KPMG

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

(A Component Unit of the Massachusetts Department of Transportation)

Financial Statements, Required Supplementary Information and Supplementary Information

June 30, 2017 and 2016

(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 years ended June 30, 2017 and 2016, and the related notes to the financial statements, which collectively comprise the Massachusetts Bay Transportation Authority's (the Authority) basic financial statements for the years 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 audits. We conducted our audits 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, 2017 and 2016, and the changes in its financial position and its cash flows for the years then ended, in accordance with U.S. generally accepted accounting principles.

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 audits 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 and Other Information

Our audits were 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 audits of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with 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 November 21, 2017 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
November 21, 2017

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, 2017 (FY17) with selected comparative information for the fiscal year ended June 30, 2016 (FY16) and for the fiscal year ended June 30, 2015 (FY15). 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 175 cities and towns and is authorized to enter into agreements for providing mass transportation service by private companies, including railroads. The 175 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 110 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 will continue until June 30, 2018; unless extended an additional two years if, prior to June 30, 2018, the FMCB finds in a recommendation 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. Upon such recommendation, the Governor may approve the extension but in no event shall the FMCB continue beyond June 30, 2020.

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 assets, statements of revenues, expenses and changes in net assets, and statements 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 Statements of Net Position present 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 Statements of Revenue, Expenses and Changes in Net Position report the operating revenues and expenses and nonoperating revenues and expenses of the Authority for each fiscal year with the difference – the increase 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.

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The Statements of Cash Flows report cash and cash equivalent activities for each 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 – 2017 to 2016

- The Authority's net position at June 30, 2017 was $2,720,037, an increase from the prior year of $196,763 primarily due to increases in transportation revenue and intergovernmental revenues. These increases were offset by swap termination payments of $32,993 and increases in operating expense of $56,984 due to increases in wage, pension, post-employment benefits, and commuter rail expenses.
- Total bonds and notes payable outstanding at June 30, 2017 and 2016 were $5,563,850 and $5,656,191, respectively. During fiscal 2017, the Authority, in August 2016, issued $119,260 of 2016 Assessment Bonds Series A, $217,694 of Senior Sales Tax bonds, 2016 Series A, and in March 2017 $232,130 of Senior Sales Tax bonds, 2017 Series A which were used to refund certain outstanding bond issues.
- During the year, the Authority's operating revenues, principally transportation revenues, totaled $730,418 as compared to operating revenues of $693,180 in fiscal year 2016, an increase of $37,238.
- Total nonoperating revenues and capital grants, which consists of sales tax receipts and federal and state operating grants, decreased by $35,117 from $1,933,213 in FY16 to $1,898,096 in FY17. The decrease was primarily due to an increase in intergovernmental revenues including dedicated sales tax revenue, contract assistance and local assessments of $22,642 offset by a decrease in capital grants and contributions of $49,988. The nonoperating expenses decreased $79,193 due to a decrease in interest rate swap termination and restructuring payments of $45,872 coupled with a reduction in interest expense of $33,321.
- Total operating expenses of $2,164,575 in FY17 increased by $56,984 as compared with FY16. The increase in operating expenses from FY16 to FY17 is attributable to increases in pension expense, post-employment benefit expense and commuter rail expenses of $37,865, $26,099 and $14,613, respectively.
- As of June 30, 2017, the Authority's capital assets had a depreciated value of $9,482,186, made up of $16,476,391 in historical cost offset by $6,994,205 in accumulated depreciation. During FY17 the Authority spent $780,944 for additions to the system.

(b) Financial Highlights – 2016 to 2015

- The Authority's net position at June 30, 2016 was $2,523,274, an increase from the prior year balance of $172,433 primarily due to the increase in transportation revenue, intergovernmental revenues and interest and other nonoperating income. These increases were offset by swap termination payments of $78,865 and increases in operating expense of $51,569 due to increases in pension, commuter rail and depreciation expenses.

(Amounts in thousands)

- Total bonds and notes payable outstanding at June 30, 2016 and 2015 were $5,656,191 and $5,328,607, respectively. During FY16, the Authority, in October 2015, issued $358,405 of 2015 Sales Tax bonds, Series A in the amount of $177,855 which will be used to fund new projects and Series B in the amount of $180,550 which was used to refund certain outstanding debt.
- During FY16, the Authority's operating revenues, principally transportation revenues, totaled $693,180 as compared to operating revenues of $661,522 in FY15.
- Total nonoperating revenues which consists of sales tax receipts and federal and state operating grants increased by $81,567 from $1,289,882 in FY15 to $1,371,539 in FY16. The increase is attributable to increase in pension expense, depreciation expenses primarily due to an increase in intergovernmental revenues including dedicated sales tax revenue, contract assistance and local assessments of $51,641. The nonoperating expenses increased $72,061 due to interest rate swap termination and restructuring payments of $78,865 offset by a reduction in interest expense of $6,804.
- Total operating expenses of $2,107,591 in FY16 increased by $51,569 as compared with FY15. The increase in operating expenses is attributable to increases in pension expense, depreciation expense and commuter rail expenses of $38,080, $30,619, and $15,715, respectively, offset by a decrease in postemployment benefit costs of $46,963, material and supplies of $42,181. Interest expense on the Authority's bonds decreased slightly $29,511.
- As of June 30, 2016, the Authority's capital assets had a depreciated value of $9,139,550, made up of $15,906,322 in historical cost offset by $6,766,722 in accumulated depreciation. During FY16 the Authority spent $677,055 for additions to the system.

Condensed Financial Information

Condensed financial information as of and for the years ended June 30, 2017, 2016, and 2015 is as follows:

Condensed Statements of Net Position:

		June 30		
		2017	**2016**	**2015**
Current and other assets and deferred outflows	$	1,855,658	1,897,611	1,738,897
Capital assets, net		9,482,186	9,139,550	8,888,646
Total assets and deferred outflows	$	11,337,844	11,037,161	10,627,543
Current liabilities	$	949,630	863,840	851,966
Long-term liabilities and deferred inflows		7,668,177	7,650,047	7,424,736
Total liabilities and deferred inflows	$	8,617,807	8,513,887	8,276,702

(Continued)

(Amounts in thousands)

	June 30 2017	June 30 2016	June 30 2015
Net position:			
Net investment in capital assets	$ 4,713,587	4,523,401	4,083,287
Restricted	19,711	19,533	19,475
Unrestricted	(2,013,261)	(2,019,660)	(1,751,921)
Total net position	$ 2,720,037	2,523,274	2,350,841

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

	June 30 2017	June 30 2016	June 30 2015
Operating revenue:			
Revenue from transportation	$ 659,003	619,214	602,627
Other	71,415	73,966	58,895
Total operating revenues	730,418	693,180	661,522
Operating expenses:			
Transportation services	997,163	908,216	896,063
Other operating expenses	761,912	779,601	770,804
Total operating expenses, excluding depreciation	1,759,075	1,687,817	1,666,867
Depreciation and amortization	405,500	419,774	389,155
Total operating expenses, including depreciation	2,164,575	2,107,591	2,056,022
Operating loss	(1,434,157)	(1,414,411)	(1,394,500)
Net nonoperating revenue	1,119,234	1,025,170	1,015,574
Loss before capital grants	(314,923)	(389,241)	(378,926)
Capital grants and contributions	511,686	561,674	567,082
Increase in net position	196,763	172,433	188,156
Beginning of year net position*	2,523,274	2,350,841	2,162,685
End of year net position	$ 2,720,037	2,523,274	2,350,841

* Restated as of July 1, 2014.

(Continued)

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, 2017, 2016, and 2015.

Financial Highlights for the fiscal years ended June 30, 2017 and 2016

- The Authority ended the years June 30, 2017 and 2016 with a net position of $2,720,037 and $2,523,274 of which $4,713,587 and $4,523,401 represented the Authority's net investment in capital assets, and $(2,013,261) and $(2,019,660) was unrestricted, respectively. The net position increased by $196,763 and $172,433 in the FY17 and FY16, respectively. The increase in net position in FY17 and FY16 is attributable to increased operating and nonoperating revenue growth and cost control management of controllable expenses offset by a decrease in capital grants in both fiscal years.
- The Authority incurred an operating loss for the years ended June 30, 2017 and 2016 of $1,434,157 and $1,414,411, respectively. The operating losses were 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 years ended June 30, 2017 and 2016 the Authority recognized $992,192 and $986,274 of sales tax revenues from the Commonwealth of Massachusetts. Local assessments on cities and towns within the Authority's service area accounted for $164,023 and $162,883 in nonoperating revenue in FY17 and FY16, respectively. Adding to the operating loss was interest expense, net of investment and other income of $177,058 and $202,079, respectively, in FY17 and FY16.
- The Authority ended the years June 30, 2017 and 2016 with cash and investments of $1,157,830 and $1,229,021, respectively. Only $338,403 and $272,459 of this amount at June 30, 2017 and 2016, 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 statements of cash flows identify the sources and uses of cash for each fiscal year. Cash and cash equivalents increased by $17,153 in FY17 and decreased by $33,039 in FY16. The increase in FY17 is due principally to increases in sales tax and local assessment that offset the cash used for operations and capital improvements. The decrease in FY16 is due to the increased cash used for operations and capital improvements and an interest rate swap termination payment. The decrease was offset by an increase from sales tax and local assessments.

Financial Highlights for the fiscal years ended June 30, 2016 and June 30, 2015

- The Authority ended the years June 30, 2016 and 2015 with a net position balance of $2,523,274 and $2,350,841 of which $4,523,401 and $4,083,287 represented the amount invested in capital assets, net of related debt, and $(2,019,660) and $(1,751,921) was unrestricted, respectively. The net position increased $172,433 and decreased $494,218 in FY16 and FY15, respectively. The decrease in net position in FY15 is attributable to the adoption of GASB No. 68, *Employer Accounting for Pensions* which resulted in a reduction of the July 1, 2014 net position of $682,374.
- The Authority incurred an operating loss for the years ended June 30, 2016 and 2015 of $1,414,411 and $1,391,500, respectively. The operating losses were 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 fiscal years ended June 30, 2016 and 2015 the Authority recognized $986,274 and $970,637 of sales tax revenues from the Commonwealth. Local

(Amounts in thousands)

assessments on cities and towns within the Authority's service area accounted for $162,883 and $160,159 in nonoperating revenue in FY16 and FY15, respectively. Adding to the operating loss was interest expense, net of investment and other income of $202,079 and $239,398, respectively, in FY16 and FY15.

- The Authority ended the fiscal years June 30, 2016 and 2015 with cash and investments of $1,229,021 and $1,097,143, respectively. However, only $272,459 and $307,209 of this amount at June 30, 2016 and 2015, 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 statements of cash flows identify the sources and uses of cash for each fiscal year. Cash and cash equivalents increased by $33,039 in FY16 and increased by $47,664 in FY15. The decrease in FY16 is due principally to increases in sales tax and local assessment receipts that offset the cash used in operations. The increase in FY14 resulted primarily from the receipt of sales taxes and local assessments of $1,223,790. This increase was offset by $764,878 of cash used for operations and the cash used for financing of $499,429.

Operating Revenue

The following charts show the major sources of operating revenue for the fiscal years ended June 30, 2017, 2016 and 2015:

	2017	Percent of total	2016	Percent of total	2015	Percent of total
Bus	$ 110,791	15 %	$ 105,454	15 %	$ 102,609	16 %
Subw ay	311,870	43	298,197	43	299,883	45
Commuter rail	218,523	30	199,488	29	185,096	28
Other passenger	17,819	2	16,075	2	15,039	2
Other operating	71,415	10	73,966	11	58,895	9
	$ 730,418	100 %	$ 693,180	100 %	$ 661,522	100 %

Passenger revenues make up 90%, 89% and 91% of the total operating revenues in FY17, FY16 and FY15, 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.

(Continued)

(Amounts in thousands)

Operating Expenses

The following charts show the major sources of operating expenses for the fiscal years ended June 30, 2017, 2016 and 2015:

	2017	Percent of total	2016	Percent of total	2015	Percent of total
Wages and benefits	$ 997,163	46 %	$ 908,216	43 %	$ 896,063	44 %
Commuter rail	514,626	24	500,013	24	484,298	24
Depreciation	405,500	19	419,774	20	389,155	19
Material and supplies	232,897	11	247,380	12	256,441	12
Other operating	14,389	1	32,208	2	30,065	1
	$ 2,164,575	101 %	$ 2,107,591	101 %	$ 2,056,022	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, 2017, 2016, and 2015 amounted to $9,482,186 and $9,139,950, and $8,888,646 (net of accumulated depreciation), 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, 2017, 2016 and 2015:

	2017	2016	2015
Land	$ 359,946	384,946	375,975
Construction work in progress	1,812,287	1,232,231	970,116
Ways and structures	6,219,732	6,318,513	6,372,335
Buildings and equipment	1,090,221	1,203,860	1,170,220
	$ 9,482,186	9,139,550	8,888,646

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 $811,176, $729,563, and $357,213 for the years ended June 30, 2017, 2016, and 2015, respectively. Commitments to invest in new transportation equipment were $393,965, $577,312, and $585,167 as of June 30, 2017, 2016, and 2015, respectively.

(Amounts in thousands)

Debt

Bonds and notes outstanding for the fiscal years ended June 30, 2017, 2016 and 2015:

		2017	2016	2015
General Transportation System bonds	$	196,835	206,465	229,915
Revenue bonds		4,128,973	4,315,717	4,271,457
MBTPC bonds		304,585	304,585	304,585
Commercial Paper		167,300	67,300	94,350
BAB's		428,300	428,300	428,300
	$	5,225,993	5,322,367	5,328,607

The total amount for these categories of debt decreased by $96,374 and $6,240 for the fiscal years ended June 30, 2017 and 2016, respectively.

The Senior Sales Tax Series 2017A was issued for $232,130 on March 7, 2017. Principal and interest payments commence on July 1, 2017 and continue through July 1, 2026. Semiannual interest payments are made on January 1 and July 1. Proceeds were used to refund Senior Sales Tax Series 2008A-1 and Series 2008A-2.

On July 19, 2016, the Authority issued Senior Sales Tax Series 2016A capital appreciation bonds in the amount of $217,694. Principal is payable on July 1, 2021 through July 1, 2033. Capital interest bonds do not make interest payments. Proceeds were used to refund Senior Sales Tax Series 2007A-2.

On July 19, 2016, the Authority issued Assessment Bonds 2016 Series A in the amount of $119,260. Principal is payable on July 1, 2024 through July 1, 2028. Semiannual interest payments are made on July 1 and January 1. Proceeds were used to refund the Series 2008A Assessment bonds.

The Authority issued Senior Sales Tax 2015 Series A in the amount of $177,855 and Series B in the amount of $180,550. Principal is payable on July 1, 2019 through July 1, 2045. The first interest payment on these bonds was January 1, 2016. The Series 2015A sales tax bonds were issued for use to finance system-wide improvements, vehicle replacements and other capital projects. The 2015B sales tax bonds, along with other funds on hand, were issued to refund $57,880 of 2006 Series C Senior Sales Tax Bonds, $55,500 of 2005 Series A Assessment Bonds, and $83,035 of $2008 Series A Assessment Bonds.

Subsequent to year end, on October 12, 2017 the MBTA issued $300,821 in Bond Anticipation Notes (BANS) to be used exclusively for the Positive Train Control project; $118,698 in 2017 Series A-1 Subordinated Sales Tax Sustainability Bonds to be used on sustainable projects for environmentally sustainable projects and $156,425 in 2017A-2 Subordinated Sales Tax Bonds to fund federal and state reimbursement projects.

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 Chief Administrator and/or Chief Financial Officer of the Authority.

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

Statements of Net Position

June 30, 2017 and 2016

(Dollars in thousands)

Assets and Deferred Outflows of Resources		**2017**	**2016**
Current assets:			
Unrestricted cash and temporary cash investments (note 3)	$	338,403	272,459
Restricted cash and temporary cash investments (note 3):			
Bond construction accounts		15,797	51,760
Stabilization accounts		19,711	19,533
Other cash and temporary investments		12,150	25,156
Accounts receivable:			
Commonwealth of Massachusetts		99,879	99,589
Federal grants		20,623	19,119
Other trade, net		29,253	26,836
Materials and supplies		35,095	35,157
Prepaid expenses		2,623	2,880
Total current assets		573,534	552,489
Noncurrent assets:			
Restricted cash and investments accounts (note 3):			
Bond construction accounts		79,451	176,541
Lease deposits		59,050	63,900
Bond reserve accounts (note 8)		633,268	619,672
Total restricted cash and investments accounts		771,769	860,113
Net investment in direct financing lease (note 5)		25,728	24,601
Capital assets, at cost (notes 6, 7, and 9):			
Transportation property, being depreciated		14,304,158	14,289,145
Transportation property, not being depreciated		2,172,233	1,617,177
Less accumulated depreciation		(6,994,205)	(6,766,772)
Capital assets, net		9,482,186	9,139,550
Total noncurrent assets		10,279,683	10,024,264
Total assets		10,853,217	10,576,753
Deferred outflows of resources:			
Debt refundings		195,870	194,223
Derivative related amounts (note 8c)		2,652	36,457
Pension related amounts (note 13)		286,105	229,728
Total deferred outflows of resources		484,627	460,408
Total assets and deferred outflows of resources	$	11,337,844	11,037,161

See accompanying notes to financial statements.

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

Statements of Net Position

June 30, 2017 and 2016

(Dollars in thousands)

Liabilities and Deferred Inflows of Resources		**2017**	**2016**
Current liabilities:			
Current maturities of bonds and notes payable (note 8)	$	464,660	344,260
Current capital lease obligations (note 6)		3,458	4,026
Accounts payable		256,278	263,176
Due to Commonwealth		—	15,583
Accrued liabilities:			
Payroll and vacation		42,167	44,783
Interest		119,753	130,449
Injuries and damage claims, workers’ compensation claims, and other (note 10)		63,314	61,563
Total current liabilities		949,630	863,840
Noncurrent liabilities, less current maturities:			
Bonds payable, net (note 8)		5,099,190	5,311,931
Obligations under capital leases (note 6)		59,640	67,956
Accrued liabilities (notes 10 and 11)		89,898	86,601
Pension liability (note 13)		1,253,593	1,120,283
Other postemployment benefits (note 14)		1,118,374	976,553
Liability for derivative instruments (note 8)		3,967	46,075
Unearned revenue		31,939	30,652
Total noncurrent liabilities		7,656,601	7,640,051
Total liabilities		8,606,231	8,503,891
Deferred inflows of resources:			
Debt refundings		193	208
Pension related amounts (note 13)		11,383	9,788
Total deferred inflows of resources		11,576	9,996
Total liabilities and deferred inflows of resources	$	8,617,807	8,513,887
Net Position			
Net investment in capital assets		4,713,587	4,523,401
Restricted		19,711	19,533
Unrestricted		(2,013,261)	(2,019,660)
Total net position	$	2,720,037	2,523,274

See accompanying notes to financial statements.

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

Statements of Revenue, Expenses, and Changes in Net Position

Years ended June 30, 2017 and 2016

(Dollars in thousands)

		2017	2016
Operating revenue:			
Revenue from transportation	$	659,003	619,214
Other		71,415	73,966
Total operating revenue		730,418	693,180
Operating expenses:			
Wages and related employee benefits:			
Wages		517,855	495,172
Medical and dental insurance		57,727	63,255
Other postemployment benefits		189,653	163,554
Health and welfare expenditures		9,160	9,472
Pensions		173,344	135,479
Social security taxes		43,079	41,920
Workers' compensation		16,638	13,349
Other		908	8,843
Capitalized costs		(11,201)	(22,828)
Total wages and related employee benefits		997,163	908,216
Other operating expenses:			
Depreciation and amortization		405,500	419,774
Materials, supplies, and services		232,897	247,380
Injuries and damages		11,323	20,343
Commuter railroad and local subsidy expenses (note 12)		514,626	500,013
Other		3,066	11,865
Total other operating expenses		1,167,412	1,199,375
Total operating expenses		2,164,575	2,107,591
Operating loss		(1,434,157)	(1,414,411)
Nonoperating revenue (expense):			
Dedicated sales tax revenue (note 4)		992,192	986,274
Contract assistance – Commonwealth of Massachusetts		171,417	155,833
Dedicated local assessments (note 4)		164,023	162,883
Fair value change in investment derivatives		1,653	1,124
Interest rate swap termination and restructuring payments (note 8c)		(32,993)	(78,865)
Other nonoperating income		40,433	36,117
Interest income		16,692	29,308
Interest expense		(234,183)	(267,504)
Nonoperating revenue, net		1,119,234	1,025,170
Loss before capital grants and contributions		(314,923)	(389,241)
Capital grants and contributions		511,686	561,674
Increase in net position		196,763	172,433
Beginning of year, net position		2,523,274	2,350,841
End of year, net position	$	2,720,037	2,523,274

See accompanying notes to financial statements.

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

Statements of Cash Flows

Years ended June 30, 2017 and 2016

(Dollars in thousands)

		2017	2016
Cash flows from operating activities:			
Receipts from transit customers	$	659,191	621,366
Receipts from other operations		61,521	73,239
Payments to suppliers and vendors		(961,728)	(932,648)
Payments to employees		(574,155)	(578,022)
Net cash used in operating activities		(815,171)	(816,065)
Cash flows from capital and related financing activities:			
Cash (used in) provided by:			
Additions to transportation property		(755,827)	(677,041)
Interest paid		(244,879)	(259,741)
(Increase) decrease in deferred credits/charges		1,287	956
Commercial paper (retirements) advances, net		100,000	(27,050)
Payments on debt		(196,705)	(346,935)
Payments to escrow for refundings		(595,177)	—
Proceeds from bond and note issuances		569,084	358,405
Bond construction and reserve account disbursements (receipts)		88,344	(134,200)
Proceeds from bond premiums		29,632	23,335
Interest rate swap termination and restructuring payments		(32,993)	(78,865)
Payments of capital lease activity		(3,458)	(4,475)
Capital grants		510,182	560,479
Other		(6,140)	4,230
Net cash used in capital and related financing activities		(536,650)	(580,902)
Cash flows from noncapital and related financing activities:			
Sales tax and local assessment		1,327,432	1,310,221
Payments to the Commonwealth		(15,583)	—
Reimbursable payments		—	22,155
Net cash provided by noncapital and related financing activities		1,311,849	1,332,376
Cash flows from investing activity:			
Interest and other income		57,125	31,552
Net cash provided by investing activity		57,125	31,552
Net change		17,153	(33,039)
Cash, temporary cash investments, restricted, and other special accounts, beginning of year		368,908	401,947
Cash, temporary cash investments, restricted, and other special accounts, end of year	$	386,061	368,908
Adjustments to reconcile operating loss to net cash used in operating activities:			
Operating loss	$	(1,434,157)	(1,414,411)
Changes not requiring current expenditure of cash:			
Depreciation and amortization		405,500	419,774
Increase in pension amounts		81,528	60,303
Increase in other postemployment benefits		141,821	117,729
Changes in all other working capital accounts except cash, temporary cash investments, and short-term debt		(9,863)	540
Net cash used in operating activities	$	(815,171)	(816,065)

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 175 cities and towns and is authorized to enter into agreements for providing mass transportation service by private companies, including railroads. The 175 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 110 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 2017, which are balanced primarily through a combination of internal cost controls and increased own-source revenues and which facilitate the transfer of all 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) Statements of Cash Flows

For purposes of the statements 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.

(Dollars in thousands)

(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, 2017 and 2016:

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

(h) Construction in Progress

During FY17 and FY16, $856,044 and $786,734, respectively, 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 FY17 and FY16, 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 annual aggregate Assessments of $136,027.

The dedicated assessment revenue consists of the obligation of 175 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, tunnel and highway tolls, and registry fee revenue. The CTF will also receive the sales tax receipts dedicated for transportation purposes, with a guaranteed annual payment of $275,000. 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 Enabling Act was amended on October 31, 2014 to increase the Dedicated Sales Tax by $160,000 annually, starting in FY15. The Transportation Finance Act provided funding for various transportation services and infrastructure needs within the various units of MassDOT. The Commonwealth appropriated the amount of $171,417 and $155,833 from the CTF to the Authority for FY17 and FY16. This amount is 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, 2017 and 2016 was $19,665 and $20,888, respectively.

(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

GASB Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits*, requires governments to account for other postemployment benefits, primarily healthcare, on an accrual basis, rather than on a pay-as-you-go basis. The effect is the recognition of an actuarially required contribution as an expense on the statement of revenue, expenses, and changes in net position when future retirees earn their postemployment benefit rather than when they use their postemployment benefit. To the extent that an entity does not fund its actuarially required contribution, a postemployment benefit liability is recognized on the balance sheet over time (note 14).

(q) Environmental Remediation Costs

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).

(Continued)

(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 FY17 and FY16, the Authority has reported deferred outflows related to its derivative instruments, its pension plans and the deferred losses on debt refunding transactions. The deferred inflows are related to the deferred gains on debt refunding transactions 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.

(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.

(Dollars in thousands)

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.

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 statements of net position at June 30, 2017 and 2016:

		2017	2016
Restricted:			
Bond construction accounts	$	95,248	228,301
Bond reserve, stabilization, and other accounts		665,129	664,361
Lease deposits		59,050	63,900
Subtotal		819,427	956,562
Unrestricted cash and temporary cash investments		338,403	272,459
	$	1,157,830	1,229,021

(Dollars in thousands)

Included in bond reserve, stabilization, and other accounts at June 30, 2017 and 2016 are investments in Commonwealth debt instruments with a fair value of $46,231 and $49,110, respectively.

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 $79,450 and $86,221 as of June 30, 2017 and 2016, respectively.

(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, 2017 and 2016 was $199,204 and $220,414, respectively. The bank balance at June 30, 2017 and 2016 was $199,875 and $218,791, respectively. Of this amount, $0 and $45,235, respectively, 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, 2017 and 2016.

(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, 2017 and 2016 are presented below. All investments are presented by investment type and maturity.

	2017				
		Investment maturities (in years)			
Investment type	**Amount**	**Less than 1 year**	**1–3**	**4–8**	**More than 8**
MMDT	$ 266,308	266,308	—	—	—
Money market funds	414,482	414,482	—	—	—
Guaranteed investment contracts	1,331	—	—	—	1,331
U.S. Treasury STRIPS	59,050	—	—	—	59,050
U.S. Treasury securities	3,382	3,382	—	—	—
U.S. government-sponsored enterprises	82,004	45,564	5,982	—	30,458
State and Local Government	62,926	—	—	12,180	50,746
Municipal bonds	46,231	—	—	15,838	30,393
International bank notes	22,912	—	22,912	—	—
Investments	$ 958,626	729,736	28,894	28,018	171,978

(Dollars in thousands)

		2016				
			Investment maturities (in years)			
Investment type		**Amount**	**Less than 1 year**	**1–3**	**4–8**	**More than 8**
MMDT	$	201,572	201,572	—	—	—
Money market funds		383,846	383,846	—	—	—
Guaranteed investment contracts		1,333	—	—	—	1,333
U.S. Treasury STRIPS		63,900	—	—	—	63,900
U.S. government-sponsored enterprises		243,817	202,162	6,208	—	35,447
State and Local Government		62,926	—	—	—	62,926
Municipal bonds		49,110	—	—	4,743	44,367
Commercial paper and certificates of deposit		2,103	2,103	—	—	—
Investments	$	1,008,607	789,683	6,208	4,743	207,973

(c) Credit Ratings

The Authority holds guaranteed investment contracts with a fair value of $1,331 and $1,333 at June 30, 2017 and 2016, respectively. These investments are not rated.

The Authority had $171,589 and $175,936 in U.S. Treasury STRIPS, U.S. Treasury securities, State and local government series and municipal bonds as of June 30, 2017 and 2016, respectively. 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 $82,004 and $243,817 invested in government-sponsored enterprises as of June 30, 2017 and 2016, respectively. These investments have an implied credit rating of AAaa/AA+ or they have been collateralized to AAA.

The Authority has $266,308 and $201,572 invested in MMDT as of June 30, 2017 and 2016, respectively, 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 $437,394 and $385,949 invested in money market funds, international bonds, commercial paper, and certificates of deposit as of June 30, 2017 and 2016, respectively. These investments are not rated.

(Dollars in thousands)

(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		2017	Percentage of portfolio
Federal National Mortgage Association	Aaa/AA+	$	67,493	7.4 %

	Credit rating by Moody's/S&P		2016	Percentage of portfolio
Federal National Mortgage Association	Aaa/AA+	$	103,815	16.4 %

(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, 2017 and 2016.

(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, 2017.

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

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

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

- U.S. Treasury Securities consist principally of U.S. Treasury bills, notes and bonds are generally classified as Level 1 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 1 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.

Commercial Paper and Nonnegotiable Certificates of Deposit – Commercial paper issued by corporate or government entities and nonnegotiable certificates of deposit with financial institutions are short term investments that are generally classified as Level 1.

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

(Continued)

(Dollars in thousands)

(g) Fair Value Measurements

The Authority categorizes its recurring fair value measurements within the fair value hierarchy as of June 30, 2017 and 2016 as follows:

	2017		
	Fair value	**Level 1**	**Level 2**
Investments by fair value level:			
Money market funds	$ 414,482	414,482	—
U.S. Treasury STRIPS	59,050	—	59,050
U.S. Treasury securities	3,382	—	3,382
U.S. government sponsored enterprises	82,004	—	82,004
Municipal bonds	46,231	—	46,231
International bank note	22,912	—	22,912
	628,061	$ 414,482	213,579
Investments measured at amortized cost:			
MMDT	266,308		
State & Local Government Series	62,926		
Guaranteed investment contracts	1,331		
Total investments	$ 958,626		
Interest rate swaps	$ 3,967		3,967

	2016		
	Fair value	**Level 1**	**Level 2**
Investments by fair value level:			
Money Market Funds	$ 383,846	383,846	—
U.S. Treasury STRIPS	63,900	—	63,900
U.S. government sponsored enterprises	243,817	—	243,817
Municipal bonds	49,110	—	49,110
Commercial paper and CDs	2,103	2,103	—
	742,776	$ 385,949	356,827
Investments measured at amortized cost:			
MMDT	201,572		
State & Local Government Series	62,926		
Guaranteed investment contracts	1,333		
Total investments	$ 1,008,607		
Interest rate swaps	$ 46,075		46,075

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) 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, 2017 and 2016, 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, 2017 and 2016 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, 2017 and 2016, the fair value of the FDAs represents an asset to the Authority. The fair value of the FDAs are not material to the Authority's financial statements.

(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 FY17 was $992,992 and $164,023, respectively, a total of $1,157,015. The total amount of dedicated sales tax revenues and assessment revenues received in FY16 was $986,274 and $162,883, respectively, a total of $1,149,157. Total annual debt service (principal and interest) paid during FY17 on outstanding Sales Tax Series, Assessment and Prior Obligation Bonds was $413,965, representing

(Dollars in thousands)

34% of pledged revenues. Total annual debt service paid during FY16 on outstanding Sales Tax Series, Assessment and Prior Obligation Bonds was $470,318, representing 41% 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 FY17 was $15,373, which represents 34% of $45,046 revenue in the FY17. The debt service requirement in FY16 was $15,373, which represents 35% of $43,559 parking revenue earned in the FY16.

Total principal and interest remaining on Sales Tax Series Bonds, Assessment Bonds, Prior Obligation Bonds, and MBTPC Bonds outstanding as of June 30, 2017 and 2016 are $7,728,997 and $8,382,061, respectively.

(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 has the right within five years following the effective date to prepay the then outstanding balance of the annual base rent, without penalty, in the amount of $21,700 plus 5% annual interest compounded from the effective date of the lease to the date of prepayment. After the fifth year of the initial term has passed, no prepayment of the then outstanding balance will be allowed or accepted. The Authority has deferred the unearned interest income and will recognize it utilizing the effective interest method over the lease term until such time as the lessee determines whether the operational impact of the exercise of the option is prudent and feasible.

As of June 30, 2017 and through date of the audit opinion date, the lessee has not elected to prepay the outstanding balance of the annual base rent.

The following lists the components of the net investment in direct financing lease as of June 30, 2017 and 2016:

		2017	2016
Total minimum lease payments receivable	$	68,981	68,981
Less unearned income		(43,253)	(44,380)
Net investment in direct financing lease	$	25,728	24,601

(Dollars in thousands)

(6) Lease Obligations

(a) Capital Lease Arrangements

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

The following is a schedule by year of future minimum lease payments under the Authority's capital lease arrangements together with the present value of net minimum lease payments as of June 30, 2017:

Fiscal year(s):		
2018	$	3,496
2019		595
2020		—
2021		—
2022		—
2023–2027		—
2028–2030		59,048
		63,139
Less amount representing interest		(41)
Present value of net minimum lease payments		63,098
Less current principal maturities		(3,458)
Obligations under capital leases	$	59,640

The liability for these leases changed in 2017 and 2016 as follows:

Outstanding at June 30, 2015	$	65,673
Net change in obligation		6,309
Outstanding at June 30, 2016		71,982
Net change in obligation		(8,884)
Outstanding at June 30, 2017	$	63,098

(b) Operating Leases

As of June 30, 2017 and 2016, the Authority, as lessor, did not have any outstanding operating lease obligations.

In June 2016, the Authority, as lessor, entered into a 99-year lease with a third party for space at the South Station for an annual lease payment of $1,000 plus contractual increases over the life of the lease.

(Continued)

(Dollars in thousands)

(7) Capital Assets

A summary rollforward of capital assets at June 30, 2017 and 2016 are as follows:

	Beginning balance June 30, 2016	Increases	Decreases	Ending balance June 30, 2017
Capital assets not being depreciated:				
Land	$ 384,946	—	25,000	359,946
Construction work in progress	1,232,231	856,044	275,988	1,812,287
Total capital assets not being depreciated	1,617,177	856,044	300,988	2,172,233
Capital assets being depreciated:				
Ways and structures	10,857,758	159,217	114	11,016,861
Buildings and equipment	3,022,800	41,671	185,761	2,878,710
Buildings and equipment included in capital lease	408,587	—	—	408,587
Total capital assets being depreciated	14,289,145	200,888	185,875	14,304,158
Less accumulated depreciation for:				
Ways and structures	4,539,245	257,884	—	4,797,129
Buildings and equipment	1,943,586	150,782	185,761	1,908,607
Buildings and equipment included in capital lease	283,941	4,528	—	288,469
Total	6,766,772	413,194	185,761	6,994,205
Other capital assets, net	7,522,373	(212,306)	114	7,309,953
Capital assets, net	$ 9,139,550	643,738	301,102	9,482,186

(Continued)

(Dollars in thousands)

	Beginning balance June 30, 2015	Increases	Decreases	Ending balance June 30, 2016
Capital assets not being depreciated:				
Land	$ 375,975	8,980	9	384,946
Construction work in progress	970,116	786,734	524,619	1,232,231
Total capital assets not being depreciated	1,346,091	795,714	524,628	1,617,177
Capital assets being depreciated:				
Ways and structures	10,662,292	195,466	—	10,857,758
Buildings and equipment	2,843,680	210,494	31,374	3,022,800
Buildings and equipment included in capital lease	409,782	—	1,195	408,587
Total capital assets being depreciated	13,915,754	405,960	32,569	14,289,145
Less accumulated depreciation for:				
Ways and structures	4,289,957	249,288	—	4,539,245
Buildings and equipment	1,802,585	172,375	31,374	1,943,586
Buildings and equipment included in capital lease	280,657	4,479	1,195	283,941
Total	6,373,199	426,142	32,569	6,766,772
Other capital assets, net	7,542,555	(20,182)	—	7,522,373
Capital assets, net	$ 8,888,646	775,532	524,628	9,139,550

(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, 2017 and 2016, Prior Obligations in the amount of $196,835 and $206,465, respectively, are outstanding.

Debt issued by the Authority after June 30, 2000 (new debt) will not be 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.

(Continued)

The Authority issued two series of Senior Sales Tax bonds during fiscal year 2017 as follows:

On July 19, 2016, the Authority issued Senior Sales Tax Series 2016A capital appreciation bonds in the amount of $217,694. Principal is payable on July 1, 2021 through July 1, 2033. Capital interest bonds do not make interest payments. Proceeds were used to refund Senior Sales Tax Series 2007A-2.

The Senior Sales Tax Series 2017A was issued for $232,130 on March 7, 2017. Principal and interest payments commence on July 1, 2017 and continue through July 1, 2026. Semiannual interest payments are made on January 1 and July 1. Proceeds were used to refund Senior Sales Tax Series 2008A-1 and Series 2008A-2.

The Authority issued two series of Senior Sales Tax bonds during fiscal year 2016 as follows:

On October 14, 2015, the Authority issued Senior Sales Tax Series 2015A in the amount of $177,885. Principal is payable on July 1, 2022 through July 1, 2045. Semiannual interest payments are made on January 1 and July 1. Proceeds were used to finance system-wide improvements, vehicle replacements and other capital projects.

On October 14, 2015, the Authority issued Senior Sales Tax Series 2015B in the amount of $180,550. Principal is payable on July 1, 2019 through July 1, 2035. Semiannual interest payments are made on January 1 and July 1. Proceeds were used to refund the remainder of 2006 Series C Senior Sales Tax Bonds, the remainder of 2005 Series A Assessment Bonds, and to partially refund the 2008 Series A Assessment Bonds.

The Authority issued one series of Assessment bonds during fiscal year 2017 as follows:

On July 19, 2016, the Authority issued Assessment Bonds 2016 Series A in the amount of $119,260. Principal is payable on July 1, 2024 through July 1, 2028. Semiannual interest payments are made on July 1 and January 1. Proceeds were used to refund the Series 2008A Assessment bonds.

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 issued commercial paper notes (CP) in the amount of $100,000 during fiscal year 2017. The new notes were split between CP Sales Tax Series A and Series B, with each program increasing notes outstanding by $50,000.

As of June 30, 2017 and 2016, $167,300 and $67,300 of commercial paper were outstanding. At June 30, 2017, the total commercial paper notes included CP Sales Tax Series A in the amount of $79,775 and CP Sales Tax Series B in the amount of $87,525. The weighted average annual interest rate for CP Sales Tax Series A and Series B were 0.82% and 0.70%, respectively.

(Dollars in thousands)

The Authority's bonds payable outstanding at June 30, 2017 are as follows:

	Final fiscal year of maturity	Interest rates	Outstanding principal as of June 30, 2017	Due in fiscal year 2018
General transportation system bonds:				
1991 Series A dated November 1, 1991	2021	7.00 %	$ 36,165	8,145
1994 Series A Refunding dated June 1, 1994	2019	7.00 %	1,960	975
1998 Series C dated November 1, 1998	2022	5.50 %	4,450	535
2000 Series Variable Rate Demand Obligation dated March 10, 2000*	2030	Variable	154,260	7,660
			196,835	17,315
Revenue bonds:				
2003 Series A Senior Sales Tax dated January 29,2003	2021	5.25 %	95,185	16,020
2003 Series C Senior Sales Tax dated February 3, 2004**	2023	Variable	129,665	17,035
2004 Series B Senior Sales Tax dated March 9, 2004	2030	4.00%–5.25%	301,445	47,475
2004 Series C Senior Sales Tax dated December 22, 2004	2024	4.00%–5.50%	162,415	47,980
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%	91,895	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 %	147,960	11,970
2006 Series C Senior Sales Tax dated June 28, 2006	2027	5.50 %	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%	35,190	1,380
2008 Series A Assessment dated November 13, 2008	2035	4.37%–5.25%	16,330	—

(Dollars in thousands)

	Final fiscal year of maturity	Interest rates	Outstanding principal as of June 30, 2017	Due in fiscal year 2018
2009 Series B Senior Sales Tax dated February 26, 2009	2019	3.00%–5.00%	$ 39,365	19,230
2009 Series D Senior Sales Tax dated October 29, 2009	2020	3.00%–5.00%	14,445	—
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%	71,055	1,460
2010 Series C Senior Sales Tax dated December 8, 2010	2021	5.00 %	63,450	—
2012 Series A Assessment dated June 21, 2012	2042	4.00%–5.00%	402,820	11,695
2014 Series A Senior Sales Tax dated April 23, 2014	2045	3.00%–5.00%	195,000	5,150
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	222,978	—
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	232,130	20,330
			4,128,973	280,045
Metropolitan Boston Transit Parking (MBTPC) Bonds:				
2011 Series A MBTPC dated June 22, 2011	2042	4.00%–5.25%	304,585	—
			304,585	—
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	—

(Dollars in thousands)

	Final fiscal year of maturity	Interest rates	Outstanding principal as of June 30, 2017	Due in fiscal year 2018
Commercial Paper	2018	0.12%–0.16%	$ 167,300	167,300
Total bond and notes payable			5,225,993	$ 464,660
Less current maturities			(464,660)	
Total long-term			4,761,333	
Plus unamortized bond premiums/discounts, net			337,857	
Total long-term bonds payable			$ 5,099,190	

* 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, 2017 for the 2000 Series A1 are 0.87% and 0.90% 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, 2016 the variable interest is based on the SIFMA rate, plus 20 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 foresee the bond being called.

***** This bond bears interest at a variable rate of 70% of three (3) month LIBOR plus 48 basis points. The interest rate as of June 30, 2017 was 1.284%. Since this bond is a direct purchase, there is no standby purchase agreement and/or letter of credit providing liquidity support.

(Continued)

(Dollars in thousands)

The principal and interest maturities of the bonds and notes payable as of June 30, 2017 are as follows:

		Principal	Interest
Fiscal year(s):			
2018	$	464,660	231,255
2019		258,290	222,145
2020		266,155	209,644
2021		278,195	195,672
2022		291,926	181,796
2023–2027		1,259,230	724,541
2028–2032		1,161,494	425,707
2033–2037		640,223	220,644
2038–2042		511,840	83,641
2043–2047		93,980	7,959
Total	$	5,225,993	2,503,004

A summary rollforward of bonds payable for the years ended June 30, 2017 and 2016 is as follows:

	2017					
	Balance 2016	Bonds issued	Principal payments	Refunded/ redeemed principal	Capital appreciation bond accretion	Balance 2017
GTS	$ 206,465	—	(9,630)	—	—	196,835
Revenue	4,315,717	569,084	(187,075)	(574,887)	6,134	4,128,973
BABs	428,300	—	—	—	—	428,300
Commercial Paper	67,300	100,000	—	—	—	167,300
MBTPC	304,585	—	—	—	—	304,585
	$ 5,322,367	669,084	(196,705)	(574,887)	6,134	5,225,993

	2016					
	Balance 2015	Bonds issued	Principal payments	Refunded/ redeemed principal	Capital appreciation bond accretion	Balance 2016
GTS	$ 229,915	—	(23,450)	—	—	206,465
Revenue	4,271,457	358,405	(127,070)	(196,415)	9,340	4,315,717
BABs	428,300	—	—	—	—	428,300
Commercial Paper	94,350	—	(27,050)	—	—	67,300
MBTPC	304,585	—	—	—	—	304,585
	$ 5,328,607	358,405	(177,570)	(196,415)	9,340	5,322,367

(Continued)

(Dollars in thousands)

The following funds are included in restricted assets at June 30, 2017 and 2016 in connection with the Authority's revenue bond trust agreements and bond resolutions:

	2017			2016		
	Assessment bonds	Sales tax bonds	MBTPC bonds	Assessment bonds	Sales tax bonds	MBTPC bonds
Debt service	$ 57,166	317,740	9,177	46,707	317,532	8,639
Debt service reserve	30,868	205,319	12,998	30,440	202,795	13,559
	$ 88,034	523,059	22,175	77,147	520,327	22,198

The minimum required balances in the debt service reserve funds at June 30, 2017 and 2016 were $185,650 and $189,477 for the Sales Tax Series Bonds and $27,850 and $29,702 for the Assessment Bonds, respectively. The minimum required balances in the debt service reserve funds at June 30, 2017 and 2016 for MBTPC Bonds were $12,294 and $12,294, respectively. 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 issues 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 $167,300 and $67,300 in outstanding commercial paper as of June 30, 2017 and 2016, respectively.

(b) Debt Refundings

The Senior Sales Tax Series 2017A bonds were issued in the amount of $232,130 on March 7, 2017. The first principal and interest payments are both made on July 1, 2017. The final maturity is July 1, 2026. Proceeds were used to refund Senior Sales Tax Series 2008A-1 and Series 2008A-2 variable rate demand obligations of $232,130.

On July 19, 2016, the Authority issued Senior Sales Tax Series 2016 Series A capital appreciation bonds in the amount of $217,694. Amortization begins on July 1, 2021 and final maturity is July 1, 2033. These bonds were used to refund the Senior Sales Tax Series 2007A-2 Bonds of $205,217. The remaining proceeds, along with an additional $7,700 from accounts of the Senior Debt Service Reserve Fund for the Refunded Bonds under the Sales Tax Bond Trust Agreement, were applied towards the Debt Service Reserve Fund ($10,651), Underwriters' Compensation ($1,051), and to pay the costs of issuance ($659). The cash flow from the Senior Sales Tax Series 2016A (refunding bonds) was $288,195 and the cash flow from the refunded bonds was $367,070 resulting in a cash flow savings of $78,875. The present value savings on the refunding was $57,383. The accounting loss on the refunding of $7,817 was recorded as deferred outflow and will be amortized over the future life of the bonds.

The Assessment Series 2016A was also issued July 19, 2016 in the amount of $119,260. The first interest payment date is January 1, 2017 and the first principal payment occurs on July 1, 2024. Final maturity is July 1, 2028. The proceeds from the sale of the bonds, including net original issue premium in the amount of $29,632, along with $2,000 of available funds under the Assessment Bond Trust Agreement, were used to refund Assessment Series 2008A ($137,540) and pay issuance costs ($878). The cash flow from the Assessment Series 2016A (refunding bonds) was $172,181 and the cash flow from the refunded bonds was $256,340 resulting in a cash flow savings of $84,158. The present value savings on the refunding was $53,485. The accounting loss on the refunding of $11,545 was recorded as deferred outflow and will be amortized over the future life of the bonds.

On October 14, 2015, the Authority issued Senior Sales Tax Series 2015A and Series 2015B for $358,405. Principal is payable on July 1, 2019 through July 1, 2045. The first interest payment on these bonds is January 1, 2016. The Senior Sales Tax Series 2015A was issued for use to finance system-wide improvements, vehicle replacements and other capital projects. The Senior Sales Tax Series 2015B, along with other funds on hand, were issued to refund $57,880 of Senior Sales Tax Series 2006C, $55,500 of Assessment Series 2005A, and $83,035 of Assessment Series 2008A.

The proceeds of the Senior Sales Tax Series 2015B of $180,550 plus a premium of $31,086 were deposited into an irrevocable trust to execute an ‘in-substance’ defeasance of the previously outstanding Assessment Series 2005A ($55,500); Senior Sales Tax Series 2006C ($57,880); and Assessment Series 2008A ($83,035). The cash flow from the 2015B (refunding bonds) was $294,632 and the cash flow from the refunded bonds was $325,954 resulting in a cash flow savings of $31,322. The present value savings on the refunding was $19,405. The accounting loss on the refunding of $11,887 was recorded as deferred outflow and will be amortized over the future life of the bonds.

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. On June 30, 2017 and 2016, $765,062 and $422,655, respectively, 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.

(Dollars 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 2017	Fair value at June 30 2016
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	$ (931)	(1,565)
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	(1,721)	(34,892)
								(2,652)	(36,457)
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	(1,315)	(9,618)
								(1,315)	(9,618)
								$ (3,967)	(46,075)

(a) The 2003 B-1 and 2003 B-2 hedged bonds were legally redeemed in March 2008 through the issuance of commercial paper.

The aggregate fair value balance of the derivative instruments at June 30, 2017 and 2016 is ($3,967) and ($46,075), respectively, and is reflected on the Authority's statements of net position as a liability for derivative instruments. Of this liability, ($2,652) and ($36,457) at June 30, 2017 and 2016, respectively, were offset by deferred outflows of resources from derivative instruments that qualify for hedge accounting. As of June 30, 2017 and 2016, the Authority determined that the investment derivative instrument does not meet the criteria for hedge accounting. Accordingly, the change in fair value of these swaps 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.

(Dollars in thousands)

During 2017 the Authority amended several swaps by making payments to the counterparty of Derivative 2 and Derivative 8 totaling $32,993. In both swaps, the Authority pays a fixed interest rate in exchange for a payment based on a floating rate. Derivatives 2 and 8 paid interest rates of 5.20% and 5.61%, respectively, prior to amendment. Upon amendment, the fixed rate MBTA pays on both swaps was reduced to 2.00%. The amortization and floating rates of the swaps were not changed. This payment is presented as nonoperating expense in the statement of revenues, expenses and changes in net position.

Swap Payments and Associated Debt

As of June 30, 2017, debt service requirements on the floating rate maturity of the 2003 Series C Senior Sales Tax Bonds and net swap payments, applying the fixed rate on the swap of 4.13% and assuming CPI rate of 2.00% plus 79 basis points through the term of the swap, are as follows. As rates vary, variable interest rate payments on the 2003 Series C bonds and net swap payments will vary.

Fiscal years ending June 30		2003 Series C Senior Sales Tax Bonds principal	2003 Series C Senior Sales Tax Bonds interest	Interest rate swap, net	Total
2018	$	—	500	335	835
2019		—	500	335	835
2020		—	500	335	835
2021		25,005	500	335	25,840
	$	25,005	2,000	1,340	28,345

As of June 30, 2017, debt service requirements on floating rate maturities of the 2010 Series A Senior Sales Tax Bonds and net swap payments applying the fixed rate on the swap of 2.00% and assuming SIFMA index rate is 1.00% and the variable rate on the 2010 Series A Senior Sales Tax

(Dollars in thousands)

Bonds is 0.41% plus 20 basis points through the term of the swap, are as follows. As rates vary, variable interest rate payments on the 2010 Series A Senior Sales Tax Bonds will vary.

Fiscal years ending June 30		2010 Series A Senior Sales Tax Bonds principal	2010 Series A Senior Sales Tax Bonds interest	Interest rate swap, net	Total
2018	$	—	796	796	1,592
2019		—	796	796	1,592
2020		—	796	796	1,592
2021		—	796	796	1,592
2022		—	796	796	1,592
2023–2027		41,565	3,389	3,389	48,343
2028–2032		38,080	776	776	39,632
	$	79,645	8,145	8,145	95,935

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.

The following represents the credit ratings of the counterparties as of June 30, 2017:

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.

(Dollars in thousands)

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.

(d) Demand Bonds

The 2000 Series was issued a VRDO. MBTA's ability to purchase these bonds is secured through Standby Bond Purchase Agreements with nationally recognized financial institutions that expire on September 28, 2018. Under generally accepted accounting principles, VRDOs are generally classified as current liabilities if, among other things, the supporting security agreements expire in less than one year of the date of the financial statements.

(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, 2017 and 2016, 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, 2017	Unexpended costs
Federal grants	$	8,351,897	7,871,629	480,268
State and local sources		4,258,628	3,260,972	997,656
Authority bonds		6,601,091	5,942,075	659,016
Total	$	19,211,616	17,074,676	2,136,940

(Dollars in thousands)

Funding source		Approved project costs	Expenditures through June 30, 2016	Unexpended costs
Federal grants	$	7,898,863	7,484,219	414,644
State and local sources		3,999,272	2,987,184	1,012,088
Authority bonds		6,209,086	5,795,649	413,437
Total	$	18,107,221	16,267,052	1,840,169

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 $973,201 and $1,309,893 at June 30, 2017 and 2016, respectively.

(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.

(Dollars in thousands)

(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. The Authority pays 75% to 80% of all healthcare premiums for active employees within the health insurance plans administered by the Group Insurance Commission of the Commonwealth (GIC). The Authority pays 80% to 90% of all health premiums for retired employees within the health insurance plans administered by the GIC. Stop-loss insurance is carried on health insurance claims in excess of these amounts per individual per illness until December 31, 2015.

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.

During FY17 and FY16, expenditures for claims and judgments, excluding workers' compensation, and health and life, were $6,081 and $9,738, respectively. Expenses for claims related to workers' compensation were $16,638 and $13,349, and expenditures for the self-insured health plans were $57,727 and $62,976 for the years ended June 30, 2017 and 2016, respectively.

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, and injuries and damages (legal claims) as accrued expenses as of June 30, 2017, 2016, and 2015. Changes in the self-insurance liabilities in FY17, FY16, and FY15 were as follows:

		2017	2016	2015
Liability, beginning of year	$	112,454	119,498	111,430
Provisions for claims		112,402	79,019	104,948
Payments		(80,446)	(86,063)	(96,880)
Liability, end of year	$	144,410	112,454	119,498

(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

(Continued)

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 $1,487 in FY17 and $595 in FY16. The Authority performed cost completion estimates and revised cost completion estimates downward by ($28,422) and ($1,796) in FY17 and FY16, respectively, with the change in the liability in each fiscal year 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, 2017 and 2016 included in the long-term accrued liabilities in the statement of net position was $5,802 and $35,711, respectively.

(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.

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 $389,106 and $347,364 in FY17 and FY16, respectively. 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.

(Dollars in thousands)

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.

Employees Covered by Benefit Terms

At June 30, 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	6,684	97	938
Active employees	5,786	268	681
Inactive employees entitled to, but not yet receiving benefits	233	14	—
Total	12,703	379	1,619

(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.

(Dollars in thousands)

The historical MBTA Retirement Fund contribution rates are as follows:

Valuation date	Effective date	Contribution percentage: Employer	Employee	Total
12/31/2014	7/1/2015	16.0286 %	5.7914 %	21.8200 %
12/31/2015	7/1/2016	18.0386	6.4614	24.5000
12/31/2016	7/1/2017	20.0111	7.1189	27.1300

Actual contributions made in were in accordance with these contribution requirements.

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

Valuation date	Effective date	Contribution percentage: Employer	Employee	Total
12/31/2014	7/1/2015	13.89 %	8.51 %	22.40 %
12/31/2015	7/1/2016	14.62	8.36	22.98
12/31/2016	7/1/2017	14.18	8.79	22.97

Actual contributions of 12.67% (employer) and 7.28% (employee) for December 31, 2014 were less than the actuarial contribution requirements above. Actual combinations for previous years were equal to the actuarial requirement above.

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

The Authority’s June 30, 2016 net pension liability for each retirement plan was measured as of December 31, 2015, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that same date.

(Dollars in thousands)

Actuarial assumptions. The total pension liability in the December 31, 2016 actuarial valuations were 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 increases	4.00	3.50	4.00
Investment rate of return	8.00*	7.00*	3.71*

* Net of pension plan investment expense, including inflation

For the December 31, 2016 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.

The actuarial assumptions used in the December 31, 2016 valuation for the MBTA Retirement Fund were based on the results of an actuarial experience study for the four-year period ending December 31, 2015. There was no separate experience actuarial study performed for the MBTA Police Association Plan or the MBTA Deferred Compensation Plan.

For the December 31, 2014 actuarial valuation and the rollforward to December 31, 2015, mortality rates were based on the UP 1994 Mortality Tables for Males or Females, as appropriate, projected to year 2020 with adjustments for mortality improvements based on Scale AA. A special mortality table is used for the period after disability retirement. Among pre-retirement deaths, 7.5% are assumed to qualify for accidental death benefits.

The actuarial assumptions used in the December 31, 2014 valuations were based on the results of an actuarial experience study for the five-year period ending December 31, 2010.

(Continued)

(Dollars in thousands)

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the target allocation as of December 31, 2016 and 2015 are summarized in the following tables:

	MBTA Retirement Fund	
	2016	
	Target allocation	Long term expected real rate of return
Equity	43 %	8.75 %
Fixed Income	25	6.20
Alternatives	30	8.70
Cash	2	0.94
Total	100 %	
	2015	
	Target allocation	Long term expected real rate of return
Equity	43 %	8.46 %
Fixed Income	27	1.83
Alternatives	30	7.92
Total	100 %	

(Dollars in thousands)

	MBTA Police Association Retirement Plan	
	2016	
	Target allocation	Long term expected real rate of return
Equity	66 %	8.42 %
Fixed Income	30	2.19
Alternatives	4	8.58
Total	100 %	
	2015	
	Target allocation	Long term expected real rate of return
Equity	65 %	8.46 %
Fixed Income	31	1.83
Alternatives	4	7.92
Total	100 %	

Discount rate. The discount rate used to measure the total pension liability as of December 31, 2016 and 2015 was 8.0% for the MBTA Retirement Fund while the discount rate for the MBTA Police Association Retirement Plan was 7.0%. 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 3.71%. 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 3.71 and 3.20% as of December 31, 2016 and 2015.

(Dollars 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, 2014	$ 2,447,731	1,587,965	859,766
Changes for the year:			
Service cost	37,305	—	37,305
Interest	191,392	—	191,392
Difference between expected and actual experience	31,325	—	31,325
Changes in assumptions	(6,762)	—	(6,762)
Contributions – employer	—	73,374	(73,374)
Contributions – employee	—	26,511	(26,511)
Net investment Income	—	4,712	(4,712)
Benefit payments, including refund of employee contributions	(188,906)	(188,906)	—
Administrative expense	—	(5,808)	5,808
Net changes	64,354	(90,117)	154,471
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

(Dollars in thousands)

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

		Increase (decrease)		
		Total pension liability (a)	**Plan fiduciary net position (b)**	**Net pension liability (a)-(b)**
Balances at December 31, 2014	$	92,571	72,118	20,453
Changes for the year:				
Service cost		1,879	—	1,879
Interest		6,490	—	6,490
Contributions – employer		—	2,512	(2,512)
Contributions – employee		—	1,513	(1,513)
Net investment Income		—	403	(403)
Differences between expected and actual experience		(5,058)	—	(5,058)
Change in assumptions		784	—	784
Benefit payments, including refund of employee contributions		(3,542)	(3,542)	—
Administrative expense		—	(138)	138
Net changes		553	748	(195)
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

(Dollars in thousands)

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

		Increase (decrease) Total pension liability
Balances at December 31, 2014	$	81,892
Changes for the year:		
Service cost		1,382
Interest		2,615
Differences between expected and actual experience		4,482
Changes in assumptions		1,260
Changes in benefits		614
Other		(809)
Benefit payments, including refund of employee contributions		(5,648)
Net changes		3,896
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

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, 2016 and 2015:

(Dollars in thousands)

	2016			
	Current rate	1% Decrease of current rate	Current discount rate	1% Increase of current rate
MBTA Retirement Fund	8.00 %	$ 1,412,017	1,146,650	920,903
MBTA Police Assoc. Retirement Plan	7.00	34,317	21,370	10,653
MBTA Deferred Compensation	3.71	95,178	85,573	77,516

	2015			
	Current rate	1% Decrease of current rate	Current discount rate	1% Increase of current rate
MBTA Retirement Fund	8.00 %	$ 1,269,791	1,014,237	796,832
MBTA Police Assoc. Retirement Plan	7.00	32,548	20,258	10,086
MBTA Deferred Compensation	3.20	95,769	85,788	77,459

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

For the year ended June 30, 2017 and 2016 the Authority recognized pension expense of $163,642; $2,868; and $6,834; and $133,297; and $2,403; and $6,642 for the MBTA Retirement Fund, the MBTA Police Association Retirement Plan and the MBTA Deferred Compensation Plan, respectively.

(Dollars in thousands)

At June 30, 2017, 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:					
Net difference between projected and actual earnings on pension plan investments	$	115,040	3,120	—	118,160
Changes in assumptions		—	560	630	1,190
Contributions subsequent to the measurement date		44,103	1,241	2,931	48,275
Differences between expected and actual experience		110,270	1,412	6,798	118,480
Total deferred outflows of resources		269,413	6,333	10,359	286,105
Deferred Inflows of Resources:					
Differences between expected and actual experience		—	(3,815)	(3,510)	(7,325)
Changes in assumptions		(4,058)	—	—	(4,058)
Total deferred inflows of resources		(4,058)	(3,815)	(3,510)	(11,383)
Less contributions subsequent to the measurement date		(44,103)	(1,241)	(2,931)	(48,275)
Net deferred outflows and inflows of resources exclusive of employer specific deferrals	$	221,252	1,277	3,918	226,447

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, 2018.

(Dollars in thousands)

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

		MBTA Retirement Fund	MBTA Police Assoc. Retirement Plan	MBTA Deferred Compensation Plan
Year ended June 30:				
2018	$	72,465	668	2,111
2019		72,465	668	1,621
2020		52,480	506	186
2021		23,842	(426)	—
2022		—	(376)	—
2023		—	237	—
Totals	$	221,252	1,277	3,918

Payable to the Pension Plans

At June 30, 2017 and 2016 the Authority reported a payable for $547 and $418, respectively, for the outstanding amount of contributions to pension plans required for the years ended June 30, 2017 and 2016.

(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 6.4614% and 5.7914% of total covered payroll for the years ended June 30, 2017 and 2016, respectively, with the Authority contributing 8%. The Plan had 339 and 299 members as of June 30, 2017 and 2016, respectively. The cost of the Plan was $846 and $846 for the years ended June 30, 2017 and 2016, respectively. 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 $32,718 and $31,227 as of June 30, 2017 and 2016, respectively, 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 retired employees under any of the medical benefit programs then offered and available by the Authority. The benefits, benefit levels, employee contributions, and employer contributions are governed by the Authority, collective bargaining agreements, and state statute. As of the July 1, 2016 actuarial valuation, the plan has 8,127 (actual) retired and inactive participants and 6,527 (actual) active employees that meet the eligibility requirements for participation in the plan. The plan does not issue a separate financial report.

(Dollars in thousands)

(a) Benefits Provided

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

(b) Funding Policy

Retirees pre- and post-65 entering into GIC health insurance coverage with a retirement date on or before July 1, 1994 contribute 10% of 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 will 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) Annual OPEB Costs and Net OPEB Obligation

The Authority's annual OPEB expense is calculated based on the Actuarially Required Contribution (ARC) of the employer, an amount actuarially determined in accordance with the parameters of GASB Statement No. 45. The July 1, 2016 actuarial valuation established the ARC for fiscal year 2016 and the July 1, 2015 actuarial valuation established the ARC for fiscal year 2016. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover the normal cost each year and amortizes the unfunded actuarial liability over a period of 21 years. The following table shows the components of the Authority's annual OPEB cost for the years ended June 30, 2017 and 2016, the amount actually contributed to the plan, and the change in the Authority's net OPEB obligation:

		2017	2016
ARC	$	236,673	219,090
Interest on net OPEB obligation		28,515	24,678
Amortization adjustment to ARC		(62,863)	(52,605)
Annual OPEB cost		202,325	191,163
Contributions made		(60,504)	(59,737)
Change in net OPEB obligation		141,821	131,426
Net OPEB obligation – beginning of year		976,553	845,127
Net OPEB obligation – end of year	$	1,118,374	976,553

(Dollars in thousands)

The Authority's annual OPEB cost, the percentage of annual OPEB cost contributed to the plan, and the net OPEB obligation were as follows:

Fiscal year ended		Annual OPEB cost	Percentage of OPEB cost contributed		Net OPEB obligation
2017	$	202,325	29.9 %	$	1,118,374
2016		191,163	31.2		976,553
2015		193,065	25.8		845,127

(d) Funded Status and Funding Progress

The funded status of the plan, based on an actuarial valuation as of July 1, 2016 and 2015, is as follows:

		2017	2016
Actuarial accrued liability ("AAL")	$	2,368,814	2,266,407
Actuarial value of plan assets		—	—
Unfunded actuarial accrued liability ("UAAL")	$	2,368,814	2,266,407
Funded ratio (actuarial value of plan assets/AAL)		— %	— %
Covered payroll (active plan members)	$	465,654	465,032
UAAL as a percentage of covered payroll		508.7 %	487.4 %

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and healthcare cost trends. Amounts determined regarding the funded status of the plan and the ARCs of the Authority are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The schedule of funding progress, presented as required supplementary information following the notes to the financial statements, presents multiyear trend information that shows whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liability for benefits.

(e) Actuarial Methods and Assumptions

Projections of benefits for financial reporting purposes are based on the plan as understood by the Authority and the plan members and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the Authority and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

In the July 1, 2016 actuarial valuation, the projected unit credit cost method was used. The actuarial value of assets was not determined as the Authority has not advance funded its obligation. The actuarial assumptions included a 2.92% investment rate of return. Also, the actuarial assumption for the annual healthcare cost trend rate is 7.0% in year one to a 5.0% long-term trend rate for all healthcare benefits in year ten and thereafter. The amortization costs for the initial unfunded actuarial accrued liability (UAAL) is a level dollar closed amortization for a period of 21 years.

(f) 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.

In fiscal 2017 and 2016, the Authority made contributions to the Trust Fund of $9,160 and $9,472, respectively. The liability for the Authority’s obligation for the benefits administered by this Trust Fund is recorded as part of the OPEB liability. Other than the Authority’s OPEB liability and required contributions, the activities of the Trust Fund have been excluded from the accompanying financial statements. Since inception, the Authority has provided accounting and administrative services to the Trust without compensation and maintained the activities of the Trust Fund in a separate operating banking account.

(15) Subsequent Events

Subsequent to year end, on October 12, 2017 the MBTA issued $300,821 in BANS to be used exclusively for the Positive Train Control project; $118,698 in 2017 Series A-1 Subordinated Sales Tax Sustainability Bonds to be used on environmentally sustainable projects and $156,425 in 2017A-2 Subordinated Sales Tax Bonds to fund federal and state reimbursement projects.

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, 2017

(Dollar amounts in thousands)

(Unaudited)

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

Notes: Information provided for Required Supplementary Information will be provided for 10 years as the information 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, 2017

(Dollar amounts in thousands)

(Unaudited)

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

Notes: Information provided for Required Supplementary Information will be provided for 10 years as the information 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, 2017

(Dollar amounts in thousands)

(Unaudited)

Total Pension Liability		**December 31** 2016	2015	2014
Service cost	$	2,035	1,382	1,715
Interest		2,687	2,615	2,592
Differences between expected and actual experience		5,423	4,482	2,767
Change in assumptions		(4,681)	1,260	—
Changes in benefits		—	614	—
Other Changes		—	(809)	—
Benefit payments, including refunds of employee contributions		(5,679)	(5,648)	(5,517)
Net Change in total pension liability		(215)	3,896	1,557
Authority's total pension liability – beginning		85,788	81,892	80,335
Authority's total pension liability – ending		85,573	85,788	81,892
Covered-employee payroll	$	60,454	56,540	56,042
Total pension liability as a percentage of covered employee payroll		142 %	152 %	146 %

Notes: Information provided for Required Supplementary Information will be provided for 10 years as the information 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, 2017

(Dollar amounts in thousands)

(Unaudited)

		2016	2015	2014
Actuarially determined contribution	$	77,239	73,359	77,594
Contributions in relation to the actuarially determined contribution		77,239	73,374	70,603
Contribution deficiency (excess)	$	—	(15)	6,991
Covered employee payroll	$	446,741	443,238	417,957
Contributions as a percentage of covered employee payroll		17.3 %	16.6 %	16.9 %

Notes: Information provided for Required Supplementary Information will be provided for 10 years as the information 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, 2017

(Dollar amounts in thousands)

(Unaudited)

		2016	2015	2014
Actuarially determined contribution	$	2,550	2,512	2,279
Contributions in relation to the actuarially determined contribution		2,550	2,512	2,279
Contribution deficiency (excess)	$	—	—	—
Covered employee payroll	$	16,289	16,478	18,207
Contributions as a percentage of covered employee payroll		15.7 %	15.2 %	12.5 %

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

See accompanying independent auditors' report

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

Required Supplementary Information

Schedule of Funding Progress

June 30, 2017 and 2016

(Dollars in thousands)

(Unaudited)

OPEB Plans

Valuation date	Actuarial value of assets (a)	Actuarial accrued liability (b)	Unfunded actuarial accrued liability (c) (b)-(a)	(Unfunded) funded ratio (d) (a)/(b)	Covered payroll (e)	UAAL as a percentage of covered payroll (c)/(e)
July 1, 2016	$ —	2,368,814	2,368,814	— %	$ 465,654	508.7 %
July 1, 2015	—	2,266,407	2,266,407	—	465,032	487.4
July 1, 2014	—	2,315,626	2,315,626	—	442,214	523.6

See accompanying independent auditors' report.

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, 2017

	Number of Spaces at Facility (Unaudited)	2017 Gross Revenues by Facility	Revenue Amount from Facility to Debt Service	2017 Net Revenue of Facility after Debt Service	2017 Debt Service Percentage of Gross Revenue
Alewife (Garage)	2,733	$ 5,780,736	1,975,283	3,805,453	34.17 %
Route 128 (Garage)	2,589	4,992,482	1,704,808	3,287,674	34.15
Quincy Adams (Garage)	2,358	4,324,292	1,474,144	2,850,148	34.09
Wonderland (Garage) & Lots	2,075	2,948,463	1,006,978	1,941,485	34.15
Hingham Boat	1,841	870,566	296,752	573,814	34.09
Braintree (Garage)	1,322	2,781,523	948,719	1,832,804	34.11
Wellington	1,316	1,954,138	666,695	1,287,443	34.12
Kingston	1,039	305,912	104,414	201,498	34.13
Greenbush	995	196,581	67,152	129,429	34.16
Lynn (Garage)	965	359,510	124,037	235,473	34.50
Riverside	935	1,749,712	596,342	1,153,370	34.08
Quincy Center (Garage)	872	—	—	—	—
North Quincy Hancock	838	1,038,713	353,857	684,856	34.07
Newburyport	814	169,633	57,954	111,679	34.16
Oak Grove	788	1,417,542	483,997	933,545	34.14
Norwood Center	781	486,687	165,999	320,688	34.11
Middleboro/Lakeville	769	417,664	142,684	274,980	34.16
Canton Junction	764	460,556	157,556	303,000	34.21
Forge Park	716	395,451	135,101	260,350	34.16
Salem (Garage)	700	713,596	244,523	469,073	34.27
South Weymouth	697	255,958	87,405	168,553	34.15
Ashland	678	389,733	133,142	256,591	34.16
Quincy Boat	600	—	—	—	—
South Attleboro	568	484,108	165,419	318,689	34.17
Woodland (Garage)	548	962,554	328,332	634,222	34.11
Campello	535	150,566	51,873	98,693	34.45
Wollaston	534	694,960	236,763	458,197	34.07
Norfolk	532	368,452	125,782	242,670	34.14
Bridgewater	504	230,058	78,647	151,411	34.19
Beverly Depot (Garage)	500	415,340	142,202	273,138	34.24
Dedham	497	240,218	81,971	158,247	34.12
Nantasket	495	99,868	34,125	65,743	34.17
Hanson	482	213,004	72,730	140,274	34.14
Westboro	448	352,637	120,352	232,285	34.13
Orient Heights	434	431,480	147,170	284,310	34.11

(Continued)

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, 2017

	Number of Spaces at Facility (Unaudited)	2017 Gross Revenues by Facility	Revenue Amount from Facility to Debt Service	2017 Net Revenue of Facility after Debt Service	2017 Debt Service Percentage of Gross Revenue
Beachmont	430	$ 277,811	94,845	182,966	34.14 %
Cohasset	410	176,001	60,086	115,915	34.14
Abington	405	258,892	88,319	170,573	34.11
Halifax	402	162,655	55,583	107,072	34.17
Grafton	373	235,916	80,510	155,406	34.13
Holbrook/Randolph	369	187,863	64,170	123,693	34.16
Southborough	364	305,201	104,164	201,037	34.13
Hersey	354	96,552	32,980	63,572	34.16
Readville	354	278,860	95,084	183,776	34.10
North Quincy Newport	347	623,041	212,480	410,561	34.10
Lechmere	347	116,239	39,711	76,528	34.16
Montello	343	197,615	67,444	130,171	34.13
Walpole	335	259,990	88,825	171,165	34.16
East Weymouth	333	236,710	80,736	155,974	34.11
Stoughton	318	223,759	76,352	147,407	34.12
Bradford	303	49,531	16,910	32,621	34.14
Lots with 150-300 spaces	4,657	3,645,947	1,240,716	2,405,231	34.03
Lots with less than 150 spaces	1,757	1,060,873	361,991	698,882	34.12
		$ 45,046,149	15,373,814	29,672,335	34.13 %

See accompanying independent auditors’ report