



**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
RETIREMENT FUND**

Financial Statements and Required Supplementary Information

December 31, 2014

(With Independent Auditors' Report Thereon)

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
RETIREMENT FUND**

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KPMG LLP
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Independent Auditors' Report

The Retirement Board and Participants
Massachusetts Bay Transportation Authority Retirement Fund:

We have audited the accompanying financial statements of the Massachusetts Bay Transportation Authority Retirement Fund (the Fund), which comprise the statement of fiduciary net position as of December 31, 2014 and the related statement of changes in fiduciary net position for the year then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

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

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. 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 fiduciary net position of the Massachusetts Bay Transportation Authority Retirement Fund as of December 31, 2014 and the changes in fiduciary net position for the year then ended in accordance with U.S. generally accepted accounting principles.



Emphasis of Matter Paragraph

As discussed in note 2(j) to the basic financial statements, the Fund adopted the provisions of Governmental Accounting Standards Board (GASB) Statement No. 67, *Financial Reporting for Pension Plans – an Amendment of GASB Statement No. 25*. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

U.S. generally accepted accounting principles require that the Management’s Discussion and Analysis on pages 3–9 and the supplementary schedules of changes in net pension liability and related ratios, investment returns, contributions and related notes on pages 26 through 29 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management’s responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

KPMG LLP

April 22, 2016

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
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Required Supplementary Information
Management's Discussion and Analysis
December 31, 2014
(Unaudited)

This section presents Management's Discussion and Analysis (MD&A) of the Massachusetts Bay Transportation Authority Retirement Fund's (the Fund or MBTARF) financial activity and performance as of and for the year ended December 31, 2014. The MD&A is unaudited and is intended to serve as an introduction to the Fund's basic financial statements, as well as to offer readers of the Fund's financial statements a narrative view and analysis of MBTARF's financial activities.

Financial Reporting Structure

The financial statements include the statements of fiduciary net position and changes in fiduciary net position. They present the financial position of the Fund as of December 31, 2014 and its financial activities for the year then ended. The notes to the financial statements provide further information that is essential to a full understanding of the financial statements. The notes describe the significant accounting policies of the Fund and provide detailed disclosures on certain account balances. The required supplementary schedules include the schedules of changes in net pension liability and related ratios, investment returns, contributions and related notes as prescribed by the Governmental Accounting Standards Board (GASB).

The Fund's financial statements are prepared on an accrual basis of accounting. This method of accounting requires recognizing and recording cash financial transactions when they occur and not just in conjunction with the inflows and outflows of cash.

The total assets managed by the Fund are held in the trust for the payment of pension and related benefits to its members. The Fund's Board of Trustees, in its fiduciary capacity, with assistance from its consultants established the Fund's investment policies and oversees their implementation.

Financial Highlights

Year Ended December 31, 2014

The net position of the Fund decreased \$18.7 million, or 1.16%, from \$1,606.7 million as of December 31, 2013 to \$1,588.0 million as of December 31, 2014.

Net investment income decreased \$158.1 million, or 68.3%, from \$231.6 million for the year ended December 31, 2013 to \$73.5 million for the year ended December 31, 2014. The Fund had a 5.51% rate of return for the year ended December 2014 compared to a 17.08% rate of return for the year ended December 31, 2013. The returns identified in the MD&A are gross of fees with the exception of hedge funds, which are net of fees.

The total contributions received during the year ended December 31, 2014 were \$95.9 million compared to total contributions received during the year ended December 31, 2013 of \$79.0 million.

Employer contributions during the year ended December 31, 2014 increased \$12.6 million or 21.7% to \$70.6 million from \$58.0 million during the year ended December 31, 2013. This increase is primarily due to the execution of the new wage agreement that was applied retro actively going back to July 2010.

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Member contributions were \$25.3 million during the year ended December 2014, an increase of \$4.3 million or 20.4% over year ended December 31, 2013 member contributions of \$21.0 million. The change in member contributions is also due to the implementation of the new wage agreement.

Benefits paid during the year ended December 31, 2014 were \$182.5 million an increase of \$5.2 million, or 2.9%, over the benefits paid during the year ended December 31, 2013 of \$177.3 million. This increase is primarily due to the 2014 retirees having an increased average benefit and life span as well as the application of the wage agreement for members who retired after July 1, 2010.

Financial Analysis

The following schedules report the condensed comparative fiduciary net position and activities for the Fund as of and for the years ended December 31, 2014 and 2013.

Condensed Comparative Fiduciary Net Position

(Dollar values expressed in millions)

| | December 31 | |
|---|--------------------|-------------|
| | 2014 | 2013 |
| Cash | \$ 3.0 | 2.9 |
| Receivables | 5.8 | 6.5 |
| Investments | 1,585.9 | 1,604.2 |
| Cash collateral on securities lending | 105.9 | 123.7 |
| Total assets | 1,700.6 | 1,737.3 |
| Cash collateral on securities lending | 105.9 | 123.7 |
| Accounts payable and accrued expenses | 4.3 | 4.3 |
| Payable for investments purchased | 2.5 | 2.6 |
| Total liabilities | 112.7 | 130.6 |
| Net position – restricted for pension benefits | \$ 1,587.9 | 1,606.7 |

Total assets were \$1,700.6 million as of December 31, 2014, a decrease of \$36.7 million, or 2.1%, over year ended December 31, 2013. Investments were valued at \$1,585.9, a decrease of \$18.3 million, or 1.1%, over year ended December 31, 2013. This decrease in investment reflects a slowdown in equity market gains compared to the exceptional increases seen in 2013. Cash collateral on securities lending decreased by \$17.8 million, or 14.39%. Receivables decreased by \$0.7 million, or 10.8%, over the prior calendar year due to decreased pending investment sales at the end of the calendar year.

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Total liabilities as of December 31, 2014 decreased by \$17.9 million, or 13.8%, over the prior year. This resulted primarily from decreased cash collateral on securities lending activity. The cash collateral on securities lending decreased by \$17.8 million, or 14.39%, in calendar year 2014. Payable for investment purchased decreased by \$0.1 million, or 3.8%.

Condensed Comparative Fiduciary Net Position

(Dollar values expressed in millions)

| | December 31 | |
|---|--------------------|-------------|
| | 2014 | 2013 |
| Additions: | | |
| Employer contributions | \$ 70.6 | 58.0 |
| Member contributions | 25.3 | 21.0 |
| Income from investments | 73.5 | 231.6 |
| Total additions | 169.4 | 310.6 |
| Deductions: | | |
| Retirement benefits | 182.5 | 177.3 |
| Refunds of contributions | 1.6 | 1.1 |
| Administrative expense | 4.0 | 3.9 |
| Total deductions | 188.1 | 182.3 |
| Total changes in fiduciary net position | \$ (18.7) | 128.3 |

Additions to Plan Fiduciary Position

For the calendar year ended December 31, 2014, employer contributions increased by \$12.6 million and member contributions increased by \$4.3 million. Effective July 1, 2014, the employer's contribution rate changed from 15.3311% to 16.0511% and the member contribution rate changed from 5.5589% to 5.7989%, resulting in a 4.7% and 4.3% increase, respectively.

Contributions are required to provide benefits and meet administrative expenses and are made jointly by the Massachusetts Bay Transportation Authority (the Authority) and members. The contribution percentage is negotiated periodically as part of the collective bargaining agreement. The Fund's investment portfolio has been a major source of additions to the Fund's net position. There was a net investment gain in 2014 of \$73.2 million compared to a \$231.3 net investment gain in 2013. This is primarily the result of a change in net appreciation of the fair value of the investment portfolio.

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Deductions from Fiduciary Net Position

Benefits paid increased by \$5.2 million, or 2.93%, over the year ended 2014. This increase is primarily due to the 2013 retirees having an increased average benefit and life span as well as the implementation of the wage agreement for members who retired after July 1, 2010. Administrative expenses increased from \$3.9 million to \$4.0 million, an increase of \$0.1 million, or 2.63%.

Net Pension Liability (NPL)

The Fund retains an independent actuarial firm, Buck Consultants, to conduct annual actuarial valuations to monitor net pension liability.

As of December 31, 2014 and 2013, the fiduciary net position as a percentage of the total pension liability was 64.88% and 67.96%, respectively. Because there were no changes to any underlying actuarial assumptions from 2013 to 2014, the decrease in NPL was primarily due to the net decrease in fiduciary net position.

Investment Performance 2014

The Fund began the calendar year 2014 with net position of \$1,606.7 million and ended the calendar year with net position of \$1,587.9 million, representing a 1.16% decrease. The Fund invests strategically to achieve the actuarial rate of return while controlling risk through diversification of asset class exposure. The primary determinant of long-term investment performance is the strategic asset allocation policy.

Domestic equity (32.5%), international equity (13.6%), fixed income investments (21.9%), and cash equivalents (3.6%) comprise approximately (71.6%) of invested assets as of December 31, 2014. The remaining (28.4%) of assets are invested in real estate (8.9%), and alternative investments (19.5%), which include private equity, absolute return, and diversified beta. These assets are expected to earn enhanced returns and manage risk through further diversification.

Investment performance results are measured by the relationship of the Fund's portfolio returns for equity and fixed income investment against widely accepted market indices. For the calendar year ended December 31, 2014, the MBTA Retirement Fund's total fund return was 5.51% compared to 17.08% for the calendar year ended December 31, 2013. The 2014 return was primarily due to the market conditions.

The domestic large cap equity returned 10.39% compared to the S&P 500 Index of 13.69%. The domestic small cap equity returned 2.37% compared to the Russell 2000 Growth Index of 5.60% and the Russell 2000 Value Index of 4.22%. The global equity and emerging markets returned 6.35% compared to MSCI All Country World Index.

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The total fund performance of 5.51% for calendar year 2014 underperformed by 0.71% the total fund custom index (a blended composition of major market indices in proportion to the Fund's asset allocation), which returned 6.22%.

The domestic large cap equity returned 10.39% compared to the S&P 500 Index of 13.69%. The domestic small cap equity returned 2.37% compared to the Russell 2000 Growth Index of 5.60% and the Russell 2000 Value Index of 4.22%. The global equity and emerging markets returned 6.35% compared to MSCI All Country World Index of 5.50%. The international equity returned (5.87)% compared to the MSCI EAFE Index of (4.90)%. Fixed Income returned 4.90% compared to the BC Aggregate of 5.97%

Additionally, for the year ended December 31, 2014, the real estate portfolio return 25.25% compared to the NCREIF Property Index of 11.82%. The hedge fund portfolio returned 4.14% compared to the CSFB/Tremont Hedge Fund Index of 4.13%. The private equity active portfolio returned 7.60% and the legacy private equity portfolio returned (4.96)% compared to State Street's Customized Benchmark return of 6.93%. State Street Customized Benchmark consists of 36% buyout, 9% venture, 37% debt and 18% fund of funds. Diversified Beta returned 6.72% compared to the 91 Treasury Bill Plus 300 Basis Points return of 3.04%.

Other Information

In 2007, the Fund invested \$25 million in Fletcher Fixed Income Alpha Fund, Ltd., a Cayman Islands hedge fund within a master-feeder structure managed by Fletcher Asset Management, Inc. On June 29, 2012, Fletcher International Ltd, the master fund, filed for Chapter 11 bankruptcy protection. The bankruptcy court appointed an Independent Trustee to investigate and, ultimately, liquidate the master fund. On November 25, 2013, the Independent Trustee issued a report detailing allegations of fraud committed by Fletcher and its principal, Mr. Alphonse Fletcher, J., as well as certain of his associates. After partial write downs of the investment in 2011 and 2012, the Fund wrote down the Fletcher investment value to zero in 2013. The Fund, working with the Independent Trustee, remains actively engaged in litigation seeking recovery of damages from Fletcher, his associates, and third-party professionals.

On June 29, 2009, the Fund invested \$10 million in Weston Capital Partners Fund II Ltd. (Partners II), a fund of funds managed by Weston Capital Asset Management LLC (Weston Capital). Partners II was a feeder fund within a master-feeder structure. On September 25, 2013, the MBTARF entered into a Transfer Form Agreement by which a pro rata portion of a majority of the underlying assets of Partners II, including interests in White Oak Opportunity SRV, L.P., White Oak Strategic II SRV, L.P., White Oak Strategic Master Fund, L.P., and White Oak Strategic SRV, L.P., were transferred directly to the MBTARF. At a meeting of investors on September 29, 2014, at the MBTARF's request, an independent director, Ms. Karen Balmer, was appointed and directed to wind down Partners II and dissolve its remaining assets. In May of 2015, Ms. Balmer delivered an accounting of Partners II assets and reported that the master-feeder structure would be dissolved with liquid assets distributed immediately and nonliquid assets and claims pursued post-dissolution by a newly formed liquidating entity.

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On June 23, 2014, a consensual civil judgment entered in the United States District Court, Southern District of Florida, in favor of the Securities and Exchange Commission (SEC) against Weston Capital and certain principals in connection with investment activities involving a separate Weston Capital fund known as the Wimbledon Fund SPC, Class TT Segregated Portfolio. The actions described in the SEC complaint appear unrelated to the MBTARF's redeemed investment in Partners II. As of December 31, 2014 the Fund has received \$5,927,688 in cash distributions from Partners II. The fair value as of December 31, 2014 of the four funds managed by White Oak Advisors, LLC, plus the distributions received from Partners II through December 31, 2014, is \$9,560,835. In December of 2015 the MBTARF received notice from the directors of the White Oak Funds which continue to hold portfolio entities that those funds had engaged Crestline-Kirchner, L.P., an investment advisor specializing in the management of illiquid assets, to serve as investment manager to those White Oak Funds. The relationship between the relevant White Oak Funds and Crestline-Kirchner, L.P. has been structured to lower on-going management fees and incentivize a successful exit from the portfolio companies.

On June 28, 2015, *The Boston Globe* published an article about the Fund's alleged over valuation of assets and under valuation of liabilities for fiscal years 2011-2013 based on a report authored by, among others, Harry Markopolos (the Markopolos Report). Despite requests, the Markopolos Report was not shared with the Fund. In response to the allegations, the Fund, through a special subcommittee of the Retirement Board, issued a Request for Proposals (RFP) seeking an independent expert review of the Fund's valuations, assets and liabilities for the period.

Following the RFP process, which prompted inquiries and proposals from a number of experienced firms, on November 20, 2015, the Retirement Board voted to retain FTI Consulting (FTI) to conduct an independent review of all pension assets, investment returns, actuarial assumptions and liabilities, as set forth in the Fund's audited financial statements for 2011, 2012 and 2013.

FTI is a leading independent provider of multidisciplinary, independent investigative, forensic accounting, and computer forensic and analytic services to the global business and legal community. FTI provides independent, multidisciplinary teams consisting of former "Big 4" auditors, forensic accountants, former federal and state prosecutors, former regulators, former law enforcement officials, investigative researchers, and computer forensic and data analytic specialists.

FTI reviewed thousands of pages of documents, worked cooperatively with the Fund's auditor, and interviewed the Fund's actuary, custodian, investment advisor and key Fund personnel. On March 9, 2016, FTI issued a report finding no significant differences between the financial information reported for 2011-2013 by the Fund and the supporting documentation provided by the custodian or other third parties. In addition, FTI determined that the key actuarial assumptions were reasonable and appropriately applied. Finally, the FTI report concluded that the allegations contained in the Markopolos Report regarding the Fund's audited financial statements lacked merit. The Retirement Board voted to make the FTI report available to the public, and it is linked to the Fund's website (www.mbtarf.com).

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Contacting the MBTA Retirement Fund

This financial report is designed to provide a general overview of the Fund's investment results and financial condition of the Fund for the year ended December 31, 2014. Please contact the MBTA Retirement Fund Office for additional financial information or questions related to this report.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
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Statement of Fiduciary Net Position

December 31, 2014

Assets:

Investments, at fair value:

Domestic:

| | |
|---|----------------------|
| Cash and cash equivalents | \$ 57,554,556 |
| Fixed income | 340,063,702 |
| Common stock and equity funds | 515,963,329 |
| Real estate | 141,194,900 |
| Alternative investments and hedge funds | 309,485,039 |
| | <u>1,364,261,526</u> |

International:

| | |
|-------------------------------|--------------------|
| Cash and cash equivalents | 14,281 |
| Fixed income | 6,515,165 |
| Common stock and equity funds | 215,111,044 |
| | <u>221,640,490</u> |

| | |
|-------------------|---------------|
| Total investments | 1,585,902,016 |
|-------------------|---------------|

| | |
|---|----------------------|
| Cash and cash equivalents | 2,952,778 |
| Contribution receivable from Massachusetts Bay Transportation Authority | 1,658,892 |
| Cash collateral on securities lending, invested | 105,907,691 |
| Receivable for investments sold and other | 4,176,805 |
| | <u>1,700,598,182</u> |

| | |
|--------------|---------------|
| Total assets | 1,700,598,182 |
|--------------|---------------|

Liabilities:

| | |
|---|--------------------|
| Cash collateral on securities lending, due to borrowers | 105,907,691 |
| Accounts payable and accrued expenses | 4,273,470 |
| Payable for investments purchased | 2,450,532 |
| | <u>112,631,693</u> |

| | |
|-------------------|-------------|
| Total liabilities | 112,631,693 |
|-------------------|-------------|

| | |
|--|--------------------------------|
| Net position – restricted for pension benefits | \$ <u><u>1,587,966,489</u></u> |
|--|--------------------------------|

See accompanying notes to financial statements.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
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Statement of Changes in Fiduciary Net Position

Year ended December 31, 2014

| | |
|--|-------------------------|
| Additions: | |
| Contributions by Massachusetts Bay Transportation Authority | \$ 70,603,285 |
| Contributions by members | 25,318,224 |
| Total contributions | <u>95,921,509</u> |
| Investment income: | |
| Income from investments and other income | 53,319,148 |
| Less investment expenses, other than from securities lending | (7,566,154) |
| Net appreciation (depreciation) in fair value of investments | 27,464,514 |
| Net investment gain | <u>73,217,508</u> |
| Securities lending activity: | |
| Securities lending income | 657,244 |
| Less borrower rebates and fees | <u>331,275</u> |
| Net income from securities lending activities | <u>325,969</u> |
| Total net investment income | <u>73,543,477</u> |
| Total additions | <u>169,464,986</u> |
| Deductions: | |
| Retirement benefits | 182,499,776 |
| Refunds of members' contributions | 1,630,411 |
| Administrative expenses | 4,052,664 |
| Total deductions | <u>188,182,851</u> |
| Net change in net position | (18,717,865) |
| Net position – restricted for pension benefits: | |
| Beginning of year | <u>1,606,684,354</u> |
| End of year | <u>\$ 1,587,966,489</u> |

See accompanying notes to financial statements.

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Notes to Financial Statements

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(1) Description of the Fund

(a) General

The following description of the Massachusetts Bay Transportation Authority Retirement Fund (the Fund), a single employer plan, provides only general information. Employees (members) should refer to the Pension Agreement for a more complete description of the Fund's provisions.

The Fund was established on January 1, 1948, under an agreement and declaration of trust (restated in October 28, 1980) by and among the Massachusetts Bay Transportation Authority (the Authority), Local 589, Amalgamated Transit Union, Boston Carmen's Union, and AFL CIO (collectively, the Union). The Fund was established as a contributory defined benefit retirement plan in accordance with the Pension Agreement, effective July 1, 1970, adopted by the Authority and the Union for the purpose of receiving contributions and providing pension benefits for its members and qualified beneficiaries.

The general administration and responsibility for the operation of the Fund are vested in a seven-member Retirement Board. The Board consists of three members appointed by the Authority (at least one of whom must be a member of the Authority's Board of Directors), two members appointed by the Boston Carmen's Union, Local Union 589 of the Amalgamated Transit Union, AFL-CIO, one member elected by vote conducted by the Authority for a term of three years by members of the Fund who are not members of the Boston Carmen's Union, Local Union 589 of the Amalgamated Transit Union, AFL-CIO, and one member, who has no vote and is known as the honorary member, who is elected, for such period as the Retirement Board may determine, by the other six members of the Retirement Board.

(b) Membership

The Fund covers all employees of the Authority except the MBTA Police, who are covered separately, and certain executives who elect coverage under an alternate plan. At December 31, 2014, Fund membership consisted of:

| | | |
|---|-------------|-----|
| Retired members or beneficiaries | | |
| currently receiving benefits | 6,407 | (1) |
| Active members | 5,798 | |
| Active members not presently earning service credit | 134 | |
| | <hr/> | |
| Total membership | 12,339 | |
| | <hr/> <hr/> | |

(1) Includes 6,309 retirees and beneficiaries and 98 individuals receiving payments under QDROs

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(c) ***Funding Policy***

Contributions required to provide benefits and meet administrative expenses are made jointly by the Authority and members. The member contribution rate was increased from 5.5589% to 5.7989% effective July 1, 2014 of pretax compensation. The Authority's contribution rate was increased from 15.3311% to 16.0511% effective July 1, 2014. Effective July 1, 2015 member contribution and Authority contribution rates will be 5.7914% and 16.0286% respectively. These contribution rates were calculated based on the most recent actuarial valuation of plan benefits and the Memorandum of Understanding with the Authority. The terms of the Fund's obligations are part of the Pension Agreement contained in the annual report of the Fund. Only parties to the Pension Agreement can amend the terms. The contributions by members and the Authority have been developed to provide normal contributions, interest on the unfunded accrued liability, and administrative expenses.

(d) ***Benefits***

The Fund provides for retirement, disability and death benefits in accordance with the Pension Agreement, as amended.

A summary of benefits is as follows:

Normal Retirement Allowance

Condition for Allowance

Any member may retire at age 65. A member may remain in service after the stated retirement date.

Amount of Allowance

The normal retirement allowance equals 2.46% of 3-year average annual compensation multiplied by the years of service, such allowance not to exceed 75% of such average annual compensation.

Early Normal Retirement Allowance

Condition for Allowance

Any member hired prior December 6, 2012 and has completed at least 23 years of service may retire on an early normal retirement allowance.

Any member hired on or after December 6, 2012, has attained age 55 and completed at least 25 years of service may retire on an early normal retirement allowance.

Amount of Allowance

The early normal retirement allowance is computed in the same manner as a normal retirement allowance on the basis of the compensation and service to the time of retirement.

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Early Reduced Retirement Allowance

Condition for Allowance

A member who has attained age 55 and has completed at least 20 years of service may be retired on an early reduced retirement allowance.

Amount of Allowance

The early reduced retirement allowance is an immediate allowance, commencing at the date of retirement, and is computed in the same manner as a normal retirement allowance on the basis of compensation and service to the time of early retirement, but reduced by 1/2 of 1% for each month of retirement prior to normal retirement date.

Disability Retirement Allowance

Condition for Allowance

Any member who has completed 4 years of service in case of disablement due to an occupational accident or sickness, or who has completed 6 years of service in case of disablement due to any other cause, and who has become totally and permanently incapacitated, mentally or physically, for the further performance of duty may be retired.

Amount of Allowance

Upon disability retirement, a member receives an allowance commencing immediately, which is computed as a normal retirement allowance on the basis of the compensation and service to the time of disability retirement and is not less than 15% of the member's 3-year average annual compensation.

Vested Retirement Allowance

Condition for Allowance

Any member who has completed 10 years of service and who is not eligible for a retirement allowance is eligible for a vested retirement allowance, in lieu of a refund of his/her contributions with interest, in the event his/her employment terminates for reasons other than voluntary quit or discharge for cause.

Amount of Allowance

The vested retirement allowance is a deferred allowance commencing on the member's normal retirement date and equal to a percentage, not exceeding 100%, of the amount computed as a normal retirement allowance on the basis of the compensation and service to the time of termination; the applicable percentage is 5% multiplied by the number of years of creditable service, not in excess of 20, at the time of termination.

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Survivor Benefit

Condition for Benefit

Upon the death of a member who has completed 10 years of service and who is survived by a spouse and/or dependent children designated to receive the deceased member's contributions with interest, a benefit may be elected by such survivor in lieu of the payment of the contributions with interest.

Amount of Benefit

If the deceased member had completed at least 10 but fewer than 23 years of service, the survivor's benefit, payable for life, is equal to the amount which would have become payable if the member had retired as of the date of his/her death and elected a 50% joint and survivor option in effect as of the date of death with the survivor as the designated person under the option. There is no reduction for early commencement.

If the deceased member had completed at least 23 years of service, the survivor's benefit, payable for life, is equal to the amount which would have become payable if the member had retired as of the date of his/her death and elected a 100% joint and survivor option in effect as of the date of death with the survivor as the designated person under the option. There is no reduction for early commencement.

Accidental Death Benefit

Condition for Benefit

Upon the death of a member in service whose death results solely from an injury or injuries sustained in the performance of duty, and who is survived by a spouse designated to receive the deceased member's contribution with interest, an allowance shall be payable to said spouse.

Amount of Benefit

The accidental death benefit, payable for life, is equal to the amount which would have become payable to the member if the member had retired as of the date of his/her death on a disability retirement allowance. If there should be insufficient creditable service, the surviving spouse receives the minimum allowance available under the disability retirement provision.

(e) Fund Termination

In the event of termination of the Fund, all of the assets of the Fund shall be used for the benefit of members and retired members or their beneficiaries, and for no other purpose. Each member, and each retired member or their designated beneficiary in receipt of a retirement allowance, shall be entitled to such proportionate part of the assets of the Fund as the reserve, required for their benefits, bears to the total reserves required under the Fund as determined by the Massachusetts Bay Transportation Authority Retirement Board (the Retirement Board) on the basis of actuarial valuation. The Retirement Board may require all such members, and retired members or designated beneficiaries, to withdraw such amounts in cash or in the form of immediate or deferred annuities as it may determine.

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(2) Significant Accounting Policies

(a) Basis of Accounting

The financial statements have been prepared on the accrual basis of accounting in conformity with U.S. generally accepted accounting principles (GAAP), as promulgated by the Governmental Accounting Standards Board (GASB).

(b) Use of Estimates

The preparation of financial statements in conformity with GAAP requires the Fund's management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Significant items subject to such estimates and assumptions include, but are not limited to, the assessment of fair values for real estate and alternative investment holdings in the absence of readily available market values, and these estimates may be materially different than values that would have been used had a ready market existed for these investments.

(c) Cash and Cash Equivalents

Cash and cash equivalents generally consist of cash on deposit with banks and financial institutions and highly liquid short-term investments, which have original maturities of three months or less. The Fund maintains its cash deposits with financial institutions, which management considers being of high credit quality and, by policy, limits the allocation of funds to any single major financial institution to minimize the Fund's amount of credit exposure.

(d) Revenue Recognition

Contributions are recognized pursuant to the contractual requirements of the Pension Agreement. Investment income is recognized as it is earned. Net appreciation (depreciation) in the fair value of investments is recorded as an increase (decrease) to investment income based on the valuation of investments as of the date of the financial statements.

(e) Retirement Benefits and Refunds

Retirement benefits and refunds are recognized when they become due and payable.

(f) Investments

Investments are stated at fair value. Securities traded on national security exchanges are valued on the basis of the closing price as of the last business day of the reporting period. Securities traded in the over-the-counter market are normally valued at the mean of the closing bid and asked prices. Securities listed or traded on certain foreign exchanges whose operations are similar to the U.S. over-the-counter market are valued at the price within the limits of the latest available current bid and asked prices deemed best to reflect current value. Gains and losses on sales of investments are determined on the basis of average cost.

Investments in real estate represent the Fund's percent ownership in private real estate funds and limited partnerships. The Fund's investments are valued based on estimates by the Fund's management

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as a result of their review of financial information of the underlying real estate investment assets and standards established by the real estate industry, generally using the net asset value of the underlying investment as a practical expedient.

Investments in alternative investments and hedge funds include the Fund's percent ownership in venture capital, leveraged buyouts, private placements, hedge fund-of-funds, and other investments where the structure, risk profile, and return potential differ from traditional equity and fixed income investments. These investments are included in the statement of fiduciary net position at estimated values determined in good faith by the Fund's management, generally using the net asset value of the underlying investment as a practical expedient.

Purchase and sales of investments are selected on a trade-date basis.

(g) *Derivatives*

A derivative is an investment agreement or security with a value that depends on, or is derived from, the value of an underlying asset, reference rate, or financial index. The Fund has classified its investment in forward exchange contracts as investment derivative instruments. A forward exchange contract is a commitment to purchase or sell a foreign currency at a future date at a negotiated forward rate. The Fund utilizes forward foreign exchange contracts to minimize the effect of fluctuating foreign currencies. Risk associated with such contracts includes movement in the value of a foreign currency relative to the U.S. dollar. Realized gain or loss on forward exchange contracts is the difference between the original contract and the closing value of such contract and is included in the statement of changes in fiduciary net position. At December 31, 2014, the Fund held open forward exchange contracts of varying amounts and currencies. Unrealized gains and losses are not significant to the financial statements.

(h) *Currency Translation*

As a result of having assets and liabilities denominated in foreign currencies, the Fund is exposed to the effect of foreign exchange rate fluctuations. Assets and liabilities denominated in foreign currencies and commitments under forward foreign exchange contracts and currency options are translated into U.S. dollars at the mean of the quoted bid and asked prices of such currencies against the U.S. dollar. Changes in foreign exchanges are reflected directly in income. Purchases and sales of portfolio securities are translated at the rates of exchange prevailing when such securities were acquired or sold. Income and expenses are translated at rates of exchange prevailing when accrued. It is not practical to isolate that portion of the results of operations arising as a result of changes in the foreign exchange rates from the fluctuations arising from changes in the market price of securities during the period. Net realized gains on foreign currency transactions represent net foreign exchange gains from holding foreign currencies, currency gains or losses realized between the trade and settlement dates on security transactions, and the difference between the amounts of dividends, interest, and foreign taxes recorded on the Fund's books and the U.S. dollar equivalent amounts actually received or paid.

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(i) Income Taxes

The Fund is considered a qualified governmental plan under Internal Revenue Code Section 414(d) and, is generally exempt from federal and state income tax under the Internal Revenue Code Section 115.

(j) Recent Accounting Pronouncements

The Fund implemented GASB No. 67 *Financial Reporting for Pension Plans*-an amendment of GASB Statement No. 25, for the year ending December 31, 2014. This statement replaces the requirements of GASB Statement No. 25, *Financial Reporting for Defined Benefit Pension Plans and Note Disclosure for Defined Contribution Plans*, and specifies the required approach to measuring the pension liability of employers and nonemployer contributing entities for benefits provided through the pension plan. GASB Statement No. 67 requires plans to disclose a net pension liability (NPL) to be measured as the total pension liability (TPL) less the amount of the pension plan's fiduciary net position (FNP).

(3) Cash Deposits, Investments, and Securities Lending

The Fund, in accordance with the declaration of trust agreement, is authorized to make deposits into checking and savings accounts and to invest in any form or type of investment, financial instrument, or financial transaction deemed prudent in the informed opinion of the Retirement Board. State Street Bank & Trust Company serves as the master custodian for the Fund's assets.

For the year ended December 31, 2014, the Fund's essential risk information about deposits and investments is presented on the following tables.

(a) Custodial Credit Risk

Custodial credit risk is the risk that, in the event of failure of a depository financial institution, the Fund's deposits may not be returned. The Fund maintains its cash and cash equivalent deposits with various financial institutions, which management considers being of high quality. The Fund limits the allocation of its cash and cash equivalent deposits to any single financial institution to minimize the Fund's exposure. The Fund's cash and cash equivalent deposits that are not collateralized are subject to the Federal Deposit Insurance Corporation (FDIC) insurance limits. At December 31, 2014, \$2,559,211 of the Fund's cash and cash equivalents deposits were in excess of the FDIC insurance limit.

Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in the name of the Fund and are held by either the depository financial institution or the depository financial institution's trust department or agent but not in the Fund's name.

All of the Fund's investments are held by the Fund's custodian in the Fund's name, except for investments in hedge funds, real estate and alternative investments, which by their nature are not required to be categorized.

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(b) Investment Policy

The Fund's investment objective is to achieve consistent positive real returns and to maximize long-term total return within prudent levels of risk through a combination of income and capital appreciation. The Fund's goal is to meet or exceed the Fund's actuarial target rate of return in order to maintain and improve upon its funded status.

The Fund is currently invested in stocks (domestic and foreign), fixed income securities (domestic), real estate, private equity, and hedge funds.

The following was the Board's adopted asset allocation policy as of December 31, 2014:

| Asset class | Target |
|------------------------------|--------|
| Domestic equity | 25% |
| International equity | 11 |
| Global/Emerging markets | 7 |
| Fixed income | 25 |
| Real estate | 9 |
| Private equity | 10 |
| Hedge funds | 8 |
| Risk Parity/Diversified Beta | 3 |
| Cash | 2 |
| Total | 100% |

(c) Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. The following is a listing of the Fund's fixed income investments and related maturity schedule (in years) as of December 31, 2014:

| Investment type | Fair value | Less than 1 | 1-5 | 6-10 | More than 10 |
|-------------------------------|----------------|-------------|-------------|------------|--------------|
| U.S. agencies | \$ 72,210,477 | — | 67,981,724 | 290,315 | 3,938,438 |
| U.S. Treasury notes and bonds | 24,813,278 | 755,234 | 16,068,873 | 4,899,886 | 3,089,285 |
| Domestic corporate | 186,152,205 | 1,461,169 | 51,199,604 | 87,413,051 | 46,078,381 |
| International corporate | 6,515,165 | 1,085,657 | 2,962,802 | 1,721,958 | 744,748 |
| Asset backed: | | | | | |
| CMOs | 4,176,319 | — | — | 165,101 | 4,011,218 |
| Mortgage backed | 35,335,722 | 751,028 | 2,552,375 | — | 32,032,319 |
| Other | 17,375,701 | — | 9,523,048 | 1,713,373 | 6,139,280 |
| | \$ 346,578,867 | 4,053,088 | 150,288,426 | 96,203,684 | 96,033,669 |

The Fund's guidelines limit its effective exposure to interest rate risk by benchmarking the separately managed fixed income investment accounts to an intermediate duration benchmark with a weighted average duration of four to five years. The Fund further constrains its actively managed fixed income portfolios to maintain a duration that shall not exceed 1.5 times the benchmark duration. The manager

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of each fixed income portfolio is responsible for determining the maturity and commensurate returns of his/her portfolio. Fixed income managers are also expected to report risk statistics and give a description of portfolio characteristics, including quality, duration, allocation by security type, and yield to maturity.

The collateralized mortgage obligations (CMOs) held by the Fund at December 31, 2014 are highly sensitive to changes in interest rates.

(d) Credit Risk

Credit risk exists when there is a possibility the issuer or other counterparty to an investment may be unable to fulfill its obligations. The Fund expects all investment managers to perform their fiduciary duties as prudent people would and conform to all state and federal statutes governing the investment of the funds. Managers are to adhere to the philosophy and style that was articulated to the Retirement Board at the time of hire. The fixed income investment managers have full discretion to invest in fixed income securities in order to exceed their strategy specific benchmarks.

The Fund's fixed income investments as of December 31, 2014 were rated by Standard and Poor's and/or an equivalent national rating organization, and the ratings are presented below using the Standard & Poor's rating scale:

| Investment type | Fair value | AAA | AA | A | BBB | BB | B | CCC | Not rated |
|--|----------------|------------|-----------|-------------|------------|------------|------------|-----------|------------|
| U.S. agencies | \$ 72,210,477 | — | 2,595,791 | 69,324,371 | 290,315 | — | — | — | — |
| Domestic corporate | 186,152,205 | 798,907 | 1,622,292 | 66,377,087 | 37,804,850 | 12,879,937 | 49,303,163 | 786,750 | 16,579,219 |
| International | 6,515,165 | 597,766 | — | 3,920,151 | 779,408 | 517,286 | — | — | 700,554 |
| Asset backed: | | | | | | | | | |
| CMOs | 4,176,319 | — | — | 23,671 | — | — | — | — | 4,152,648 |
| Mortgage backed | 35,335,722 | 5,313,919 | 3,502,466 | 524,287 | 1,641,097 | — | — | — | 24,353,953 |
| Other | 17,375,701 | 7,449,146 | 7,899 | 678,751 | 687,929 | — | 17,343 | 308,145 | 8,226,488 |
| Total credit securities risk | 321,765,589 | 14,159,738 | 7,728,448 | 140,848,318 | 41,203,599 | 13,397,223 | 49,320,506 | 1,094,895 | 54,012,862 |
| U.S. government fixed income securities* | 24,813,278 | | | | | | | | |
| Total fixed income securities | \$ 346,578,867 | | | | | | | | |

* Obligations of the U.S. government or obligations explicitly guaranteed by the U.S. government are not considered to have credit risk.

(e) Concentration Risk

Concentration of credit risk is the risk of loss that may be attributed to the magnitude of a government's investment in a single issuer. The Fund places a 5% limit on the individual exposure to any single issuer at the time of purchase. The Fund has no investments, at fair value, that exceed 5% of the Fund's total investments as of December 31, 2014. The Fund does have investments in individual commingled funds and trusts that represent more than 5% of the Fund's assets, but in each case, these investments are in institutional commingled funds that are invested in diversified portfolios.

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(f) 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 Fund's exposure to foreign currency risk is attributable to its investments in separately managed and commingled international equity mutual funds and trusts that are invested in diversified portfolios of international stocks that are denominated in foreign currencies. The Fund's combined policy target allocation to all non-U.S. securities is currently 16% of the Fund's total assets. Currency hedging is permitted for defensive purposes. Currency hedging shall be effected through the use of forward currency contracts, which are described more fully in note 2.

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Risk of loss arises from changes in currency exchange rates. The Fund's exposure to foreign currency risk as of December 31, 2014 is presented on the following table:

| <u>Currency</u> | <u>Short term</u> | <u>Fixed income</u> | <u>Equity</u> | <u>Total</u> |
|--|-------------------|---------------------|---------------|--------------|
| Australian dollar | \$ — | 645,144 | 1,352,211 | 1,997,355 |
| Brazilian real | — | 1,115,503 | 1,674,199 | 2,789,702 |
| Canadian dollar | 11,302 | — | 1,930,686 | 1,941,988 |
| Chilean peso | — | 294,397 | — | 294,397 |
| Colombian peso | — | 181,191 | — | 181,191 |
| Danish krone | — | — | 844,320 | 844,320 |
| Euro currency | 2,971 | — | 45,074,646 | 45,077,617 |
| Hong Kong dollar | — | — | 5,195,497 | 5,195,497 |
| Indian rupee | — | 597,766 | — | 597,766 |
| Japanese yen | — | — | 30,301,657 | 30,301,657 |
| Mexican peso | — | 2,595,507 | — | 2,595,507 |
| New Zealand dollar | 8 | — | — | 8 |
| Norwegian krone | — | — | 553,681 | 553,681 |
| Philippine peso | — | 1,085,657 | — | 1,085,657 |
| Pound sterling | — | — | 25,109,705 | 25,109,705 |
| Singapore dollar | — | — | 1,754,104 | 1,754,104 |
| South African rand | — | — | 4,361,188 | 4,361,188 |
| Swedish krona | — | — | 3,854,148 | 3,854,148 |
| Swiss franc | — | — | 13,336,648 | 13,336,648 |
| Thailand baht | — | — | 5,109,760 | 5,109,760 |
| International equity pooled funds (various currencies) | — | — | 74,658,594 | 74,658,594 |
| Total securities subject to foreign currency risk | 14,281 | 6,515,165 | 215,111,044 | 221,640,490 |
| United States dollars (securities held by international investment managers) | — | — | 21,635,342 | 21,635,342 |
| Total international investment securities | \$ 14,281 | 6,515,165 | 236,746,386 | 243,275,832 |

(g) Securities Lending Transactions

The Fund participates in the State Street Bank and Trust Company securities lending program by lending securities to borrowers (subject to borrower limits and program guidelines) and earning additional income, which is included in net investment income in the statement of changes in fiduciary net position.

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The Fund did not incur any losses on loaned securities during the year ended December 31, 2014. The securities are monitored on a daily basis by the custodian to ensure that the loans are properly collateralized. The collateral value is required to be at least 102% of the fair value of loaned domestic investments and a collateral value of at least 105% of the fair value on loaned international investments. Collateral can consist of both cash and securities. Should the collateral percentage levels fall below the stated figures, the borrowers are required to provide additional collateral to proper levels. The indemnification that State Street Bank provides the Fund in regard to loan risk is that should a borrower default on returning a security from loan, the collateral held is used to buy the security to be returned to the Fund. Any shortfall of proceeds to purchase the securities is taken on by State Street Bank.

Loaned securities are included in the statement of fiduciary net position since the Fund maintains ownership. For loans collateralized by cash, the value of the collateral is recorded as a liability offsetting the cash collateral recorded as an asset. The cash collateral as of December 31, 2014 was \$105,907,691. For loans having collateral other than cash, the related collateral securities are not recorded as assets in the statement of fiduciary net position, and a corresponding liability is not recorded, since the Fund cannot pledge or sell the collateral securities, except in the event of a borrower's default.

At December 31, 2014, the fair value of loaned securities outstanding, included in investments, was approximately \$102,799,993.

(h) Commitments

At December 31, 2014, the Fund had contractual commitments to provide approximately \$68.8 million of additional funding for alternative investments and real estate.

(i) Money Rate of Return

The Annual money-weighted rate of return on the Fund's investments calculated as the internal rate of return on the pension fund net of investment expenses for the year ended December 31, 2014 is 4.80%. A money weighted return expresses investment performance net of pension plan investment expense, adjusted for the changing amounts actually invested.

(4) Related-Party Transactions

The Fund invests certain cash in a money market fund, the State Street Bank and Trust Company Short Term Investment Fund, which is sponsored by the Fund's custodial bank. The total value of the funds held at December 31, 2014 was \$52,597,983.

The Fund invests in the AFL-CIO Housing Investment Trust and the AFL-CIO Building Investment Trust, two for-profit investment programs of the AFL-CIO. The total value of AFL-CIO Housing Investment Trust at December 31, 2014 was \$48,734,330. The total value of AFL-CIO Building Investment Trust at December 31, 2014 was \$11,919,363.

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(5) Net Pension Liability

The components of the net pension liabilities of the MBTA Retirement Fund as of December 31, 2014 are shown as follows (amounts in thousands):

| | | |
|---|----|-----------------------|
| Total pension liability | \$ | 2,447,731 |
| Plan Fiduciary net position | | <u>(1,587,966)</u> |
| Fund's net pension liability | \$ | <u><u>859,765</u></u> |
| Plan fiduciary net position as a percentage of total pension liability | | 64.88% |

Actuarial Assumptions

The total pension liability was determined by an actuarial valuation as of December 31, 2014, using the following actuarial assumptions:

- Projected salary increases of 4% per year including inflation
- Investment rate of return of 8% per annum, compounded annually
- Inflation rate of 3 percent

Mortality rates were based on the UP 1994 Mortality Table for males projected to year 2020 with Scale AA is used for all active and retired participants. The UP 1994 Mortality Table for Females projected to year 2020 with Scale AA for all beneficiaries. A special mortality table is used for the period after disability retirement. Among pre-retirement deaths, 7.50% are assumed to qualify for accidental death benefits.

The actuarial assumptions used in the December 31, 2014 valuation was based on the results of an actuarial experience study for the period from January 1, 2006, through December 31, 2010. Actuarial valuations attempt to estimate costs associated with the pension fund based on a number of demographic, economic and retirement experience assumptions. Experience studies are required by statute to be conducted every five years to review experience in comparison to these assumptions and to provide recommended changes to assumptions.

The Long-term expected rate of return on Fund investments was determined using best-estimate ranges of expected future nominal rates of return (expected returns, net of investment expense and inflation) developed for each major asset class using an econometric model that forecasts a variety of economic environments and then calculates asset class returns based on functional relationships between economic variables and the asset class. Best estimates of arithmetic real rates of return for each major asset class included in the target asset allocation as of December 31, are summarized in the following table:

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| <u>Asset class</u> | <u>Target asset allocation</u> | <u>Long-term expected real rate of return</u> |
|--------------------|--------------------------------|---|
| Equity | 43% | 8.46% |
| Fixed income | 27 | 1.83 |
| Alternatives | 30 | 7.92 |

Nominal long-term expected rates of return for these asset classes are equal to the sum of the above expected long-term real rates and the expected long-term inflation rate of 3.0%

(a) Discount Rate

The discount rate used to measure the total pension liability at December 31, 2014, was 8.00%. The projections of cash flows used to determine the discount rate assumed that contributions will continue to be made in accordance with the current funding policy. Based on those assumptions, the Fund's fiduciary net position was projected to be available to make all projected further benefit payments of current plan members. Therefore, the long-term expected rate of return on the plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

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

The following presents the net pension liability, calculated using the discount rate of 8.00%, as well as what the net pension liability would be if it were calculated using a discount rate that is one percentage point lower (7.00%) or one percentage point higher (9.00%) than the current rate (amounts in thousands):

| | <u>1% Decrease (7.00%)</u> | <u>Current discount rate (8.00%)</u> | <u>1% Increase (9.00%)</u> |
|-----------------------|--------------------------------|--|--------------------------------|
| Net pension liability | 1,097,133 | 859,765 | 656,157 |

REQUIRED SUPPLEMENTARY INFORMATION

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
RETIREMENT FUND**

Schedule of Changes in Net Pension Liability and Related Ratios
(Unaudited)

| | 2014 |
|---|----------------|
| Total pension liability: | |
| Service cost | \$ 34,500,540 |
| Interest | 184,667,178 |
| Differences between expected and actual experience | 48,560,391 |
| Benefits payments | (184,130,187) |
| Net change in total pension liability | 83,597,922 |
| Total pension liability – beginning of year | 2,364,133,135 |
| Total pension liability – end of year (a) | 2,447,731,057 |
| Change in fiduciary net position: | |
| Contributions – employer | 70,603,285 |
| Contributions – employee | 25,318,224 |
| Net investment income | 73,543,477 |
| Benefits payments | (184,130,187) |
| Administrative expenses | (4,052,664) |
| Net change in fiduciary net position | (18,717,865) |
| Fiduciary net position – beginning of year | 1,606,684,354 |
| Fiduciary net position – end of year (b) | 1,587,966,489 |
| Net pension liability – end of year (a)-(b) | \$ 859,764,568 |
| Fiduciary net position as a percentage of the total pension liability | 64.88% |
| Covered-employee payroll | \$ 417,957,007 |
| Net pension liability as a percentage of covered-employee payroll | 205.71% |

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

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Schedule of Investment Returns
(Unaudited)

| | |
|---|-------------|
| | 2014 |
| Annual money-weighted rate of return, net of investment expense | <hr/> 4.80% |

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

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
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Schedule of Contributions
(Unaudited)

| Year | Actuarially determined contribution | Actual contribution in relation to actuarially determined contribution | Percentage of actuarially required contributions | Covered- employee payroll | Contribution as a percentage of covered- employees |
|-------------|--|---|---|--|---|
| 2014 | \$ 77,594,000 | 70,603,285 | 90.99% | 417,957,000 | 16.89% |
| 2013 | 67,602,000 | 58,039,160 | 85.85 | 379,071,000 | 15.31 |
| 2012 | 66,035,000 | 54,968,325 | 83.24 | 370,873,000 | 14.82 |
| 2011 | 60,691,000 | 52,278,311 | 86.14 | 366,535,000 | 14.26 |
| 2010 | 60,252,000 | 49,006,722 | 81.34 | 356,608,000 | 13.74 |
| 2009 | 49,340,000 | 38,566,024 | 78.16 | 350,619,000 | 11.00 |
| 2008 | 39,761,000 | 35,420,770 | 89.08 | 377,795,000 | 9.38 |
| 2007 | 33,815,000 | 30,014,017 | 88.76 | 357,069,000 | 8.41 |
| 2006 | 33,327,000 | 34,485,593 | 103.48 | 320,648,000 | 10.76 |
| 2005 | 31,854,000 | 32,252,740 | 101.25 | 303,250,000 | 10.64 |

See accompanying independent auditors' report.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
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Notes to Required Supplementary Information

(Unaudited)

Actuarial Assumption and Methods

Actuarially determined contributions are calculated as of the December 31 proceeding by six months of the start of the fiscal year in which contributions are made. For example, the contribution calculated in the December 31, 2012 actuarial valuation was to be made during the period from July 1, 2013 through June 30, 2014.

Methods and assumptions used to determine the contributions for calendar 2014 (based on 2012 and 2013 actuarial valuations).

- Actuarial cost method – Entry Age Normal
- Amortization method – Level Percentage of Pay
- Remaining amortization period – 26 years (2013 valuation), 27 years (2012 valuation)
- Asset Valuation method – Five year phase-in
- Investment rate of return – 8% net of pension plan investment expense
- Retirement Age – Probabilities of retirement are based on table that reflects both age and service
- Mortality – For all active and retired participants, the UP 1994 Mortality Table for Males projected to 2020 with Scale AA. For all beneficiaries, the UP 1994 Mortality Table for Females projected to 2020 with Scale AA. A special mortality table is used for the period after disability retirement.

Effective with the December 31, 2013 actuarial valuation, the actuarial asset valuation method utilized to compute the actuarial value of assets changed from the five-year moving average of market values method to the five-year phase-in smoothing method. This was done in an effort to further align the Fund's funding policies with those prevalent among the Commonwealth of Massachusetts' public retirement systems and to enhance the transparency of its actuarial calculations. With the implementation as of December 31, 2013, the Fund restarted its actuarial value of plan assets at market value and will gradually implement the phase-in smoothing method over the next four years.

See accompanying independent auditors' report.