

**MASSACHUSETTS HOUSING FINANCE AGENCY  
EMPLOYEES' RETIREMENT SYSTEM**

**FINANCIAL STATEMENTS AND  
REQUIRED SUPPLEMENTARY INFORMATION**

**YEAR ENDED DECEMBER 31, 2015**



MASSACHUSETTS HOUSING FINANCE AGENCY  
EMPLOYEES' RETIREMENT SYSTEM

FINANCIAL STATEMENTS AND  
REQUIRED SUPPLEMENTARY INFORMATION

YEAR ENDED DECEMBER 31, 2015

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## Independent Auditors' Report

To the Honorable Retirement Board  
Massachusetts Housing Finance Agency Employees' Retirement System  
Boston, Massachusetts 02108

### Report on the Financial Statements

We have audited the accompanying financial statements of the Massachusetts Housing Finance Agency Employees' Retirement System (the System), as of and for the year ended December 31, 2015, and the related notes to the financial statements, 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 accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### *Auditors' Responsibility*

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

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's 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 net position of the System as of December 31, 2015, and the respective change in net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

## ***Other Matters***

### ***Required Supplementary Information***

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis (located on pages 3 through 6), schedule of changes in employer net pension liability and related ratios, schedule of employer contributions and schedule of investment returns (located on pages 18 and 19) be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the 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 financial statements, and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

### ***Other Reporting Required by Government Auditing Standards***

In accordance with *Government Auditing Standards*, we have also issued our report dated August 18, 2016 on our consideration of the System'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 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 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 System's internal control over financial reporting and compliance.

*CliftonLarsonAllen LLP*

Boston, Massachusetts  
August 18, 2016

MHFA EMPLOYEES' RETIREMENT SYSTEM  
MANAGEMENT'S DISCUSSION AND ANALYSIS  
DECEMBER 31, 2015

As management of the Massachusetts Housing Finance Agency Employees' Retirement System (System), we offer readers of these financial statements this narrative overview and analysis of the System's financial activities for the year ended December 31, 2015.

The management's discussion and analysis (MD&A) is presented in the following sections:

1. Financial Highlights
2. Overview of the Financial Statements
3. Financial Statement Analysis

Please refer to the audited *Financial Statements* when reading the MD&A.

### *Financial Highlights*

The System's funding objective is to meet long-term benefit obligations through contributions and investment income. As of January 1, 2015, the latest actuarial valuation, the funded ratio was 79% based on the actuarial value of assets at that date. As of December 31, 2015, the plan fiduciary net position was 78.8% of the total pension liability.

The System's net position increased by \$406,004, or .36%, when compared to the prior year's net position. Net position is the residual of the System's assets in excess of the System's liabilities as of the statement date. The System's assets are restricted to meet future benefit payments.

### *Overview of the Financial Statements*

The financial statements are comprised of a Statement of Fiduciary Net Position, Statement of Changes in Fiduciary Net Position, Notes to Financial Statements and Required Supplementary Information.

The **statement of fiduciary net position** presents information on the System's assets and liabilities and the resulting net position restricted for pensions. This is calculated using the following formula: Assets - Liabilities = Net Position restricted for pensions. This statement reflects the System's investments at fair value, as well as cash, receivables and other assets and liabilities. The Statement of Fiduciary Net Position reports the financial position of the System at December 31, 2015. Over time, the increase or decrease in net position serves as a useful indicator of the System's financial health.

The **statement of changes in fiduciary net position** presents information showing how the System's net position changed during the year ended December 31, 2015. It reflects contributions by its individual members and participating employer along with deductions for retirement benefits, refunds, withdrawals, and administrative expenses. Investment income during the period is also presented showing income from investing activities.

The **notes to financial statements** provide additional information that is essential for the reader to gain a full understanding of the data provided in the financial statements.

The **required supplementary information** includes a schedule of changes in employer net pension liability and related ratios, a schedule of employer contributions and a schedule of investment returns.

MHFA EMPLOYEES' RETIREMENT SYSTEM  
MANAGEMENT'S DISCUSSION AND ANALYSIS  
DECEMBER 31, 2015

***Financial Statement Analysis***

The System's total assets as of December 31, 2015 were \$114,475,247 and were comprised of cash and cash equivalents, investments, accrued interest and dividends, and receivables.

Total liabilities as of December 31, 2015 were \$194,004 and represent amounts owed for accounts payable and accrued expenses and to MassHousing for reimbursement of the System's payroll, payroll related costs, rent and other operating costs for the period July 1, 2015 through December 31, 2015.

The following tables present current and prior year data on the System's financial statements.

**Fiduciary Net Position**

As noted earlier, net position may serve over time as a useful indicator of a government's financial position. The System's net position was \$114,281,243 at the close of the year and is summarized as follows:

	2015	2014
<b>Assets</b>		
Cash and cash equivalents.....	\$ 554,607	\$ 941,802
Investments.....	113,732,581	107,058,916
Receivables, accrued interest and dividends.....	188,059	6,064,088
Total assets.....	114,475,247	114,064,806
<b>Liabilities</b>		
Accounts payable and accrued expenses.....	46,924	49,187
Due to MassHousing.....	147,080	140,380
Total liabilities.....	194,004	189,567
<b>Net Position</b>		
Restricted for pensions.....	\$ 114,281,243	\$ 113,875,239

MHFA EMPLOYEES' RETIREMENT SYSTEM  
MANAGEMENT'S DISCUSSION AND ANALYSIS  
DECEMBER 31, 2015

Changes in Fiduciary Net Position

For the year ended December 31, 2015, the System's total fiduciary net position increased by \$406,004. In the prior year, fiduciary net position increased by \$6,003,754. These amounts are summarized as follows:

	2015	2014
<b>Additions</b>		
<i>Contributions:</i>		
Employer.....	\$ 6,064,900	\$ 3,945,695
Plan members.....	3,219,256	3,176,102
Reimbursements and transfers from other systems.....	553,557	687,396
<i>Net investment income:</i>		
Net realized and unrealized gains/ (losses).....	(3,873,872)	3,411,729
Interest and dividends.....	1,460,841	1,464,788
Less investment expense.....	(940,819)	(834,318)
Total additions.....	6,483,863	11,851,392
<b>Deductions</b>		
Retirement benefits and refunds.....	5,479,399	5,351,395
Reimbursements and transfers to other systems.....	234,706	148,926
Administration.....	363,754	347,317
Total deductions.....	6,077,859	5,847,638
Change in plan net position.....	406,004	6,003,754
Plan net position - beginning of year.....	113,875,239	107,871,485
Plan net position - end of year.....	\$ 114,281,243	\$ 113,875,239

**Additions to Fiduciary Net Position**

The amount needed to finance benefits is accumulated through the collection of employer and employee contributions, earnings on investments and reimbursements and transfers from other systems. These additions resulted in an increase to net position totaling \$6,483,863. Employer contributions and plan member contributions increased by approximately \$2,119,000 and \$43,000, respectively, in 2015 while reimbursements and transfers from other systems decreased by approximately \$134,000 when compared to the prior year. The employer contribution increased as a result of the annual actuarially determined contribution to meet the System's funding schedule. The System had net investment losses of approximately \$3,354,000 in 2015 due to market conditions; compared to a gain of approximately \$4,042,000 in 2014.



MHFA EMPLOYEES' RETIREMENT SYSTEM  
MANAGEMENT'S DISCUSSION AND ANALYSIS  
DECEMBER 31, 2015

**Deductions from Fiduciary Net Position**

The primary deductions of the System include the payment of pension benefits to participants and beneficiaries, refunds of contributions, and the costs of administering the System. Total deductions to net position totaled \$6,077,859 during the current year versus \$5,847,638 in the previous year. The payment of pension benefits increased by \$128,004, or 2.39%, over the previous year. The increase in these expenses resulted from an increase in benefit payments to newer retirees with higher average compensation and an increase of 10 retirees.

**Requests for Information**

This financial report is designed to provide the Board, our membership, taxpayers, investors, and creditors with a general overview of the System's financial results and to demonstrate the System's accountability for the funding it receives. If you have any questions about this report or need additional financial information, contact the Executive Secretary at One Beacon Street, 6<sup>th</sup> floor, Boston, Massachusetts 02108.

MHFA EMPLOYEES' RETIREMENT SYSTEM  
STATEMENT OF FIDUCIARY NET POSITION  
DECEMBER 31, 2015

**ASSETS**

Cash and cash equivalents.....	\$	554,607
Investments:		
Fixed income.....		19,134,542
Pooled equities.....		60,837,289
Pooled fixed income.....		13,258,169
Real estate.....		9,296,927
Alternative.....		11,205,654
Total investments.....		113,732,581
Accrued interest and dividends.....		100,435
Receivables:		
Other.....		87,624
Total assets.....		114,475,247

**LIABILITIES**

Accounts payable.....		46,924
Due to MassHousing.....		147,080
Total liabilities.....		194,004

**FIDUCIARY NET POSITION**

Restricted for pensions.....	\$	114,281,243
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The accompanying notes are an integral part of the financial statements.

MHFA EMPLOYEES' RETIREMENT SYSTEM  
STATEMENT OF CHANGES IN FIDUCIARY NET POSITION  
FOR THE YEAR ENDED DECEMBER 31, 2015

**ADDITIONS**

Contributions:	
Employer.....	\$ 6,064,900
Plan members.....	3,219,256
Reimbursements and transfers from other systems.....	<u>553,557</u>
Total contributions.....	<u>9,837,713</u>
Net investment income:	
Net appreciation in fair value of investments.....	(3,873,872)
Interest.....	1,460,841
Less: investment fees.....	<u>(940,819)</u>
Net investment income.....	<u>(3,353,850)</u>
Total additions.....	<u>6,483,863</u>

**DEDUCTIONS**

Retirement benefits and refunds.....	5,479,399
Reimbursements and transfers to other systems.....	234,706
Administration.....	<u>363,754</u>
Total deductions.....	<u>6,077,859</u>

<b>CHANGE IN NET POSITION.....</b>	<b>406,004</b>
Net position restricted for pensions - beginning of year.....	<u>113,875,239</u>
<b>NET POSITION RESTRICTED FOR PENSIONS - END OF YEAR.....</b>	<b>\$ <u>114,281,243</u></b>

The accompanying notes are an integral part of the financial statements.

MHFA EMPLOYEES' RETIREMENT SYSTEM  
NOTES TO FINANCIAL STATEMENTS  
DECEMBER 31, 2015

**NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

***A. General***

The financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). The Governmental Accounting Standards Board (GASB) is the standard-setting body for establishing governmental accounting and financial reporting principles. The significant accounting policies are described herein.

***B. Reporting Entity***

The Massachusetts Housing Finance Agency Employees' Retirement System (System) was established to provide retirement benefits to MassHousing employees and their beneficiaries. The System is governed by a five-member board comprised of MassHousing's Treasurer (ex-officio), two members elected by the System's participants, one member appointed by MassHousing's Board and one member appointed by the System's Board members.

***C. Measurement Focus and Basis of Accounting***

The System's financial statements are presented using the flow of economic resources measurement focus and use the accrual basis of accounting.

***D. Cash and Investments***

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

Investments are reported at fair value. Fair value is based on quotations from a national securities exchange except for pooled funds, alternative investments and real estate investments, for which fair values are estimated as detailed below.

Pooled Funds

The fair value of shares in managed investment pools is based on unit value reported by the funds.

Alternative (Private Equity and Natural Resources) and Real Estate

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

***E. Basis of Investment Transactions***

Purchases and sales of investments are recorded on the trade date. Transactions remaining unsettled as of year-end are recorded as payables for securities purchased and as a receivable for securities sold.

***F. Revenue Recognition***

Contributions are recognized as additions in the period when they become due pursuant to formal commitments, statutory or contractual requirements. Investment income is recognized when earned.

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 NOTES TO FINANCIAL STATEMENTS  
 DECEMBER 31, 2015

**G. Benefits and Refunds**

Benefits and refunds are recognized as deductions when incurred.

**H. Administrative Expenses**

Administrative expenses are financed by investment income.

**I. Due to MassHousing**

MassHousing pays the System's employees' weekly payroll. In addition, MassHousing charges the System for payroll related benefits, rent and other operating expenses. At December 31, 2015, \$147,080 is owed to MassHousing from the System for these costs.

**J. Use of Estimates**

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of additions and deductions during the reporting period. Fair values of real estate funds and alternative investments have been estimated 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.

**NOTE 2 - PLAN DESCRIPTION**

**A. General**

The System is a single employer public employee retirement system established by MassHousing on June 12, 1974, under Massachusetts General Laws (MGL), Chapter 32, and is regulated by the Massachusetts Public Employee Retirement Administration Commission (PERAC). The System is a defined benefit pension plan that covers eligible employees of MassHousing.

Membership in the System is mandatory immediately upon the commencement of employment for all permanent full-time employees working at least 18 ¾ hours weekly. The System has one classification of members (general).

Membership in the System was as follows at December 31, 2015:

Active members.....	342
Inactive members.....	47
Retirees and beneficiaries currently receiving benefits.....	139
Total.....	528

**B. Significant Plan Provisions and Requirements**

Pursuant to MGL, Chapter 32, the System provides retirement, disability and death benefits to plan members and their beneficiaries up to a maximum of 80% of a member's final three-year or five-year average salary. In addition to compensation, benefits are based upon a member's age and length of creditable service.

MHFA EMPLOYEES' RETIREMENT SYSTEM  
NOTES TO FINANCIAL STATEMENTS  
DECEMBER 31, 2015

Members of the System become vested after 10 years of creditable service. Normal retirement occurs at age 65 or age 67 (if hired on or after April 2, 2012).

For employees hired prior to April 2, 2012, the annual amount of the retirement allowance is based on the member's final three-year average salary multiplied by (1) the number of years and full months of creditable service at the time of retirement and (2) a percentage based on age at retirement in accordance with a schedule provided by state law. Assuming normal retirement at age 65, this percentage is 2.5%, which is reduced for individuals who retire prior to age 65 to reflect the longer pay out period. A member's final three-year average salary is defined as the greater of the highest consecutive three-year average annual rate of regular compensation and the average annual rate of regular compensation received during the last three years of creditable service prior to retirement.

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

Employees may elect early retirement after 20 years of service or at any time after attaining age 55 or age 60 with 10 years of eligible service. Plan members who become permanently and totally disabled may be eligible to receive a disability retirement allowance. The amount of benefits to be received depends on several factors, including the member's age, compensation, veteran status, years of service and whether or not the disability is work-related. In addition, certain death benefits exist for beneficiaries of employees who die in active service.

Pursuant to MGL, Chapter 32, Section 3(8)(c), for members leaving the System's employment to work for other Massachusetts governmental units, the System transfers their accumulated account balances and creditable service to the retirement system of their new employer. Other such retirement systems are in turn required to make comparable transfers to the System for employees coming to work for a participating employer. Liability for the service transfer is not calculated until the member's actual retirement date. Per statute, the actuary considers length of service as well as acceptance of military service credit and salary cap provisions (if applicable) in calculating the liability.

### **NOTE 3 - DEPOSITS AND INVESTMENTS**

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

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

MHFA EMPLOYEES' RETIREMENT SYSTEM  
NOTES TO FINANCIAL STATEMENTS  
DECEMBER 31, 2015

The long-term target allocations are intended as strategic goals. Thus, it is permissible for the overall System's asset allocation to deviate from the long-term target, as would likely occur during manager transitions, asset class restructurings, and other temporary changes in the System. Surplus cash flows are utilized to maintain the asset management structure. Should these cash flows not be sufficient to reallocate the plan according to policy, the transfer of assets may occur between managers. At least annually, the Board reevaluates the portfolio weightings by asset class and adjustments are made accordingly. The following identifies the asset allocation policy as of December 31, 2015:

Asset Class	Target	Range
Pooled Domestic equity.....	25%	20-30%
Public Foreign Equity (Large Dev.).....	7%	4-10%
Public Foreign Equity (Small Dev.).....	3%	2-4%
Public Emerging Market Equity.....	10%	6-14%
Investment Grade Bonds.....	15%	12-18%
High Yield Bonds.....	6%	3-9%
TIPS.....	6%	4-8%
Emerging Market Debt.....	5%	3-7%
Real estate.....	10%	7-13%
Private equity.....	8%	5-11%
Natural Resources and Commodities.....	5%	3-7%

Rate of Return

For the year ended December 31, 2015, the annual money-weighted rate of return on investments, net of investment expense, was -4.04%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Deposits - Custodial Credit Risk

Custodial credit risk for deposits is the risk that, in the event of a bank failure, the System's deposits may not be recovered. The System's policy for custodial credit risk of deposits is to rely on FDIC insurance coverage. As of December 31, 2015, the System was not exposed to custodial credit risk.

MHFA EMPLOYEES' RETIREMENT SYSTEM  
NOTES TO FINANCIAL STATEMENTS  
DECEMBER 31, 2015

Investments Summary

The System's investments at December 31, 2015 are presented below. All investments are presented by investment type, with debt securities presented by maturity (using segmented-time distribution).

Investment Type	Fair Value	Investment Maturities (in Years)			
		Less Than 1	1 - 5	6 - 10	More Than 10
<u>Debt Securities:</u>					
U.S. Treasuries.....	\$ 4,865,396	\$ 1,300,188	\$ 1,585,110	\$ 552,807	\$ 1,427,291
U.S. Agencies.....	6,330,531	-	679,296	177,197	5,474,038
Corporate bonds.....	7,938,615	192,396	3,240,975	3,106,156	1,399,088
Money market mutual funds.....	523,773	523,773	-	-	-
Pooled fixed income.....	13,258,169	13,258,169	-	-	-
Total debt securities.....	32,916,484	\$ 15,274,526	\$ 5,505,381	\$ 3,836,160	\$ 8,300,417
<u>Other Investments:</u>					
Pooled equities.....	60,837,289				
Real estate.....	9,296,927				
Alternative (private equity and natural resources).....	11,205,654				
Total other investments.....	81,339,870				
Total investments.....	\$ 114,256,354				

Investments - Interest Rate Risk of Debt Securities

Interest rate risk for debt securities is the risk that changes in interest rates of debt securities will adversely affect the fair value of an investment. The System's policy for interest rate risk of debt securities is to use diversification to minimize the exposure to interest rate risks in the aggregate investment portfolio.

Investments - Custodial Credit Risk

Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty, the System will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. The System does not have a policy for custodial credit risk of investments. As of December 31, 2015, the System was not exposed to custodial credit risk.

Investments - Credit Risk of Debt Securities

Credit risk for debt securities is the risk that an issuer or other counterparty to a debt security will not fulfill its obligations. The System's policy for credit risk of debt securities is to use diversification to minimize the exposure to credit risks in the aggregate investment portfolio. As of December 31, 2015, the credit quality ratings of the System's debt securities are as follows:



MHFA EMPLOYEES' RETIREMENT SYSTEM  
NOTES TO FINANCIAL STATEMENTS  
DECEMBER 31, 2015

Quality Ratings*	Fair Value	US Agency Securities	Corporate Bonds	Investment Type	
				Money Market Mutual Funds	Pooled Fixed Income
AAA.....	\$ 1,442,981	\$ -	\$ 1,442,981	\$ -	\$ -
AA+.....	998,073	724,956	273,117	-	-
AA.....	182,086	-	182,086	-	-
AA-.....	418,611	-	418,611	-	-
A+.....	628,580	-	628,580	-	-
A.....	1,250,861	-	1,250,861	-	-
A-.....	871,592	-	871,592	-	-
BBB+.....	1,996,847	-	1,996,847	-	-
BBB.....	582,862	-	582,862	-	-
BBB-.....	153,643	-	153,643	-	-
Unrated.....	19,524,952	5,605,575	137,435	523,773	13,258,169
Total.....	\$ <u>28,051,088</u>	\$ <u>6,330,531</u>	\$ <u>7,938,615</u>	\$ <u>523,773</u>	\$ <u>13,258,169</u>

\* Per the rating scale of Standard and Poor's (a national credit rating organization)

Deposits and Investments - Foreign Currency Risk

Foreign currency risk is the risk that fluctuations in exchange rates will adversely affect the fair value of an investment or a deposit. The System's policy for foreign currency risk is to diversify the foreign countries and currencies within its international investment portfolio. As of December 31, 2015, the System had indirect exposure to foreign currency risk for certain equity investments in the amount of approximately \$22,485,000.

Investments - Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of the System's investment in a single issuer. The System's policy for concentration of credit risk is to use extensive diversification to minimize exposure to company and industry specific risks in the aggregate investment portfolio. As of December 31, 2015, the System was not exposed to concentration of credit risk.

**NOTE 4 - FUNDING POLICY**

Plan members are required to contribute to the System at rates ranging from 5% to 9% of annual compensation, depending on their employment date. Members hired after December 31, 1978 must contribute an additional 2% of regular compensation in excess of \$30,000. These deductions earn interest at a rate determined by PERAC that vest based upon years of service. MassHousing is required to pay into the System 100% of the actuarially determined contribution. For the year ended December 31, 2015, employer contributions totaled \$6,064,900 and plan member contributions totaled \$3,219,256.

Cost-of-living adjustments (COLA) must be granted by the Board and are the responsibility of the System. COLA cannot exceed 3% of the first \$13,000 in benefits, unless the System elects to increase the maximum base retirement allowance in multiples of \$1,000.

MHFA EMPLOYEES' RETIREMENT SYSTEM  
NOTES TO FINANCIAL STATEMENTS  
DECEMBER 31, 2015

**NOTE 5 - NET PENSION LIABILITY**

The components of the net pension liability of the System at December 31, 2015, were as follows:

Total pension liability.....	\$	149,708,708
Plan fiduciary net position.....		(114,281,243)
		76,427,465
Net pension liability.....	\$	35,427,465
Plan fiduciary net position as a percentage of the total pension liability.....		76.34%

Actuarial Methods and Assumptions

The total pension liability was determined by performing update procedures to roll the liability forward from the January 1, 2015, actuarial valuation to the December 31, 2015 measurement date. The following actuarial methods and assumptions apply to all periods included in the measurement:

Methods:

Actuarial cost method	Entry Age Normal
Amortization method	Closed - Approximate level percent of payroll
Remaining amortization period	7 years for the fresh start base
Asset valuation method	Market Value of Assets (adjusted by accounts payable and receivable)

Assumptions:

Inflation	3.00%
Salary increases	5.0% per year grading down to 3.5% per year after 8 years of service
Investment rate of return	7.75% per year
Cost of living adjustment	3% of the first \$13,000 of retirement income granted annually
Mortality	RP-2000 table projected with scale BB and Generational Mortality. For members retired under an accidental disability (job-related), 40% of deaths are assumed to be from the same cause as the disability. Disabled mortality is the healthy retiree table ages set forward 2 years.
Retirement rates	Ages 55 -70
Overall disability	75% ordinary disability; 25% accidental disability

The actuarial assumptions used in the January 1, 2015 valuation were based on the results of an actuarial experience study for the period January 1, 2014 through December 31, 2014.

MHFA EMPLOYEES' RETIREMENT SYSTEM  
NOTES TO FINANCIAL STATEMENTS  
DECEMBER 31, 2015

The long-term expected real rate of return reflects the expected rate of return on plan assets minus the expected rate of inflation. Note that the discount rate includes the effect of inflation. The long-term real rate of return removes the effect of inflation on the return amounts. It is a long-term assumption and is meant to reflect a best estimate of future experience, based on the expected asset allocation. Best estimates of rates of return for each major asset class included in the System's target asset allocation as of December 31, 2015 are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return (%)
Pooled Domestic equity.....	5.3
Public Foreign Equity (Large Dev.).....	5.6
Public Foreign Equity (Small Dev.).....	4.5
Public Emerging Market Equity.....	8.0
Investment Grade Bonds.....	1.1
High Yield Bonds.....	4.3
TIPS.....	0.8
Emerging Market Debt.....	3.8
Real estate.....	4.6
Private equity.....	6.9
Natural Resources and Commodities.....	5.3

Discount Rate

The discount rate used to measure the total pension liability was 7.75 percent. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that MassHousing's contributions will be made at rates equal to the actuarially determined contribution rates. 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 plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability of MassHousing calculated using the discount rate of 7.75 percent, as well as what MassHousing's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.75 percent) or 1-percentage-point higher (8.75 percent) than the current rate:

	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)
Net pension liability.....	\$ 50,160,096	\$ 35,427,465	\$ 23,533,025

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**NOTE 6 - LEGALLY REQUIRED RESERVE ACCOUNTS**

The balance in the System's legally required reserves as of December 31, 2015 are as follows:

Description	Amount	Purpose
Annuity Savings Fund.....	\$ 37,501,604	Active members' contribution balance
Annuity Reserve Fund.....	7,759,617	Retired members' contribution account
Pension Reserve Fund.....	8,119,324	Amounts appropriated to fund future retirement
Pension Fund.....	<u>60,900,698</u>	Remaining net position
Total.....	<u>\$ 114,281,243</u>	

All reserve accounts are funded at levels required by state law.

**NOTE 7 - COMMITMENTS**

As of December 31, 2015, the System had commitments totaling approximately \$7,700,000 to 6 real estate and private equity market funds.

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**Schedule of Changes in Employer Net Pension Liability and Related Ratios (1)**  
 (In Thousands)

	2015	2014
<u>Total pension liability</u>		
Service cost.....	\$ 3,129	2,695
Interest.....	10,444	9,984
Differences between expected and actual experience.....	(265)	-
Changes of assumptions.....	7,362	-
Benefit payments, including refunds of member contributions.....	(5,161)	(5,134)
Net change in total pension liability.....	15,509	7,545
Total pension liability - beginning.....	134,200	126,655
Total pension liability - ending (a).....	\$ 149,709	134,200
<u>Plan fiduciary net position</u>		
Contributions - employer.....	\$ 6,065	3,946
Contributions - member.....	3,219	3,176
Net investment income.....	(3,354)	4,042
Benefit payments, including refunds of member contributions.....	(5,479)	(5,351)
Reimbursements and transfers from other systems, net.....	319	538
Administrative expense.....	(364)	(347)
Net change in plan fiduciary net position.....	406	6,004
Plan fiduciary net position - beginning.....	113,875	107,871
Plan fiduciary net position - ending (b).....	\$ 114,281	113,875
Net pension liability - ending (a) - (b).....	\$ 35,428	20,325
Plan fiduciary net position as a percentage of the total pension liability.....	76.3%	84.9%
Covered-employee payroll.....	\$ 32,430	28,044
Net pension liability as a percentage of covered-employee payroll.....	109.2%	72.5%

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

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MHFA EMPLOYEES' RETIREMENT SYSTEM  
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**Schedule of Employer Contributions**  
 (In Thousands)

	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>
Actuarially determined contribution.....	\$ 6,065	3,946	3,927	3,169	3,156
Contributions in relation to the actuarially determined contribution.....	<u>6,065</u>	<u>3,946</u>	<u>3,927</u>	<u>3,169</u>	<u>3,156</u>
Contribution deficiency (excess).....	<u>\$ -</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Covered-employee payroll.....	\$ 32,430	28,044	28,044	29,800	29,800
Contributions as a percentage of covered-employee payroll.....	18.7%	14.07%	14.00%	10.63%	10.59%

(continued)

	<u>2010</u>	<u>2009</u>	<u>2008</u>	<u>2007</u>	<u>2006</u>
Actuarially determined contribution.....	\$ 3,322	3,297	1,632	1,883	903
Contributions in relation to the actuarially determined contribution.....	<u>3,322</u>	<u>3,297</u>	<u>1,632</u>	<u>1,883</u>	<u>903</u>
Contribution deficiency (excess).....	<u>\$ -</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Covered-employee payroll.....	\$ 28,475	28,475	25,600	25,600	22,669
Contributions as a percentage of covered-employee payroll.....	11.67%	11.58%	6.38%	7.36%	3.98%

(concluded)

**Schedule of Investment Returns (1)**

	<u>2015</u>	<u>2014</u>
Annual money-weighted rate of return, net of investment expense.....	-4.04%	3.48%

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

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**NOTE 1 - ACTUARIALLY DETERMINED CONTRIBUTION - METHODS AND ASSUMPTIONS**

The following actuarial methods and assumptions apply to the 2015 actuarially determined contributions:

Methods:

Actuarial cost method	Entry Age Normal
Amortization method	Closed - Approximate level percent of payroll
Remaining amortization period	7 years for the fresh start base
Asset valuation method	Market Value of Assets (adjusted by accounts payable and receivable)

Assumptions:

Inflation	3.00%
Salary increases	5.0% per year grading down to 3.5% per year after 8 years of service
Investment rate of return	7.75% per year
Cost of living adjustment	3% of the first \$13,000 of retirement income granted annually
Mortality	RP-2000 table projected with scale BB and Generational Mortality. For members retired under an accidental disability (job-related), 40% of deaths are assumed to be from the same cause as the disability. Disabled mortality is the healthy retiree table ages set forward 2 years.
Retirement rates	Ages 55 -70
Overall disability	75% ordinary disability; 25% accidental disability