be reduced below the amount of the Dedicated Sales Tax and the aggregate revenue from 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 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 Authority recognizes the assessments on an accrual basis as nonoperating revenue.

The 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 CTF will also receive the sales tax receipts dedicated for transportation purposes. 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 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 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 $127,000 of an operating transfer from the CTF to the Authority for FY18. In addition, in the Commonwealth made $60,000 available to the Authority in the FY18 capital budget for pay-go capital purposes. These amounts are subject to appropriation by the Commonwealth in future years. The Authority recognizes the state appropriated funds on an accrual basis as nonoperating revenue.

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.

(l) 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. Capital grants of the Authority are reported as revenue rather than contributed capital as required by GASB Statement No. 33, *Accounting and Financial Reporting for Nonexchange Transactions*.

(m) Compensated Absences

The Authority accrues for vested vacation pay when it is earned by employees. The amount of vested vacation pay accrued as of June 30, 2018 was $19,668.

(n) Lease Accounts

Lease accounts represent amounts owed by third parties that are required to be used to pay lease payments under payment undertaking agreements on the Authority's capital leases (note 6).

(o) Pension Plans

The Authority sponsors three defined benefit pension plans, including the MBTA Retirement Fund, the MBTA Police Association Retirement Plan and the MBTA Deferred Compensation Plan. The Authority measures and records a net pension liability on its statement of net position which represents its unfunded pension plans' obligation. For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the MBTA Retirement Fund, the MBTA Police Association Retirement Plan, and the MBTA Deferred Compensation Plan, and additions to/deductions from the Plans' fiduciary net position have been determined on the same basis as they are reported by the 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 are measured at fair value.

(p) Other Postemployment Benefits

Effective July 1, 2017, the Authority adopted GASB Statement No. 75 *"Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions."* This Statement establishes standards for recognizing and measuring liabilities, deferred outflows of resources, deferred inflows of resources, and expense/expenditures. The Statement also identifies the methods and assumptions that are required to be used to project benefit payments, discount projected benefit payments to their actuarial present value, and attribute that present value to periods of employee service. Note disclosure and required supplementary information requirements are also addressed. The adoption of the Statement requires a restatement of the net position of the Authority as of June 30, 2017.

(q) Environmental Remediation Obligations

The Authority recognizes pollution remediation liabilities related to site investigation, planning and design, cleanup, and site monitoring in accordance with the provisions of GASB Statement No. 49, *Accounting and Financial Reporting for Pollution Remediation Obligations*. An operating expense provision and corresponding liability measured at current value using the expected cash flow method and in a range of possible estimated amounts has been recognized for certain pollution remediation obligations. The remediation obligation estimates are subject to change over time due to price fluctuations, changes in technology, changes in potential responsible parties, statutes or regulations, or other factors, which could result in the revision of these estimates (note 11).

(r) Derivatives

As a means of lowering the borrowing costs related to the Authority's variable rate debt, in prior years, the MBTA has entered into various interest rate swap agreements. Derivative instruments are reported as assets or liabilities at fair value on the statement of net position. 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.

(s) Available Unrestricted Resources

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

(t) 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. For June 30, 2018, the Authority has reported deferred outflows related to its derivative instruments, its pension plans, its other postemployment benefit plan and the deferred losses on debt refunding transactions. The deferred inflows are related to the deferred gains on debt refunding transactions, its other postemployment benefit plan and its pension plans.

(u) 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 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.

(v) Restatement of Net Position

As a result of adopting GASB Statement No. 75 *"Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions,"* the net position of the Authority as of July 1, 2017 was restated as follows:

Beginning net position as previously reported	$	2,720,037
Implementation of GASB Statement No. 75		(1,115,072)
Beginning net position as restated	$	1,604,965

(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 Standard and Poor's (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.

(Amounts in thousands)

Additionally, the Authority is authorized to invest in 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. MMDT has a maturity of less than one year and is not rated.

Marketable securities, which consist primarily of U.S. government instruments, are carried at fair value based upon quoted market prices. Nonparticipating interest earning contracts, including certificates of deposit, guaranteed investment contracts, and state and local government series obligations, are carried at cost.

Deposits and investments consisted of the following amounts presented in the accompanying statement of net position at June 30, 2018:

		2018
Restricted:		
Bond construction accounts	$	356,989
Bond reserve accounts		677,315
Stabilization and other accounts		56,984
Lease deposits		58,470
Subtotal		1,149,758
Unrestricted cash and temporary cash investments		256,492
	$	1,406,250

Included in bond reserve, stabilization, and other accounts at June 30, 2018 are investments in Commonwealth debt instruments with a fair value of $44,589.

In March 2016, the Board of the Authority approved the establishment of a Lockbox Capital Maintenance Fund (the Fund) that is to be funded by the increase in fare revenue generated by the fare changes effective July 1, 2016. Resources deposited in the Fund will be used for pay-as-you-go capital improvements to the system. Spending from the Fund for any purpose other than capital improvements requires at least a two-thirds vote of the FMCB. The fund had a balance of $136,019 as of June 30, 2018.

(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, 2018 was $275,649. The bank balance at June 30, 2018 was $279,387. 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, 2018.

(Amounts in thousands)

(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.

The Authority's fixed income investments at June 30, 2018 are presented below. All investments are presented by investment type and maturity.

	2018				
		Investment maturities (in years)			
Investment type	Amount	Less than 1 year	1–3	4–8	More than 8
Money market funds	$ 324,834	324,834	—	—	—
MMDT	394,817	394,817	—	—	—
Guaranteed investment contracts	3,916	—	—	—	3,916
U.S. Treasury STRIPS	58,470	—	—	—	58,470
U.S. Treasury securities	119,755	119,755	—	—	—
U.S. government-sponsored enterprises	99,432	70,734	—	—	28,698
Municipal bonds	44,589	—	—	15,493	29,096
State and Local Government	62,926	—	—	12,180	50,746
International bank notes	21,863	21,863	—	—	—
Investments	$ 1,130,602	932,003	—	27,673	170,926

(c) Credit Ratings

The Authority holds guaranteed investment contracts with a fair value of $3,916 at June 30, 2018. These investments are not rated.

The Authority had $285,740 in U.S. Treasury STRIPS, U.S. Treasury securities, State and local government series and municipal bonds as of June 30, 2018. 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/AA+.

The Authority has $99,432 invested in government-sponsored enterprises as of June 30, 2018. These investments have an implied credit rating of AAaa/AA+ or they have been collateralized to AAA.

The Authority has $394,817 invested in MMDT as of June 30, 2018, a state investment pool managed by Fidelity Investments as agent for the Commonwealth and shareholders of the MMDT. MMDT is unrated.

The Authority also has $346,697 invested in money market funds and international bank notes as of June 30, 2018. These investments are not rated.

(d) Concentration of Credit Risk – Investments

Concentration of credit risk is the risk of loss attributable to the magnitude of the Authority's investment in a single issuer. The issuers where securities at year-end exceeded 5% of the total investments, other than U.S. government obligations and mutual funds, are as follows:

	Credit rating by Moody's/S&P	2018	Percentage of portfolio
Federal National Mortgage Association	Aaa/AA+	$ 66,636	5.9 %

(e) Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. The Authority was not exposed to foreign currency risk as of June 30, 2018.

(f) 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, 2018.

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.

(Amounts in thousands)

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.

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.

(g) Fair Value Measurements

The Authority categorizes its recurring fair value measurements within the fair value hierarchy as of June 30, 2018 as follows:

	2018		
	Fair value	Level 1	Level 2
Investments by fair value level:			
Money market funds	$ 324,834	324,834	—
U.S. Treasury STRIPS	58,470	—	58,470
U.S. Treasury securities	119,755	—	119,755
U.S. government sponsored enterprises	99,432	—	99,432
Municipal bonds	44,589	—	44,589
International bank notes	21,863	—	21,863
	668,943	$ 324,834	344,109

(Amounts in thousands)

	2018		
	Fair value	**Level 1**	**Level 2**
Investments measured at amortized cost:			
MMDT	$ 394,817		
State & Local Government Series	62,926		
Guaranteed investment contracts	3,916		
Total investments	$ 1,130,602		
Interest rate swaps	$ 155	—	156
Forward delivery agreements	35,343	—	35,343

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

Derivative instruments (i.e., interest rate swaps and forward delivery agreements) classified in Level 2 of the fair value hierarchy are valued using a market approach that considers benchmark interest rates.

(h) 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 6.281% 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, 2018, as determined by Standard and Poor's, were from "A" – to "AA".

The investments purchased by the Authority and held in the Funds as of June 30, 2018 have been recorded at fair value. The FDAs qualify as derivatives under GASB Statement No. 53 and have been valued at fair value as of the date of the Statement of Net Position. At June 30, 2018, the fair value of the FDAs represents an asset of $35,343 to the Authority.

(Amounts in thousands)

(4) Pledged Revenues

The Authority has pledged, as security for Sales Tax Series Bonds issued and Assessment Bonds issued, a portion of the Commonwealth sales tax (excluding meals) 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 Program (CIP), and are payable through fiscal year ended June 30, 2046. 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 assessment revenues received in fiscal year 2018 was $1,008,184 and $166,209, respectively, a total of $1,174,398. Total annual debt service (principal and interest) paid during fiscal year 2018 on outstanding Sales Tax Series, Assessment and Prior Obligation Bonds was $435,428, representing 37.5% of pledged revenues.

The MBTPC pledge of dedicated parking receipts of the parking system of the Authority remains in place until all bonds outstanding are retired and paid. MBTPC began operations on June 22, 2011 and total annual debt service commenced on July 1, 2011. The debt service requirement in fiscal year 2018 was $15,373, which represents 34.9% of $44,021 revenue in the fiscal year 2018.

Total principal and interest remaining on Sales Tax Series Bonds, Assessment Bonds, Prior Obligation Bonds, and MBTPC Bonds outstanding as of June 30, 2018 are $8,035,006.

(5) Net Investment in Direct Financing Lease

The Authority entered into a direct financing 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 tenth anniversary of the lease, June 6, 2022, and continue for a 30 year period. The lessee had the right within five years following the effective date to prepay the then outstanding balance of the annual base rent, without penalty, but did not exercise that right.

The following lists the components of the net investment in direct financing lease as of June 30, 2018:

		2018
Total minimum lease payments receivable	$	68,981
Less unearned income		(42,128)
Net investment in direct financing lease	$	26,853

(Amounts in thousands)

(6) Lease Obligations

(a) Capital Lease Arrangements

Transportation property and facilities under capital leases are summarized in the capital assets note 7.

In fiscal 2006, the Authority entered in a Sale - in/Lease – out (SILO) transaction involving 80 commuter rail cars. The agreement provides for the lease of rolling stock for a period of 11 years for 48 cars and 17 years for the remaining 32 cars. 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. As of June 30, 2018, the outstanding SILO lease liability was $58,470. The liability for all of the Authority’s leases changed in 2018 as follows:

Outstanding balance – June 30, 2017	$	63,098
Change in lease balance		(4,581)
Outstanding balance – June 30, 2018	$	58,517

(b) Operating Leases

As of June 30, 2018, the Authority leased approximately 37,000 square feet of office space and equipment within a property in Somerville, Massachusetts. This lease requires minimum lease payments of $802 and $687 in fiscal years 2019 and 2020, respectively. The lease terminates as of June 30, 2020.

In 2017, the Authority entered into a 99-year lease for space at South Station and will receive $1,000 per year plus contractual increases over the life of the lease.

(Amounts in thousands)

(7) Capital Assets

A summary rollforward of capital assets at June 30, 2018 are as follows:

	Beginning balance June 30, 2017	Increases	Decreases	Ending balance June 30, 2018
Capital assets not being depreciated:				
Land	$ 390,728	—	297	390,431
Construction work in progress	1,812,289	937,255	709,514	2,040,030
Total capital assets not being depreciated	2,203,017	937,255	709,811	2,430,461
Capital assets being depreciated:				
Ways and structures	10,954,988	142,359	—	11,097,347
Buildings and equipment	3,084,237	485,795	11,040	3,558,992
Buildings and equipment included in capital lease	234,150	—	16,931	217,219
Total capital assets being depreciated	14,273,375	628,154	27,971	14,873,558
Less accumulated depreciation for:				
Ways and structures	4,681,856	262,084	—	4,943,940
Buildings and equipment	2,143,306	137,450	11,040	2,269,716
Buildings and equipment included in capital lease	169,044	2,129	12,716	158,457
Total	6,994,206	401,663	23,756	7,372,113
Other capital assets, net	7,279,169	226,491	4,215	7,501,445
Capital assets, net	$ 9,482,186	1,163,746	714,026	9,931,906

(8) Long-Term Debt

(a) Bonds Payable

The Enabling Act authorizes the Authority to issue general obligation debt, revenue, or other debt secured by a pledge or conveyance of all or a portion of revenues, receipts, or other assets or funds of the Authority beginning July 1, 2000.

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, 2018, Prior Obligations in the amount of $179,520, are outstanding.

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.

The Authority issued three series of Subordinated Senior Sales Tax bonds during fiscal year 2018 for the purpose of funding capital projects and redeeming commercial paper as follows.

On October 12, 2017, the Authority issued Subordinated Sales Tax Series Bond Anticipation Notes, Series 2017 (Sustainability Bonds) in the amount of $271,095. Interest payments are made annually on July 1 through the maturity date of December 1, 2021.

On October 12, 2017, the Authority issued Subordinated Sales Tax Bond Anticipation Notes, Series 2017 Series A-1 (Sustainability Bonds) in the amount of $99,170 and Series A-2 in the amount of $130,930, respectively. Amortization commences on July 1, 2025. Interest payments are made annually on July 1 until final maturity on July 1, 2046.

On December 8, 2017, the Authority entered into a TIFIA/RRIF loan with the United States Department Transportation in the amount of $382,000. The Authority can draw on the loan no later than December 31, 2021. All bonds pay 2.63% coupon rates. Amortization commences on July 1 after the draw date and final maturities occur on January 1, 2039. Interest payments are made on January 1 and July 1. There was no outstanding loan balance as of June 30, 2018.

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

The Authority redeemed commercial paper notes (CP) in the amount of $167,300 during fiscal year 2018. CP Sales Tax Series A and Series B were redeemed in their entirety. As of June 30, 2018, no commercial paper was outstanding.

(Amounts in thousands)

The Authority's bonds payable outstanding at June 30, 2018 are as follows:

	Final fiscal year of maturity	Interest rates	Outstanding principal as of June 30, 2018	Due in fiscal year 2019
General transportation system bonds:				
1991 Series A dated November 1, 1991	2021	7.00 %	$ 28,020	8,715
1994 Series A Refunding dated June 1, 1994	2019	7.00 %	985	985
1998 Series C dated November 1, 1998	2022	5.50 %	3,915	945
2000 Series Variable Rate Demand Obligation dated March 10, 2000*	2030	Variable	146,600	8,195
			179,520	18,840
Revenue bonds:				
2003 Series A Senior Sales Tax dated January 29,2003	2021	5.25 %	79,165	16,855
2003 Series C Senior Sales Tax dated February 3, 2004**	2023	Variable	112,630	17,885
2004 Series B Senior Sales Tax dated March 9, 2004	2030	4.00%–5.25%	253,970	39,190
2004 Series C Senior Sales Tax dated December 22, 2004	2024	4.00%–5.50%	114,435	33,800
2005 Series A Senior Sales Tax dated March 24, 2005	2031	5.00 %	735,450	—
2005 Series B Senior Sales Tax dated December 21, 2005	2029	4.10%–5.50%	91,830	65
2006 Series A Senior Sales Tax dated March 2, 2006	2034	5.25 %	238,850	—
2006 Series B Senior Sales Tax dated December 5, 2006	2023	5.25 %	135,990	12,620
2006 Series C Senior Sales Tax dated June 28, 2006	2027	5.50 %	8,410	8,410
2006 Series A Assessment dated September 13, 2006***	2035	Variable	161,340	—
2007 Series A-1 Senior Sales Tax dated May 24, 2007	2035	5.25 %	205,675	—
2008 Series B Senior Sales Tax dated April 30, 2008	2034	3.75%–5.25%	33,810	1,435
2008 Series A Assessment dated November 13, 2008	2035	4.37%–5.25%	16,330	16,330

(Amounts in thousands)

	Final fiscal year of maturity	Interest rates	Outstanding principal as of June 30, 2018	Due in fiscal year 2019
2009 Series B Senior Sales Tax dated February 26, 2009	2019	3.00%–5.00%	$ 20,135	20,135
2009 Series D Senior Sales Tax dated October 29, 2009	2020	3.00%–5.00%	14,445	7,045
2010 Series A Senior Sales Tax dated February 17, 2010****	2031	Variable	80,255	80,255
2010 Series B Senior Sales Tax dated April 6, 2010	2036	4.00%–5.00%	69,595	1,535
2010 Series C Senior Sales Tax dated December 8, 2010	2021	5.00 %	63,450	17,000
2012 Series A Assessment dated June 21, 2012	2042	4.00%–5.00%	391,125	20,690
2014 Series A Senior Sales Tax dated April 23, 2014	2045	3.00%–5.00%	189,850	5,305
2015 Series A Senior Sales Tax dated October 14, 2015	2046	2.00%–5.00%	177,855	—
2015 Series B Senior Sales Tax dated October 14, 2015	2036	4.00%–5.00%	180,550	—
2016 Series A Senior Sales Tax dated July 19,2016	2035	Zero Coupon	288,195	—
2016 Series A Assessment dated July 19,2016	2029	2.00%–5.00%	119,260	—
2017 Series A Senior Sales Tax dated March 7, 2017*****	2027	Variable	211,800	21,150
2017 Series A-1 Subordinated Sales Tax dated October 12, 2017	2046	5.00%	99,170	—
2017 Series A-2 Subordinated Sales Tax dated October 12, 2017	2046	5.00%	130,930	—
2017 Bond Anticipation Notes Subordinated Sales Tax dated October 12, 2017	2022	4.00%	271,095	—
			4,495,595	319,705
Metropolitan Boston Transit Parking (MBTPC) Bonds:				
2011 Series A MBTPC dated June 22, 2011	2042	4.00%–5.25%	304,585	—
			304,585	—

(Amounts in thousands)

	Final fiscal year of maturity	Interest rates		Outstanding principal as of June 30, 2018		Due in fiscal year 2019
Revenue Build America (BABs) Bonds:						
2009 Series C Senior Sales Tax dated October 29, 2009	2040	4.75%–5.569%		218,300		—
2010 Series D Senior Sales Tax dated December 8, 2010	2041	4.546%–5.869%		210,000		—
				428,300		—
Total bond and notes payable				5,408,000	$	338,545
Unamortized capital appreciation				(59,418)		
Total long-term				5,348,582		
Less current maturities				(338,545)		
Plus unamortized bond premiums/discounts, net				380,258		
Total long-term bonds payable			$	5,390,295		

* The bonds were issued as variable rate demand obligations (VRDO) and bear interest at a variable rate. As of September 28, 2011, the 2000 Series VRDO was split into 2000 Series A 1 VRDO ($94,000) and 2000 Series A 2 VRDO ($94,000). The interest rates as of June 30, 2018 for the 2000 Series A1 are 1.14% and 1.17% for the 2000 Series A2 VRDO.

** The 2020 maturity in the amount of $25,005 is variable rate debt based on the MUNI CPI rate, plus 79 basis points.

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

**** This bond was issued as a windows VRDO and its variable interest is based on the SIFMA rate, plus 9 basis points. As of June 30, 2018 the variable interest is based on the SIFMA rate, plus 30 basis points. The Authority classifies these bonds short term, as it does not have a standby purchase agreement and/or a letter of credit providing liquidity support for the remarketing window. The Authority does not currently anticipate the bond being called.

***** This bond bears interest at a variable rate of 70% of three (3) month LIBOR plus 48 basis points. Due to a margin rate reset as a result of the Tax Cuts and Jobs Act of 2017, the rate increased on January 1, 2018 to 85.1% of three month LIBOR plus 58.3 basis points. The interest rate as of June 30, 2018 was 2.55%. Since this bond is a direct purchase, there is no standby purchase agreement and/or letter of credit providing liquidity support.

(Amounts in thousands)

The contractual principal and interest maturities of the bonds and notes payable as of June 30, 2018 are as follows:

		Principal	Interest
Fiscal year(s):			
2019	$	258,290	236,648
2020		266,155	230,412
2021		278,195	217,410
2022		292,955	204,285
2023		485,055	186,061
2024–2028		1,369,910	743,723
2029–2033		1,199,370	448,749
2034–2038		622,140	245,677
2039–2043		495,525	98,355
2044–2048		140,405	15,686
Total	$	5,408,000	2,627,006

A summary rollforward of bonds payable for the year ended June 30, 2018 is as follows:

		2018					
		Balance 2017	Bonds issued	Principal payments	Refunded/ redeemed principal	Capital appreciation bond accretion	Balance 2018
GTS	$	196,835	—	(17,315)	—	—	179,520
Revenue		4,128,973	501,195	(199,790)	—	5,799	4,436,177
BABs		428,300	—	—	—	—	428,300
Commercial Paper		167,300	—	(167,300)	—	—	—
MBTPC		304,585	—	—	—	—	304,585
	$	5,225,993	501,195	(384,405)	—	5,799	5,348,582

A rollforward of the 2016A capital appreciation bonds for the year ended June 30, 2018 is as follows:

		Due at maturity	Unamortized appreciation	Outstanding balance
June 30, 2017	$	288,195	(65,217)	222,978
Appreciation		—	5,799	5,799
June 30, 2018	$	288,195	(59,418)	228,777

(Amounts in thousands)

The following funds are included in restricted assets at June 30, 2018 in connection with the Authority's revenue bond trust agreements and bond resolutions:

		2018		
		Assessment bonds	**Sales tax bonds**	**MBTPC bonds**
Debt service	$	88,756	347,248	8,259
Debt service reserve		30,037	190,707	12,308
	$	118,793	537,955	20,567

The minimum required balances in the debt service reserve funds at June 30, 2018 were $175,818 for the Sales Tax Series Bonds and $27,860 for the Assessment Bonds. The minimum required balances in the debt service reserve funds at June 30, 2018 for MBTPC Bonds were $12,294. The Authority has complied with its financial bond covenants by maintaining sufficient cash and investments in the debt service reserve funds.

In order to take advantage of low interest rates and easily accessible short term capital markets, the Authority has the ability to issue commercial paper to raise funds in order to meet its capital needs. The Authority has a $250,000 commercial paper program in total of which $150,000 is administered by JP Morgan and $100,000 by Barclays Capital Inc. The Authority's commercial paper program has been assigned short term ratings of P-1 and A-1+ by Moody's and S&P, respectively. The Authority had no commercial paper outstanding as of June 30, 2018.

(b) Debt Refundings

The Authority did not issue any debt to refund any prior bond issues during fiscal year 2018.

In prior years, the Authority defeased in substance several GTS, Sales Tax Series, and Assessment Series Bonds by placing the proceeds of new bonds or available cash in an irrevocable trust fund to provide for future debt service payments on the old debt. Accordingly, the trust account asset and the liability for the defeased bonds are not included in the accompanying financial statements. As of June 30, 2018 the balance $490,520, of all bonds are considered defeased in-substance and are still outstanding.

(c) Derivative Instruments

The Authority has entered into several interest rate swaps. The Authority entered into Swaps in order to: (1) provide lower cost fixed rate financing for its capital needs through synthetic fixed rate structures; (2) lock in long term fixed rate returns on invested assets in its required reserve funds; (3) create synthetic refinancing with cash flow savings realized as the Authority designates; or (4) create a synthetic fixed rate for the purchase of vehicular fuel for fixed periods of time rather than being exposed to unpredictable variations in fuel prices in the spot market. All Swaps for which the Authority received an upfront payment are considered hybrid instruments. The premiums/up-front payments are reported as a borrowing and included in the long term liability unearned revenue on the statements of net position and the Swaps are reported based on the "at the market" rates at the time of execution.

(Amounts in thousands)

(i) Summary of Swap Transactions by Category

Synthetic Fixed Rate Swap Transactions

Derivative item	Type	Objective	Effective date	Notional amount	Term. date	Fixed payable swap rate	Variable receivable swap rate	Fair value at June 30 2018
Cash flow hedges:								
3	Pay – fixed interest rate swap	Hedge changes in cash flows on a portion of the Senior Sales Tax Series 2003 C	February 2004	25,005	2020	4.13	CPI+79 basis points	$ (528)
8	Pay – fixed interest rate swap	Hedge changes in cash flows on the Senior Sales Tax Series 2010 A	December 2001	79,645	2030	2.00	SIFMA	904
								376
Investment derivatives:								
2	Pay – fixed interest rate swap	Originally to hedge changes in cash flows on variable rate debt	December 2001	75,480	2022	2.00	SIFMA	(220)
								(220)
								$ 156

The fair value of the cash flow hedges is recorded as an asset, offset by a deferred inflow of resources, in the accompanying financial statements as these swaps qualify for hedge accounting. As of June 30, 2018, the Authority determined that the investment derivative instrument does not meet the criteria for hedge accounting. Accordingly, the change in fair value of this swap is reported within nonoperating revenue (expense) on the statements of revenue, expenses, and changes in net position.

The fair values of the interest rate swaps were calculated by a third party derivative advisor where each leg of the swap is valued utilizing the present value of expected future cash flows based on the contractual terms of each swap or an "at the market rate" in accordance the requirements of Governmental Accounting Standards Board (GASB), Statements. Expected cash flows are discounted using the U.S. Dollar Swap curve provided by independent third parties such as Bloomberg.

Risk Disclosure

Credit Risk – Because all of the Authority’s Swaps rely upon the performance of the third parties who serve as swap counterparties, the Authority is exposed to credit risk, or the risk that a swap counterparty fails to perform according to its contractual obligations. The appropriate measurement of exposure to this risk at the reporting date is the fair value of the swaps in an asset position, as shown in the columns labeled fair value in the tables above. To mitigate credit risk, the Authority maintains strict credit standards for swap counterparties. All swap counterparties for long-term swaps are rated in the A category by both Moody’s and S&P. To further mitigate credit risk, the Authority’s swap documents require counterparties to post collateral for the Authority’s benefit if they are downgraded below a designated threshold and the fair value of the swap is in favor of the counterparty..

The following represents the credit ratings of the counterparties as of June 30, 2018:

Derivative swap item	Counterparty credit rating Moody’s/S&P
Derivative 2	A3/A-
Derivative 3	A3/BBB+
Derivative 8	A3/A-

Basis Risk – The Authority is exposed to basis risk when the floating rate the Authority receives under the swaps is different from the variable rate on the associated bonds. Should this occur, the expected savings may not be realized. Refer to tables above for basis for swap and bond variable rates and the actual rates in place at year-end.

Termination Risk – The Authority’s swap agreements do not contain any out-of-the-ordinary termination events that would expose it to significant termination risk. In keeping with market standards, the Authority or the counterparty may terminate each swap if the other party fails to perform under the terms of the contract. In addition, the swap documents allow either party to terminate in the event of a significant loss of creditworthiness. If at the time of the termination a swap has a negative value, the Authority would be liable to the counterparty for a payment equal to the fair value of such swap.

Rollover Risk – Rollover risk is the risk that occurs when the term of the swap does not match the term or maturity of the debt associated with the hedge. The Authority is subject to rollover risk for those swaps that hedge its variable rate demand obligations in the event the Authority is not able to remarket those instruments as anticipated.

(Amounts in thousands)

(d) Demand Bonds

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 Barclays Bank PLC, a nationally recognized financial institution. The SBPA was renewed on September 14, 2018 and will expire on September 21, 2022.

(9) Commitments and Contingencies

(a) Capital Investment Program (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, 2018, capital project costs approved, expenditures against these projects, and estimated costs to complete these projects, as well as the major funding sources:

Funding source		Approved project costs	Expenditures through June 30, 2018	Unexpended costs
Federal grants	$	8,662,152	8,160,680	501,472
State and local sources		4,287,574	3,459,720	827,854
Authority bonds		7,933,502	6,326,365	1,607,137
Total	$	20,883,228	17,946,765	2,936,463

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 $897,690 at June 30, 2018.

(Continued)

(b) 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 $2,500 for buildings valued over $25,000 and the self-insured retention of $1,000 for buildings valued under $25,000 effective March 1, 2014. The Authority is self-insured for workers' compensation, unemployment claims and vehicle damage and loss. Prior to the June 30, 2015, the Authority paid 85% of all health premiums up to a maximum of $200 per individual for all Blue Cross plans and $100 for Harvard and Tufts plans who remained under the self-insured health plans. 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. Supplemental postemployment benefits for certain retirees are provided by the Authority as well. See note 14.

The Authority self-funds a $7,500 per occurrence deductible for general liability. The Authority has a program of excess public liability insurance to provide for $67,500 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.

Expenditures for claims and judgments and workers' compensation were $4,470 and $15,157, respectively for the year ended June 30, 2018.

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, health claims (prior to June 30, 2015), and injuries and damages (legal claims) as accrued expenses as of June 30, 2018 and 2017. Changes in the self-insurance liabilities in FY18 were as follows:

(Amounts in thousands)

		2018	2017
Liability, beginning of year	$	144,410	112,454
Provisions for claims		37,505	112,402
Payments		(19,627)	(80,446)
Liability, end of year	$	162,288	144,410

(11) Environmental Remediation Obligations

Effective July 1, 2008, the Authority implemented GASB Statement No. 49, *Accounting and Financial Reporting for Pollution Remediation Obligations*. Statement No. 49 identifies the circumstances under which a government entity would be required to report a liability related to pollution remediation. The statement requires a government entity to estimate its expected outlays for pollution remediation if it knows that a site is polluted based on specific recognition triggers and disclose those obligations associated with cleanup efforts.

The Authority is responsible for the cleanup of leaking fuel storage tanks in facilities owned by the Authority, or parcels of land acquired as part of transit expansions. The Authority is currently managing six active storage tank sites in various stages of remediation and monitoring. The Authority has a number of years' experience in managing these cleanups and the assessment of costs for these types of cleanups. The amount of the estimated pollution remediation liability assumes there will be no major increases in the operating cost of providing these cleanup services.

The Authority is responsible for a facility where Polychlorinated Biphenyls (PCB) have been detected in the building caulk. Caulk containing PCB is frequently found in buildings built or renovated between 1950 and 1978. PCB containing caulk is no longer manufactured and is required to be removed under federal regulations. The maintenance building was found to contain such PCB containing caulk and as a result, a remediation program is now underway as part of the rehabilitation of the building.

The Authority made payments for remediation costs of $1,058 in FY18. The Authority performed cost completion estimates and revised cost completion estimates upward by $1,679 in FY18, with the change in the liability being recorded in the other operating expenses in the statements of revenue, expenses, and changes in net position. The accrued total liability as of June 30, 2018 included in the long-term accrued liabilities in the statement of net position was $6,423.

(12) 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.

(Continued)

On February 5, 2014 the Authority and Keolis Commuter Services (Keolis) entered into an operating agreement effective July 1, 2014 to provide commuter railroad service over the Authority's rail lines. The contract is for a period of eight (8) years, through June 30, 2022. The Authority has a fixed base contract amount of $2,686,342 over the eight year term of the agreement. The contract also has a provision for an extension period, comprised of the option to extend for no less than two, but no greater than four, year extension. The payments for all commuter rail costs incurred by Keolis totaled $450,598 in FY18. The fixed base contract over the term of the contract and four year extension period termination date of June 30, 2026 is $4,258,131.

(13) Retirement Plans

The Authority provides retirement benefits to employees through six defined benefit retirement plans and one defined contribution plan: The MBTA Retirement Fund, the MBTA Police Association Retirement Plan, the MBTA Deferred Compensation Plan, the MBTA Executive Deferred Compensation Plan, the MBTA Executive Deferred Compensation Annuity Plan, the MBTA Excess Benefit Annuity Plan and the MBTA Deferred Compensation Savings Plan.

The MBTA Retirement Fund, a single employer 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 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 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.

The remaining defined benefit plans are single employer plans that are unfunded and do not issue separately audited financial statements. These plans collectively have less than ten active and retired participants. A copy of the actuarial report for any of these retirement plans can be obtained by writing to the Office of the Chief Financial Officer, MBTA, Ten Park Plaza, Boston, Massachusetts 02116.

(Continued)

(Amounts in thousands)

Employees Covered by Benefit Terms

At December 31, 2017, 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	$	6,823	102	945
Active employees		5,386	253	595
Inactive employees entitled to, but not yet receiving benefits		314	27	—
Total	$	12,523	382	1,540

(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; however, the Authority may amend these requirements.

The historical MBTA Retirement Fund contribution rates are as follows:

		Contribution percentage		
Valuation date	Effective date	Employer	Employee	Total
12/31/2015	7/1/2016	18.0386 %	6.4614 %	24.5000 %
12/31/2016	7/1/2017	20.0111	7.1189	27.1300
12/31/2017	7/1/2018	22.6811	8.0089	30.6900

Actual contributions made were in accordance with these contribution requirements.

(Amounts in thousands)

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

Valuation date	Effective date	Contribution percentage Employer	Employee	Total
12/31/2015	7/1/2016	14.62 %	8.36 %	22.98 %
12/31/2016	7/1/2017	14.18 %	8.79 %	22.97 %
12/31/2017	7/1/2018	14.18 %	8.79 %	22.97 %

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, 2018 net pension liability for each retirement plan was measured as of December 31, 2017, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of December 31, 2016 rolled forward to December 31, 2017.

Actuarial assumptions. The total pension liability in the December 31, 2017 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Pension	MBTA Retirement Fund	MBTA Police Association Plan	MBTA Deferred Compensation Plan
Actuarial Assumptions			
Inflation rate	3.00 %	3.00 %	3.00 %
Salary increase	4.00	3.50	4.00
Investment rate of return *	7.50	7.00	3.16

* Net of pension plan investment expense, including inflation

For the December 31, 2017 actuarial valuation, mortality rates are used for all active employees and were based on the RP-2000 Blue Collar Mortality Tables with generational projection using the Scale BB. The RP-2000 Blue Collar Tables for Health Males projected by Scale BB generationally are the basis for all retirees and deferred vested participants. The RP-2000 Blue Collar Tables for Health Females projected by Scale BB generationally are the basis for all beneficiary participants. The RP-2000 Tables for Disabled Lives projected by Scale BB generationally are used for the period after disability retirement. Among pre-retirement deaths, 7.5% are assumed to qualify for accidental death benefits.

(Amounts in thousands)

The actuarial assumptions used in the December 31, 2017 valuation for the MBTA Retirement Fund were based on the results of an actuarial experience study for the four-year period ending December 31, 2014. There was no separate experience actuarial study performed for the MBTA Police Association Plan or the MBTA Deferred Compensation Plan.

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, 2017 are summarized in the following tables:

	MBTA Retirement Fund 2017	
	Target allocation	Long term expected real rate of return
Equity	43 %	8.56 %
Fixed Income	25	1.79
Alternatives	30	7.96
Cash	2	0.94
Total	100 %	

	MBTA Police Association Plan 2017	
	Target allocation	Long term expected real rate of return
Equity	45 %	8.41 %
Fixed Income	36	1.83
Alternatives	19	5.99
Total	100 %	

Discount rate. The discount rate used to measure the total pension liability as of December 31, 2017 was 7.50% for the MBTA Retirement Fund while the discount rate for the MBTA Police Association Retirement Plan was 7.00%. 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 3.16%. 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 3.16% as of December 31, 2017.

(Continued)

(Amounts in thousands)

(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, 2015	$	2,512,085	1,497,848	1,014,237
Changes for the year:				
Service cost		31,897	—	31,897
Interest		195,768	—	195,768
Difference between expected and actual experience		90,068	—	90,068
Changes in assumptions		—	—	—
Contributions – employer		—	77,239	(77,239)
Contributions – employee		—	27,792	(27,792)
Net investment Income		—	86,782	(86,782)
Benefit payments, including refund of employee contributions		(197,562)	(197,562)	—
Administrative expense		—	(6,493)	6,493
Net changes		120,171	(12,242)	132,413
Balances at December 31, 2016		2,632,256	1,485,606	1,146,650
Changes for the year:				
Service cost		31,850	—	31,850
Interest		204,780	—	204,780
Difference between expected and actual experience		44,627	—	44,627
Changes in assumptions		128,688	—	128,688
Contributions – employer		—	83,382	(83,382)
Contributions – employee		—	29,775	(29,775)
Net investment Income		—	221,691	(221,691)
Benefit payments, including refund of employee contributions		(212,815)	(212,815)	—
Administrative expense		—	(4,463)	4,463
Net changes		197,130	117,570	79,560
Balances at December 31, 2017	$	2,829,386	1,603,176	1,226,210

(Amounts 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, 2015	$	93,124	72,866	20,258
Changes for the year:				
Service cost		2,177	—	2,177
Interest		6,538	—	6,538
Contributions – employer		—	2,550	(2,550)
Contributions – employee		—	1,570	(1,570)
Net investment Income		—	5,313	(5,313)
Difference between expected and actual experience		1,646	—	— 1,646
Change in assumptions		—	—	—
Benefit payments, including refund of employee contributions		(3,850)	(3,850)	—
Administrative expense		—	(184)	184
Net changes		6,511	5,399	1,112
Balances at December 31, 2016		99,635	78,265	21,370
Changes for the year:				
Service cost		2,042	—	2,042
Interest		6,958	—	6,958
Contributions – employer		—	2,492	(2,492)
Contributions – employee		—	1,504	(1,504)
Net investment Income		—	9,371	(9,371)
Difference between expected and actual experience		(1,769)	—	— (1,769)
Change in assumptions		—	—	—
Benefit payments, including refund of employee contributions		(4,636)	(4,636)	—
Administrative expense		—	(180)	180
Net changes		2,595	8,551	(5,956)
Balances at December 31, 2017	$	102,230	86,816	15,414

(Amounts in thousands)

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

		Increase (decrease) Total pension liability
Balances at December 31, 2015	$	85,788
Changes for the year:		
Service cost		2,035
Interest		2,687
Differences between expected and actual experience		5,423
Changes in assumptions		(4,681)
Changes in benefits		—
Benefit payments, including refund of employee contributions		(5,679)
Net changes		(215)
Balances at December 31, 2016		85,573
Changes for the year:		
Service cost		2,039
Interest		3,142
Differences between expected and actual experience		2,206
Changes in assumptions		5,122
Changes in benefits		
Benefit payments, including refund of employee contributions		(5,889)
Net changes		6,620
Balances at December 31, 2017	$	92,193

(Amounts 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, 2017:

	2018			
	Current rate	1% Decrease of current rate	Current discount rate	1% Increase of current rate
MBTA Retirement Fund	7.50 %	1,517,983	1,226,210	978,782
MBTA Police Assoc. Retirement Plan	7.00	28,477	15,414	4,566
MBTA Deferred Compensation	3.16	102,914	92,193	83,230

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

For the year ended June 30, 2018 the Authority recognized pension expense of $186,571; $2,503; and $11,886; for the MBTA Retirement Fund, the MBTA Police Association Retirement Plan and the MBTA Deferred Compensation Plan, respectively.

(Amounts in thousands)

At June 30, 2018, 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	$	102,951	448	4,155	107,554
Contributions subsequent to the measurement date		36,125	1,093	2,762	39,980
Differences between expected and actual experience		111,984	1,176	5,486	118,646
Total deferred outflows of resources		251,060	2,717	12,403	266,180
Deferred inflows of resources:					
Net difference between projected and actual earnings on pension plan investments		(5,318)	(1,237)	—	(6,555)
Differences between expected and					—
actual experience		—	(4,432)	—	(4,432)
Changes in assumptions		(2,705)	—	(2,341)	(5,046)
Total deferred inflows of resources		(8,023)	(5,669)	(2,341)	(16,033)
Less contributions subsequent to the measurement date		(36,125)	(1,093)	(2,762)	(39,980)
Net deferred outflows and inflows of resources exclusive of employer specific deferrals	$	206,912	(4,045)	7,300	210,167

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 year ending June 30, 2019.

(Amounts 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:				
2019	$	86,996	(369)	3,453
2020		67,010	(530)	2,017
2021		38,376	(1,463)	1,830
2022		14,530	(1,412)	—
2023		—	(17)	—
2024		—	(254)	—
Totals	$	206,912	(4,045)	7,300

Payable to the Pension Plans

At June 30, 2018 the Authority reported a payable for $2,196, for the outstanding amount of contributions to pension plans required for the years ended June 30, 2018.

(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 8.009% of total covered payroll for the years ended June 30, 2018, with the Authority contributing 8%. The Plan had 389 members as of June 30, 2018. The cost of the Plan was $1,230 for the years ended June 30, 2018. 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 $33,961 as of June 30, 2018, were held by a third party administrator who allocates the assets of fully funded member account balance at the direction of individual member discretion.

(14) Other Postemployment Benefits (OPEB)

In addition to providing the pension benefits described, the Authority provides OPEB for eligible retired employees under two arrangements. 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 non-duplicative 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, 2017 is as follows:

(Amounts in thousands)

Retirees or beneficiaries currently receiving benefits payments	$	4,368
Active employees		5,099
	$	9,467

(a) Benefits Provided

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.

(b) 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.

(c) Total OPEB Liability

The Authority's total OPEB liability of $2,208,769 was measured as of June 30, 2017 and was determined by an actuarial valuation as of June 30, 2016 rolled forward to June 30, 2017.

Actuarial assumptions and other inputs: The total OPEB liability as of June 30, 2017 was determined using the following actuarial assumptions and other inputs, applied to all periods included in the measurement, unless otherwise specified:

Inflation	3.00 %
Salary increases	4.00

Actuarial Cost Method and Amortization Period. The entry age normal cost method based on level percentage of projected salary.

Mortality. RP-2014 generational table using Scale MP-2017, applied on a gender-specific basis.

Discount Rate. The discount rate used to measure the total OPEB liability is 3.13% per annum, the 20 year S&P Municipal Bond 20 Year High Grade index at June 30, 2017. The discount rate used for

(Continued)

June 30, 2016 was assumed to be 2.71% and is also based on the 20 year S&P Municipal Bond 20 Year High Grade index.

Healthcare cost trend rates. Trend rates begin with 6.8% and decrease to an ultimate rate of 5.0% after ten years.

The actuarial assumptions used in the June 30, 2016 valuation were based on the results of the February 5, 2016 actuarial experience study for the five-year period of experience from January 1, 2010–December 31, 2014.

Change in Total OPEB Liability

		Increase (decrease)
Balances at June 30, 2016	$	2,294,076
Changes for the year:		
Service cost		82,886
Interest		63,600
Changes in benefits		(171,163)
Benefit payments, including refund of employee contributions		(60,630)
Net changes		(85,307)
Balances at June 30, 2017	$	2,208,769

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 (2.13%) or 1-percentage-point higher (4.13%) than the current discount rate (in thousands):

		1% Decrease		Discount rate		1% Increase
Total OPEB liability	$	2,649,049	$	2,208,769	$	1,866,831

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	$	1,848,081	$	2,208,769	$	2,720,351

OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB

For the year ended June 30, 2018 the Authority recognized OPEB expense of $118,195. At June 30, 2018, the Authority reported deferred outflows of resources and deferred inflows of resources related to OPEB amounts from the following sources:

Deferred outflows of resources:		
Contributions subsequent to the measurement date	$	69,387
Total deferred outflows of resources		69,387
Deferred inflows of resources:		
Changes in assumptions		(142,872)
Total deferred inflows of resources		(142,872)
Net deferred outflows and inflows of resources		(73,485)
Less contributions subsequent to the measurement date		(69,387)
Net deferred outflows and inflows of resources exclusive of employer specific deferrals	$	(142,872)

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 net OPEB liability in the year ending June 30, 2019.

(Amounts in thousands)

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

Year ended June 30:		
2019	$	(28,291)
2020		(28,291)
2021		(28,291)
2022		(28,291)
2023		(28,291)
2024		(1,417)
Totals	$	(142,872)

(d) 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 2018, the Authority made contributions to the Trust Fund of $12,292. 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.

(15) Subsequent Events

Subsequent to year end, on July 2, 2018, the Authority issued $95,610 in 2018 Subseries A-1 Senior Sales Tax Bonds Variable Rate Demand Obligations and $95,619 in 2018 Subseries A-2 Senior Sales Tax Bonds Variable Rate Demand Obligations to be used to refinance the Authority's 2017 Series A $190,650 Senior Sales Tax Bonds Multi-Modal Obligations to minimize the interest impact of changes within the tax code that went into effect in January 2018.

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 Barclays Bank PLC, a nationally recognized financial institution. The SBPA was renewed on September 14, 2018 and will expire on September 21, 2022.

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

Required Supplementary Information – MBTA Retirement Fund

Schedule of Changes in Net Pension Liability and Related Ratios

June 30, 2018

(Dollar amounts in thousands)

(Unaudited)

		December 31			
Total Pension Liability		**2017**	**2016**	**2015**	**2014**
Service cost	$	31,850	31,897	37,305	34,501
Interest		204,780	195,768	191,392	184,667
Differences between expected and actual experience		44,627	90,068	31,325	48,560
Change in assumptions		128,688	—	(6,762)	—
Benefit payments, including refunds of employee contributions		(212,815)	(197,562)	(188,906)	(184,130)
Net Change in total pension liability		197,130	120,171	64,354	83,598
Total pension liability – beginning		2,632,256	2,512,085	2,447,731	2,364,133
Total pension liability – ending		2,829,386	2,632,256	2,512,085	2,447,731
Plan Fiduciary Net Position					
Contributions – employers		83,383	77,239	73,374	70,603
Contributions – employees		29,775	27,792	26,511	25,318
Net investment income		221,691	86,782	4,712	73,543
Benefit payments, including refunds of employee contributions		(212,815)	(197,562)	(188,906)	(184,130)
Administrative expenses		(4,464)	(6,493)	(5,808)	(4,053)
Net change in plan fiduciary net position		117,570	(12,242)	(90,117)	(18,719)
Plan fiduciary net position – beginning		1,485,606	1,497,848	1,587,965	1,606,684
Plan fiduciary net position – ending		1,603,176	1,485,606	1,497,848	1,587,965
Authority's net pension liability	$	1,226,210	1,146,650	1,014,237	859,766
Plan fiduciary net position as a percentage of the total pension liability		57 %	56 %	60 %	65 %
Covered-employee payroll	$	428,830	446,741	443,238	417,957
Net pension liability as a percentage of covered employee payroll		286 %	257 %	229 %	206 %

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 Massachusetts Department of Transportation)

Required Supplementary Information – MBTA Police Retirement Plan

Schedule of Changes in Net Pension Liability and Related Ratios

June 30, 2018

(Dollar amounts in thousands)

(Unaudited)

		December 31			
Total Pension Liability		**2017**	**2016**	**2015**	**2014**
Service cost	$	2,042	2,177	1,879	1,772
Interest		6,958	6,538	6,490	6,173
Differences between expected and actual experience		(1,769)	1,646	(5,058)	(60)
Change in assumptions		—	—	784	—
Benefit payments, including refunds of employee contributions		(4,636)	(3,850)	(3,542)	(3,417)
Net Change in total pension liability		2,595	6,511	553	4,468
Total pension liability – beginning		99,635	93,124	92,571	88,103
Total pension liability – ending		102,230	99,635	93,124	92,571
Plan Fiduciary Net Position					
Contributions – employers		2,492	2,550	2,512	2,280
Contributions – employees		1,504	1,570	1,513	1,337
Net investment income		9,371	5,313	403	3,966
Benefit payments, including refunds of employee contributions		(4,636)	(3,850)	(3,542)	(3,417)
Administrative expenses		(180)	(184)	(138)	(122)
Net change in plan fiduciary net position		8,551	5,399	748	4,044
Plan fiduciary net position – beginning		78,265	72,866	72,118	68,074
Plan fiduciary net position – ending		86,816	78,265	72,866	72,118
Authority’s net pension liability	$	15,414	21,370	20,258	20,453
Plan fiduciary net position as a percentage of the total pension liability		85 %	78 %	78 %	78 %
Covered-employee payroll	$	16,123	16,289	16,478	18,207
Net pension liability as a percentage of covered employee payroll		96 %	131 %	123 %	112 %

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 Massachusetts Department of Transportation)

Required Supplementary Information – MBTA Deferred Compensation Plan

Schedule of Changes in Total Pension Liability and Related Ratios

June 30, 2018

(Dollar amounts in thousands)

(Unaudited)

		December 31			
Total Pension Liability		**2017**	**2016**	**2015**	**2014**
Service cost	$	2,039	2,035	1,382	1,715
Interest		3,142	2,687	2,615	2,592
Differences between expected and actual experience		2,206	5,423	4,482	2,767
Change in assumptions		5,122	(4,681)	1,260	—
Changes in benefits		—	—	614	—
Other Changes		—	—	(809)	—
Benefit payments, including refunds of employee contributions		(5,889)	(5,679)	(5,648)	(5,517)
Net Change in total pension liability		6,620	(215)	3,896	1,557
Authority's total pension liability – beginning		85,573	85,788	81,892	80,335
Authority's total pension liability – ending	$	92,193	85,573	85,788	81,892
Covered-employee payroll	$	56,848	60,454	56,540	56,542
Total pension liability as a percentage of covered employee payroll		162 %	142 %	152 %	145 %

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 Massachusetts Department of Transportation)

Required Supplementary Information – MBTA Retirement Fund

Schedule of Pension Contributions

June 30, 2018

(Dollar amounts in thousands)

(Unaudited)

		2017	2016	2015	2014
Actuarially determined contribution	$	83,383	77,239	73,359	77,594
Contributions in relation to the actuarially determined contribution		83,383	77,239	73,374	70,603
Contribution deficiency (excess)	$	—	—	(15)	6,991
Covered employee payroll	$	428,830	446,741	443,238	417,957
Contributions as a percentage of covered employee payroll		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 Massachusetts Department of Transportation)

Required Supplementary Information – MBTA Police Retirement Plan

Schedule of Pension Contributions

June 30, 2018

(Dollar amounts in thousands)

(Unaudited)

		2017	2016	2015	2014
Actuarially determined contribution	$	2,492	2,550	2,512	2,279
Contributions in relation to the actuarially determined contribution		2,492	2,550	2,512	2,279
Contribution deficiency (excess)	$	—	—	—	—
Covered employee payroll	$	16,123	16,289	16,478	18,207
Contributions as a percentage of covered employee payroll		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 Massachusetts Department of Transportation)

Required Supplementary Information – MBTA OPEB Plan

Schedule of Changes in Total OPEB Liability and Related Ratios

June 30, 2018

(Dollar amounts in thousands)

(Unaudited)

Total OPEB Liability		**2017**
Service cost	$	82,886
Interest		63,600
Change in assumptions		(171,163)
Benefit payments, including refunds of employee contributions		(60,630)
Net Change in total OPEB liability		(85,307)
Total OPEB liability – beginning		2,294,076
Total OPEB liability – ending	$	2,208,769
Covered-employee payroll	$	460,328
Total OPEB liability as a percentage of covered employee payroll		480 %

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

See accompanying independent auditors' report

Notes to Schedule:

Change in benefit terms – NONE.

Changes in assumptions -

The discount rate changed from 2.71% as of June 30, 2016 to 3.13% as of June 30, 2017.

The June 30, 2016 (beginning of year) total OPEB liability was determined by an actuarial valuation as of that date. The June 30, 2017(end of year) total OPEB liability was determined based on a rollforward of the same valuation, assuming no experience gains or losses.

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

Supplementary Information

Metropolitan Boston Transit Parking Corporation
Schedule of Debt Service Coverage

June 30, 2018

	Number of Spaces at Facility (Unaudited)		2018 Gross Revenues by Facility	Revenue Amount from Facility to Debt Service	2018 Net Revenue of Facility after Debt Service	2018 Debt Service Percentage of Gross Revenue
Alewife	2,605	$	5,065,531	(2,004,414)	3,061,117	39.57 %
Route 128	2,589		4,535,225	(1,559,011)	2,976,214	34.38
Quincy Adams	2,394		4,392,947	(1,511,366)	2,881,581	34.40
Wonderland & Lots	1,943		2,977,881	(1,024,734)	1,953,147	34.41
Hingham Boat	1,841		863,793	(295,374)	568,419	34.20
Wellington	1,316		1,950,491	(669,681)	1,280,810	34.33
Braintree	1,220		2,819,200	(970,939)	1,848,261	34.44
Kingston	1,039		333,781	(114,776)	219,005	34.39
Greenbush	995		210,747	(72,502)	138,245	34.40
Lynn	965		351,432	(121,817)	229,615	34.66
Riverside	935		1,936,899	(664,308)	1,272,591	34.30
Quincy Center (Garage)	872		—	—	—	—
North Quincy Hancock	838		1,165,513	(402,448)	763,065	34.53
Newburyport	814		165,303	(56,850)	108,453	34.39
Oak Grove	788		1,371,375	(471,383)	899,992	34.37
Norwood Center	781		561,828	(193,279)	368,549	34.40
Middleboro/Lakeville	769		434,424	(149,220)	285,204	34.35
Canton Junction	764		432,985	(148,908)	284,077	34.39
Forge Park	716		431,816	(148,580)	283,236	34.41
Salem	700		778,315	(267,195)	511,120	34.33
South Weymouth	697		294,964	(101,683)	193,281	34.47
Ashland	678		420,841	(144,587)	276,254	34.36
Quincy Boat	600		—	—	—	—
South Attleboro	568		506,293	(174,323)	331,970	34.43
Campello	535		155,602	(53,280)	102,322	34.24
Wollaston	534		324,302	(108,072)	216,230	33.32
Norfolk	532		387,874	(133,309)	254,565	34.37
Woodland	530		845,039	(289,964)	555,075	34.31
Bridgewater	504		238,917	(82,254)	156,663	34.43
Beverly	500		424,051	(143,517)	280,534	33.84
Dedham	497		258,972	(88,906)	170,066	34.33
Nantasket	495		116,264	(40,095)	76,169	34.49
Hanson	482		222,306	(76,465)	145,841	34.40
Westborough	448		350,461	(120,239)	230,222	34.31
Orient Heights	434		443,035	(152,141)	290,894	34.34

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
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Supplementary Information

Metropolitan Boston Transit Parking Corporation
Schedule of Debt Service Coverage

June 30, 2018

	Number of Spaces at Facility (Unaudited)		2018 Gross Revenues by Facility	Revenue Amount from Facility to Debt Service	2018 Net Revenue of Facility after Debt Service	2018 Debt Service Percentage of Gross Revenue
Beachmont	430	$	311,487	(106,956)	204,531	34.34 %
Cohasset	410		189,141	(64,954)	124,187	34.34
Abington	405		275,877	(94,896)	180,981	34.40
Halifax	402		166,356	(57,201)	109,155	34.38
Grafton	373		263,533	(90,555)	172,978	34.36
Holbrook	369		200,948	(69,159)	131,789	34.42
Southborough	364		298,033	(102,213)	195,820	34.30
North Quincy Newport	354		243,023	(83,575)	159,448	34.39
Readville	354		106,107	(36,516)	69,591	34.41
Lechmere	347		10,974	(145)	10,829	1.32
Montello	347		113,490	(38,968)	74,522	34.34
Walpole	343		259,664	(89,500)	170,164	34.47
East Weymouth	335		262,820	(90,254)	172,566	34.34
Stoughton	333		241,234	(82,694)	158,540	34.28
Hersey	318		239,290	(82,182)	157,108	34.34
Bradford	303		54,145	(18,614)	35,531	34.38
Lots with 150-300 spaces	4,535		3,896,514	(1,325,094)	2,571,420	34.01
Lots with less than 150 spaces	1,700		1,119,952	(384,218)	735,734	34.31
		$	44,020,995	(15,373,314)	28,647,681	34.92 %

See accompanying independent auditors' report