

MEDFORD
RETIREMENT SYSTEM
AUDIT REPORT
JAN. 1, 2016 - DEC. 31, 2020



PUBLIC EMPLOYEE RETIREMENT ADMINISTRATION COMMISSION
COMMONWEALTH OF MASSACHUSETTS

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PERAC

COMMONWEALTH OF MASSACHUSETTS | PUBLIC EMPLOYEE RETIREMENT ADMINISTRATION COMMISSION

PHILIP Y. BROWN, ESQ., *Chair*

JOHN W. PARSONS, ESQ., *Executive Director*

Auditor SUZANNE M. BUMP | KATHLEEN M. FALLON | KATE FITZPATRICK | JAMES J. GUIDO | RICHARD MACKINNON, JR. | JENNIFER F. SULLIVAN, ESQ.

December 19, 2022

The Public Employee Retirement Administration Commission (PERAC) has completed a review of the audits of the Medford Retirement System conducted by the firm of Roselli, Clark & Associates, Certified Public Accountants (RCA). RCA conducted these audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits in *Government Auditing Standards*, issued by the Comptroller General of the United States. The audits covered the period from January 1, 2016 to December 31, 2020.

We conducted an inspection of the work papers prepared by RCA. We determined that the audits were conducted in a competent professional manner and the work papers demonstrated that audit tests and procedures were performed in sufficient detail to allow us to accept the final audit reports as issued.

We identified specific differences between these financial audits designed to provide an opinion on financial statements and our compliance audits performed in accordance with the accounting and management standards established by PERAC in regulation 840 CMR 25.00 and in compliance with the provisions specified in PERAC Memo #18/2019.

Accordingly, we supplemented the field work conducted in the audits by RCA with certain limited procedures designed to provide additional assurance that the accounting and management standards established by PERAC were adhered to and complied with. The specific objectives of our review were to determine: 1) that the Board is exercising appropriate fiduciary oversight, 2) that cash balances are accurately stated, 3) that procurements of investments complied with 23B and that management fees paid were in accordance with contracts, 4) that travel expenses were properly documented and accounted for, 5) that retirement contributions are accurately deducted, 6) that retirement allowances were correctly calculated, and 7) that required member documentation is maintained.

To achieve these objectives, we inspected certain records of the Medford Retirement Board in the above areas. Specifically, we reviewed the minutes of the Board meetings for compliance with fiduciary oversight, verified cash balances, examined a sample of investment procurements and recalculated management fees charged. We tested a sample of travel expenses for Board approvals, supporting documentation and proper accounting. We tested the payroll records of a sample of active members to confirm that the correct percentage of regular compensation is being deducted, including the additional two percent over \$30,000. We tested a sample of members who retired



during our audit period to verify that their retirement allowance was calculated in accordance with the statute. We also reviewed a sample of member files for accuracy and completeness.

In our opinion, the financial records are being maintained and the management functions are being performed in conformity with the standards established by PERAC with the exception of those related to our supplemental work which are detailed in the findings presented in this report.

It should be noted that the financial statements included in this audit report were based on the work performed by RCA and the tests conducted for the periods referenced in their opinion. These audits were not performed by employees or representatives of PERAC. It should also be noted that the opinions expressed in these audit reports were based on the laws and regulations in effect at the time.

The financial statements and footnotes presented in this report were limited to the express results as of and for the years ended December 31, 2020, December 31, 2019, December 31, 2018, December 31, 2017, and December 31, 2016.

In closing, I wish to acknowledge the work of Roselli, Clark & Associates who conducted these examinations, and the PERAC examiners who conducted limited procedures to supplement the field work and express my appreciation to the Medford Retirement Board and staff for their courtesy and cooperation.

Sincerely,



John W. Parsons, Esq.
Executive Director



EXPLANATION OF FINDINGS AND RECOMMENDATIONS

I. Retirement Allowance Calculations:

We tested 16 new retirements and found issues with two out of three sampled Accidental Disability retirement allowance calculations:

- One retiree's final year of earnings included a retroactive payment that belonged to a period before the final year. Also, the Board did not have a new PERAC approval letter for the revised calculation.
- One retiree's final year of earnings is missing one week of pay.

Recommendation: The Retirement Board should recalculate the Accidental Disability retirement calculations noted above and make necessary corrections. The Board must send in the revised calculation to PERAC for approval.

Board Response:

Both calculations have been corrected and submitted to PERAC for approval. Upon receipt of approval, the retirees will be notified, and their retirement allowance corrected. In the matter of overpayment, the Board will review the waiver provisions of M.G.L. c.32 §20(5)(c)(3).

2. Cash Reconciliations:

The retirement office staff currently prepares the monthly cash reconciliations and not the Treasurer. The Treasurer reviews and signs the reconciliations. PERAC's opinion letter from November 2018 informed the Board that the Treasurer should be responsible for reconciling the cash accounts. The Treasurer is paid an annual stipend of \$1,500.

The cash reconciliations are not signed or dated by the preparer.

Recommendation: The City Treasurer should prepare the reconciliations for better internal controls over cash.

The preparer and reviewer should sign and date the cash reconciliations for best documentation.

Board Response:

Beginning January 2023, the City Treasurer will begin performing the cash reconciliation of the Board's two cash accounts. In the matter of cash reconciliations not signed or dated by the preparer, a date has been added to the signature page.

FINAL DETERMINATION:

PERAC Audit staff will follow up in six (6) months to ensure appropriate actions have been taken regarding all findings.

SUPPLEMENTARY INFORMATION

SCHEDULE OF ALLOCATION OF INVESTMENTS OWNED

(percentages by category)

AS OF DECEMBER 31, 2020		
	MARKET VALUE	PERCENTAGE OF TOTAL ASSETS
Cash	\$2,583,073	1.1%
Fixed Income Securities	23,977,708	10.6%
Equities	834	0.0%
Pooled Domestic Equity Funds	66,872,232	29.7%
Pooled International Equity Funds	26,139,032	11.6%
Pooled Global Equity Funds	17,405,588	7.7%
Pooled Domestic Fixed Income Funds	30,118,712	13.4%
Pooled Global Fixed Income Funds	7,328,912	3.3%
Pooled Alternative Investment Funds	20,550,636	9.1%
Pooled Real Estate Funds	19,494,901	8.7%
Hedge Funds	<u>10,881,077</u>	<u>4.8%</u>
Grand Total	<u>\$225,352,704</u>	<u>100.0%</u>

For the year ending December 31, 2020, the rate of return for the investments of the Medford Retirement System was 12.18%. For the five-year period ending December 31, 2020, the rate of return for the investments of the Medford Retirement System averaged 8.61%. For the 36-year period ending December 31, 2020, since PERAC began evaluating the returns of the retirement systems, the rate of return on the investments of the Medford Retirement System was 8.77%.

The composite rate of return for all retirement systems for the year ending December 31, 2020 was 12.80%. For the five-year period ending December 31, 2020, the composite rate of return for the investments of all retirement systems averaged 10.38%. For the 36-year period ending December 31, 2020, since PERAC began evaluating the returns of the retirement systems, the composite rate of return on the investments of all retirement systems averaged 9.31%.

SUPPLEMENTARY INFORMATION (Continued)

ADMINISTRATION OF THE SYSTEM

The System is administered by a five-person Board of Retirement consisting of the Finance Director who shall be a member ex-officio, a second member appointed by the governing authority, a third and fourth member who shall be elected by the members in or retired from the service of such system, and a fifth member appointed by the other four board members.

Ex-officio Member: Robert Dickinson

Appointed Member: Robert Maiocco Term Expires: 01/21/2024

Elected Member: Patrick Ripley Term Expires: 07/01/2023

Elected Member: Rick Jordan, Chairperson Term Expires: 12/19/2023

Appointed Member: James Vieira Term Expires: 01/27/2024

The Board members are required to meet at least once a month. The Board must keep a record of all of its proceedings. The Board must annually submit to the appropriate authority an estimate of the expenses of administration and cost of operation of the system. The board must annually file a financial statement of condition for the system with the Executive Director of PERAC.

The investment of the system's funds is the responsibility of the Board. All retirement allowances must be approved by the Retirement Board. The PERAC Actuary performs verification prior to payment, unless the system has obtained a waiver for superannuation calculations allowing them to bypass this requirement. All expenses incurred by the System must be approved by a majority vote of the Board. Payments shall be made only upon vouchers signed by two persons designated by the Board.

Retirement board members and employees are bonded by an authorized agent representing a company licensed to do business in Massachusetts. Fidelity insurance is the only required policy coverage under Ch. 32 §21 and §23 as well as 840 CMR 17.01. The policy is designed to cover specific intentional acts such as theft, fraud or embezzlement and also specify who commits such acts, most commonly employees of the system. This coverage reimburses the system for the losses it suffers as a result of its employees' actions. It does not insure the employees for their illegal acts. Statutorily required coverage is provided by the current fidelity insurance policy to a limit of \$1,000,000 with a \$10,000 deductible issued through Travelers Casualty and Surety Company. The system also has Fiduciary coverage to a limit of \$50,000,000 under a blanket policy issued through the Massachusetts Association of Contributory Retirement Systems.

BOARD REGULATIONS

The Medford Retirement Board has adopted Supplemental Regulations which are available on the PERAC website at <https://mass.gov/Medford-retirement-board-regulations>.

SUPPLEMENTARY INFORMATION (Continued)

ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Sherman Actuarial Services as of January 1, 2022.

The actuarial liability for active members was	\$127,219,098
The actuarial liability for inactive members was	2,496,987
The actuarial liability for retired members was	<u>218,454,246</u>
The total actuarial liability was	\$348,170,331
System assets as of that date were (actuarial value)	<u>230,597,138</u>
The unfunded actuarial liability was	<u>\$117,573,193</u>
The ratio of system's assets to total actuarial liability was	66.2%
As of that date the total covered employee payroll was	\$47,592,905

The normal cost for employees on that date was 9.1% of payroll

The normal cost for the employer (including expenses) was 5.9% of payroll

The principal actuarial assumptions used in the valuation are as follows:

Investment Return: 7.25% per annum

Rate of Salary Increase: 3.50% per annum

SCHEDULE OF FUNDING PROGRESS AS OF JANUARY 1, 2022

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a % of Cov. Payroll ((b-a)/c)
1/1/2022	\$230,597,138	\$348,170,331	\$117,573,193	66.2%	\$47,592,905	247.0%
1/1/2020	\$205,456,666	\$334,961,570	\$129,504,904	61.3%	\$46,003,072	281.5%
1/1/2018	\$195,355,103	\$286,954,150	\$91,599,047	68.1%	\$41,033,141	223.2%
1/1/2016	\$179,451,376	\$266,747,163	\$87,295,787	67.3%	\$39,326,319	222.0%
1/1/2014	\$163,680,899	\$268,527,648	\$104,846,749	61.0%	\$37,863,532	276.9%

SUPPLEMENTARY INFORMATION (Continued)

MEMBERSHIP EXHIBIT

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Retirement in Past Years										
Superannuation	22	18	13	20	20	24	33	28	24	23
Ordinary Disability	0	0	0	0	1	0	1	0	0	0
Accidental Disability	3	1	3	4	4	0	0	3	2	1
Total Retirements	25	19	16	24	25	24	34	31	26	24
Total Retirees, Beneficiaries and Survivors	636	625	615	608	616	613	421	593	611	604
Total Active Members	671	695	720	755	765	782	630	902	948	893
Pension Payments										
Superannuation	\$7,602,729	\$7,828,960	\$7,857,845	\$7,920,881	\$8,176,167	\$8,745,515	\$9,146,891	\$9,725,174	\$10,292,242	\$10,675,802
Survivor/Beneficiary Payments	760,987	753,177	801,333	805,779	845,833	887,372	901,438	941,832	966,444	895,025
Ordinary Disability	157,378	157,141	148,279	160,585	186,866	204,124	240,348	223,428	205,333	221,642
Accidental Disability	3,543,990	3,530,433	3,632,436	3,805,688	3,966,091	3,925,381	4,257,255	4,507,641	4,405,953	4,543,691
Other	<u>1,505,224</u>	<u>1,605,257</u>	<u>1,644,416</u>	<u>1,710,004</u>	<u>1,742,881</u>	<u>1,191,680</u>	<u>1,109,075</u>	<u>1,068,087</u>	<u>1,144,069</u>	<u>1,190,298</u>
Total Payments for Year	<u>\$13,570,308</u>	<u>\$13,874,968</u>	<u>\$14,084,309</u>	<u>\$14,402,937</u>	<u>\$14,917,838</u>	<u>\$14,954,071</u>	<u>\$15,655,007</u>	<u>\$16,466,162</u>	<u>\$17,014,041</u>	<u>\$17,526,458</u>

ROSELLI, CLARK & ASSOCIATES
Certified Public Accountants



**MEDFORD CONTRIBUTORY
RETIREMENT SYSTEM**
(a Component Unit of the
City of Medford, Massachusetts)

Basic Financial Statements and
Supplementary Information

Year Ended December 31, 2020

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

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DECEMBER 31, 2020

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ROSELLI, CLARK & ASSOCIATES
CERTIFIED PUBLIC ACCOUNTANTS

500 West Cummings Park
Suite 4900
Woburn, MA 01801

Telephone: (781) 933-0073

www.roselliclark.com

INDEPENDENT AUDITORS' REPORT

To the Medford Retirement Board
Medford Contributory Retirement System
Medford, Massachusetts

Report on the Financial Statements

We have audited the accompanying financial statements of the Medford Contributory Retirement System (the "System"), a component unit of the City of Medford, Massachusetts, as of and for the year ended December 31, 2020, and the related notes to the financial statements, which collectively comprise the System's basic 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 opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

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

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

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the System as of December 31, 2020, and the respective changes in financial 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, and the schedules listed under the required supplementary information section in the accompanying table of contents 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.



Roselli, Clark & Associates
Certified Public Accountants
Woburn, Massachusetts
April 28, 2021

MANAGEMENT'S DISCUSSION AND ANALYSIS

Our discussion and analysis of the Medford Contributory Retirement System's (the "System") financial performance provides an overview of the System's financial activities for the calendar year ended December 31, 2020. You should read it in conjunction with the basic financial statements, footnotes and required supplementary information that follows this discussion.

Financial Highlights

The System's funding objective is to meet long-term benefit obligations through contributions and investment income. The System's independent actuary estimates that the System is approximately 66% funded at December 31, 2020.

The System's fiduciary net position increased over \$18.5 million in 2020 to approximately \$225.6 million. Current year additions of nearly \$41.3 million exceeded deductions of approximately \$22.8 million. The current year increase in fiduciary net position was approximately \$4.5 million lower than the prior year. The System's investment performance for 2020, net of investment management fees, was over 11.5% versus 15.9% in 2019. The System's 2020 net investment return exceeded its long-term expected investment return, which is currently 7.25%.

Overview of the Financial Statements

The basic 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 basic financial statements are prepared in accordance with accounting principles generally accepted in the United States of America, or GAAP; specifically, GASB Statement No. 67, *Financial Reporting for Pension Plans*.

The Statement of Fiduciary Net Position reports the System's assets, deferred outflows of resources, liabilities, deferred inflows of resources and fiduciary 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. Over time, the increase or decrease in fiduciary net position serves as a useful indicator of the System's financial health and condition.

The Statement of Changes in Fiduciary Net Position reports additions to and deductions from the System during the. This statement reflects contributions by members and participating employers along with deductions for retirement benefits, refunds, withdrawals and administrative expenses. Investment income, including realized and unrealized gains, during the year is also presented.

The Notes to the Financial Statements provide additional information that is essential for the reader to gain a full understanding of the data provided in the financial statements. This report also includes Required Supplementary Information following the Notes to the Financial Statements that consist the schedules of changes in net pension liability and related ratios, investment returns and contributions and the notes to the schedule of contributions.

Financial Analysis

The condensed comparative Statements of Net Position for the two most recent years are as follows:

	December 31,		Dollar	Percent
	2020	2019	Change	Change
Assets:				
Cash and cash equivalents	\$ 2,583,073	\$ 2,089,354	\$ 493,719	24%
Investments, at fair value	222,769,631	205,441,113	17,328,518	8%
Receivables and other assets	<u>322,559</u>	<u>303,745</u>	<u>18,814</u>	6%
Total Assets	<u>225,675,263</u>	<u>207,834,212</u>	<u>17,841,051</u>	9%
Liabilities	<u>72,066</u>	<u>775,391</u>	<u>(703,325)</u>	-91%
Fiduciary Net Position	<u>\$ 225,603,197</u>	<u>\$ 207,058,821</u>	<u>\$ 18,544,376</u>	9%

Total assets at December 31, 2020 approximated \$225.6 million and principally consisted of investments recorded at fair value. Total asset increased by approximately \$17.8 million in 2020, due primarily to a positive investment portfolio performance of over 11.5%. Fluctuations in receivables and liabilities were due primarily to the timing of investment sales and purchases being completed.

The condensed comparative Statements of Changes in Fiduciary Net Position for the two most recent years are as follows:

	Year Ended December 31,		Dollar	Percent
	2020	2019	Change	Change
Additions:				
Contributions	\$ 18,193,064	\$ 17,953,232	\$ 239,832	1%
Investment income, net	<u>23,143,141</u>	<u>27,244,587</u>	<u>(4,101,446)</u>	-15%
Total Additions	<u>41,336,205</u>	<u>45,197,819</u>	<u>(3,861,614)</u>	-9%
Deductions:				
Benefits and refunds to Plan members	22,432,439	21,759,576	672,863	3%
Administrative and other expenses	<u>359,390</u>	<u>391,443</u>	<u>(32,053)</u>	-8%
Total Deductions	<u>22,791,829</u>	<u>22,151,019</u>	<u>640,810</u>	3%
Change in Fiduciary Net Position	<u>\$ 18,544,376</u>	<u>\$ 23,046,800</u>	<u>\$ (4,502,424)</u>	-20%

Fiduciary net position increased over \$18.5 million in 2020, primarily as a result of net investment income of approximately \$23.1 million.

Contributions to the System's Fiduciary Net Position primarily include employer and employee contributions in addition to transfers from other retirement systems. Contributions for 2020 totaled nearly \$18.2 million versus \$18.0 million in 2019.

Employer contributions represent the largest source of System contributions. In 2020, employer contributions totaled approximately \$13.0 million, or 71%, in of total contributions. Employer contributions are actuarially determined. Employee contributions totaled approximately \$4.6 million in

2020, which was approximately \$304,000, or 6%, lower than the prior year. This decrease was due primarily to a decrease in the average number of active members within the System offset by the effect normal pay raises.

Other contributions decreased approximately \$210,000 year-over-year.

Investment income is presented net of associated investment management expenses. In 2020, the System reported over \$23.1 million in net investment income versus approximately \$27.2 million in 2019. The System's money-weighted rates of return for 2020 and 2019 were approximately 11.5% and 15.9%, respectively.

Deductions to the System's Fiduciary Net Position primarily include pension benefits to members and beneficiaries, refunds to inactive members, transfers and reimbursements to other Massachusetts public retirement systems and administrative expenses. Total deductions for 2020 increased approximately \$641,000 to nearly \$22.8 million versus \$22.2 million in 2019.

Pension benefits to members and beneficiaries represents the largest deduction from Fiduciary Net Position for the System. Pension benefits to members and beneficiaries represented approximately 93% of total 2020 and 2019 deductions. Pension benefits to members and beneficiaries increased approximately \$594,000, or 3%, in 2020. This increase was due to a modest increase in the average number of beneficiaries paid year-over-year coupled with the normal annual cost-of-living adjustments paid by the System.

In addition to the increase in pension benefits to members and beneficiaries, the System reported an approximate \$79,000 increase in transfers and reimbursements to other Massachusetts public retirement systems, which is a function of timing and employment trends/movements.

Administrative expenses decreased modestly year-over-year.

Overall Financial Position

The System's positive investment performance in 2020 enabled it to maintain an approximate 66% funded ratio at December 31, 2020. The System's 30-year investment return as published by PERAC exceeds the discount rate used by the System in its actuarial studies (7.25%). Provided the System continues to garner strong investment performances, it is possible that the System will achieve fully funded status on or before the expected date included in latest actuarial valuation of 2033.

The System maintains a large portion of its investments measured at NAV or using level 2 inputs. Some of these funds invest in private companies or real estate. The determination of the value of these investments is very subjective and the ultimate amount of gains and losses in some of these funds will not be determined until the underlying assets (i.e., the real estate or stock in the private companies) are sold. Furthermore, these types of investments are not as liquid as investments in savings accounts, money markets, certificates of deposits, government securities or debt and equity securities in publicly-held U.S. corporations. You should refer to Notes 2 and 4 to these financial statements.

Although the System has been successful in generating the yields necessary to achieve fully funded status in the required time frame, the System (like so many other institutional investors) has experienced a great deal of volatility in its investments. Management believes that the volatility in the worldwide markets may continue for the foreseeable future. Accordingly, management intends to actively monitor the System's investment positions to best maximize returns while mitigating risk as best it can.

Contacting the System's Financial Management Personnel

Our discussion and analysis is designed to provide the Medford Retirement 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 Medford Retirement Board at 85 George P. Hassett Drive, Medford, MA 02155.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

STATEMENT OF FIDUCIARY NET POSITION
DECEMBER 31, 2020

Assets:	
Cash and cash equivalents	\$ 2,583,073
Investments:	
Fixed income securities	23,977,708
Equity securities	834
Mutual funds	147,864,475
PRIT funds	50,926,614
Receivables:	
Interest receivable	130,051
Contributions and other	<u>192,508</u>
Total Assets	<u>225,675,263</u>
Liabilities:	
Accounts payable and accrued expenses	<u>72,066</u>
Total Liabilities	<u>72,066</u>
Net Position Restricted for Pensions	<u>\$ 225,603,197</u>

See accompanying notes to basic financial statements.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
YEAR ENDED DECEMBER 31, 2020

Additions:	
Employer contributions	\$ 12,989,190
Employee contributions	4,552,956
Other contributions	<u>624,975</u>
Total contributions	<u>18,167,121</u>
Investment income:	
Interest and dividends	4,195,499
Net appreciation in fair value of investments	20,233,690
Less investment management fees	<u>(1,286,048)</u>
Total net investment income	<u>23,143,141</u>
Other income	<u>25,943</u>
Total Additions	<u>41,336,205</u>
Deductions:	
Benefits and refunds to Plan members:	
Benefits to retirees and survivors	21,254,893
Member refunds	239,110
Transfers and reimbursements to other systems	938,436
Administrative expenses:	
Operations payroll and related personnel costs	260,632
Other	<u>98,758</u>
Total Deductions	<u>22,791,829</u>
Net Change in Net Position	18,544,376
Net Position Restricted for Pensions:	
Beginning of the year	<u>207,058,821</u>
End of the year	<u>\$ 225,603,197</u>

See accompanying notes to basic financial statements.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

NOTES TO THE FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2020

1. DESCRIPTION OF THE PLAN

General – The Medford Contributory Retirement System (the “System”) is a cost-sharing, multiple employer cost sharing defined benefit pension plan established and administered by the Medford Retirement Board under the provisions of Chapter 32 of the Massachusetts General Laws (“MGL”), as amended, to provide pension benefits for participants. The System is a component unit of the City of Medford, Massachusetts (the “City”). The City and the Medford Housing Authority contribute to the System.

Employees of the City (with the exception of teachers and certain administrative personnel employed by the School Department who participate in a separate plan) and the Medford Housing Authority are covered by the System. Participation in the System is mandatory immediately upon the commencement of employment for all permanent, full-time employees.

At December 31, 2020, membership in the System consisted of:

Retirees and beneficiaries currently receiving benefits	604
Active plan members	893
Inactive plan members	<u>78</u>
Total membership	<u>1,575</u>

Plan Benefits – Massachusetts contributory retirement system benefits are uniform from one public pension system to another. For employees with service dates beginning before April 2, 2012, the System provides for retirement allowance benefits up to a maximum of 80% of a participant’s highest consecutive three-year average annual rate of regular compensation. For those employees who began their service after April 2, 2012, the System provides for retirement allowance benefits up to a maximum of 80% of a participant’s highest consecutive five-year average annual rate of regular compensation. Benefit payments are based upon a participant’s age, length of creditable service, level of compensation and group classification.

The retirement allowance consists of two parts – an annuity and a pension. Participants’ accumulated total deductions and a portion of the interest they generate constitute the annuity. The differential between the total retirement benefit and annuity is the pension.

Participants who resign from service and who are not eligible to receive a retirement allowance are entitled to request a refund of their accumulated total contributions. In addition, depending upon the number of years of creditable service, such employees may be entitled to receive interest, which has accrued on those contributions. A vested employee who has not reached their eligible retirement age and elects to leave their accumulated total deductions on deposit may apply for benefits upon reaching their eligible retirement age.

Survivor benefits are extended to eligible beneficiaries of participants whose death occurs prior to or following retirement.

Retirement Requirements – In order to receive retirement benefits, participants must meet one of the following two categories:

- 1) Normal Retirement – Generally, normal retirement occurs between ages 65 and 67. However, most participants with a hire date before April 2, 2012, may retire after twenty years of creditable service or at any time after attaining age 55. For most participants hired on or after April 2, 2012, they must attain the age of 60 before they can retire. Participants with hire dates subsequent to January 1, 1978 must have a minimum of ten years' creditable service in order to retire at age 55 or 60, as applicable. Participants become vested after ten years of creditable service. Benefits commencing before age 65 are generally provided at a reduced rate. However, members working in certain occupations may retire with full benefits earlier than age 65.
- 2) Disability Retirements – The System provides for both an ordinary and accidental disability retirement. An ordinary disability retirement is where a participant is permanently incapacitated from a cause unrelated to employment. An accidental disability retirement is where the disability is the result of an injury or illness received or aggravated in the performance of their duty.

The amount of benefits to be received in such cases is dependent upon several factors, including the age at which the disability retirement occurs, the years of creditable service, average regular compensation and veteran status. In addition, certain provisions are in place relative to death benefits for beneficiaries of employees who die in active service.

Public Availability of Financial Statements – The Medford Retirement Board issues a publicly available financial report that includes financial statements and required supplementary information for the System. That report may be obtained by writing to the Medford Retirement Board, 85 George P. Hassett Drive, Medford, MA 02155.

2. SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting – The financial statements of the System have been prepared on the accrual basis of accounting in accordance with generally accepted accounting principles in the United States if America, or GAAP. Employer contributions are recognized when due and the employer is legally required to provide the contributions. Member contributions are recognized in the period in which the contributions are due. Investment income is recognized in the period earned. Benefits and refunds are recognized when due and payable in accordance with the terms of the pension plan.

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 and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Cash and Cash Equivalents – Cash and cash equivalents include cash on hand, demand deposits and short-term holdings with original maturities of three months or less from the date of acquisition.

Investments – Investments are reported at fair value. When actively quoted observable prices are not available, the System generally uses either implied pricing from similar investments or valuation models based on net present values of estimated future cash flows (adjusted as appropriate for liquidity, credit, market and/or other risk factors).

The System categorizes its fair value measurements within the fair value hierarchy established by GAAP. This hierarchy is based on valuation inputs used to measure the fair value of the asset or liability. The three levels of the hierarchy are as follows:

- *Level 1* – Inputs are quoted prices in active markets for identical investments at the measurement date.
- *Level 2* – Inputs (other than quoted prices included in Level 1) are either directly or indirectly observable for the investment through correlation with market data at the measurement date and for the duration of the instrument’s anticipated life.
- *Level 3* – Inputs reflect the System’s best estimate of what market participants would use in pricing the investment at the measurement date.

The remaining investments not categorized under the fair value hierarchy are shown at net asset value (“NAV”). These are investments in non-governmental entities for which a readily determinable fair value is not available, such as member units or an ownership interest in partners’ capital to which a proportionate share of net assets is attributed. Investments at NAV are commonly calculated by subtracting the fair value of liabilities from the fair value of assets.

3. SYSTEM ADMINISTRATION

The System is administered by a five-person Board consisting of the City Auditor, two members who are elected by the participants in or retired from the service of the System, one member appointed by the City Mayor and one member appointed by the other members of the Board.

At December 31, 2020, the Board was comprised as follows:

		<u>Term Expires</u>
Ex-Officio Member:	Ms. Aleesha Nunley-Benjamin (City Auditor)	No specified date
Appointed Member:	Mr. Robert Maiocco	January 23, 2024
Elected Member:	Mr. Patrick Ripley	July 1, 2023
Elected Member:	Mr. Rick Jordan (Chairperson)	December 19, 2023
Board Appointed Member:	Mr. James Vieira	January 27, 2024

The Board is required to meet at least once a month and keep a record of its proceedings. The Board annually submits a financial statement of condition for the System with the Commissioner of the Massachusetts Public Employee Retirement Administration Commission, or PERAC. Retirement allowances are approved by the Board and, in certain circumstances, submitted to a PERAC for verification prior to payments being made. Expenses incurred by the System must be approved by two or more members of the Board.

4. DEPOSITS AND INVESTMENTS

MGL and PERAC regulations require the System to invest funds only in preapproved investment instruments, which include, but are not necessarily limited to, bank deposits, money markets, certificates of deposit, U.S. obligations, repurchase agreements, certain corporate bonds and equities and investment pools.

Investment Policy – The investment of the System’s funds is the responsibility of the Board. The Board manages its investments using an investment policy that was last updated in November 2020. The investment objective is to ensure that the System’s assets are invested to enhance and preserve principal, both in real and nominal terms. The System’s investment policy seeks a long-term investment return of 7.25%.

The System’s investment policy requires diversification within its investment portfolio. The System’s portfolio target weights at the broad asset class level were as follows:

Asset Class	Target Allocation
Equities:	
Domestic - large cap	22.0%
Domestic - small/mid cap	7.0%
International	11.0%
Emerging Markets	8.0%
Fixed Income:	
Core bonds	12.0%
Emerging blended debt	4.0%
Global multi-sector	8.0%
TIPS	6.0%
Real Estate	10.0%
Private Equity	7.0%
Hedge Funds	5.0%

Investment Management – New England Pension Consultants provided investment advisory services to the System throughout all of 2020. At December 31, 2020, the System had contracted with eight investment managers.

Custody of Investments – People’s United Bank is the custodian of the System’s investment portfolio.

Custodial Credit Risk: Deposits – Deposits are subject to the risk of bank failure. The System may be unable to recover the full amount of its deposits in any one bank institution in the event of a bank failure. The System’s policy for custodial credit risk of deposits is to rely on Federal Deposit Insurance Corporation (“FDIC”) insurance coverage for the first \$250,000 of deposits held at each financial institution. At December 31, 2020, \$398,179 of the System’s bank deposits was not covered by FDIC or other depository insurance.

Custodial Credit Risk: Investments – Custodial credit risk for investments is the risk that in the event of a 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 the outside party. The System’s policy for custodial credit risk of investments intends that all investments are either insured and/or registered in the name of the System. At December 31, 2020, the System was not exposed to custodial credit risk on its investments.

Fair Value Measurements: Investments – The following table presents the System’s investments carried at fair value on a recurring basis at December 31, 2020:

Investments by Fair Value Level	December 31, 2020	Fair Value Measurements Using		
		Level 1	Level 2	Level 3
Debt securities:				
U.S. government notes and obligations	\$ 12,574,850	\$ 5,461,111	\$ 7,113,739	\$ -
Foreign government bonds	299,989	-	299,989	-
Corporate bonds	11,102,869	11,102,869	-	-
Total debt securities	23,977,708	16,563,980	7,413,728	-
Equity securities	834	834	-	-
Mutual funds	130,458,887	-	130,458,887	-
Total investments by fair value level	154,437,429	\$ 16,564,814	\$ 137,872,615	\$ -
Investments measured at NAV:				
Mutual funds	17,405,588			
PRIT funds	50,926,614			
Total investments measured at NAV	68,332,202			
Total investments	\$ 222,769,631			

Investments Measured at NAV by Asset Class	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Private equity mutual funds	\$ 17,405,588	\$ -	Varies	30 to 60 days
PRIT funds	50,926,614	12,055,908	Monthly	30 days
	\$ 68,332,202	\$ 12,055,908		

Investments measured at NAV include comingled/pooled funds in a private equity mutual fund and private equity fund and investments in the State Treasurer investment pool, referred to as PRIT funds.

Private equity funds generally include investments in which the System is a general partner in a private equity, venture capital fund or similar investment vehicle. The value of these investments are recorded at values determined in good faith by the general partners of the private equity and venture capital firms after consideration of pertinent information, including current financial position and operative results, price-earnings multiples and available market prices of similar companies’ securities, the nature of the securities, marketability, restrictions on disposition and other appropriation and do not necessarily represent amounts which might ultimately be realized, since such amounts depend on future circumstances and cannot reasonably be determined until individual securities are liquidated. In addition, fair values of real estate funds are generally based on independent, third-party appraisals. By their very nature, these investments are illiquid and typically cannot be resold or redeemed. Distributions from each fund will be received as the underlying investments are liquidated. It is expected that the underlying assets for the funds will be liquidated over an average of ten years.

The State Treasurer investment pool is administered by the Commonwealth of Massachusetts’ Pension Reserve Investment Management Board, or PRIM. The System maintains several Massachusetts Pension Reserve Investment Trust, or PRIT funds, each of which consists of a diverse set of investments that includes private equity, venture and real estate investments. The

determination of the fair value of these investments is very subjective and the period-end values are reported to the System as NAV. Investments in the PRIT funds are more liquid than investments in private equity and real estate holdings, but generally cannot be resold to third parties. The System may liquidate its investment in the PRIT funds at any time with less than thirty days' notice. Distributions from the PRIT funds may be received regularly and, upon receipt, are deposited into an accompanying short-term cash investment account.

Because of the inherent uncertainty of valuations used in many of the System's investments measured at NAV, estimated values may differ significantly from the values that would have been used had a readily available market for positions in privately held companies or the real estate existed at December 31, 2020. These differences could have a material adverse effect on the System's financial statements.

Concentration of Credit Risk: Investments – The following investments held by the System at December 31, 2020 represent approximately 73.2% of the System's total investments:

Rhumblin Advisers S&P 500 Pooled Index Fund	22.1%
Lazard International Strategic Equity Portfolio	11.7%
PRIM Alternative Investments Fund	9.2%
PRIM Core Real Estate Fund	8.8%
City of London Emerging Markets Country Fund	7.8%
Loomis Salyes MSFD Fund	7.8%
Rhumblin U.S. TIPS Pooled Fund	5.8%

Interest Rate Risk: Investments – Debt securities are subject to interest rate risk. Debt securities may be adversely affected by changes in interest rates, which may negatively affect the fair value of individual debt instruments. The System does not have a formal investment policy that limits investments maturities as a means of managing its exposure to fair value losses arising from increasing interest rates. In practice, the System mitigates this risk by managing the duration of its maturities.

At December 31, 2020, the System has the following investments and maturities:

Investment Type	Fair Value	Investment Maturities (in years)			
		Less than 1	1 to 5	6 to 10	More than 10
U.S. Treasury notes	\$ 5,461,111	\$ -	\$ 5,461,111	\$ -	\$ -
U.S. Agencies obligations	7,113,739	4,085,075	2,539,305	-	489,359
Foreign government bonds	299,989	299,989	-	-	-
Corporate bonds	11,102,869	-	1,684,216	8,775,943	642,710
Investments with maturities	23,977,708	\$ 4,385,064	\$ 9,684,632	\$ 8,775,943	\$ 1,132,069
Equity securities	834				
Mutual funds	147,864,475				
PRIT	50,926,614				
Investments without maturities	198,791,923				
Total investments	\$ 222,769,631				

Credit Risk: Investments – This is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. As previously noted, MGL and PERAC have enacted regulations to reduce this risk. In evaluating its credit risk, the System relies on credit ratings assigned by nationally recognized credit rating agencies such as Moody’s Investor Services, Inc. and Standard and Poor’s Financial Services, LLC. The System does voluntarily self-impose certain investment restrictions; however, those can be changed at the Board’s discretion.

None of the System’s equities, mutual funds or other pooled investments were subject to credit quality ratings from credit rating agencies. The following table summarizes the credit ratings for the System’s fixed income securities:

Quality Rating (Moody's)	U.S.		Foreign Corporate Bonds	Total
	Government Treasuries & Agencies	Government Bonds		
Aaa	\$ 5,966,162	\$ -	\$ 1,903,054	\$ 7,869,216
A1	-	-	1,050,499	1,050,499
A2	-	-	2,352,914	2,352,914
A3	-	-	1,170,883	1,170,883
Baa1	1,815,373	-	-	1,815,373
Ba2	-	-	359,440	359,440
Not Rated	4,793,315	299,989	4,266,079	9,359,383
	<u>\$ 12,574,850</u>	<u>\$ 299,989</u>	<u>\$ 11,102,869</u>	<u>\$ 23,977,708</u>

At December 31, 2020, uninsured short-term investments with fair values of \$2,027,442 were reported as cash equivalents. These funds represent temporary holdings of excess cash resources. The System intends to reinvest these amounts in less than one year. Accordingly, the fair value of these short-term investments has been classified as cash equivalents in these financial statements.

Rate of Return – The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested. The 2020 money-weighted rate of return was approximately 11.5%

5. FUNDING

Employer Contributions – Under MGL, participating employers are assessed their share of the total retirement cost based on an independent actuarial study. Employer contributions totaled \$12,989,190 in 2020.

Employee Contributions – Employee contribution rates vary based on when an employee commenced their creditable service. Active members contribute 5%, 7%, 8% or 9% of their gross regular compensation depending on when their creditable service commenced. Employees hired on or after January 1, 1979 contribute an additional 2% of their gross regular compensation over \$30,000.

Cost-of-Living Adjustments – Cost-of-living adjustments granted between 1981 and 1997 and any increase in other pension benefits imposed by the Commonwealth of Massachusetts during those years are the financial responsibility of the Commonwealth. The Commonwealth is expected to continue funding the cost-of-living amounts granted over this period for the duration of their selected retirement option. Cost-of-living adjustments granted after 1997 must be approved and funded by the System. Cost-of-living adjustments cannot exceed the greater of CPI or 3%. The System approved a 3% cost-of-living adjustment on the first \$16,000 of pension benefits.

6. NET PENSION LIABILITY

The System is statutorily required to adopt the funding schedule that will fully amortize the unfunded actuarial accrued liability by June 30, 2040. As of the latest actuarial valuation, the System has selected a funding schedule that fully amortizes the unfunded actuarial accrued liability by June 30, 2033.

The components of the System’s net pension liability at December 31, 2020 were as follows (dollar amounts in thousands):

Total pension liability	\$ 343,471
Plan fiduciary net position	<u>225,603</u>
Net pension liability	<u>\$ 117,868</u>
Plan fiduciary net position as a percentage of total pension liability	65.7%

The total pension liability was determined by an actuarial valuation as of December 31, 2019 and rolled forward to December 31, 2020. The significant actuarial assumptions used in the actuarial valuation report were as follows:

Actuarial cost method:	Individual entry age normal
Asset valuation method:	Market value
Investment rate of return:	7.25% per year
Projected salary increases:	3.50% per year
Cost of living adjustments:	3% on the first \$16,000 of benefits
Mortality rates:	Represented by the various SOA Pub-2010 Public Retirement Plans Mortality Tables specific to group, pre-retirement versus post-retirement, disabled and beneficiaries, with Scale MP-2019 improvements until 2025

Discount Rate – The discount rate used to measure the total pension liability in the December 31, 2020 actuarial valuation was 7.25%. The projection of cash flows used to determine the discount rate assumed plan member contributions were made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially-determined contribution rates and the member rate. Based on those assumptions, the System’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.

Expected Rate of Return – The System’s investment policy targets a nominal rate of return of 7.25%. This long-term expected rate of return is presented neither in arithmetic nor geometric means.

Sensitivity Analysis – The following illustrates the net position liability at December 31, 2020 calculated using the current discount rate of 7.25%, as well as the projection of what the net position liability would be if it were calculated using a discount rate that is 1.0% lower or higher than the current rate (dollar amounts in thousands):

Current Discount Rate	Net Pension Liability At		
	1% Decrease	Current Rate	1% Increase
7.25%	\$ 152,508	\$ 117,868	\$ 88,198

7. LEGALLY REQUIRED RESERVE ACCOUNTS

Net position restricted for pensions at December 31, 2020 was comprised of the following legally required reserves:

Description	Amount	Purpose
Annuity Savings Fund	\$ 50,345,303	Active members' contribution balance
Annuity Reserve Fund	15,777,288	Retired members' contribution balance
Pension Fund	4,846	Amounts appropriated to fund future retirement
Military Service Fund	4,868	Members' contributions while on military leave
Pension Reserve Fund	<u>159,470,892</u>	Remaining net position
	<u>\$ 225,603,197</u>	

8. COMMITMENTS AND CONTINGENCIES

General – The System is subject to a variety of claims that arise from time to time in the ordinary course of business. Although management of the System currently believes that resolving claims against the System, individually or in aggregate, will not have a material adverse impact on the System’s financial position or its results of operations, these matters are subject to inherent uncertainties and management’s views of these matters may change in the future.

COVID-19 – The COVID-19 pandemic has resulted in global economic slowdowns and disruptions that have and could continue to affect U.S. and global markets and economies. The System’s ability to meet its long-term investment return projections and targets is highly dependent on these markets and economies. The global response to the COVID-19 pandemic is beyond the System’s control and the likelihood and extent of further market volatility cannot be predicted.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

REQUIRED SUPPLEMENTARY INFORMATION - UNAUDITED

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
(dollar amounts in thousands)

	2020	2019	2018	2017	2016	2015	2014
Total pension liability:							
Service cost	\$ 6,952	\$ 6,330	\$ 6,116	\$ 6,116	\$ 5,909	\$ 5,709	\$ 5,976
Interest	23,989	21,662	21,204	20,285	19,767	21,229	20,588
Differences between expected and actual experience	-	11,095	-	6,081	-	(5,236)	-
Changes in assumptions	-	24,449	-	-	-	(13,742)	-
Benefit payments, including refunds	(22,432)	(21,760)	(21,088)	(19,415)	(18,536)	(18,556)	(17,749)
Net change in total pension liability	8,509	41,776	6,232	13,067	7,140	(10,596)	8,815
Total pension liability - beginning of year	334,962	293,186	286,954	273,887	266,747	277,343	268,528
Total pension liability - end of year (a)	<u>\$ 343,471</u>	<u>\$ 334,962</u>	<u>\$ 293,186</u>	<u>\$ 286,954</u>	<u>\$ 273,887</u>	<u>\$ 266,747</u>	<u>\$ 277,343</u>
Plan fiduciary net position:							
Contributions - employer	\$ 12,989	\$ 12,254	\$ 11,560	\$ 11,175	\$ 11,000	\$ 10,500	\$ 10,011
Contributions - employee	4,552	4,857	4,200	3,960	3,928	3,723	3,660
Contributions - nonemployer contributing entities	625	835	1,231	998	1,208	269	638
Net investment income	23,144	27,244	(5,307)	21,508	8,196	465	8,741
Benefit payments, including refunds	(22,432)	(21,760)	(21,088)	(19,415)	(18,536)	(18,010)	(17,118)
Administrative expenses	(359)	(391)	(489)	(321)	(310)	(256)	(272)
Other	25	8	43	17	44	33	71
Net change in plan fiduciary net position	18,544	23,047	(9,850)	17,922	5,530	(3,276)	5,731
Plan fiduciary net position - beginning of year	207,059	184,012	193,862	175,940	170,410	173,686	167,955
Plan fiduciary net position - end of year (b)	<u>\$ 225,603</u>	<u>\$ 207,059</u>	<u>\$ 184,012</u>	<u>\$ 193,862</u>	<u>\$ 175,940</u>	<u>\$ 170,410</u>	<u>\$ 173,686</u>
Net pension liability - end of year (a) - (b)	<u>\$ 117,868</u>	<u>\$ 127,903</u>	<u>\$ 109,174</u>	<u>\$ 93,092</u>	<u>\$ 97,947</u>	<u>\$ 96,337</u>	<u>\$ 103,657</u>
Plan fiduciary net position as a percentage of the total pension liability	65.7%	61.8%	62.8%	67.6%	64.2%	63.9%	62.6%
Covered payroll	\$ 47,613	\$ 46,003	\$ 42,469	\$ 41,033	\$ 40,703	\$ 39,326	\$ 37,864
Net pension liability as a percentage of covered payroll	247.6%	278.0%	257.1%	226.9%	240.6%	245.0%	273.8%

These schedules are presented to illustrate the requirement to show information for ten years. However, until a full ten-year trend is completed, information is presented for those years in which information is available.

See accompanying independent auditors' report.

**MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)**

REQUIRED SUPPLEMENTARY INFORMATION - UNAUDITED

SCHEDULE OF CONTRIBUTIONS

For Fiscal Year Ended June 30,	Actuarially Determined Contribution	Contributions in Relation to the Actuarially Determined Contribution	Contribution Deficiency (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
2020	\$ 12,989,190	\$ 12,989,190	\$ -	\$ 47,613,178	27.3%
2019	12,253,953	12,253,953	-	46,003,071	26.6%
2018	11,560,340	11,560,340	-	42,469,301	27.2%
2017	11,174,776	11,174,776	-	41,033,141	27.2%
2016	11,000,000	11,000,000	-	40,702,740	27.0%
2015	10,500,000	10,500,000	-	39,326,319	26.7%
2014	10,011,299	10,011,299	-	37,863,532	26.4%

SCHEDULE OF INVESTMENT RETURNS

For Fiscal Year Ended June 30,	Annual Money- Weighted Rate of Return *
2020	11.54%
2019	15.90%
2018	-2.14%
2017	12.44%
2016	5.13%
2015	0.28%
2014	5.54%

* Net of investment expenses.

These schedules are presented to illustrate the requirement to show information for ten years. However, until a full ten-year trend is completed, information is presented for those years in which information is available.

See accompanying independent auditors' report.

**MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)**

**NOTES TO REQUIRED SUPPLEMENTARY INFORMATION
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2020**

A. CHANGES OF BENEFIT TERMS

The System may be amended or terminated in whole or in part at any time by the Massachusetts Legislature, provided that no such modification, amendment or termination shall be made that would deprive a current member of superannuation pension rights or benefits provided under applicable laws of Massachusetts, if such member has paid the stipulated contributions specified in sections or provisions of such laws. There were no significant changes to the System's benefit terms in 2020.

B. SIGNIFICANT ACTUARIAL ASSUMPTIONS AND METHODS

The significant actuarial assumptions used in the most current actuarial valuation report included:

Actuarial cost method:	Individual entry age normal
Asset valuation method:	Market value
Investment rate of return:	7.25% per annum
Projected salary increases:	3.50% per year
Cost of living adjustments:	3% on the first \$16,000 of benefits
Mortality rates:	Represented by the various SOA Pub-2010 Public Retirement Plans Mortality Tables specific to group, pre-retirement versus post-retirement, disabled and beneficiaries, with Scale MP-2019 improvements until 2025



ROSELLI, CLARK & ASSOCIATES
CERTIFIED PUBLIC ACCOUNTANTS

500 West Cummings Park
Suite 4900
Woburn, MA 01801

Telephone: (781) 933-0073

www.roselliclark.com

**INDEPENDENT AUDITORS' REPORT ON AUDIT OF SPECIFIC ELEMENTS, ACCOUNTS
AND ITEMS OF FINANCIAL STATEMENTS**

To the Medford Retirement Board
Medford Contributory Retirement System
Medford, Massachusetts

We have audited the accompanying schedule of employer allocations of the Medford Contributory Retirement System (the "System"), a component unit of the City of Medford, Massachusetts, as of and for the year ended December 31, 2020. We have also audited the total for all entities of the columns titled net pension liability, total deferred outflows of resources, total deferred inflows of resources and total pension expense (specified column totals) included in the accompanying schedule of pension amounts by employer of the System as of and for the year ended December 31, 2020, and the related notes thereto.

Management's Responsibility for the Schedules

Management is responsible for the preparation and fair presentation of these schedules 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 opinions on the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer 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 Audit 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 schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer 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 schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer.

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

Opinions

In our opinion, the schedules referred to above present fairly, in all material respects, the employer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total pension expense for the total of all participating entities of the System as of and for the year ended December 31, 2020, in accordance with accounting principles generally accepted in the United States of America.

Other Matters

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the System as of and for the year ended December 31, 2020, and our report thereon, dated April 28, 2021, expressed an unmodified opinion on those financial statements.

A handwritten signature in cursive script that reads "Roselli, Clark & Associates".

Roselli, Clark & Associates
Certified Public Accountants
Woburn, Massachusetts
April 28, 2021

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

SCHEDULE OF EMPLOYER ALLOCATIONS
YEAR ENDED DECEMBER 31, 2020

<u>Employer</u>	<u>Actual Employer Contributions</u>	<u>Employer Allocation Percentage</u>
City of Medford	\$ 12,310,219	94.77%
Medford Housing Authority	<u>678,971</u>	<u>5.23%</u>
Total	<u>\$ 12,989,190</u>	<u>100.00%</u>

See notes to schedule of employer allocation and schedule of pension amounts by employer.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER
YEAR ENDED DECEMBER 31, 2020

	City of Medford	Medford Housing Authority	Total
Net pension liability	<u>\$ 111,706,915</u>	<u>\$ 6,161,202</u>	<u>\$ 117,868,117</u>
Deferred outflows of resources:			
Differences between actual and expected experience	\$ 7,321,048	\$ 403,792	\$ 7,724,840
Changes of assumptions	14,171,681	781,641	14,953,322
Changes in proportion and differences between employer contributions and proportionate share of contributions	<u>254,432</u>	<u>192,866</u>	<u>447,298</u>
Total deferred outflows of resources	<u>\$ 21,747,161</u>	<u>\$ 1,378,299</u>	<u>\$ 23,125,460</u>
Deferred inflows of resources:			
Net difference between projected and actual investment earnings on pension plan investments	\$ 8,220,557	\$ 453,406	\$ 8,673,963
Changes in proportion and differences between employer contributions and proportionate share of contributions	<u>192,866</u>	<u>254,432</u>	<u>447,298</u>
Total deferred inflows of resources	<u>\$ 8,413,423</u>	<u>\$ 707,838</u>	<u>\$ 9,121,261</u>
Pension expense (income):			
Proportionate share of plan pension expense	\$ 17,711,676	\$ 976,888	\$ 18,688,564
Proportionate share of plan pension revenue	(444,940)	(24,541)	(469,481)
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	<u>108,582</u>	<u>(108,582)</u>	<u>-</u>
Total employer pension expense (income)	<u>\$ 17,375,318</u>	<u>\$ 843,765</u>	<u>\$ 18,219,083</u>

See notes to schedule of employer allocation and schedule of pension amounts by employer.

**MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)**

**NOTES TO PENSION SCHEDULES
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2020**

A. INTRODUCTION

GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*, establishes financial reporting requirements for governments that provide employees with pension benefits. GASB 68 requires employers to recognize a net pension liability or net pension asset as employees earn pension benefits. Employers participating in the Medford Contributory Retirement System (the “System”) will recognize their proportionate share of the collective pension amounts for all benefits provided by the Retirement System.

B. METHOD OF PROPORTIONATE SHARE ALLOCATION

The basis for the proportionate share allocation by employer as found in the Schedule of Employer Allocations and Schedule of Pension Amounts by Employer is consistent with the manner in which employer contributions to the System are determined. The net pension liability, deferred outflows of resources, deferred inflows of resources and pension expense is based upon actual historical employer contributions to the System from the census data submitted by the System for pay periods ending December 31, 2020.

C. EXPECTED FUTURE AMORTIZATION OF DEFERRED BALANCES

The following table summarizes the expected amortization of the deferred outflows of resources and inflows of resources into pension expense.

<u>Measurement Period Ended December 31:</u>	<u>City of Medford</u>	<u>Medford Housing Authority</u>	<u>Total</u>
2021	\$ 5,460,147	\$ 223,924	\$ 5,684,071
2022	6,114,897	337,208	6,452,105
2023	2,392,550	110,613	2,503,163
2024	(628,614)	(6,526)	(635,140)
2025	(5,242)	5,242	-
	<u>\$ 13,333,738</u>	<u>\$ 670,461</u>	<u>\$ 14,004,199</u>

ROSELLI, CLARK & ASSOCIATES
Certified Public Accountants



**MEDFORD CONTRIBUTORY
RETIREMENT SYSTEM**
(a Component Unit of the
City of Medford, Massachusetts)

Report on Examination of Basic Financial
Statements and Additional Information

Year Ended December 31, 2019

Report on Internal Control and Compliance
Year Ended December 31, 2019

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

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ROSELLI, CLARK & ASSOCIATES
CERTIFIED PUBLIC ACCOUNTANTS

500 West Cummings Park
Suite 4900
Woburn, MA 01801
Telephone: (781) 933-0073
www.roselliclark.com

INDEPENDENT AUDITORS' REPORT

To the Medford Retirement Board
Medford Contributory Retirement System
Medford, Massachusetts

Report on the Financial Statements

We have audited the accompanying financial statements of the Medford Contributory Retirement System (the "System"), a component unit of the City of Medford, Massachusetts, as of and for the year ended December 31, 2019, and the related notes to the financial statements, which collectively comprise the System's basic 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 opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

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

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

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the System as of December 31, 2019, and the respective changes in financial 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, and the schedules listed under the required supplementary information section in the accompanying table of contents 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.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued a report dated September 4, 2020 on our consideration of the System's internal control over financial reporting and our tests of its compliance with certain provisions of laws, regulations, contracts, 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 the 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.



Roselli, Clark & Associates
Certified Public Accountants
Woburn, Massachusetts
September 4, 2020

MANAGEMENT'S DISCUSSION AND ANALYSIS

Our discussion and analysis of the Medford Contributory Retirement System's (the "System") financial performance provides an overview of the System's financial activities for the calendar year ended December 31, 2019. You should read it in conjunction with the basic financial statements, footnotes and required supplementary information that follows this discussion.

Financial Highlights

The System's funding objective is to meet long-term benefit obligations through contributions and investment income. The System's independent actuary estimates that the System is approximately 62% funded at December 31, 2019.

The System's fiduciary net position increased over \$23.0 million in 2019 to approximately \$207.1 million. Current year additions of nearly \$45.2 million exceeded deductions of approximately \$22.2 million. The current year increase in fiduciary net position was far more favorable than the prior year's reported decrease of over \$9.8 million. The System's investment performance for 2019, net of investment management fees, was approximately 15.9% versus -2.1% in 2018. The 2019 net investment return for the System exceeded its long-term expected discount rate, which is currently 7.25%.

The benchmark U.S. equity indices were down significantly in the first quarter of 2020. The volatility in U.S. markets is historic and primarily due to the COVID-19 pandemic, which sparked liquidations of equities and debt securities causing market prices of nearly all investment securities to plummet. Additionally, declining worldwide oil prices further exacerbated the situation. The System actively manages its investments and has taken steps to attempt to mitigate losses. It is important to note that much of the investment losses experienced in the first quarter of 2020 were recouped in the following quarter. The System reduced its discount rate to 7.25% in its latest valuation to, among other things, reflect this market uncertainty.

Overview of the Financial Statements

The basic 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 basic financial statements are prepared in accordance with accounting principles generally accepted in the United States of America, or GAAP; specifically, GASB Statement No. 67, *Financial Reporting for Pension Plans*.

The Statement of Fiduciary Net Position reports the System's assets, deferred outflows of resources, liabilities, deferred inflows of resources and fiduciary 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. Over time, the increase or decrease in fiduciary net position serves as a useful indicator of the System's financial health and condition.

The Statement of Changes in Fiduciary Net Position reports additions to and deductions from the System during the year. This statement reflects contributions by members and participating employers along with deductions for retirement benefits, refunds, withdrawals and administrative expenses. Investment income, including realized and unrealized gains, during the year is also presented.

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

This report also includes Required Supplementary Information following the Notes to the Financial Statements that consist the schedules of changes in net pension liability and related ratios, investment returns and contributions and the notes to the schedule of contributions.

Financial Analysis

The condensed comparative Statements of Net Position for the two most recent years are as follows:

	December 31,		Dollar	Percent
	2019	2018	Change	Change
Assets:				
Cash and cash equivalents	\$ 2,089,354	\$ 7,484,871	\$ (5,395,517)	-72%
Investments, at fair value	205,441,113	176,484,193	28,956,920	16%
Receivables and other assets	303,745	106,580	197,165	185%
Total Assets	<u>207,834,212</u>	<u>184,075,644</u>	<u>23,758,568</u>	13%
Liabilities	<u>775,391</u>	<u>63,623</u>	<u>711,768</u>	1119%
Fiduciary Net Position	<u>\$ 207,058,821</u>	<u>\$ 184,012,021</u>	<u>\$ 23,046,800</u>	13%

Total assets at December 31, 2019 approximated \$207.8 million and principally consisted of investments recorded at fair value. Total asset increased by approximately \$23.8 million in 2019, due primarily to a positive investment portfolio performance of over 15.9%. Fluctuations in receivables and liabilities were due primarily to the timing of investment sales and purchases being completed.

The condensed comparative Statements of Changes in Fiduciary Net Position for the two most recent years are as follows:

	Year Ended December 31,		Dollar	Percent
	2019	2018	Change	Change
Additions:				
Contributions	\$ 17,953,232	\$ 17,034,033	\$ 919,199	5%
Investment income, net	27,244,587	(5,420,060)	32,664,647	603%
Total Additions	<u>45,197,819</u>	<u>11,613,973</u>	<u>33,583,846</u>	289%
Deductions:				
Benefits and refunds to Plan members	21,759,576	21,087,645	671,931	3%
Administrative and other expenses	391,443	375,791	15,652	4%
Total Deductions	<u>22,151,019</u>	<u>21,463,436</u>	<u>687,583</u>	3%
Change in Fiduciary Net Position	<u>\$ 23,046,800</u>	<u>\$ (9,849,463)</u>	<u>\$ 32,896,263</u>	334%

Fiduciary net position increased over \$23.0 million in 2019, primarily as a result of net investment income of approximately \$27.2 million for the year.

Contributions to the System's Fiduciary Net Position primarily include employer and employee contributions in addition to transfers from other retirement systems. Contributions for 2019 totaled nearly \$18.0 million versus \$17.0 million in 2018.

Employer contributions represent the largest source of System contributions. In 2019, employer contributions totaled approximately \$12.3 million, or 68%, in of total contributions. Employer contributions are actuarially determined. Employee contributions totaled approximately \$4.9 million in 2019, which was approximately \$657,000, or 16%, greater than the prior year. This increase was due primarily to an increase in the number of active members within the System coupled with the effect normal pay raises

Other contributions decreased approximately \$396,000 year-over-year.

Investment income is presented net of associated investment management expenses. In 2019, the System reported over \$27.2 million in net investment income versus approximately \$(5.4) million in 2018. The System's money-weighted rates of return for 2019 and 2018 were approximately 15.9% and -2.1%, respectively.

Deductions to the System's Fiduciary Net Position primarily include pension benefits to members and beneficiaries, refunds to inactive members, transfers and reimbursements to other Massachusetts public retirement systems and administrative expenses. Total deductions for 2019 increased approximately \$688,000 to nearly \$22.2 million versus \$21.5 million in 2018.

Pension benefits to members and beneficiaries represents the largest deduction from Fiduciary Net Position for the System. Pension benefits to members and beneficiaries represented approximately 93% and 92% of total 2019 and 2018 deductions, respectively. Pension benefits to members and beneficiaries increased approximately \$915,000, or 5%, in 2019. This increase was due to a greater average number of beneficiaries paid year-over-year coupled with the normal annual cost-of-living adjustments paid by the System.

The increase in pension benefits to members and beneficiaries was offset by an approximate \$243,000 decrease in transfers and reimbursements to other Massachusetts public retirement systems, which is a function of timing and employment trends/movements.

Administrative expenses were relatively consistent year-over-year.

Overall Financial Position

The System's funded ratio of approximately 62% in the December 31, 2019 actuarial valuation report places it in the top one-half of Massachusetts public employee retirement systems. Using the assumptions detailed more fully in Note 6 to the financial statements, the System forecasts that it will be fully funded in 2033, well ahead of the mandated deadline.

The System maintains a large portion of its investments measured at NAV or using level 2 inputs. Some of these funds invest in private companies or real estate. The determination of the value of these investments is very subjective and the ultimate amount of gains and losses in some of these funds will not be determined until the underlying assets (i.e., the real estate or stock in the private companies) are sold. Furthermore, these types of investments are not as liquid as investments in savings accounts, money markets, certificates of deposits, government securities or debt and equity securities in publicly-held U.S. corporations. You should refer to Notes 2 and 4 to these financial statements.

Although the System has been successful in generating the yields necessary to achieve fully funded status in the required time frame, the System (like so many other institutional investors) has experienced a great deal of volatility in its investments. Management believes that the volatility in the worldwide markets may continue for the foreseeable future. Accordingly, management intends to actively monitor the System's investment positions to best maximize returns while mitigating risk as best it can.

Contacting the System's Financial Management Personnel

Our discussion and analysis is designed to provide the Medford Retirement 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 Medford Retirement Board at 85 George P. Hassett Drive, Medford, MA 02155.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

STATEMENT OF FIDUCIARY NET POSITION
DECEMBER 31, 2019

Assets:	
Cash and cash equivalents	\$ 2,089,354
Investments:	
Fixed income securities	24,759,376
Equity securities	2,137
Mutual funds	138,761,904
PRT funds	41,917,696
Receivables:	
Interest receivable	121,032
Contributions and other	<u>182,713</u>
Total Assets	<u>207,834,212</u>
Liabilities:	
Accounts payable and accrued expenses	61,809
Open trades	<u>713,582</u>
Total Liabilities	<u>775,391</u>
Net Position Restricted for Pensions	<u>\$ 207,058,821</u>

See accompanying notes to basic financial statements.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
YEAR ENDED DECEMBER 31, 2019

Additions:	
Employer contributions	\$ 12,253,953
Employee contributions	4,856,585
Other contributions	<u>834,787</u>
Total contributions	<u>17,945,325</u>
Investment income:	
Interest and dividends	4,686,567
Net appreciation in fair value of investments	23,838,345
Less investment management fees	<u>(1,280,325)</u>
Total net investment income	<u>27,244,587</u>
Other income	<u>7,907</u>
Total Additions	<u>45,197,819</u>
Deductions:	
Benefits and refunds to Plan members:	
Benefits to retirees and survivors	20,660,956
Member refunds	336,756
Transfers and reimbursements to other systems	761,864
Administrative expenses:	
Operations payroll and related personnel costs	255,998
Other	<u>135,445</u>
Total Deductions	<u>22,151,019</u>
Net Change in Net Position	23,046,800
Net Position Restricted for Pensions:	
Beginning of the year	<u>184,012,021</u>
End of the year	<u>\$ 207,058,821</u>

See accompanying notes to basic financial statements.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

NOTES TO THE FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

1. DESCRIPTION OF THE PLAN

General – The Medford Contributory Retirement System (the “System”) is a cost-sharing, multiple employer cost sharing defined benefit pension plan established and administered by the Medford Retirement Board under the provisions of Chapter 32 of the Massachusetts General Laws (“MGL”) to provide pension benefits for participants. The System is a component unit of the City of Medford, Massachusetts (the “City”). The City and the Medford Housing Authority contribute to the System.

Employees of the City (with the exception of teachers and certain administrative personnel employed by the School Department who participate in a separate plan) and the Medford Housing Authority are covered by the System. Participation in the System is mandatory immediately upon the commencement of employment for all permanent, full-time employees.

At December 31, 2019, membership in the System consisted of:

Retirees and beneficiaries currently receiving benefits	611
Active plan members	948
Inactive plan members	<u>42</u>
Total membership	<u>1,601</u>

Plan Benefits – Massachusetts contributory retirement system benefits are generally uniform from one public pension system to another. For employees with service dates beginning before April 2, 2012, the System provides for retirement allowance benefits up to a maximum of 80% of a participant’s highest consecutive three-year average annual rate of regular compensation. For those employees who began their service after April 2, 2012, the System provides for retirement allowance benefits up to a maximum of 80% of a participant’s highest consecutive five-year average annual rate of regular compensation. Benefit payments are based upon a participant’s age, length of creditable service, level of compensation and group classification.

The retirement allowance consists of two parts – an annuity and a pension. Participants’ accumulated total deductions and a portion of the interest they generate constitute the annuity. The differential between the total retirement benefit and annuity is the pension.

Participants who resign from service and who are not eligible to receive a retirement allowance are entitled to request a refund of their accumulated total contributions. In addition, depending upon the number of years of creditable service, such employees may be entitled to receive interest, which has accrued on those contributions. A vested employee who has not reached their eligible retirement age and elects to leave their accumulated total deductions on deposit may apply for benefits upon reaching their eligible retirement age.

Survivor benefits are extended to eligible beneficiaries of participants whose death occurs prior to or following retirement.

Retirement Requirements – In order to receive retirement benefits, participants must meet one of the following two categories:

- 1) Normal Retirement – Generally, normal retirement occurs between ages 65 and 67. However, most participants with a hire date before April 2, 2012, may retire after twenty years of creditable service or at any time after attaining age 55. For most participants hired on or after April 2, 2012, they must attain the age of 60 before they can retire. Participants with hire dates subsequent to January 1, 1978 must have a minimum of ten years' creditable service in order to retire at age 55 or 60, as applicable. Participants become vested after ten years of service. Benefits commencing before age 65 are generally provided at a reduced rate. However, members working in certain occupations may retire with full benefits earlier than age 65.
- 2) Disability Retirements – The System provides for both an ordinary and accidental disability retirement. An ordinary disability retirement is where a participant is permanently incapacitated from a cause unrelated to employment. An accidental disability retirement is where the disability is the result of an injury or illness received or aggravated in the performance of their duty.

The amount of benefits to be received in such cases is dependent upon several factors, including the age at which the disability retirement occurs, the years of creditable service, average regular compensation and veteran status. In addition, certain provisions are in place relative to death benefits for beneficiaries of employees who die in active service.

Public Availability of Financial Statements – The Medford Retirement Board issues a publicly available financial report that includes financial statements and required supplementary information for the System. That report may be obtained by writing to the Medford Retirement Board, 85 George P. Hassett Drive, Medford, MA 02155.

2. SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting – The financial statements of the System have been prepared on the accrual basis of accounting. Plan member contributions are recognized in the period in which the contributions are due. Employer contributions are recognized when due and the employer is legally required to provide the contributions. Benefits and refunds are recognized when due and payable in accordance with the terms of the pension plan.

Use of Estimates – The preparation of financial statements in conformity with generally accepted accounting principles in the United States of America, or GAAP, requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Cash and Cash Equivalents – Cash and cash equivalents include cash on hand, demand deposits and short-term holdings with original maturities of three months or less from the date of acquisition.

Investments – The carrying amounts of the System's investments approximate their fair value. When actively quoted observable prices are not available, the System generally uses either implied pricing from similar investments or valuation models based on net present values of estimated future cash flows (adjusted as appropriate for liquidity, credit, market and/or other risk factors).

The System categorizes its fair value measurements within the fair value hierarchy established by GAAP. This hierarchy is based on valuation inputs used to measure the fair value of the asset or liability. The three levels of the hierarchy are as follows:

- *Level 1* – Inputs are quoted prices in active markets for identical investments at the measurement date.
- *Level 2* – Inputs (other than quoted prices included in Level 1) are either directly or indirectly observable for the investment through correlation with market data at the measurement date and for the duration of the instrument’s anticipated life.
- *Level 3* – Inputs reflect the System’s best estimate of what market participants would use in pricing the investment at the measurement date.

The remaining investments not categorized under the fair value hierarchy are shown at net asset value (“NAV”). These are investments in non-governmental entities for which a readily determinable fair value is not available, such as member units or an ownership interest in partners’ capital to which a proportionate share of net assets is attributed. Investments at NAV are commonly calculated by subtracting the fair value of liabilities from the fair value of assets.

The following table presents the fair value of the System’s investments by type as of December 31, 2019:

Investments by Fair Value Level	December 31, 2019	Fair Value Measurements Using		
		Level 1	Level 2	Level 3
Debt securities:				
U.S. government notes and obligations	\$ 9,972,491	\$ 6,936,092	\$ 3,036,399	\$ -
Foreign government bonds	300,000	-	300,000	-
Corporate bonds	14,486,885	14,486,885	-	-
Total debt securities	24,759,376	21,422,977	3,336,399	-
Equity securities	2,137	2,137	-	-
Mutual funds	118,407,467	-	118,407,467	-
Total investments by fair value level	143,168,980	\$ 21,425,114	\$ 121,743,866	\$ -
Investments measured at NAV:				
Mutual funds	20,354,437			
PRIT funds	41,917,696			
Total investments measured at NAV	62,272,133			
Total investments	\$ 205,441,113			
Investments Measured at NAV				
By Asset Class	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Private equity mutual funds	\$ 20,354,437	\$ -	Varies	30 to 60 days
PRIT funds	41,917,696	11,110,687	Monthly	30 days
	\$ 62,272,133	\$ 11,110,687		

Investments measured at NAV include comingled/pooled funds in a private equity mutual fund and private equity fund and investments in the State Treasurer investment pool, referred to as PRIT funds.

Private equity funds generally include investments in which the System is a general partner in a private equity, venture capital fund or similar investment vehicle. The value of these investments are recorded at values determined in good faith by the general partners of the private equity and venture capital firms after consideration of pertinent information, including current financial position and operative results, price-earnings multiples and available market prices of similar companies' securities, the nature of the securities, marketability, restrictions on disposition and other appropriation and do not necessarily represent amounts which might ultimately be realized, since such amounts depend on future circumstances and cannot reasonably be determined until individual securities are liquidated. In addition, fair values of real estate funds are generally based on independent, third-party appraisals. By their very nature, these investments are illiquid and typically cannot be resold or redeemed. Distributions from each fund will be received as the underlying investments are liquidated. It is expected that the underlying assets for the funds will be liquidated over an average of ten years.

The State Treasurer investment pool is administered by the Commonwealth of Massachusetts' Pension Reserve Investment Management Board, or PRIM. The System maintains several Massachusetts Pension Reserve Investment Trust, or PRIT funds, each of which consists of a diverse set of investments that includes private equity, venture and real estate investments. The determination of the fair value of these investments is very subjective and the period-end values are reported to the System as NAV. Investments in the PRIT funds are more liquid than investments in private equity and real estate holdings, but generally cannot be resold to third parties. The System may liquidate its investment in the PRIT funds at any time with less than thirty days' notice. Distributions from the PRIT funds may be received regularly and, upon receipt, are deposited into an accompanying short-term cash investment account.

Because of the inherent uncertainty of valuations used in many of the System's investments measured at NAV, estimated values may differ significantly from the values that would have been used had a readily available market for positions in privately held companies or the real estate existed at December 31, 2019. These differences could have a material adverse effect on the System's financial statements.

3. SYSTEM ADMINISTRATION

The System is administered by a five-person Board consisting of the City Auditor, two members who are elected by the participants in or retired from the service of the System, one member appointed by the City Mayor and one member appointed by the other members of the Board.

At December 31, 2019, the Board was comprised as follows:

		<u>Term Expires</u>
Ex-Officio Member:	Ms. Aleesha Nunley-Benjamin (City Auditor)	No specified date
Appointed Member:	Mr. Robert Maiocco	January 23, 2021
Elected Member:	Mr. Patrick Ripley	October 30, 2020
Elected Member:	Mr. Rick Jordan (Chairperson)	December 19, 2020
Board Appointed Member:	Mr. James Vieira	January 27, 2021

The Board is required to meet at least once a month and keep a record of its proceedings. The Board annually submits a financial statement of condition for the System with the Commissioner of the Massachusetts Public Employee Retirement Administration Commission, or PERAC. Retirement allowances are approved by the Board and, in certain circumstances, submitted to a PERAC for verification prior to payments being made. Expenses incurred by the System must be approved by two or more members of the Board.

4. DEPOSITS AND INVESTMENTS

MGL and PERAC regulations require the System to invest funds only in preapproved investment instruments, which include, but are not necessarily limited to, bank deposits, money markets, certificates of deposit, U.S. obligations, repurchase agreements, certain corporate bonds and equities and investment pools.

Custodial Credit Risk: Deposits – Deposits are subject to the risk of bank failure. The System may be unable to recover the full amount of its deposits in any one bank institution in the event of a bank failure. The System’s policy for custodial credit risk of deposits is to rely on Federal Deposit Insurance Corporation (“FDIC”) insurance coverage for the first \$250,000 of deposits held at each financial institution. At December 31, 2019, \$511,937 of the System’s bank deposits was not covered by FDIC or other depository insurance.

Investment Policy – The investment of the System’s funds is the responsibility of the Board. The Board adopted a revised investment policy statement in September 2017. The investment objective is to ensure that the System’s assets are invested to enhance and preserve principal, both in real and nominal terms. The System’s investment policy seeks a long-term investment return of 7.25%.

The System’s investment policy requires diversification within its investment portfolio. Effective September 2017, the System’s portfolio target weights at the broad asset class level were as follows:

<u>Asset Class</u>	<u>Target Allocation</u>
Equities:	
Domestic	12.0% to 32.0%
International	8.0% to 18.0%
Emerging Markets	0.0% to 10.0%
Fixed Income:	
Domestic	5.5% to 15.5%
Multisector	5.5% to 15.5%
International	0.0% to 7.0%
Global Asset Allocation	10.0% to 22.0%
Private Equity	3.0% to 10.0%
Real Estate	4.0% to 10.0%
Hedge Funds	0.0% to 7.0%

Custody of Investments – People’s United Bank is the custodian of the System’s investment portfolio.

Rate of Return – The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested. The 2019 money-weighted rate of return was approximately 15.9%

Investment Management – New England Pension Consultants provided investment advisory services to the System throughout all of 2019. At December 31, 2019, the System had contracted with the following companies to serve as investment managers:

Investment Advisor	Investment Type
Ashmore Investment Management Corp.	Fixed income
City of London Investment Management Co. Ltd	International balanced funds
Garcia Hamilton & Associates, L.P.	Fixed income
Lazard Asset Management LLC	International equities
Loomis, Sayles & Company, L.P.	Domestic fixed income and small cap equities
Pension Reserves Investment Management Board	Real estate, hedge funds and alternative investments
RhumblLine Advisers Limited Partnership	Domestic equities and fixed income
William Blair & Company LLC	Global equities, fixed income and currencies

Custodial Credit Risk: Investments – Custodial credit risk for investments is the risk that in the event of a 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 the outside party. The System’s policy for custodial credit risk of investments intends that all investments are either insured and/or registered in the name of the System. At December 31, 2019, the System was not exposed to custodial credit risk on its investments.

Foreign Currency Risk: Investments – Foreign current risk is a risk that fluctuations in exchange rates will adversely affect the fair value of an investment or deposit. The System did not have any securities denominated in foreign currencies at December 31, 2019.

Concentration of Credit Risk: Investments – The following investments held by the System at December 31, 2019 represent approximately 72.5% of the System’s total investments:

Rhumbline Advisers S&P 500 Pooled Index Fund	19.5%
Lazard International Strategic Equity Portfolio	10.7%
William Blair Macro Allocation Fund	7.8%
Loomis Salyes MSFD Fund	7.7%
PRIM Core Real Estate Fund	7.7%
PRIM Alternative Investments Fund	7.5%
City of London Emerging Markets Country Fund	6.4%
PRIM Hedge Fund	5.2%

Interest Rate Risk: Investments – Debt securities are subject to interest rate risk. Debt securities may be adversely affected by changes in interest rates, which may negatively affect the fair value of individual debt instruments. The System does not have a formal investment policy that limits investments maturities as a means of managing its exposure to fair value losses arising from increasing interest rates.

At December 31, 2019, the System has the following investments and maturities:

Investment Type	Fair Value	Investment Maturities (in years)			
		Less than 1 year	1 to 5 years	6 to 10 years	More than 10 years
U.S. Treasury notes	\$ 6,936,092	\$ -	\$ 404,777	\$ 1,991,635	\$ 4,539,680
U.S. Agencies obligations	3,036,399	1,704,898	504,655	826,846	-
Foreign government bonds	300,000	-	300,000	-	-
Corporate bonds	14,486,885	-	10,840,785	3,163,037	483,063
Investments with maturities	24,759,376	\$ 1,704,898	\$ 12,050,217	\$ 5,981,518	\$ 5,022,743
Equity securities	2,137				
Mutual funds	138,761,904				
PRIT	41,917,696				
Investments without maturities	180,681,737				
Total investments	\$ 205,441,113				

Credit Risk: Investments – In the case of investments, credit risks the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. As previously noted, MGL and PERAC have enacted regulations to reduce this risk. In evaluating its credit risk, the System relies on credit ratings assigned by nationally recognized credit rating agencies such as Moody’s Investor Services, Inc. and Standard and Poor’s Financial Services, LLC. The System does voluntarily self-impose certain investment restrictions; however, those can be changed at the Board’s discretion. The System maintains a significant portion (approximately 99%) of its monetary assets as investment holdings.

None of the System’s equities, mutual funds or other pooled investments were subject to credit quality ratings from credit rating agencies. The following table summarizes the credit ratings for the System’s fixed income securities:

Quality Rating (Moody's)	U.S.		Corporate Bonds	Total
	Government Treasuries & Agencies	Foreign Government Bonds		
Aaa	\$ 9,972,491	\$ -	\$ 744,242	\$ 10,716,733
Aa3	-	-	351,484	351,484
A1	-	-	1,051,015	1,051,015
A2	-	-	3,439,035	3,439,035
A3	-	-	1,108,005	1,108,005
Baa3	-	-	672,760	672,760
Ba2	-	-	472,821	472,821
B1	-	-	741,101	741,101
Not Rated	-	300,000	5,906,422	6,206,422
	\$ 9,972,491	\$ 300,000	\$ 14,486,885	\$ 24,759,376

At December 31, 2019, uninsured short-term investments with fair values of \$1,385,674 were reported as cash equivalents. These funds represent temporary holdings of excess cash resources. The System intends to reinvest these amounts in less than one year. Accordingly, the fair value of these short-term investments has been classified as cash equivalents in these financial statements.

5. FUNDING

Employer Contributions – Under MGL, participating employers are assessed their share of the total retirement cost based on an independent actuarial study. Employer contributions totaled \$12,253,953 in 2019.

Employee Contributions – Employee contribution rates vary based on when an employee commenced their creditable service. Active members contribute 5%, 7%, 8% or 9% of their gross regular compensation depending on when their creditable service commenced. Employees hired on or after January 1, 1979 contribute an additional 2% of their gross regular compensation over \$30,000.

Cost-of-Living Adjustments – Cost-of-living adjustments granted between 1981 and 1997 and any increase in other pension benefits imposed by the Commonwealth of Massachusetts during those years are the financial responsibility of the Commonwealth. The Commonwealth is expected to continue funding the cost-of-living amounts granted over this period for the duration of their selected retirement option. Cost-of-living adjustments granted after 1997 must be approved and funded by the System. Cost-of-living adjustments cannot exceed the greater of CPI or 3%. The System approved a 3% cost-of-living adjustment on the first \$16,000 of pension benefits.

6. NET PENSION LIABILITY

The System is statutorily required to adopt the funding schedule that will fully amortize the unfunded actuarial accrued liability by June 30, 2040. As of the latest actuarial valuation, the System has selected a funding schedule that fully amortizes the unfunded actuarial accrued liability by June 30, 2033.

The components of the System’s net pension liability at December 31, 2019 were as follows (dollar amounts in thousands):

Total pension liability	\$ 334,962
Plan fiduciary net position	<u>207,059</u>
Net pension liability	<u>\$ 127,903</u>
Plan fiduciary net position as a percentage of total pension liability	61.8%

The total pension liability was determined by an actuarial valuation as of December 31, 2019. The significant actuarial assumptions used in the actuarial valuation report were as follows:

Actuarial cost method:	Individual entry age normal
Asset valuation method:	Market value
Investment rate of return:	7.25% per year (formerly 7.5%)
Projected salary increases:	3.50% per year
Cost of living adjustments:	3% on the first \$16,000 of benefits
Mortality rates:	Represented by the various SOA Pub-2010 Public Retirement Plans Mortality Tables specific to group, pre-retirement versus post-retirement, disabled and beneficiaries, with Scale MP-2019 improvements until 2025

Discount Rate – The discount rate used to measure the total pension liability in the December 31, 2019 actuarial valuation was 7.25%, versus 7.5% used in the previous valuation. The projection of cash flows used to determine the discount rate assumed plan member contributions were made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially-determined contribution rates and the member rate. Based on those assumptions, the System’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.

Expected Rate of Return – The System’s investment policy targets a nominal rate of return of 7.25%. This long-term expected rate of return is presented neither in arithmetic or geometric means.

Sensitivity Analysis – The following illustrates the net position liability at December 31, 2019 calculated using the current discount rate of 7.25%, as well as the projection of what the net position liability would be if it were calculated using a discount rate that is 1.0% lower or higher than the current rate (dollar amounts in thousands):

Current Discount Rate	Net Pension Liability At		
	1% Decrease	Current Rate	1% Increase
7.25%	\$ 162,130	\$ 127,903	\$ 98,591

7. LEGALLY REQUIRED RESERVE ACCOUNTS

Net position restricted for pensions at December 31, 2019 was comprised of the following legally required reserves:

Description	Amount	Purpose
Annuity Savings Fund	\$ 49,267,056	Active members' contribution balance
Annuity Reserve Fund	15,935,245	Retired members' contribution balance
Military Service Fund	4,863	Members' contributions while on military leave
Pension Fund	1,074,746	Amounts appropriated to fund future retirement
Pension Reserve Fund	<u>140,776,911</u>	Remaining net assets
	<u>\$ 207,058,821</u>	

8. COMMITMENTS AND CONTINGENCIES

The System is subject to a variety of claims that arise from time to time in the ordinary course of business. Although management of the System currently believes that resolving claims against the System, individually or in aggregate, will not have a material adverse impact on the System's financial position or its results of operations, these matters are subject to inherent uncertainties and management's views of these matters may change in the future.

9. SUBSEQUENT EVENT

In March 2020, the World Health Organization declared the breakout of the novel coronavirus COVID-19 as a pandemic. Subsequent to this declaration, worldwide bond and equity markets experienced significant volatility. Substantial liquidation of investments caused market prices for virtually all investment classes to decline significantly. While the System expects this matter may negatively impact its Fiduciary Net Position, the ultimate financial impact cannot be reasonably estimated at this time.

* * * * *

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

REQUIRED SUPPLEMENTARY INFORMATION - UNAUDITED

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
(dollar amounts in thousands)

	2019	2018	2017	2016	2015	2014
Total pension liability:						
Service cost	\$ 6,330	\$ 6,116	\$ 6,116	\$ 5,909	\$ 5,709	\$ 5,976
Interest	21,662	21,204	20,285	19,767	21,229	20,588
Differences between expected and actual experience	11,095	-	6,081	-	(5,236)	-
Changes in assumptions	24,449	-	-	-	(13,742)	-
Benefit payments, including refunds	<u>(21,760)</u>	<u>(21,088)</u>	<u>(19,415)</u>	<u>(18,536)</u>	<u>(18,556)</u>	<u>(17,749)</u>
Net change in total pension liability	<u>41,776</u>	<u>6,232</u>	<u>13,067</u>	<u>7,140</u>	<u>(10,596)</u>	<u>8,815</u>
Total pension liability - beginning of year	<u>293,186</u>	<u>286,954</u>	<u>273,887</u>	<u>266,747</u>	<u>277,343</u>	<u>268,528</u>
Total pension liability - end of year (a)	<u>\$ 334,962</u>	<u>\$ 293,186</u>	<u>\$ 286,954</u>	<u>\$ 273,887</u>	<u>\$ 266,747</u>	<u>\$ 277,343</u>
Plan fiduciary net position:						
Contributions - employer	\$ 12,254	\$ 11,560	\$ 11,175	\$ 11,000	\$ 10,500	\$ 10,011
Contributions - employee	4,857	4,200	3,960	3,928	3,723	3,660
Contributions - nonemployer contributing entities	835	1,231	998	1,208	269	638
Net investment income	27,244	(5,307)	21,508	8,196	465	8,741
Benefit payments, including refunds	(21,760)	(21,088)	(19,415)	(18,536)	(18,010)	(17,118)
Administrative expenses	(391)	(489)	(321)	(310)	(256)	(272)
Other	<u>8</u>	<u>43</u>	<u>17</u>	<u>44</u>	<u>33</u>	<u>71</u>
Net change in plan fiduciary net position	<u>23,047</u>	<u>(9,850)</u>	<u>17,922</u>	<u>5,530</u>	<u>(3,276)</u>	<u>5,731</u>
Plan fiduciary net position - beginning of year	<u>184,012</u>	<u>193,862</u>	<u>175,940</u>	<u>170,410</u>	<u>173,686</u>	<u>167,955</u>
Plan fiduciary net position - end of year (b)	<u>\$ 207,059</u>	<u>\$ 184,012</u>	<u>\$ 193,862</u>	<u>\$ 175,940</u>	<u>\$ 170,410</u>	<u>\$ 173,686</u>
Net pension liability - end of year (a) - (b)	<u>\$ 127,903</u>	<u>\$ 109,174</u>	<u>\$ 93,092</u>	<u>\$ 97,947</u>	<u>\$ 96,337</u>	<u>\$ 103,657</u>
Plan fiduciary net position as a percentage of the total pension liability	61.82%	62.76%	67.56%	64.24%	63.88%	62.62%
Covered payroll	\$ 46,003	\$ 42,469	\$ 41,033	\$ 40,703	\$ 39,326	\$ 37,864
Net pension liability as a percentage of covered payroll	278.03%	257.07%	226.87%	240.64%	244.97%	273.76%

These schedules are presented to illustrate the requirement to show information for ten years. However, until a full ten-year trend is completed, information is presented for those years in which information is available.

See accompanying independent auditors' report.

**MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)**

REQUIRED SUPPLEMENTARY INFORMATION - UNAUDITED

SCHEDULE OF CONTRIBUTIONS

For Fiscal Year Ended June 30,	Actuarially Determined Contribution	Contributions in Relation to the Actuarially Determined Contribution	Contribution Deficiency (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
2019	\$ 12,253,953	\$ 12,253,953	\$ -	\$ 46,003,071	26.64%
2018	11,560,340	11,560,340	-	42,469,301	27.22%
2017	11,174,776	11,174,776	-	41,033,141	27.23%
2016	11,000,000	11,000,000	-	40,702,740	27.03%
2015	10,500,000	10,500,000	-	39,326,319	26.70%
2014	10,011,299	10,011,299	-	37,863,532	26.44%

SCHEDULE OF INVESTMENT RETURNS

For Fiscal Year Ended June 30,	Annual Money- Weighted Rate of Return *
2019	15.90%
2018	-2.14%
2017	12.44%
2016	5.13%
2015	0.28%
2014	5.54%

* Net of investment expenses.

These schedules are presented to illustrate the requirement to show information for ten years. However, until a full ten-year trend is completed, information is presented for those years in which information is available.

See accompanying independent auditors' report.

**MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)**

**NOTES TO REQUIRED SUPPLEMENTARY INFORMATION
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019**

A. CHANGES OF BENEFIT TERMS

The System may be amended or terminated in whole or in part at any time by the Massachusetts Legislature, provided that no such modification, amendment or termination shall be made that would deprive a current member of superannuation pension rights or benefits provided under applicable laws of Massachusetts, if such member has paid the stipulated contributions specified in sections or provisions of such laws. There were no significant changes to the System's benefit terms in 2019.

B. SIGNIFICANT ACTUARIAL ASSUMPTIONS AND METHODS

The significant actuarial assumptions used in the December 31, 2019 report were as follows:

Actuarial cost method:	Individual entry age normal
Asset valuation method:	Market value
Investment rate of return:	7.25% per annum
Projected salary increases:	3.50% per year
Cost of living adjustments:	3% on the first \$16,000 of benefits
Mortality rates:	Represented by the various SOA Pub-2010 Public Retirement Plans Mortality Tables specific to group, pre-retirement versus post-retirement, disabled and beneficiaries, with Scale MP-2019 improvements until 2025

C. CHANGES OF ASSUMPTIONS

The discount rate used in the latest valuation report decreased to 7.25% from 7.50%. In addition, the System updated the mortality tables used in its latest actuarial valuation.



ROSELLI, CLARK & ASSOCIATES
CERTIFIED PUBLIC ACCOUNTANTS

500 West Cummings Park
Suite 4900
Woburn, MA 01801
Telephone: (781) 933-0073
www.roselliclark.com

INDEPENDENT AUDITORS' REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH GOVERNMENT AUDITING STANDARDS

To the Medford Retirement Board
Medford Contributory Retirement System
Medford, Massachusetts

We have audited, 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, the financial statements of the Medford Contributory Retirement System (the "System"), a component unit of the City of Medford, Massachusetts, as of and for the year ended December 31, 2019, and the related notes to the financial statements which collectively comprise the System's basic financial statements and have issued our report thereon dated September 4, 2020.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the System's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we do not express an opinion on the effectiveness of the System's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or, significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the System's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.



Roselli, Clark & Associates
Certified Public Accountants
Woburn, Massachusetts
September 4, 2020



ROSELLI, CLARK & ASSOCIATES
CERTIFIED PUBLIC ACCOUNTANTS

500 West Cummings Park
Suite 4900
Woburn, MA 01801
Telephone: (781) 933-0073
www.roselliclark.com

**INDEPENDENT AUDITORS' REPORT ON AUDIT OF SPECIFIC ELEMENTS, ACCOUNTS
AND ITEMS OF FINANCIAL STATEMENTS**

To the Medford Retirement Board
Medford Contributory Retirement System
Medford, Massachusetts

We have audited the accompanying schedule of employer allocations of the Medford Contributory Retirement System (the "System"), a component unit of the City of Medford, Massachusetts, as of and for the year ended December 31, 2019. We have also audited the total for all entities of the columns titled net pension liability, total deferred outflows of resources, total deferred inflows of resources and total pension expense (specified column totals) included in the accompanying schedule of pension amounts by employer of the System as of and for the year ended December 31, 2019, and the related notes thereto.

Management's Responsibility for the Schedules

Management is responsible for the preparation and fair presentation of these schedules 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 opinions on the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer 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 Audit 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 schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer 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 schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer.

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

Opinions

In our opinion, the schedules referred to above present fairly, in all material respects, the employer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total pension expense for the total of all participating entities of the System as of and for the year ended December 31, 2019, in accordance with accounting principles generally accepted in the United States of America.

Other Matters

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the System as of and for the year ended December 31, 2019, and our report thereon, dated September 4, 2020, expressed an unmodified opinion on those financial statements.



Roselli, Clark & Associates
Certified Public Accountants
Woburn, Massachusetts
September 4, 2020

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

SCHEDULE OF EMPLOYER ALLOCATIONS
YEAR ENDED DECEMBER 31, 2019

<u>Employer</u>	Actual Employer Contributions	Employer Allocation Percentage
City of Medford	\$ 11,635,777	94.96%
Medford Housing Authority	<u>618,176</u>	<u>5.04%</u>
Total	<u>\$ 12,253,953</u>	<u>100.00%</u>

See notes to schedule of employer allocation and schedule of pension amounts by employer.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER
YEAR ENDED DECEMBER 31, 2019

	City of Medford	Medford Housing Authority	Total
Net pension liability	<u>\$ 121,450,437</u>	<u>\$ 6,452,310</u>	<u>\$ 127,902,747</u>
Deferred outflows of resources:			
Differences between actual and expected experience	\$ 10,601,740	\$ 563,240	\$ 11,164,980
Changes of assumptions	18,706,582	993,827	19,700,409
Changes in proportion and differences between employer contributions and proportionate share of contributions	<u>425,604</u>	<u>75,448</u>	<u>501,052</u>
Total deferred outflows of resources	<u>\$ 29,733,926</u>	<u>\$ 1,632,515</u>	<u>\$ 31,366,441</u>
Deferred inflows of resources:			
Net difference between projected and actual investment earnings on pension plan investments	\$ 1,516,119	\$ 80,548	\$ 1,596,667
Changes in proportion and differences between employer contributions and proportionate share of contributions	<u>75,448</u>	<u>425,604</u>	<u>501,052</u>
Total deferred inflows of resources	<u>\$ 1,591,567</u>	<u>\$ 506,152</u>	<u>\$ 2,097,719</u>
Pension expense (income):			
Proportionate share of plan pension expense	\$ 16,617,983	\$ 882,865	\$ 17,500,848
Proportionate share of plan pension revenue	(448,448)	(23,825)	(472,273)
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	<u>60,920</u>	<u>(60,920)</u>	<u>-</u>
Total employer pension expense (income)	<u>\$ 16,230,455</u>	<u>\$ 798,120</u>	<u>\$ 17,028,575</u>

See notes to schedule of employer allocation and schedule of pension amounts by employer.

**MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)**

**NOTES TO PENSION SCHEDULES
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019**

A. INTRODUCTION

GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*, establishes financial reporting requirements for governments that provide employees with pension benefits. GASB 68 requires employers to recognize a net pension liability or net pension asset as employees earn pension benefits. Employers participating in the Medford Contributory Retirement System (the “System”) will recognize their proportionate share of the collective pension amounts for all benefits provided by the Retirement System.

B. METHOD OF PROPORTIONATE SHARE ALLOCATION

The basis for the proportionate share allocation by employer as found in the Schedule of Employer Allocations and Schedule of Pension Amounts by Employer is consistent with the manner in which employer contributions to the System are determined. The net pension liability, deferred outflows of resources, deferred inflows of resources and pension expense is based upon actual historical employer contributions to the System from the census data submitted by the System for pay periods ending December 31, 2019.

C. EXPECTED FUTURE AMORTIZATION OF DEFERRED BALANCES

The following table summarizes the expected amortization of the deferred outflows of resources and inflows of resources into pension expense.

Measurement Period Ended December 31:	City of Medford	Medford Housing Authority	Total
2020	\$ 8,293,644	\$ 289,455	\$ 8,583,099
2021	7,091,565	262,862	7,354,427
2022	7,747,717	374,744	8,122,461
2023	4,018,161	155,358	4,173,519
2024	991,272	43,944	1,035,216
	<u>\$ 28,142,359</u>	<u>\$ 1,126,363</u>	<u>\$ 29,268,722</u>

ROSELLI, CLARK & ASSOCIATES
Certified Public Accountants

**MEDFORD CONTRIBUTORY
RETIREMENT SYSTEM
(a Component Unit of the
City of Medford, Massachusetts)**

Report on Examination of Basic Financial
Statements and Additional Information

Year Ended December 31, 2018

Report on Internal Control and Compliance
Year Ended December 31, 2018



MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

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ROSELLI, CLARK & ASSOCIATES
CERTIFIED PUBLIC ACCOUNTANTS

500 West Cummings Park
Suite 4900
Woburn, MA 01801
Telephone: (781) 933-0073
www.roselliclark.com

INDEPENDENT AUDITORS' REPORT

To the Medford Retirement Board
Medford Contributory Retirement System
Medford, Massachusetts

Report on the Financial Statements

We have audited the accompanying financial statements of the Medford Contributory Retirement System (the "System"), a component unit of the City of Medford, Massachusetts, as of and for the year ended December 31, 2018, and the related notes to the financial statements, which collectively comprise the System's basic 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 opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

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

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

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the System as of December 31, 2018, and the respective changes in financial 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, and the schedules listed under the required supplementary information section in the accompanying table of contents 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.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued a report dated May 9, 2019 on our consideration of the System's internal control over financial reporting and our tests of its compliance with certain provisions of laws, regulations, contracts, 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 the 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.

Roselli, Clark & Associates

Roselli, Clark & Associates
Certified Public Accountants
Woburn, Massachusetts
May 9, 2019

MANAGEMENT'S DISCUSSION AND ANALYSIS

Our discussion and analysis of the Medford Contributory Retirement System's (the "System") financial performance provides an overview of the System's financial activities for the calendar year ended December 31, 2018. You should read it in conjunction with the basic financial statements, footnotes and required supplementary information that follows this discussion.

Financial Highlights

The System's funding objective is to meet long-term benefit obligations through contributions and investment income. The System's independent actuary estimates that the System is approximately 63% funded at December 31, 2018. Based on its current funding schedule, the System expects to be fully funded on or about 2031.

The System's money-weighted return on investments, net of investment management fees, was approximately -2.1% in 2018. The negative return on investments in 2018 was due primarily to a significant decline in the U.S. equity markets in the fourth calendar quarter of 2018. Prior to the fourth calendar quarter, the U.S. equity markets were on track to meet or exceed the System's targeted annual investment return (currently 7.5% per annum). It's important to note that the U.S. equity markets rebounded significantly in the first calendar quarter of 2019, which was erased nearly all of the fourth calendar quarter of 2018's losses.

This negative return on investments was the primary contributor to the over \$9.8 million decrease in the System's fiduciary net position in 2018.

Overview of the Financial Statements

This discussion and analysis is intended as an introduction to the System's basic financial statements. The basic 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.

Statement of Fiduciary Net Position – presents information on the System's assets, deferred outflows of resources, liabilities, deferred inflows of resources and fiduciary net position restricted for pensions. This statement reflects the System's investments at fair value, as well as cash, receivables, other assets and liabilities. Over time, the increase or decrease in fiduciary net position serves as a useful indicator of the System's financial health and condition.

Statement of Changes in Fiduciary Net Position – presents information showing how the System's fiduciary net position changed during the year. It reflects contributions by members and participating employers along with deductions for retirement benefits, refunds, withdrawals and administrative expenses. Investment income, including realized and unrealized gains on pooled investments, during the year is also presented.

Notes to the Financial Statements – provide additional information that is essential for the reader to gain a full understanding of the data provided in the financial statements.

Required Supplementary Information – includes this management's discussion and analysis and various unaudited schedules.

Financial Analysis

Fiduciary Net Position

The System's total assets as of December 31, 2018 approximated \$184.1 million and principally consisted of investments recorded at fair value. Total assets decreased nearly \$11.8 million, or 6%, from December 31, 2017 due primarily to the decline in investment balances year-over-year. System liabilities decreased over \$1.9 million year-over-year due to the absence of open trade payables at December 31, 2018.

	<u>2018</u>	<u>2017</u>
Assets:		
Cash and cash equivalents	\$ 7,484,871	\$ 3,656,453
Investments, at fair value	176,484,193	191,962,122
Receivables and other assets	<u>106,580</u>	<u>249,560</u>
Total Assets	<u>184,075,644</u>	<u>195,868,135</u>
Liabilities	<u>63,623</u>	<u>2,006,651</u>
Fiduciary Net Position	<u>\$184,012,021</u>	<u>\$193,861,484</u>

Change in Fiduciary Net Position

Net investment income decreased nearly \$27.0 million in 2018 as a result of the 2018 negative investment return of 2.1% versus a 12.4% positive return in 2017. This decline in investments was the primary contributor to the over \$9.8 million negative change in fiduciary net position in 2018.

	Year Ended December 31,	
	<u>2018</u>	<u>2017</u>
Additions:		
Contributions	\$ 17,034,033	\$ 16,150,165
Investment income, net	<u>(5,420,060)</u>	<u>21,507,752</u>
Total Additions	<u>11,613,973</u>	<u>37,657,917</u>
Deductions:		
Benefits and refunds to Plan members	21,087,645	19,415,411
Administrative and other expenses	<u>375,791</u>	<u>321,200</u>
Total Deductions	<u>21,463,436</u>	<u>19,736,611</u>
Change in Fiduciary Net Position	<u>\$ (9,849,463)</u>	<u>\$ 17,921,306</u>

Additions – The amount needed to finance pension benefits is accumulated through the collection of employers and employees' contributions, reimbursements from the Commonwealth of Massachusetts for pre-1998 Cost of Living Adjustments and through earnings on investments. In 2018, contributions from the employers and employees increased by nearly \$884,000. This increase was due primarily to an increase in employer contributions (i.e., appropriations) of approximately \$386,000 and employee contributions of over \$201,000. Employer contributions totaled

\$11,560,340, or 68%, of total contributions. Employer contributions are determined by an actuarial valuation.

As previously noted, the money-weighted rate of return, net of investment expense, was approximately -2.1% in 2018 versus 12.4% in 2017. This caused the significant decrease in net investment income year-over-year.

Deductions – The primary deductions for the System include the payment of pension benefits to participants and beneficiaries, refunds of contributions and the costs of administering the system. Benefit and refund payments to Plan members in 2018 were approximately \$1.7 million, or 9%, higher than the prior year. This increase was due to an increase in retirees and beneficiaries receiving pension benefits as well as an increase in the average annual benefits paid for these retirees and beneficiaries. Administrative and other expenses, which primarily consist of System operations payroll and operational costs increased slightly year-over-year.

Overall Financial Position

The System's funded ratio of approximately 63% in the December 31, 2018 actuarial valuation report places it in the top one-half of Massachusetts public employee retirement systems. Using the assumptions detailed more fully in Note 6 to the financial statements, the System forecasts that it will be fully funded in 2031, well ahead of the mandated deadline.

The System maintains a large portion of its investments in pooled funds. Some of these funds invest in private companies or real estate. The determination of the value of these investments is very subjective and the ultimate amount of gains and losses in some of these funds will not be determined until the underlying assets (i.e., the real estate or stock in the private companies) are sold. Furthermore, these types of investments are not as liquid as investments in savings accounts, money markets, certificates of deposits, government securities or debt and equity securities in publicly-held U.S. corporations. You should refer to Notes 2 and 4 to these financial statements.

U.S. equity markets rebounded significantly in the first calendar quarter of 2019, erasing virtually all the 2018 investment losses incurred by the System, which if that trend continues for the duration of 2019, will have positive impacts to the System's funding ratio at December 31, 2019.

Although the System has been successful in generating the yields necessary to achieve fully funded status in the required time frame, the System (like so many other institutional investors) has experienced a great deal of volatility in its investments. Management believes that the volatility in the worldwide markets may continue for the foreseeable future. Accordingly, management intends to actively monitor the System's investment positions to best maximize returns while mitigating risk as best it can.

Contacting the System's Financial Management Personnel

Our discussion and analysis is designed to provide the Medford Retirement 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 Medford Retirement Board at 85 George P. Hassett Drive, Medford, MA 02155.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

STATEMENT OF FIDUCIARY NET POSITION
DECEMBER 31, 2018

Assets:	
Cash and cash equivalents	\$ 7,484,871
Investments:	
Fixed income securities	20,551,116
Equity securities	2,171
Mutual funds	117,171,588
PRIT	38,759,318
Receivables:	
Interest receivable	98,898
Other	<u>7,682</u>
Total Assets	<u>184,075,644</u>
Liabilities:	
Accounts payable and accrued expenses	<u>63,623</u>
Total Liabilities	<u>63,623</u>
Net Position Restricted for Pensions	<u>\$ 184,012,021</u>

See accompanying notes to basic financial statements.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
YEAR ENDED DECEMBER 31, 2018

Additions:	
Employer contributions	\$ 11,560,340
Employee contributions	4,199,452
Other contributions	<u>1,230,796</u>
Total contributions	<u>16,990,588</u>
Investment income:	
Interest and dividends	5,193,033
Net appreciation in fair value of investments	(9,276,877)
Less investment management fees	<u>(1,336,216)</u>
Total net investment income	<u>(5,420,060)</u>
Other income	<u>43,445</u>
Total Additions	<u>11,613,973</u>
Deductions:	
Benefits and refunds to Plan members:	
Benefits to retirees and survivors	19,746,000
Member refunds	124,046
Transfers and reimbursements to other systems	1,217,599
Administrative expenses:	
Operations payroll and related personnel costs	230,208
Other	<u>145,583</u>
Total Deductions	<u>21,463,436</u>
Net Change in Net Position	(9,849,463)
Net Position Restricted for Pensions:	
Beginning of the year	<u>193,861,484</u>
End of the year	<u>\$ 184,012,021</u>

See accompanying notes to basic financial statements.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

NOTES TO THE FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2018

1. DESCRIPTION OF THE PLAN

General – The Medford Contributory Retirement System (the “System”) is a multiple employer cost sharing defined benefit pension plan established and administered by the Medford Retirement Board under the provisions of Chapter 32 of the Massachusetts General Laws to provide pension benefits for participants. The System is a component unit of the City of Medford, Massachusetts (the “City”). The City and the Medford Housing Authority (the “Authority”) contribute to the System.

Employees of the City (with the exception of teachers and certain administrative personnel employed by the School Department who participate in a separate plan) and the Authority are covered by the System. Participation in the System is mandatory immediately upon the commencement of employment for all permanent, full-time employees.

At December 31, 2018, membership in the System consisted of:

Retirees and beneficiaries currently receiving benefits	593
Active plan members	902
Inactive plan members	<u>39</u>
Total membership	<u>1,534</u>

Plan Benefits – Massachusetts contributory retirement system benefits are generally uniform from system to system. For employees with service dates beginning before April 2, 2012, the System provides for retirement allowance benefits up to a maximum of 80% of a participant’s highest consecutive three-year average annual rate of regular compensation. For those employees who began their service after April 2, 2012, the System provides for retirement allowance benefits up to a maximum of 80% of a participant’s highest consecutive five-year average annual rate of regular compensation. Benefit payments are based upon a participant’s age, length of creditable service, level of compensation and group classification.

The retirement allowance consists of two parts – an annuity and a pension. Participants’ accumulated total deductions and a portion of the interest they generate constitute the annuity. The differential between the total retirement benefit and annuity is the pension.

Participants who resign from service and who are not eligible to receive a retirement allowance are entitled to request a refund of their accumulated total contributions. In addition, depending upon the number of years of creditable service, such employees may be entitled to receive interest, which has accrued on those contributions. A vested employee who has not reached their eligible retirement age and elects to leave their accumulation on deposit may apply for benefits upon reaching their eligible retirement age.

Survivor benefits are extended to eligible beneficiaries of participants whose death occurs prior to or following retirement.

Retirement Requirements – In order to receive retirement benefits, participants must meet one of the following two categories:

Normal Retirement – Generally, normal retirement occurs between ages 65 and 67. However, most participants with a hire date before April 2, 2012, may retire after ten years of service at age 55 or twenty years of service at any age. For most participants hired on or after April 2, 2012, they must attain the age of 60 before they can retire. Participants with hire dates subsequent to January 1, 1978 must have a minimum of ten years' creditable service in order to retire at age 55 or 60, as applicable. Participants become vested after ten years of service. Benefits commencing before age 65 are generally provided at a reduced rate. However, members working in certain occupations may retire with full benefits earlier than age 65.

Participants who resign from service and who are not eligible to receive a retirement allowance or are under the age of 55 may request a refund of their accumulated total contributions. In addition, depending on the number of years of creditable service, these employees may be entitled to interest that has accrued on their contributions; for those employees who voluntarily terminate with less than ten years of service, this interest rate is 3.0%. A vested employee under the age of 55 who elects to leave their accumulated contributions on deposit may apply for pension benefits upon reaching their eligible retirement age.

Disability Retirements – The System provides for both an ordinary disability retirement, where a participant is permanently incapacitated from a cause unrelated to employment, and an accidental disability retirement, where the disability is the result of an injury or illness received or aggravated in the performance of one's duty. The amount of benefits to be received in such cases is dependent upon several factors, including the age at which the disability retirement occurs, the years of service, average compensation and veteran status. In addition, certain provisions are in place relative to death benefits for beneficiaries of employees who die in active service.

Public Availability of Financial Statements – The Medford Retirement Board issues a publicly available financial report that includes financial statements and required supplementary information for the System. That report may be obtained by writing to the Medford Retirement Board, 85 George P. Hassett Drive, Medford, MA 02155.

2. SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting – The financial statements of the System have been prepared on the accrual basis of accounting. The accounting records of the System are maintained on a calendar-year basis in accordance with the standards and procedures established by the Public Employee Retirement Administration Commission ("PERAC") and Massachusetts law.

Estimates – The preparation of financial statements in conformity with generally accepted accounting principles in the United States of America, or GAAP, requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Cash and Cash Equivalents – Cash and cash equivalents include cash on hand, demand deposits and short-term holdings with original maturities of three months or less from the date of acquisition.

Investments – The carrying amounts of the System’s investments approximate their fair value. When actively quoted observable prices are not available, the System generally uses either implied pricing from similar investments or valuation models based on net present values of estimated future cash flows (adjusted as appropriate for liquidity, credit, market and/or other risk factors).

The System categorizes its fair value measurements within the fair value hierarchy established by GAAP. This hierarchy is based on valuation inputs used to measure the fair value of the asset or liability. The three levels of the hierarchy are as follows:

- *Level 1* – Inputs are quoted prices in active markets for identical investments at the measurement date.
- *Level 2* – Inputs (other than quoted prices included in Level 1) are either directly or indirectly observable for the investment through correlation with market data at the measurement date and for the duration of the instrument’s anticipated life.
- *Level 3* – Inputs reflect the System’s best estimate of what market participants would use in pricing the investment at the measurement date.

The remaining investments not categorized under the fair value hierarchy are shown at net asset value (“NAV”). These are investments in non-governmental entities for which a readily determinable fair value is not available, such as member units or an ownership interest in partners’ capital to which a proportionate share of net assets is attributed. Investments at NAV are commonly calculated by subtracting the fair value of liabilities from the fair value of assets.

The following table presents the fair value of the System’s investments by type as of December 31, 2018:

	December 31, 2018	Fair Value Measurements Using		
		Level 1	Level 2	Level 3
Investments by fair value level				
Debt securities:				
U.S. governments and agencies obligations	\$ 9,789,827	\$ 4,805,921	\$ 4,983,906	\$ -
Foreign government obligations	299,634	-	299,634	-
Corporate bond obligations	10,461,655	10,461,655	-	-
Equity securities	2,171	2,171	-	-
Mutual funds	<u>101,589,281</u>	<u>69,698,504</u>	<u>31,890,777</u>	-
Total investments by fair value level	<u>122,142,568</u>	<u>\$ 84,968,251</u>	<u>\$ 37,174,317</u>	<u>\$ -</u>
Investments measured at NAV				
Mutual funds	15,582,307			
PRIT	<u>38,759,318</u>			
Total investments measured at NAV	<u>54,341,625</u>			
Total investments measured at fair value	<u>\$ 176,484,193</u>			

Equity and debt securities and mutual funds classified in Level 1 are valued using prices quoted in active markets for those securities. Debt securities and mutual funds classified in Level 2 were valued using observable inputs from similar securities, including basing value on yield currently available on comparable securities of issued with similar credit ratings.

Investments Measured at NAV By Asset Class	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Private equity mutual funds	\$ 15,582,307	\$ -	Varies	30 to 60 days
PRIT	<u>38,759,318</u>	<u>9,300,326</u>	Monthly	30 days
	<u>\$ 54,341,625</u>	<u>\$ 9,300,326</u>		

Investments measured at NAV include comingled/pooled funds in a mutual fund and private equity fund and investments in the State Treasurer investment pool, or PRIT.

Private equity funds generally include investments in which the System is a general partner in a private equity, venture capital fund or similar investment vehicle. The value of these investments are recorded at values determined in good faith by the general partners of the private equity and venture capital firms after consideration of pertinent information, including current financial position and operative results, price-earnings multiples and available market prices of similar companies' securities, the nature of the securities, marketability, restrictions on disposition and other appropriation and do not necessarily represent amounts which might ultimately be realized, since such amounts depend on future circumstances and cannot reasonably be determined until individual securities are liquidated. In addition, fair values of real estate funds are generally based on independent, third-party appraisals. By their very nature, these investments are illiquid and typically cannot be resold or redeemed. Distributions from each fund will be received as the underlying investments are liquidated. It is expected that the underlying assets for the funds will be liquidated over an average of ten years.

The State Treasurer investment pool is administered by the Commonwealth of Massachusetts' Pension Reserve Investment Management Board, or PRIM. The System maintains several Massachusetts Pension Reserve Investment Trust, or PRIT funds, each of which consists of a diverse set of investments that includes private equity, venture and real estate investments. The determination of the fair value of these investments is very subjective and the period-end values are reported to the System as NAV. Investments in the PRIT funds are more liquid than investments in private equity and real estate holdings, but generally cannot be resold to third parties. The System may liquidate its investment in the PRIT funds at any time with less than thirty days' notice. Distributions from the PRIT funds may be received regularly and, upon receipt, are deposited into an accompanying short-term cash investment account.

Because of the inherent uncertainty of valuations used in many of the System's investments measured at NAV, estimated values may differ significantly from the values that would have been used had a readily available market for positions in privately held companies or the real estate existed at December 31, 2018. These differences could have a material adverse effect on the System's financial statements.

Fair Value of Financial Instruments – The carrying amounts of cash and cash equivalents, accounts receivable and other current assets, and accounts payable and accrued expenses approximate their fair value due to the relatively short-term maturities.

Revenue Recognition – Contributions are recognized as additions in the period in which they become due pursuant to formal commitments, and statutory or contractual requirements. Contributions appropriated by the City and the Authority are on a fiscal-year basis. Investment purchases and sales are recorded on their trade dates. Interest and dividends are recorded when earned. Investment income is allocated to the various funds on the basis of a rate determined annually by PERAC.

Derivatives – The System may invest in derivative products such as currency hedges to minimize the currency risk on international investments. The System does not have any direct holdings that are classified as derivatives at December 31, 2018. At December 31, 2018, the System maintained investments with PRIT totaling approximately \$38.8 million, a portion of which may include derivatives at the discretion of the PRIT fund managers.

3. SYSTEM ADMINISTRATION

The System is administered by a five-person Board consisting of the City Auditor, two members who are elected by the participants in or retired from the service of the System, one member appointed by the City Mayor and one member appointed by the other members of the Board.

At December 31, 2018, the Board was comprised as follows:

		<u>Term Expires</u>
Ex-Officio Member:	Ms. Aleesha Nunley-Benjamin (City Auditor)	No specified date
Appointed Member:	Mr. Robert Maiocco	January 23, 2021
Elected Member:	Mr. Patrick Ripley	July 1, 2020
Elected Member:	Mr. Rick Jordan	December 19, 2020
Board Appointed Member:	Mr. James Vieira	January 27, 2021

The Board is required to meet at least once a month and keep a record of its proceedings. The Board annually submits a financial statement of condition for the System with the Commissioner of PERAC. Retirement allowances are approved by the Board and, in certain circumstances, submitted to a PERAC for verification prior to payments being made. Expenses incurred by the System must be approved by two members of the Board.

4. DEPOSITS AND INVESTMENTS

Massachusetts General Laws Chapter 32 and PERAC regulations require the System to invest funds only in pre-approved investment instruments, which include but are not necessarily limited to bank deposits, money markets, certificates of deposit, U.S. obligations, repurchase agreements, certain corporate bonds and equities and investment pools.

Investment Policy – The investment of the System’s funds is the responsibility of the Board. The Board adopted a revised investment policy statement in September 2017. The investment objective is to ensure that the System’s assets are invested to enhance and preserve principal, both in real and nominal terms. The System’s investment policy seeks a long-term investment return of 7.5%.

The System's investment policy requires diversification within its investment portfolio. Effective September 2017, the System's portfolio target weights at the broad asset class level were as follows:

<u>Asset Class</u>	<u>Target Allocation</u>
Equities:	
Domestic	12.0% to 32.0%
International	8.0% to 18.0%
Emerging Markets	0.0% to 10.0%
Fixed Income:	
Domestic	5.5% to 15.5%
Multisector	5.5% to 15.5%
International	0.0% to 7.0%
Global Asset Allocation	10.0% to 22.0%
Private Equity	3.0% to 10.0%
Real Estate	4.0% to 10.0%
Hedge Funds	0.0% to 7.0%

Custody of Investments – People's United Bank is the custodian of the System's investment portfolio.

Rate of Return – The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested. The 2018 money-weighted rate of return was approximately -2.1%

Investment Management – New England Pension Consultants provided investment advisory services to the System throughout all of 2018. At December 31, 2018, the System had contracted with the following companies to serve as investment managers:

<u>Investment Advisor</u>	<u>Investment Type</u>
City of London Investment Management Co. Ltd	International balanced funds
Columbia Management Investment Advisers LLC	Fixed income
Lazard Asset Management LLC	International equities
Loomis, Sayles & Company, L.P.	Domestic fixed income and small cap equities
Pension Reserves Investment Management Board	Alternative investments, real estate and hedge funds
RhumbLine Advisers Limited Partnership	Domestic equities
Western Asset Management Company	International equities and emerging markets
William Blair & Company LLC	Global equities, fixed income and currencies

Custodial Credit Risk: Deposits – Deposits are subject to the risk of bank failure. The System may be unable to recover the full amount of its deposits in any one bank institution in the event of a bank failure. The System’s policy for custodial credit risk of deposits is to rely on Federal Deposit Insurance Corporation (“FDIC”) insurance coverage for the first \$250,000 of deposits held at each financial institution. At December 31, 2018, \$489,542 of the System’s bank deposits was not covered by FDIC or other depository insurance.

Custodial Credit Risk: Investments – Custodial credit risk for investments is the risk that, in the event of a 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 the outside party. The System’s policy for custodial credit risk of investments intends that all investments are either insured and/or registered in the name of the System. At December 31, 2018, the System was not exposed to custodial credit risk on its investments.

Interest Rate Risk: Deposits – This is the risk that fair value losses may arise due to increasing interest rates, such risk is reduced by the fact that the System maintains such funds in highly liquid bank accounts; thereby, allowing for timely re-allocation of such holdings should the need arise.

Interest Rate Risk: Investments – Debt securities are subject to interest rate risk. Debt securities may be adversely affected by changes in interest rates, which may negatively affect the fair value of individual debt instruments. The System does not have a formal investment policy that limits investments maturities as a means of managing its exposure to fair value losses arising from increasing interest rates.

Foreign Currency Risk: Deposits and Investments – A risk that fluctuations in exchange rates will adversely affect the fair value of an investment or deposit. The System did not have any securities denominated in foreign currencies at December 31, 2018.

Securities Credit Risk: Investments – In the case of investments, there is the risk that in the event of an invested party will be unable to fulfill its obligations, such as to provide required payments to investors, to meet current or future performance expectations, to abide by industry regulations and proper operational practices, ceasing to exist, or filing for bankruptcy. In those instances, the System may not be able to recover the full amount of its principal investment and/or investment earnings. As previously noted, PERAC and Massachusetts statutory regulations have been enacted to reduce this risk. In evaluating its credit risk, the System relies on credit ratings assigned by Moody’s Investor Services, Inc. and Standard and Poor’s Financial Services, LLC. The System does voluntarily self-impose certain investment restrictions; however, those can be changed at the Board’s discretion. The System maintains a significant portion (approximately 96%) of its monetary assets as investment holdings.

None of the System’s mutual funds or pooled investments were subject to credit quality ratings from leading credit rating agencies. The following table summarizes the credit ratings for the System’s fixed income securities (excluding pooled fixed income investments):

Quality Rating (Moody's)	U.S.		Foreign	Total
	Government Treasuries & Agencies	Corporate Bonds	Government Bonds	
Aaa	\$ 9,789,827	\$ 535,909	\$ -	\$ 10,325,736
Aa1	-	199,990	-	199,990
Aa2	-	620,319	-	620,319
A1	-	1,268,689	-	1,268,689
A2	-	1,209,798	-	1,209,798
A3	-	1,021,187	-	1,021,187
Baa1	-	495,431	-	495,431
Baa2	-	497,257	-	497,257
Ba3	-	496,130	-	496,130
B1	-	169,975	-	169,975
Not Rated	-	3,946,970	299,634	4,246,604
	<u>\$ 9,789,827</u>	<u>\$ 10,461,655</u>	<u>\$ 299,634</u>	<u>\$ 20,551,116</u>

At December 31, 2018, uninsured short-term investment funds with fair values of \$6,863,785 were reported as cash equivalents. These funds represent temporary holdings of excess cash resources. The System intends to reinvest these amounts in less than one year. Accordingly, the fair values of these amounts have been classified as cash equivalents in these financial statements. These funds are not insured by the FDIC.

Concentration of Credit Risk: Investments – The following investments held by the System at December 31, 2018 represent approximately 78.2% of the System’s total investments:

Rhumblin Advisers S&P 500 Pooled Index Fund	14.7%
William Blair Macro Allocation Fund	12.5%
Lazard International Strategic Equity Portfolio	12.1%
Loomis Salyes MSFD Fund	11.7%
PRIM Alternative Investments Fund	8.2%
PRIM Core Real Estate Fund	8.1%
PRIM Hedge Fund	5.7%
City of London Emerging Markets Country Fund	5.2%

5. FUNDING POLICY

Employee Contributions – Employees whose creditable service began prior to January 1, 1975, contribute 5% of their regular compensation; those whose service date is subsequent to January 1, 1975, and prior to January 1, 1984, contribute 7%; those whose service date is subsequent to January 1, 1984, and prior to July 1, 1996, contribute 8%, and those whose service date is subsequent to July 1, 1996, contribute 9%. In addition, employees hired on or after January 1, 1979 contribute an additional 2% on earnings in excess of \$30,000.

Employer Contributions (Funding) – Under the provisions of Chapter 32 of Massachusetts General Law, participating employers are assessed their share of the total retirement cost based on independent actuarial study. Significant actuarial assumptions are used to compute the actuarially determined employer contribution requirement.

Employer contributions of \$11,560,340 were made in 2018. Employer contributions as a percentage of covered payroll was approximately 27% in 2018.

Cost of Living Adjustment (COLA) – Through 1998, the Massachusetts Legislature was able to grant cost-of-living increases to benefits being paid to retirees. These increases were expressed as a percentage of the retiree’s allowance subject to a maximum dollar increase. All COLA’s granted from 1982 through June 30, 1998, are reimbursed to the System by the Commonwealth of Massachusetts since the Commonwealth was financially responsible for COLA adjustments during this time frame; any COLA’s granted thereafter by the Board are required to be funded by the System directly. A COLA may be approved in excess of the Consumer Price Index, or CPI, but is not to exceed 3% annually on the first \$16,000 of a retirement allowance. The System has historically approved a COLA annually, usually at the maximum 3% rate.

The Commonwealth is expected to continue funding the cost-of-living amounts granted to retirees prior to 1998 for the duration of their selected retirement option.

6. ACTUARIAL VALUATION

The System is statutorily required to adopt the funding schedule that will fully amortize the unfunded actuarial accrued liability by June 30, 2040. As of the latest actuarial valuation, the System has selected a funding schedule that fully amortizes the unfunded actuarial accrued liability by June 30, 2031.

The components of the System’s net pension liability at December 31, 2018 were as follows:

Total pension liability	\$ 293,186,227
Plan fiduciary net position	<u>184,012,021</u>
Net pension liability	<u>\$ 109,174,206</u>
Plan fiduciary net position as a percentage of total pension liability	62.8%

The total pension liability was determined by an actuarial valuation as of January 1, 2018. The significant actuarial assumptions used in this report were as follows:

Actuarial cost method:	Individual entry age normal
Asset valuation method:	Market value
Investment rate of return:	7.5% per annum
Projected salary increases:	3.50% per year
Cost of living adjustments:	3% on the first \$16,000 of benefits
Mortality rates:	Pre-retirement and post-retirement rates reflect the RP-2014 Blue Collar mortality table with Scale MP-2014, fully generational. Group 1 and 2 retirees are set forward 5 years for males and 3 years for females, fully generational. Group 4 retirees are set forward 3 years for males and 6 years for females, fully generational.
Disabled life mortality:	RP-2000 mortality table set forward 6 years for Group 1 and 2 and 2 years for Group 4, generationally adjusted.

Discount Rate – The discount rate used to measure the total pension liability in the December 31, 2018 actuarial valuation report was 7.5%. The projection of cash flows used to determine the discount rate assumed plan member contributions were made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially-determined contribution rates and the member rate. Based on those assumptions, the System’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.

Expected Rate of Return – The System’s investment policy targets a nominal rate of return of 7.5%. This long-term expected rate of return is presented neither in arithmetic or geometric means.

Sensitivity Analysis – The following illustrates the net position liability at December 31, 2018 calculated using the current discount rate of 7.5%, as well as the projection of what the net position liability would be if it were calculated using a discount rate that is 1.0% lower (6.5%) and 1.0% higher (8.5%) that the current rate:

	1% Decrease (6.5%)	Current Discount (7.5%)	1% Increase (8.5%)
Net pension liability	\$ 137,676,849	\$ 109,174,206	\$ 84,712,574

7. NET POSITION RESTRICTED FOR PENSIONS

Net position restricted for pensions, as of December 31, 2018, were comprised of four funds:

Description	Amount	Purpose
Annuity Savings Fund	\$ 47,379,097	Active members' contribution balance
Annuity Reserve Fund	16,140,366	Retired members' contribution balance
Military Service Fund	4,858	Members' contributions account while on military leave
Pension Fund	1,190,082	Amounts appropriated to fund future retirement
Pension Reserve Fund	<u>119,297,618</u>	Remaining net assets
	<u>\$ 184,012,021</u>	

8. COMMITMENTS AND CONTINGENCIES

The System is subject to a variety of claims that arise from time to time in the ordinary course of business. Although management of the System currently believes that resolving claims against the System, individually or in aggregate, will not have a material adverse impact on the System's financial position or its results of operations, these matters are subject to inherent uncertainties and management's views of these matters may change in the future.

* * * * *

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

REQUIRED SUPPLEMENTARY INFORMATION - UNAUDITED

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
(dollar amounts are in thousands)

	2018	2017	2016	2015	2014
Total pension liability:					
Service cost	\$ 6,115,958	\$ 6,115,853	\$ 5,909,037	\$ 5,709,214	\$ 5,976,621
Interest	21,203,767	20,285,273	19,766,673	21,228,946	20,587,820
Differences between expected and actual experience	-	6,081,774	-	(5,235,568)	-
Changes in assumptions	-	-	-	(13,742,413)	-
Benefit payments, including refunds	(21,087,648)	(19,415,411)	(18,536,212)	(18,556,416)	(17,748,689)
Net change in total pension liability	6,232,077	13,067,489	7,139,498	(10,596,237)	8,815,752
Total pension liability - beginning of year	286,954,150	273,886,661	266,747,163	277,343,400	268,527,648
Total pension liability - end of year (a)	<u>\$ 293,186,227</u>	<u>\$ 286,954,150</u>	<u>\$ 273,886,661</u>	<u>\$ 266,747,163</u>	<u>\$ 277,343,400</u>
Plan fiduciary net position:					
Contributions - employer	\$ 11,560,340	\$ 11,174,776	\$ 11,000,000	\$ 10,500,000	\$ 10,011,299
Contributions - employee	4,199,452	3,960,307	3,928,047	3,722,994	3,659,843
Contributions - nonemployer contributing entities	1,230,796	997,809	1,207,605	269,723	637,868
Net investment income	(5,306,525)	21,507,752	8,196,559	464,885	8,740,674
Benefit payments, including refunds	(21,087,645)	(19,415,411)	(18,536,212)	(18,009,941)	(17,118,357)
Administrative expenses	(489,326)	(321,200)	(310,145)	(256,147)	(272,089)
Other	43,445	17,273	44,323	33,055	71,499
Net change in plan fiduciary net position	(9,849,463)	17,921,306	5,530,177	(3,275,431)	5,730,737
Plan fiduciary net position - beginning of year	193,861,484	175,940,178	170,410,001	173,685,432	167,954,695
Plan fiduciary net position - end of year (b)	<u>\$ 184,012,021</u>	<u>\$ 193,861,484</u>	<u>\$ 175,940,178</u>	<u>\$ 170,410,001</u>	<u>\$ 173,685,432</u>
Net pension liability - end of year (a) - (b)	<u>\$ 109,174,206</u>	<u>\$ 93,092,666</u>	<u>\$ 97,946,483</u>	<u>\$ 96,337,162</u>	<u>\$ 103,657,968</u>
Plan fiduciary net position as a percentage of the total pension liability	62.76%	67.56%	64.24%	63.88%	62.62%
Covered payroll	\$ 42,469,301	\$ 41,033,141	\$ 40,702,740	\$ 39,326,319	\$ 37,863,532
Net pension liability as a percentage of covered payroll	257.07%	226.87%	240.64%	244.97%	273.77%

These schedules are presented to illustrate the requirement to show information for ten years. However, until a full ten-year trend is completed, information is presented for those years in which information is available.

See accompanying independent auditors' report.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

REQUIRED SUPPLEMENTARY INFORMATION - UNAUDITED

SCHEDULE OF CONTRIBUTIONS
(dollar amounts are in thousands)

	2018	2017	2016	2015	2014
Actuarially-determined contribution	\$ 11,560,340	\$ 11,174,776	\$ 11,000,000	\$ 10,500,000	\$ 10,011,299
Contributions in relation to the actuarially-determined contribution	<u>11,560,340</u>	<u>11,174,776</u>	<u>11,000,000</u>	<u>10,500,000</u>	<u>10,011,299</u>
Contribution deficiency (excess)	\$ -	\$ -	\$ -	\$ -	\$ -
Covered payroll	\$ 42,469,301	\$ 41,033,141	\$ 40,702,740	\$ 39,326,319	\$ 37,863,532
Contribution as a percentage of covered payroll	27.22%	27.23%	27.03%	26.70%	26.44%

SCHEDULE OF INVESTMENT RETURNS

	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of investment expense	-2.14%	12.44%	5.13%	0.28%	5.54%

These schedules are presented to illustrate the requirement to show information for ten years. However, until a full ten-year trend is completed, information is presented for those years in which information is available.

See accompanying independent auditors' report.

**MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)**

**NOTES TO REQUIRED SUPPLEMENTARY INFORMATION
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2018**

A. CHANGES OF BENEFIT TERMS

The System may be amended or terminated in whole or in part at any time by the Massachusetts Legislature, provided that no such modification, amendment or termination shall be made that would deprive a current member of superannuation pension rights or benefits provided under applicable laws of Massachusetts, if such member has paid the stipulated contributions specified in sections or provisions of such laws. There were no significant changes to the System's benefit terms in 2018.

B. SIGNIFICANT ACTUARIAL ASSUMPTIONS AND METHODS

The significant actuarial assumptions used in the December 31, 2018 report were as follows:

Actuarial cost method:	Individual entry age normal
Asset valuation method:	Market value
Investment rate of return:	7.5% per annum
Projected salary increases:	3.50% per year
Cost of living adjustments:	3% on the first \$16,000 of benefits
Mortality rates:	Pre-retirement and post-retirement rates reflect the RP-2014 Blue Collar mortality table with Scale MP-2014, fully generational. Group 1 and 2 retirees are set forward 5 years for males and 3 years for females, fully generational. Group 4 retirees are set forward 3 years for males and 6 years for females, fully generational.
Disabled life mortality:	RP-2000 mortality table set forward 6 years for Group 1 and 2 and 2 years for Group 4, generationally adjusted.



ROSELLI, CLARK & ASSOCIATES
CERTIFIED PUBLIC ACCOUNTANTS

500 West Cummings Park
Suite 4900
Woburn, MA 01801
Telephone: (781) 933-0073
www.roselliclark.com

INDEPENDENT AUDITORS' REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH GOVERNMENT AUDITING STANDARDS

To the Medford Retirement Board
Medford Contributory Retirement System
Medford, Massachusetts

We have audited, 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, the financial statements of the Medford Contributory Retirement System (the "System"), a component unit of the City of Medford, Massachusetts, as of and for the year ended December 31, 2018, and the related notes to the financial statements which collectively comprise the System's basic financial statements and have issued our report thereon dated May 9, 2019.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the System's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we do not express an opinion on the effectiveness of the System's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or, significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the System's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Roselli, Clark & Associates

Roselli, Clark & Associates
Certified Public Accountants
Woburn, Massachusetts
May 9, 2019



ROSELLI, CLARK & ASSOCIATES
CERTIFIED PUBLIC ACCOUNTANTS

500 West Cummings Park
Suite 4900
Woburn, MA 01801

Telephone: (781) 933-0073

www.roselliclark.com

**INDEPENDENT AUDITORS' REPORT ON AUDIT OF SPECIFIC ELEMENTS, ACCOUNTS
AND ITEMS OF FINANCIAL STATEMENTS**

To the Medford Retirement Board
Medford Contributory Retirement System
Medford, Massachusetts

We have audited the accompanying schedule of employer allocations of the Medford Contributory Retirement System (the "System"), a component unit of the City of Medford, Massachusetts, as of and for the year ended December 31, 2018. We have also audited the total for all entities of the columns titled net pension liability, total deferred outflows of resources, total deferred inflows of resources and total pension expense (specified column totals) included in the accompanying schedule of pension amounts by employer of the System as of and for the year ended December 31, 2018, and the related notes thereto.

Management's Responsibility for the Schedules

Management is responsible for the preparation and fair presentation of these schedules 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 opinions on the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer 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 Audit 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 schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer 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 schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer.

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

Opinions

In our opinion, the schedules referred to above present fairly, in all material respects, the employer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total pension expense for the total of all participating entities of the System as of and for the year ended December 31, 2018, in accordance with accounting principles generally accepted in the United States of America.

Other Matters

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the System as of and for the year ended December 31, 2018, and our report thereon, dated May 9, 2019, expressed an unmodified opinion on those financial statements.

Roselli, Clark & Associates

Roselli, Clark & Associates
Certified Public Accountants
Woburn, Massachusetts
May 9, 2019

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

SCHEDULE OF EMPLOYER ALLOCATIONS
YEAR ENDED DECEMBER 31, 2018

Dollar amounts are in thousands

Employer	Actual Employer Contributions	Employer Allocation Percentage
City of Medford	\$ 10,942,155	94.65%
Medford Housing Authority	618,185	5.35%
Total	\$ 11,560,340	100.00%

See notes to schedule of employer allocation and schedule of pension amounts by employer.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER
YEAR ENDED DECEMBER 31, 2018

	City of Medford	Medford Housing Authority	Total
Net pension liability	<u>\$ 103,336,116</u>	<u>\$ 5,838,090</u>	<u>\$ 109,174,206</u>
Deferred outflows of resources:			
Differences between actual and expected experience	\$ 3,322,493	\$ 187,707	\$ 3,510,200
Net difference between projected and actual investment earnings on pension plan investments	14,135,958	798,626	14,934,584
Changes of assumptions	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	<u>314,052</u>	<u>187,182</u>	<u>501,234</u>
Total deferred outflows of resources	<u>\$ 17,772,503</u>	<u>\$ 1,173,515</u>	<u>\$ 18,946,018</u>
Deferred inflows of resources:			
Differences between actual and expected experience	\$ 817,313	\$ 46,175	\$ 863,488
Changes of assumptions	2,145,292	121,201	2,266,493
Changes in proportion and differences between employer contributions and proportionate share of contributions	<u>187,182</u>	<u>314,052</u>	<u>501,234</u>
Total deferred inflows of resources	<u>\$ 3,149,787</u>	<u>\$ 481,428</u>	<u>\$ 3,631,215</u>
Pension expense (income):			
Proportionate share of plan pension expense	\$ 11,530,674	\$ 651,438	\$ 12,182,112
Proportionate share of plan pension revenue	(446,339)	(25,213)	(471,552)
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	<u>(16,620)</u>	<u>16,620</u>	<u>-</u>
Total employer pension expense (income)	<u>\$ 11,067,715</u>	<u>\$ 642,845</u>	<u>\$ 11,710,560</u>

See notes to schedule of employer allocation and schedule of pension amounts by employer.

**MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)**

**NOTES TO PENSION SCHEDULES
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2018**

A. INTRODUCTION

GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*, establishes financial reporting requirements for governments that provide employees with pension benefits. GASB 68 requires employers to recognize a net pension liability or net pension asset as employees earn pension benefits. Employers participating in the Medford Contributory Retirement System (the “System”) will recognize their proportionate share of the collective pension amounts for all benefits provided by the Retirement System.

B. METHOD OF PROPORTIONATE SHARE ALLOCATION

The basis for the proportionate share allocation by employer as found in the Schedule of Employer Allocations and Schedule of Pension Amounts by Employer is consistent with the manner in which employer contributions to the System are determined. The net pension liability, deferred outflows of resources, deferred inflows of resources and pension expense is based upon actual historical employer contributions to the System from the census data submitted to the System for pay periods ending December 31, 2018.

C. EXPECTED FUTURE AMORTIZATION OF DEFERRED BALANCES

The following table summarizes the expected amortization of the deferred outflows of resources and inflows of resources into pension expense.

<u>Measurement Period Ended December 31:</u>	<u>City of Medford</u>	<u>Medford Housing Authority</u>	<u>Total</u>
2019	\$ 3,579,214	\$ 196,153	\$ 3,775,367
2020	4,262,131	147,451	4,409,582
2021	3,063,772	117,138	3,180,910
2022	<u>3,717,599</u>	<u>231,345</u>	<u>3,948,944</u>
	<u>\$ 14,622,716</u>	<u>\$ 692,087</u>	<u>\$ 15,314,803</u>

ROSELLI, CLARK & ASSOCIATES
Certified Public Accountants



**MEDFORD CONTRIBUTORY
RETIREMENT SYSTEM
(a Component Unit of the
City of Medford, Massachusetts)**

Report on Examination of
Basic Financial Statements
and Additional Information

Year Ended December 31, 2017

Report on Internal Control and Compliance
Year Ended December 31, 2017

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

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INDEPENDENT AUDITORS' REPORT

To the Medford Retirement Board
Medford Contributory Retirement System
Medford, Massachusetts

Report on the Financial Statements

We have audited the accompanying financial statements of the Medford Contributory Retirement System (the "System"), a component unit of the City of Medford, Massachusetts, as of and for the year ended December 31, 2017, and the related notes to the financial statements, which collectively comprise the System's basic 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 opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

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

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

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the System as of December 31, 2017, and the respective changes in financial 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, and the schedules of changes in net pension liability and related ratios, contributions and investment returns as listed in the table of contents, 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.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued a report dated August 22, 2018 on our consideration of the System's internal control over financial reporting and our tests of its compliance with certain provisions of laws, regulations, contracts, 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 the 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.

Roselli, Clark & Associates

Roselli, Clark & Associates
Certified Public Accountants
Woburn, Massachusetts
August 22, 2018

MANAGEMENT'S DISCUSSION AND ANALYSIS

Our discussion and analysis of the Medford Contributory Retirement System's (the "System") financial performance provides an overview of the System's financial activities for the calendar year ended December 31, 2017. You should read it in conjunction with the basic financial statements, footnotes and required supplementary information that follows this discussion.

Financial Highlights

The System's funding objective is to meet long-term benefit obligations through contributions and investment income. The System's independent actuary estimates that the System is approximately 68% funded at December 31, 2017. Based on its current funding schedule, the System expects to be fully funded on or about 2031.

The System's fiduciary net position increased over \$17.9 million in 2017 versus an increase of approximately \$5.5 million in 2016. This improvement was primarily attributable to a significant improvement in the investment return experienced by the System in 2017. The System's 2017 investment return, net of investment management fees, exceeded 12.4% in 2017 versus an approximate 5.1% return in 2016.

Overview of the Financial Statements

This discussion and analysis is intended as an introduction to the System's basic financial statements. The basic 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.

Statement of Fiduciary Net Position – presents information on the System's assets, deferred outflows of resources, liabilities, deferred inflows of resources and fiduciary net position restricted for pensions. This statement reflects the System's investments at fair value, as well as cash, receivables, other assets and liabilities. Over time, the increase or decrease in fiduciary net position serves as a useful indicator of the System's financial health and condition.

Statement of Changes in Fiduciary Net Position – presents information showing how the System's fiduciary net position changed during the year. It reflects contributions by members and participating employers along with deductions for retirement benefits, refunds, withdrawals and administrative expenses. Investment income, including realized and unrealized gains on pooled investments, during the year is also presented.

Notes to the Financial Statements – provide additional information that is essential for the reader to gain a full understanding of the data provided in the financial statements.

Required Supplementary Information – includes this management's discussion and analysis and various unaudited schedules.

Financial Analysis

Fiduciary Net Position

The System's total assets as of December 31, 2017, approximated \$195.9 million and principally consisted of investments recorded at fair value. Total assets increased over \$15.4 million, or 8.5%, from December 31, 2016. System liabilities at December 31, 2017 and 2016 primarily represented open trades payable.

	December 31,	
	<u>2017</u>	<u>2016</u>
Assets		
Cash and cash equivalents	\$ 3,656,453	\$ 3,517,409
Investments	191,962,122	176,474,490
Receivables and other current assets	<u>249,560</u>	<u>472,055</u>
Total Assets	<u>195,868,135</u>	<u>180,463,954</u>
Liabilities		
Accounts payable and accrued expenses	<u>2,006,651</u>	<u>4,523,776</u>
Total Liabilities	<u>2,006,651</u>	<u>4,523,776</u>
Fiduciary Net Position	<u>\$ 193,861,484</u>	<u>\$ 175,940,178</u>

Change in Fiduciary Net Position

Additions increased nearly \$13.3 million in 2017 and were due almost entirely to the increase in net investment income. The System's investment portfolio returned over 12.4% net of investment management fees in 2017, which was a sharp improvement from the 2016 return of approximately 5.1%.

	Year Ended December 31,	
	<u>2017</u>	<u>2016</u>
Additions		
Contributions	\$ 16,150,165	\$ 16,179,975
Investment income, net of management fees	<u>21,507,752</u>	<u>8,196,559</u>
Total Additions	<u>37,657,917</u>	<u>24,376,534</u>
Deductions		
Benefits and refunds to Plan members	19,415,411	18,536,212
Administrative and other expenses	<u>321,200</u>	<u>310,145</u>
Total Deductions	<u>19,736,611</u>	<u>18,846,357</u>
Change in Fiduciary Net Position	<u>\$ 17,921,306</u>	<u>\$ 5,530,177</u>

Additions – The amount needed to finance pension benefits is accumulated through the collection of employers and employees’ contributions, reimbursements from the Commonwealth of Massachusetts for pre-1998 Cost of Living Adjustments and through earnings on investments. Employer and employee contributions were consistent year-over-year. Employer contributions totaled \$11,174,776, or 69%, of total contributions. Employer contributions are determined by an actuarial valuation.

Deductions – The primary deductions for the System include the payment of pension benefits to participants and beneficiaries, refunds of contributions and the costs of administering the system. Benefit and refund payments to Plan members in 2017 were approximately \$0.9 million, or 5%, higher than the prior year. This increase was due to an increase in retirees and beneficiaries receiving pension benefits as well as an increase in the average annual benefits paid for these retirees and beneficiaries. Administrative and other expenses, which primarily consist of System operations payroll, board stipends, legal, and service provider costs increased slightly year-over-year.

Overall Financial Position

The System’s funded ratio of approximately 68% in the December 31, 2017 actuarial valuation report places it in the top one-half of Massachusetts public employee retirement systems. Using the assumptions detailed more fully in Note 6 to the financial statements, the System forecasts that it will be fully funded in 2031, well ahead of the mandated deadline.

The System maintains a large portion of its investments in pooled funds. Some of these funds invest in private companies or real estate. The determination of the value of these investments is very subjective and the ultimate amount of gains and losses in some of these funds will not be determined until the underlying assets (i.e., the real estate or stock in the private companies) are sold. Furthermore, these types of investments are not as liquid as investments in savings accounts, money markets, certificates of deposits, government securities or debt and equity securities in publicly-held U.S. corporations. You should refer to Notes 2 and 4 to these financial statements.

Although the System has been successful in generating the yields necessary to achieve fully funded status in the required time frame, the System (like so many other institutional investors) has experienced a great deal of volatility in its investments. Management believes that the volatility in the worldwide markets may continue for the foreseeable future. Accordingly, management intends to actively monitor the System’s investment positions to best maximize returns while mitigating risk as best it can.

Contacting the System’s Financial Management Personnel

Our discussion and analysis is designed to provide the Medford Retirement 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 Medford Retirement Board at 85 George P. Hassett Drive, Medford, MA 02155.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

STATEMENT OF FIDUCIARY NET POSITION
DECEMBER 31, 2017

ASSETS

Cash and cash equivalents	\$ 3,656,453
Investments	191,962,122
Accounts receivable:	
Due from Commonwealth	84,496
Member deductions	72,258
Interest receivable	92,806
	<u>249,560</u>
Total assets	<u>195,868,135</u>

DEFERRED OUTFLOWS OF RESOURCES

-

LIABILITIES

Accounts payable and accrued expenses	49,354
Open trades payable	1,957,297
	<u>2,006,651</u>
Total liabilities	<u>2,006,651</u>

DEFERRED INFLOWS OF RESOURCES

-

NET POSITION RESTRICTED FOR PENSIONS

\$ 193,861,484

See notes to the financial statements.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
YEAR ENDED DECEMBER 31, 2017

ADDITIONS

Contributions:	
Employer contributions – appropriations	\$ 11,174,776
Employee contributions – member deductions and payments	3,960,307
Transfers from other systems	616,727
Reimbursements from other systems	205,668
Receipts from the Commonwealth of Massachusetts	<u>175,414</u>
Total contributions	<u>16,132,892</u>
Investment earnings, net:	
Interest and dividends	3,526,573
Net appreciation in fair value of investments	19,480,466
Less management fees	<u>(1,499,287)</u>
Net investment income	<u>21,507,752</u>
Other income	<u>17,273</u>
Total additions	<u>37,657,917</u>

DEDUCTIONS

Benefits and refunds to Plan members:	
Benefit payments to pensioners and beneficiaries	18,573,838
Member refunds	97,454
Transfers to other systems	167,217
Reimbursements to other systems	576,902
Administrative expenses:	
System operations payroll and board stipends	208,609
Other administrative expenses	<u>112,591</u>
Total deductions	<u>19,736,611</u>

NET INCREASE IN NET POSITION 17,921,306

NET POSITION RESTRICTED FOR PENSIONS

Beginning of year	<u>175,940,178</u>
End of year	<u>\$ 193,861,484</u>

See notes to the financial statements.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

NOTES TO THE FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2017

1. DESCRIPTION OF THE PLAN

General – The Medford Contributory Retirement System (the “System”) is a multiple employer cost sharing defined benefit pension plan established and administered by the Medford Retirement Board under the provisions of Chapter 32 of the Massachusetts General Laws to provide pension benefits for participants. The System is a component unit of the City of Medford, Massachusetts (the “City”). The City and the Medford Housing Authority (the “Authority”) contribute to the System.

Employees of the City (with the exception of teachers and certain administrative personnel employed by the School Department who participate in a separate plan) and the Authority are covered by the System. Participation in the System is mandatory immediately upon the commencement of employment for all permanent, full-time employees.

At December 31, 2017, membership in the System consisted of:

Retirees and beneficiaries currently receiving benefits	630
Active plan members	776
Inactive plan members	<u>148</u>
Total membership	<u>1,554</u>

Plan Benefits – Massachusetts contributory retirement system benefits are generally uniform from system to system. For employees with service dates beginning before April 2, 2012, the System provides for retirement allowance benefits up to a maximum of 80% of a participant’s highest consecutive three-year average annual rate of regular compensation. For those employees who began their service after April 2, 2012, the System provides for retirement allowance benefits up to a maximum of 80% of a participant’s highest consecutive five-year average annual rate of regular compensation. Benefit payments are based upon a participant’s age, length of creditable service, level of compensation and group classification.

The retirement allowance consists of two parts – an annuity and a pension. Participants’ accumulated total deductions and a portion of the interest they generate constitute the annuity. The differential between the total retirement benefit and annuity is the pension.

Participants who resign from service and who are not eligible to receive a retirement allowance are entitled to request a refund of their accumulated total contributions. In addition, depending upon the number of years of creditable service, such employees may be entitled to receive interest, which has accrued on those contributions. A vested employee who has not reached their eligible retirement age and elects to leave their accumulation on deposit may apply for benefits upon reaching their eligible retirement age.

Survivor benefits are extended to eligible beneficiaries of participants whose death occurs prior to or following retirement.

Retirement Requirements – In order to receive retirement benefits, participants must meet one of the following two categories:

Normal Retirement – Generally, normal retirement occurs between ages 65 and 67. However, most participants with a hire date before April 2, 2012, may retire after ten years of service at age 55 or twenty years of service at any age. For most participants hired on or after April 2, 2012, they must attain the age of 60 before they can retire. Participants with hire dates subsequent to January 1, 1978 must have a minimum of ten years' creditable service in order to retire at age 55 or 60, as applicable. Participants become vested after ten years of service. Benefits commencing before age 65 are generally provided at a reduced rate. However, members working in certain occupations may retire with full benefits earlier than age 65.

Participants who resign from service and who are not eligible to receive a retirement allowance or are under the age of 55 may request a refund of their accumulated total contributions. In addition, depending on the number of years of creditable service, these employees may be entitled to interest that has accrued on their contributions; for those employees who voluntarily terminate with less than ten years of service, this interest rate is 3.0%. A vested employee under the age of 55 who elects to leave their accumulated contributions on deposit may apply for pension benefits upon reaching their eligible retirement age.

Disability Retirements – The System provides for both an ordinary disability retirement, where a participant is permanently incapacitated from a cause unrelated to employment, and an accidental disability retirement, where the disability is the result of an injury or illness received or aggravated in the performance of one's duty. The amount of benefits to be received in such cases is dependent upon several factors, including the age at which the disability retirement occurs, the years of service, average compensation and veteran status. In addition, certain provisions are in place relative to death benefits for beneficiaries of employees who die in active service.

Public Availability of Financial Statements – The Medford Retirement Board issues a publicly available financial report that includes financial statements and required supplementary information for the System. That report may be obtained by writing to the Medford Retirement Board, 85 George P. Hassett Drive, Medford, MA 02155.

2. SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting – The financial statements of the System have been prepared on the accrual basis of accounting. The accounting records of the System are maintained on a calendar-year basis in accordance with the standards and procedures established by the Public Employee Retirement Administration Commission ("PERAC") and Massachusetts law.

Estimates – The preparation of financial statements in conformity with generally accepted accounting principles in the United States of America, or GAAP, requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Cash and Cash Equivalents – Cash and cash equivalents include cash on hand, demand deposits and short-term holdings with original maturities of three months or less from the date of acquisition.

Investments – The carrying amounts of the System’s investments approximate their fair value. When actively quoted observable prices are not available, the System generally uses either implied pricing from similar investments or valuation models based on net present values of estimated future cash flows (adjusted as appropriate for liquidity, credit, market and/or other risk factors).

The System categorizes its fair value measurements within the fair value hierarchy established by GAAP. This hierarchy is based on valuation inputs used to measure the fair value of the asset or liability. The three levels of the hierarchy are as follows:

- *Level 1* – Inputs are quoted prices in active markets for identical investments at the measurement date.
- *Level 2* – Inputs (other than quoted prices included in Level 1) are either directly or indirectly observable for the investment through correlation with market data at the measurement date and for the duration of the instrument’s anticipated life.
- *Level 3* – Inputs reflect the System’s best estimate of what market participants would use in pricing the investment at the measurement date.

The remaining investments not categorized under the fair value hierarchy are shown at net asset value (“NAV”). These are investments in non-governmental entities for which a readily determinable fair value is not available, such as member units or an ownership interest in partners’ capital to which a proportionate share of net assets is attributed. Investments at NAV are commonly calculated by subtracting the fair value of liabilities from the fair value of assets.

The following table presents the fair value of the System’s investments by type as of December 31, 2017:

	December 31, 2017	Fair Value Measurements Using		
		Level 1	Level 2	Level 3
Investments by fair value level				
Debt securities:				
U.S. governments and agencies	\$ 10,465,315	\$ 3,526,465	\$ 7,697,370	\$ -
Foreign governments	349,585	-	349,585	-
Corporate bonds	6,915,878	6,915,878	-	-
Equity securities:				
Common shares	3,180	3,180	-	-
Preferred shares	1,446,044	-	1,446,044	-
Mutual funds	118,876,138	81,014,636	37,861,502	-
Total investments by fair value level	138,056,140	\$ 91,460,159	\$ 47,354,501	\$ -
Investments measured at NAV				
Mutual funds	10,602,938			
Private equity funds	7,203,691			
PRIT	36,099,353			
Total investments measured at NAV	53,905,982			
Total investments measured at fair value	\$ 191,962,122			

Equity and debt securities and mutual funds classified in Level 1 are valued using prices quoted in active markets for those securities. Debt securities and mutual funds classified in Level 2 were valued using observable inputs from similar securities, including basing value on yield currently available on comparable securities of issued with similar credit ratings.

Investments Measured at NAV By Asset Class	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Private equity mutual funds	\$ 17,806,629	\$ -	Varies	30 to 60 days
PRIT	36,099,353	8,767,091	Monthly	30 days
	<u>\$ 53,905,982</u>	<u>\$ 8,767,091</u>		

Investments measured at NAV include comingled/pooled funds in a mutual fund and private equity fund and investments in the State Treasurer investment pool, or PRIT.

Private equity funds generally include investments in which the System is a general partner in a private equity, venture capital fund or similar investment vehicle. The value of these investments are recorded at values determined in good faith by the general partners of the private equity and venture capital firms after consideration of pertinent information, including current financial position and operative results, price-earnings multiples and available market prices of similar companies' securities, the nature of the securities, marketability, restrictions on disposition and other appropriation and do not necessarily represent amounts which might ultimately be realized, since such amounts depend on future circumstances and cannot reasonably be determined until individual securities are liquidated. In addition, fair values of real estate funds are generally based on independent, third-party appraisals. By their very nature, these investments are illiquid and typically cannot be resold or redeemed. Distributions from each fund will be received as the underlying investments are liquidated. It is expected that the underlying assets for the funds will be liquidated over an average of ten years.

The State Treasurer investment pool is administered by the Commonwealth of Massachusetts' Pension Reserve Investment Management Board, or PRIM. The System maintains several Massachusetts Pension Reserve Investment Trust, or PRIT funds, each of which consists of a diverse set of investments that includes private equity, venture and real estate investments. The determination of the fair value of these investments is very subjective and the period-end values are reported to the System as NAV. Investments in the PRIT funds are more liquid than investments in private equity and real estate holdings, but generally cannot be resold to third parties. The System may liquidate its investment in the PRIT funds at any time with less than thirty days' notice. Distributions from the PRIT funds may be received regularly and, upon receipt, are deposited into an accompanying short-term cash investment account.

Because of the inherent uncertainty of valuations used in many of the System's investments measured at NAV, estimated values may differ significantly from the values that would have been used had a readily available market for positions in privately held companies or the real estate existed at December 31, 2017. These differences could have a material adverse effect on the System's financial statements.

Fair Value of Financial Instruments – The carrying amounts of cash and cash equivalents, accounts receivable and other current assets and accounts payable approximate their fair value due to the relatively short-term maturities.

Revenue Recognition – Contributions are recognized as additions in the period in which they become due pursuant to formal commitments, and statutory or contractual requirements. Contributions appropriated by the City and the Authority are on a fiscal-year basis. Investment purchases and sales are recorded on their trade dates. Interest and dividends are recorded when earned. Investment income is allocated to the various funds on the basis of a rate determined annually by PERAC.

Derivatives – The System may invest in derivative products such as currency hedges to minimize the currency risk on international investments. The System does not have any direct holdings that are classified as derivatives at December 31, 2017. At December 31, 2017, the System maintained investments with PRIT totaling approximately \$36.1 million, a portion of which may include derivatives at the discretion of the PRIT fund managers.

3. SYSTEM ADMINISTRATION

The System is administered by a five-person Board consisting of the City Auditor, two members who are elected by the participants in or retired from the service of the System, one member appointed by the City Mayor and one member appointed by the other members of the Board.

At December 31, 2017, the Board was comprised as follows:

		<u>Term Expires</u>
Ex-Officio Member:	Ms. Aleesha Nunley-Benjamin (City Auditor)	No specified date
Appointed Member:	Mr. Robert Maiocco	January 23, 2021
Elected Member:	Mr. Patrick Ripley	July 1, 2020
Elected Member:	Mr. Rick Jordan	December 19, 2020
Board Appointed Member:	Mr. James Vieira	January 27, 2021

The Board is required to meet at least once a month and keep a record of its proceedings. The Board annually submits a financial statement of condition for the System with the Commissioner of PERAC. Retirement allowances are approved by the Board and, in certain circumstances, submitted to a PERAC for verification prior to payments being made. Expenses incurred by the System must be approved by two members of the Board.

4. DEPOSITS AND INVESTMENTS

Massachusetts General Laws Chapter 32 and PERAC regulations require the System to invest funds only in pre-approved investment instruments, which include but are not necessarily limited to bank deposits, money markets, certificates of deposit, U.S. obligations, repurchase agreements, certain corporate bonds and equities and investment pools.

Investment Policy – The investment of the System’s funds is the responsibility of the Board. The Board adopted a revised investment policy statement in September 2017. The investment objective is to ensure that the System’s assets are invested to enhance and preserve principal, both in real and nominal terms. The System’s investment policy seeks a long-term investment return of 7.5%.

The System's investment policy requires diversification within its investment portfolio. Effective September 2017, the System's portfolio target weights at the broad asset class level were as follows:

<u>Asset Class</u>	<u>Target Allocation</u>
Equities:	
Domestic	12.0% to 32.0%
International	8.0% to 18.0%
Emerging Markets	0.0% to 10.0%
Fixed Income:	
Domestic	5.5% to 15.5%
Multisector	5.5% to 15.5%
International	0.0% to 7.0%
Global Asset Allocation	10.0% to 22.0%
Private Equity	3.0% to 10.0%
Real Estate	4.0% to 10.0%
Hedge Funds	0.0% to 7.0%

Custody of Investments – State Street Bank and Trust was the custodian of the System's investment portfolio and provided the System with investment transaction and reporting services during the first nine months of 2017. The System engaged People's United Bank to provide these services effective October 1, 2017.

Rate of Return – The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested. The 2017 money-weighted rate of return was approximately 12.44%.

Investment Management – New England Pension Consultants provided investment advisory services to the System throughout all of 2017. At December 31, 2017, the System had contracted with the following companies to serve as investment managers:

<u>Investment Advisor</u>	<u>Investment Type</u>
City of London Investment Management Co. Ltd	International balanced funds
Columbia Management Investment Advisers LLC	Fixed income
Lazard Asset Management LLC	International equities
Loomis, Sayles & Company, L.P.	Domestic fixed income
Pension Reserves Investment Management Board	Alternative investments, real estate and hedge funds
RhumbLine Advisers Limited Partnership	Domestic equities
Standard Life Investments	Hedge funds
Western Asset Management Company	International equities and emerging markets
William Blair & Company LLC	Global equities, fixed income and currencies

Custodial Credit Risk: Deposits – Deposits are subject to the risk of bank failure. The System may be unable to recover the full amount of its deposits in any one bank institution in the event of a bank failure. The System’s policy for custodial credit risk of deposits is to rely on Federal Deposit Insurance Corporation (“FDIC”) insurance coverage for the first \$250,000 of deposits held at each financial institution. At December 31, 2017, \$83,039 of the System’s bank deposits was not covered by FDIC or other depository insurance.

Custodial Credit Risk: Investments – Custodial credit risk for investments is the risk that, in the event of a 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 the outside party. The System’s policy for custodial credit risk of investments intends that all investments are either insured and/or registered in the name of the System. At December 31, 2017, the System was not exposed to custodial credit risk on its investments.

Interest Rate Risk: Deposits – This is the risk that fair value losses may arise due to increasing interest rates, such risk is reduced by the fact that the System maintains such funds in highly liquid bank accounts; thereby, allowing for timely re-allocation of such holdings should the need arise.

Interest Rate Risk: Investments – Debt securities are subject to interest rate risk. Debt securities may be adversely affected by changes in interest rates, which may negatively affect the fair value of individual debt instruments. The System does not have a formal investment policy that limits investments maturities as a means of managing its exposure to fair value losses arising from increasing interest rates.

Foreign Currency Risk: Deposits and Investments –The System did not hold any specific security denominated in a foreign currency at December 31, 2017.

Securities Credit Risk: Investments – In the case of investments, there is the risk that in the event of an invested party will be unable to fulfill its obligations, such as to provide required payments to investors, to meet current or future performance expectations, to abide by industry regulations and proper operational practices, ceasing to exist, or filing for bankruptcy. In those instances, the System may not be able to recover the full amount of its principal investment and/or investment earnings. As previously noted, PERAC and Massachusetts statutory regulations have been enacted to reduce this risk. In evaluating its credit risk, the System relies on credit ratings assigned by Moody’s Investor Services, Inc. and Standard and Poor’s Financial Services, LLC. The System does voluntarily self-impose certain investment restrictions; however, those can be changed at the Board’s discretion. The System maintains a significant portion (approximately 98%) of its monetary assets as investment holdings.

None of the System's mutual funds or pooled investments were subject to credit quality ratings from leading credit rating agencies. The following table summarizes the credit ratings for the System's fixed income securities (excluding pooled fixed income investments):

Moody's Rating Scale	Fair Value
Aaa	\$ 4,318,769
Aa1	92,382
Aa2	86,484
Aa3	221,256
A1	411,950
A2	340,321
A3	935,947
Baa1	1,984,539
Baa2	1,088,729
Baa3	1,219,333
Ba1	143,365
Ba2	33,449
B1	39,900
Not Rated	<u>6,814,354</u>
	<u>\$ 17,730,778</u>

At December 31, 2017, uninsured short-term investment funds with fair values of \$3,365,301 were reported as cash equivalents. These funds represent temporary holdings of excess cash resources. The System intends to reinvest these amounts in less than one year. Accordingly, the fair values of these amounts have been classified as cash equivalents in these financial statements. These funds are not insured by the FDIC.

Concentration of Credit Risk: Investments – The following investments held by the System at December 31, 2017 represent approximately 80.0% of the System's total investments:

Rhumblin Advisers S&P 500 Pooled Index Fund	15.9%
Lazard International Strategic Equity Portfolio	13.2%
Loomis Salyes MSFD Fund	10.6%
Standard Life Investments Global Alternative Return Fund	8.0%
William Blair Macro Allocation Fund	7.9%
PRIM Core Real Estate Fund	7.1%
PRIM Alternative Investments Fund	6.5%
City of London Emerging Markets Country Fund	5.5%
PRIM Hedge Fund	5.3%

5. FUNDING POLICY

Employee Contributions – Employees whose creditable service began prior to January 1, 1975, contribute 5% of their regular compensation; those whose service date is subsequent to January 1, 1975, and prior to January 1, 1984, contribute 7%; those whose service date is subsequent to January 1, 1984, and prior to July 1, 1996, contribute 8%, and those whose service date is subsequent to July 1, 1996, contribute 9%. In addition, employees hired on or after January 1, 1979 contribute an additional 2% on earnings in excess of \$30,000.

Employer Contributions (Funding) – Under the provisions of Chapter 32 of Massachusetts General Law, participating employers are assessed their share of the total retirement cost based on independent actuarial study.

Employer contributions of \$11,174,776 were made in 2017. Employer contributions as a percentage of covered payroll was approximately 27% in 2017.

Cost of Living Adjustment (COLA) – Through 1998, the Massachusetts Legislature was able to grant cost-of-living increases to benefits being paid to retirees. These increases were expressed as a percentage of the retiree’s allowance subject to a maximum dollar increase. All COLA’s granted from 1982 through June 30, 1998, are reimbursed to the System by the Commonwealth of Massachusetts since the Commonwealth was financially responsible for COLA adjustments during this time frame; any COLA’s granted thereafter by the Board are required to be funded by the System directly. A COLA may be approved in excess of the Consumer Price Index, or CPI, but is not to exceed 3% annually on the first \$16,000 of a retirement allowance. The System has historically approved a COLA annually, usually at the maximum 3% rate.

The Commonwealth is expected to continue funding the cost-of-living amounts granted to retirees prior to 1998 for the duration of their selected retirement option.

6. ACTUARIAL VALUATION

The System is statutorily required to adopt the funding schedule that will fully amortize the unfunded actuarial accrued liability by June 30, 2040. As of the latest actuarial valuation, the System has selected a funding schedule that fully amortizes the unfunded actuarial accrued liability by June 30, 2031.

The components of the System’s net pension liability at December 31, 2017 were as follows:

Total pension liability	\$ 286,954,150
Plan fiduciary net position	<u>193,861,484</u>
Net pension liability	<u>\$ 93,092,666</u>
Plan fiduciary net position as a percentage of total pension liability	67.6%

The total pension liability was determined by an actuarial valuation as of December 31, 2017. The significant actuarial assumptions used in this report were as follows:

Actuarial cost method:	Individual entry age normal
Asset valuation method:	Market value
Investment rate of return:	7.5% per annum
Projected salary increases:	3.50% per year
Cost of living adjustments:	3% on the first \$16,000 of benefits
Mortality rates:	Pre-retirement and post-retirement rates reflect the RP-2014 Blue Collar mortality table with Scale MP-2014, fully generational. Group 1 and 2 retirees are set forward 5 years for males and 3 years for females, fully generational. Group 4 retirees are set forward 3 years for males and 6 years for females, fully generational.
Disabled life mortality:	RP-2000 mortality table set forward 6 years for Group 1 and 2 and 2 years for Group 4.

Discount Rate – The discount rate used to measure the total pension liability in the December 31, 2017 actuarial valuation report was 7.5%. The projection of cash flows used to determine the discount rate assumed plan member contributions were made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially-determined contribution rates and the member rate. Based on those assumptions, the System’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.

Expected Rate of Return – The System’s investment policy targets a nominal rate of return of 7.5%. This long-term expected rate of return is presented neither in arithmetic or geometric means.

Sensitivity Analysis – The following illustrates the net position liability at December 31, 2017 calculated using the current discount rate of 7.5%, as well as the projection of what the net position liability would be if it were calculated using a discount rate that is 1.0% lower (6.5%) and 1.0% higher (8.5%) that the current rate:

	1% Decrease (6.5%)	Current Discount (7.5%)	1% Increase (8.5%)
Net pension liability	\$ 121,264,181	\$ 93,092,666	\$ 68,912,658

7. NET POSITION RESTRICTED FOR PENSIONS

Net position restricted for pensions, as of December 31, 2017, were comprised of four funds:

<u>Description</u>	<u>Amount</u>	<u>Purpose</u>
Annuity Savings Fund	\$ 47,770,902	Active members' contribution balance
Annuity Reserve Fund	14,247,137	Retired members' contribution balance
Military Service Fund	4,850	Members' contributions account while on military leave
Pension Fund	2,275,409	Amounts appropriated to fund future retirement
Pension Reserve Fund	<u>129,563,186</u>	Remaining net assets
	<u>\$ 193,861,484</u>	

8. COMMITMENTS AND CONTINGENCIES

The System is subject to a variety of claims that arise from time to time in the ordinary course of business. Although management of the System currently believes that resolving claims against the System, individually or in aggregate, will not have a material adverse impact on the System's financial position or its results of operations, these matters are subject to inherent uncertainties and management's views of these matters may change in the future.

* * * * *

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

REQUIRED SUPPLEMENTARY INFORMATION - UNAUDITED
YEARS ENDED DECEMBER 31, 2017

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS

	2017	2016	2015	2014
Total pension liability:				
Service cost	\$ 6,115,853	\$ 5,909,037	\$ 5,709,214	\$ 5,976,621
Interest	20,285,273	19,766,673	21,228,946	20,587,820
Changes in benefit terms	-	-	-	-
Differences between expected and actual experience	6,081,774	-	(5,235,568)	-
Changes in assumptions	-	-	(13,742,413)	-
Interest on benefit payments	-	-	(659,019)	(630,332)
Benefit payments, including refunds of member contributions	(19,415,411)	(18,536,212)	(17,897,397)	(17,118,357)
Net change in total pension liability	13,067,489	7,139,498	(10,596,237)	8,815,752
Total pension liability - beginning of year	273,886,661	266,747,163	277,343,400	268,527,648
Total pension liability - end of year (a)	<u>\$ 286,954,150</u>	<u>\$ 273,886,661</u>	<u>\$ 266,747,163</u>	<u>\$ 277,343,400</u>
Plan fiduciary net position:				
Contributions - employer	\$ 11,174,776	\$ 11,000,000	\$ 10,500,000	\$ 10,011,299
Contributions - members	3,960,307	3,928,047	3,722,994	3,659,843
Contributions - nonemployer contributing entities	997,809	1,207,605	269,723	637,868
Net investment income	21,507,752	8,196,559	464,885	8,740,674
Benefit payments, including refunds of member contributions	(19,415,411)	(18,536,212)	(18,009,941)	(17,118,357)
Administrative expenses	(321,200)	(310,145)	(256,147)	(272,089)
Other	17,273	44,323	33,055	71,499
Net change in plan fiduciary net position	17,921,306	5,530,177	(3,275,431)	5,730,737
Plan fiduciary net position - beginning of year	175,940,178	170,410,001	173,685,432	167,954,695
Plan fiduciary net position - end of year (b)	<u>\$ 193,861,484</u>	<u>\$ 175,940,178</u>	<u>\$ 170,410,001</u>	<u>\$ 173,685,432</u>
Net pension liability - end of year (a) - (b)	<u>\$ 93,092,666</u>	<u>\$ 97,946,483</u>	<u>\$ 96,337,162</u>	<u>\$ 103,657,968</u>
Plan fiduciary net position as a percentage of the total pension liability	67.6%	64.2%	63.9%	62.6%
Covered-employee payroll	\$ 41,033,141	\$ 40,702,740	\$ 39,326,319	\$ 37,863,532
Net pension liability as a percentage of covered-employee payroll	226.9%	240.6%	245.0%	273.8%

Note: This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, information is presented for those years in which information is available.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

REQUIRED SUPPLEMENTARY INFORMATION - UNAUDITED
YEARS ENDED DECEMBER 31, 2017

SCHEDULE OF CONTRIBUTIONS

	2017	2016	2015	2014
Actuarially-determined contribution	\$ 11,174,776	\$ 11,000,000	\$ 10,500,000	\$ 10,011,299
Contributions in relation to the actuarially-determined contribution	<u>11,174,776</u>	<u>11,000,000</u>	<u>10,500,000</u>	<u>10,011,299</u>
Contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Covered-employee payroll	\$ 41,033,141	\$ 40,702,740	\$ 39,326,319	\$ 37,863,532
Contribution as a percentage of covered-employee payroll	27.2%	27.0%	26.7%	26.4%

SCHEDULE OF INVESTMENT RETURNS

	2017	2016	2015	2014
Annual money-weighted rate of return, net of investment expense	12.44%	5.13%	0.28%	5.54%

Note: These schedules are presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, information is presented for those years in which information is available.

See independent auditors' report.

**MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)**

**NOTES TO REQUIRED SUPPLEMENTARY INFORMATION
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2017**

A. CHANGES OF BENEFIT TERMS

The System may be amended or terminated in whole or in part at any time by the Massachusetts Legislature, provided that no such modification, amendment or termination shall be made that would deprive a current member of superannuation pension rights or benefits provided under applicable laws of Massachusetts, if such member has paid the stipulated contributions specified in sections or provisions of such laws. There were no significant changes to the System's benefit terms in 2017.

B. SIGNIFICANT ACTUARIAL ASSUMPTIONS AND METHODS

The significant actuarial assumptions used in the December 31, 2017 report were as follows:

Actuarial cost method:	Individual entry age normal
Asset valuation method:	Market value
Investment rate of return:	7.5% per annum
Projected salary increases:	3.50% per year
Cost of living adjustments:	3% on the first \$16,000 of benefits
Mortality rates:	Pre-retirement and post-retirement rates reflect the RP-2014 Blue Collar mortality table with Scale MP-2014, fully generational. Group 1 and 2 retirees are set forward 5 years for males and 3 years for females, fully generational. Group 4 retirees are set forward 3 years for males and 6 years for females, fully generational.
Disabled life mortality:	RP-2000 mortality table set forward 6 years for Group 1 and 2 and 2 years for Group 4.



ROSELLI, CLARK & ASSOCIATES
 CERTIFIED PUBLIC ACCOUNTANTS

500 West Cummings Park
 Suite 4900
 Woburn, MA 01801
 Telephone: (781) 933-0073
 www.roselliclark.com

INDEPENDENT AUDITORS' REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH GOVERNMENT AUDITING STANDARDS

To the Medford Retirement Board
 Medford Contributory Retirement System
 Medford, Massachusetts

We have audited, 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, the financial statements of the Medford Contributory Retirement System (the "System"), a component unit of the City of Medford, Massachusetts, as of and for the year ended December 31, 2017, and the related notes to the financial statements which collectively comprise the System's basic financial statements and have issued our report thereon dated August 22, 2018.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the System's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we do not express an opinion on the effectiveness of the System's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or, significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the System's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Roselli, Clark & Associates

Roselli, Clark & Associates
Certified Public Accountants
Woburn, Massachusetts
August 22, 2018



**INDEPENDENT AUDITORS' REPORT ON AUDIT OF SPECIFIC ELEMENTS, ACCOUNTS
AND ITEMS OF FINANCIAL STATEMENTS**

To the Medford Retirement Board
Medford Contributory Retirement System
Medford, Massachusetts

We have audited the accompanying schedule of employer allocations of the Medford Contributory Retirement System (the "System"), a component unit of the City of Medford, Massachusetts, as of and for the year ended December 31, 2017. We have also audited the total for all entities of the columns titled net pension liability, total deferred outflows of resources, total deferred inflows of resources and total pension expense (specified column totals) included in the accompanying schedule of pension amounts by employer of the System as of and for the year ended December 31, 2017, and the related notes thereto.

Management's Responsibility for the Schedules

Management is responsible for the preparation and fair presentation of these schedules 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 opinions on the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer 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 Audit 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 schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer 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 schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer.

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

Opinions

In our opinion, the schedules referred to above present fairly, in all material respects, the employer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total pension expense for the total of all participating entities of the System as of and for the year ended December 31, 2017, in accordance with accounting principles generally accepted in the United States of America.

Other Matters

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the System as of and for the year ended December 31, 2017, and our report thereon, dated August 22, 2018, expressed an unmodified opinion on those financial statements.

Roselli, Clark & Associates

Roselli, Clark & Associates
Certified Public Accountants
Woburn, Massachusetts
August 22, 2018

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
 (A Component Unit of the City of Medford, Massachusetts)

SCHEDULE OF EMPLOYER ALLOCATIONS
YEAR ENDED DECEMBER 31, 2017

Employer	Actual Employer Contributions	Employer Allocation Percentage
City of Medford	\$ 10,592,790	94.79%
Medford Housing Authority	581,986	5.21%
Total	\$ 11,174,776	100.00%

See notes to schedule of employer allocations and schedule of pension amounts by employer.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2017

	City of Medford	Medford Housing Authority	Total
Net pension liability	\$ 88,244,400	\$ 4,848,266	\$ 93,092,666
Deferred outflows of resources:			
Differences between expected and actual experience	\$ 4,546,212	\$ 249,775	\$ 4,795,987
Difference between projected and actual investment earnings on pension plan investments	8,063,132	442,999	8,506,131
Changes of assumptions	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	431,520	190,550	622,070
Total deferred outflows of resources	<u>\$ 13,040,864</u>	<u>\$ 883,324</u>	<u>\$ 13,924,188</u>
Deferred inflows of resources:			
Differences between expected and actual experience	\$ 1,854,614	\$ 101,894	\$ 1,956,508
Difference between projected and actual investment earnings on pension plan investments	6,471,122	355,532	6,826,654
Changes of assumptions	4,868,018	267,455	5,135,473
Changes in proportion and differences between employer contributions and proportionate share of contributions	190,550	431,520	622,070
Total deferred inflows of resources	<u>\$ 13,384,304</u>	<u>\$ 1,156,401</u>	<u>\$ 14,540,705</u>
Pension expense (income):			
Proportionate share of plan pension expense	\$ 8,564,761	\$ 470,560	\$ 9,035,321
Proportionate share of plan pension revenue	(377,602)	(20,746)	(398,348)
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	11,016	(11,016)	-
Total employer pension expense	<u>\$ 8,198,175</u>	<u>\$ 438,798</u>	<u>\$ 8,636,973</u>

See notes to schedule of employer allocations and schedule of pension amounts by employer.

**MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)**

**NOTES TO PENSION SCHEDULES
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2017**

A. INTRODUCTION

GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*, establishes financial reporting requirements for governments that provide employees with pension benefits. GASB 68 requires employers to recognize a net pension liability or net pension asset as employees earn pension benefits. Employers participating in the Medford Contributory Retirement System (the “System”) will recognize their proportionate share of the collective pension amounts for all benefits provided by the Retirement System.

B. METHOD OF PROPORTIONATE SHARE ALLOCATION

The basis for the proportionate share allocation by employer as found in the Schedule of Employer Allocations and Schedule of Pension Amounts by Employer is consistent with the manner in which employer contributions to the System are determined. The net pension liability, deferred outflows of resources, deferred inflows of resources and pension expense is based upon actual historical employer contributions to the System from the census data submitted to the System for pay periods ending December 31, 2017.

C. EXPECTED FUTURE AMORTIZATION OF DEFERRED BALANCES

The following table summarizes the expected amortization of the deferred outflows of resources and inflows of resources into pension expense (income).

<u>Measurement Period Ended December 31:</u>	<u>City of Medford</u>	<u>Medford Housing Authority</u>	<u>Total</u>
2018	\$ (117,464)	\$ (18,074)	\$ (135,538)
2019	(131,170)	(42,409)	(173,579)
2020	552,633	(91,997)	460,636
2021	<u>(647,439)</u>	<u>(120,597)</u>	<u>(768,036)</u>
	<u>\$ (343,440)</u>	<u>\$ (273,077)</u>	<u>\$ (616,517)</u>

**MEDFORD CONTRIBUTORY
RETIREMENT SYSTEM
(A Component Unit of the
City of Medford, Massachusetts)**

Report on Examination of
Basic Financial Statements
And Additional Information
Year Ended December 31, 2016

Report on Internal Control and Compliance
Year Ended December 31, 2016

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

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INDEPENDENT AUDITORS' REPORT

To the Medford Retirement Board
Medford Contributory Retirement System
Medford, Massachusetts

Report on the Financial Statements

We have audited the accompanying financial statements of the Medford Contributory Retirement System (the "System"), a component unit of the City of Medford, Massachusetts, as of and for the year ended December 31, 2016, and the related notes to the financial statements, which collectively comprise the System's basic 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 opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

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

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

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the System as of December 31, 2016, and the respective changes in financial 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, and the schedules of changes in net pension liability and related ratios, contributions and investment returns as listed in the table of contents, 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.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued a report dated August 28, 2017 on our consideration of the System's internal control over financial reporting and our tests of its compliance with certain provisions of laws, regulations, contracts, 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 the 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.

Roselli, Clark & Associates

Roselli, Clark & Associates
Certified Public Accountants
Woburn, Massachusetts
August 28, 2017

MANAGEMENT'S DISCUSSION AND ANALYSIS

Our discussion and analysis of the Medford Contributory Retirement System's (the "System") financial performance provides an overview of the System's financial activities for the calendar year ended December 31, 2016. You should read it in conjunction with the basic financial statements, footnotes and required supplementary information that follows this discussion.

Financial Highlights

The System's funding objective is to meet long-term benefit obligations through contributions and investment income. As of January 1, 2016 (the latest available actuarial information date), the funded ratio was approximately 67% based on the actuarial value of assets at that date.

The System's fiduciary net position increased over \$5.5 million in 2016 versus a decrease of nearly \$3.3 million in 2015. This improvement was primarily attributable to a significant improvement in the investment return experienced by the System in 2016. The System's 2016 investment return, net of investment management fees, exceeded 5.1% in 2016, which was significantly greater than the 0.3% return in 2015.

The System's latest actuarial valuation assumes a long-term return on investments of 7.5% (commonly referred to as the discount rate). The System's average return on investments (inclusive of investment management fees) was approximately 7.2% and 8.7% for the five years and thirty-two years ended December 31, 2016, respectively.

Overview of the Financial Statements

This discussion and analysis is intended as an introduction to the System's basic financial statements. The basic 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.

Statement of Fiduciary Net Position – presents information on the System's assets, deferred outflows of resources, liabilities, deferred inflows of resources and fiduciary net position restricted for pensions. This statement reflects the System's investments at fair value, as well as cash, receivables, other assets and liabilities. Over time, the increase or decrease in fiduciary net position serves as a useful indicator of the System's financial health and condition.

Statement of Changes in Fiduciary Net Position – presents information showing how the System's fiduciary net position changed during the year. It reflects contributions by members and participating employers along with deductions for retirement benefits, refunds, withdrawals and administrative expenses. Investment income, including realized and unrealized gains on pooled investments, during the year is also presented.

Notes to the Financial Statements – provide additional information that is essential for the reader to gain a full understanding of the data provided in the financial statements.

Required Supplementary Information – includes this management's discussion and analysis and various unaudited schedules.

Financial Analysis

Fiduciary Net Position

The System's total assets as of December 31, 2016, approximated \$180.5 million and principally consisted of investments recorded at fair value. Total assets increased nearly \$5.8 million, or approximately 3.3%, from December 31, 2015. System liabilities at December 31, 2016 and 2015 primarily represented open trades payable.

	December 31,	
	2016	2015
Assets		
Cash and cash equivalents	\$ 3,517,409	\$ 10,346,267
Investments	176,474,490	163,817,091
Receivables and other current assets	<u>472,055</u>	<u>522,154</u>
Total Assets	<u>180,463,954</u>	<u>174,685,512</u>
Liabilities		
Accounts payable and accrued expenses	<u>4,523,776</u>	<u>4,275,511</u>
Total Liabilities	<u>4,523,776</u>	<u>4,275,511</u>
Fiduciary Net Position	<u>\$ 175,940,178</u>	<u>\$ 170,410,001</u>

Change in Fiduciary Net Position

In 2016, the System returned to profitability, primarily due to a sharp increase in investment income year-over-year as well as increased contributions from employers and member transfers into the System.

	Year Ended December 31,	
	2016	2015
Additions		
Contributions	\$ 16,179,975	\$ 14,525,772
Net investment income, net of management fees	<u>8,196,559</u>	<u>464,885</u>
Total Additions	<u>24,376,534</u>	<u>14,990,657</u>
Deductions		
Benefits and refunds to Plan members	18,536,212	18,009,941
Administrative and other expenses	<u>310,145</u>	<u>256,147</u>
Total Deductions	<u>18,846,357</u>	<u>18,266,088</u>
Change in Fiduciary Net Position	<u>\$ 5,530,177</u>	<u>\$ (3,275,431)</u>

Additions – The amount needed to finance pension benefits is accumulated through the collection of employers and employees’ contributions, reimbursements from the Commonwealth of Massachusetts for pre-1998 Cost of Living Adjustments and through earnings on investments. Employer and employee contributions were consistent year-over-year. Employer contributions totaled \$11,000,000, or 68%, of total contributions. Employer contributions are determined by an actuarial valuation.

The System’s investment portfolio posted positive returns in 2016. The System’s 2016 money-weighted return on investments, net of investment management fees, was approximately 5.3%, which was a sharp improvement from the near-flat returns experiences in 2015.

Deductions – The primary deductions for the System include the payment of pension benefits to participants and beneficiaries, refunds of contributions and the costs of administering the system. Benefit and refund payments to Plan members in 2016 were approximately \$0.5 million, or 3%, higher than the prior year. This increase was due to an increase in retirees and beneficiaries receiving pension benefits as well as an increase in the average annual benefits paid for these retirees and beneficiaries. Administrative and other expenses, which primarily consist of System operations payroll, board stipends, legal, and service provider costs increased slightly year-over-year.

Overall Financial Position

The System’s funded ratio of approximately 67% in the January 1, 2016 actuarial valuation report places it in the top one-half of Massachusetts public employee retirement systems. Using the assumptions detailed more fully in Note 6 to the financial statements, the System forecasts that it will be fully funded by June 30, 2032, well ahead of the mandated deadline.

The System maintains a large portion of its investments in pooled funds. Some of these funds invest in private companies or real estate. The determination of the value of these investments is very subjective and the ultimate amount of gains and losses in some of these funds will not be determined until the underlying assets (i.e., the real estate or stock in the private companies) are sold. Furthermore, these types of investments are not as liquid as investments in savings accounts, money markets, certificates of deposits, government securities or debt and equity securities in publicly-held U.S. corporations. You should refer to Notes 2 and 4 to these financial statements.

Although the System has been successful in generating the yields necessary to achieve fully funded status in the required time frame, the System (like so many other institutional investors) has experienced a great deal of volatility in its investments. Management believes that the volatility in the worldwide markets may continue for the foreseeable future. Accordingly, management intends to actively monitor the System’s investment positions to best maximize returns while mitigating risk as best it can.

Contacting the System’s Financial Management Personnel

Our discussion and analysis is designed to provide the Medford Retirement 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 Medford Retirement Board at 85 George P. Hassett Drive, Medford, MA 02155.

**MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)**

**STATEMENT OF FIDUCIARY NET POSITION
DECEMBER 31, 2016**

ASSETS

Cash and cash equivalents	\$ 3,517,409
Investments	176,474,490
Accounts receivable:	
Open trades	349,363
Member deductions	19,855
Interest receivable	<u>102,837</u>
	<u>472,055</u>
Total assets	<u>180,463,954</u>

DEFERRED OUTFLOWS OF RESOURCES

-

LIABILITIES

Open trades payable	<u>4,523,776</u>
Total liabilities	<u>4,523,776</u>

DEFERRED INFLOWS OF RESOURCES

-

NET POSITION RESTRICTED FOR PENSIONS

\$ 175,940,178

See notes to the financial statements.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
YEAR ENDED DECEMBER 31, 2016

ADDITIONS

Contributions:	
Employer contributions – appropriations	\$ 11,000,000
Employee contributions – member deductions and payments	3,928,047
Transfers from other systems	733,237
Reimbursements from other systems	155,913
Receipts from the Commonwealth of Massachusetts	<u>318,455</u>
Total contributions	<u>16,135,652</u>
Investment earnings, net:	
Interest and dividends	3,463,066
Net appreciation in fair value of investments	5,661,866
Less management fees	<u>(928,373)</u>
Net investment income	<u>8,196,559</u>
Other income	<u>44,323</u>
Total additions	<u>24,376,534</u>

DEDUCTIONS

Benefits and refunds to Plan members:	
Benefit payments to pensioners and beneficiaries	17,667,679
Member refunds	221,512
Transfers to other systems	261,720
Reimbursements to other systems	385,301
Administrative expenses:	
System operations payroll and board stipends	217,311
Other administrative expenses	<u>92,834</u>
Total deductions	<u>18,846,357</u>

NET INCREASE IN NET POSITION 5,530,177

NET POSITION RESTRICTED FOR PENSIONS

Beginning of year	<u>170,410,001</u>
End of year	<u>\$ 175,940,178</u>

See notes to the financial statements.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

NOTES TO THE FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2016

1. DESCRIPTION OF THE PLAN

General – The Medford Contributory Retirement System (the “System”) is a multiple employer cost sharing defined benefit pension plan established and administered by the Medford Retirement Board under the provisions of Chapter 32 of the Massachusetts General Laws to provide pension benefits for participants. The System is a component unit of the City of Medford, Massachusetts (the “City”). The City and the Medford Housing Authority (the “Authority”) contribute to the System.

Employees of the City (with the exception of teachers and certain administrative personnel employed by the School Department who participate in a separate plan) and the Authority are covered by the System. Participation in the System is mandatory immediately upon the commencement of employment for all permanent, full-time employees.

At December 31, 2016, membership in the System consisted of:

Retirees and beneficiaries currently receiving benefits	613
Active plan members	782
Inactive plan members	<u>131</u>
Total membership	<u>1,526</u>

Plan Benefits – Massachusetts contributory retirement system benefits are generally uniform from system to system. For employees with service dates beginning before April 2, 2012, the System provides for retirement allowance benefits up to a maximum of 80% of a participant’s highest consecutive three-year average annual rate of regular compensation. For those employees who began their service after April 2, 2012, the System provides for retirement allowance benefits up to a maximum of 80% of a participant’s highest consecutive five-year average annual rate of regular compensation. Benefit payments are based upon a participant’s age, length of creditable service, level of compensation and group classification.

The retirement allowance consists of two parts – an annuity and a pension. Participants’ accumulated total deductions and a portion of the interest they generate constitute the annuity. The differential between the total retirement benefit and annuity is the pension.

Participants who resign from service and who are not eligible to receive a retirement allowance are entitled to request a refund of their accumulated total contributions. In addition, depending upon the number of years of creditable service, such employees may be entitled to receive interest, which has accrued on those contributions. A vested employee who has not reached their eligible retirement age and elects to leave his accumulation on deposit may apply for benefits upon reaching his eligible retirement age.

Survivor benefits are extended to eligible beneficiaries of participants whose death occurs prior to or following retirement.

Retirement Requirements – In order to receive retirement benefits, participants must meet one of the following two categories:

Normal Retirement – Generally, normal retirement occurs between ages 65 and 67. However, most participants with a hire date before April 2, 2012, may retire after ten years of service at age 55 or twenty years of service at any age. For most participants hired on or after April 2, 2012, they must attain the age of 60 before they can retire. Participants with hire dates subsequent to January 1, 1978 must have a minimum of ten years' creditable service in order to retire at age 55 or 60, as applicable. Participants become vested after ten years of service. Benefits commencing before age 65 are generally provided at a reduced rate. However, members working in certain occupations may retire with full benefits earlier than age 65.

Participants who resign from service and who are not eligible to receive a retirement allowance or are under the age of 55 may request a refund of their accumulated total contributions. In addition, depending on the number of years of creditable service, these employees may be entitled to interest that has accrued on their contributions; for those employees involuntarily terminated with less than ten years of service, this interest rate is 3.0%. A vested employee under the age of 55 who elects to leave his accumulated contributions on deposit may apply for pension benefits upon reaching his eligible retirement age.

Disability Retirements – The System provides for both an ordinary disability retirement, where a participant is permanently incapacitated from a cause unrelated to employment, and an accidental disability retirement, where the disability is the result of an injury or illness received or aggravated in the performance of one's duty. The amount of benefits to be received in such cases is dependent upon several factors, including the age at which the disability retirement occurs, the years of service, average compensation and veteran status. In addition, certain provisions are in place relative to death benefits for beneficiaries of employees who die in active service.

Public Availability of Financial Statements – The Medford Retirement Board issues a publicly available financial report that includes financial statements and required supplementary information for the System. That report may be obtained by writing to the Medford Retirement Board, 85 George P. Hassett Drive, Medford, MA 02155.

2. SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting – The financial statements of the System have been prepared on the accrual basis of accounting. The accounting records of the System are maintained on a calendar-year basis in accordance with the standards and procedures established by the Public Employee Retirement Administration Commission ("PERAC") and Massachusetts law.

Estimates – The preparation of financial statements in conformity with generally accepted accounting principles in the United States of America, or GAAP, requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Cash and Cash Equivalents – Cash and cash equivalents include cash on hand, demand deposits and short-term holdings with original maturities of three months or less from the date of acquisition.

Investments – The carrying amounts of the System’s investments approximate their fair value. When actively quoted observable prices are not available, the System generally uses either implied pricing from similar investments or valuation models based on net present values of estimated future cash flows (adjusted as appropriate for liquidity, credit, market and/or other risk factors).

The System categorizes its fair value measurements within the fair value hierarchy established by GAAP. This hierarchy is based on valuation inputs used to measure the fair value of the asset or liability. The three levels of the hierarchy are as follows:

- *Level 1* – Inputs are quoted prices in active markets for identical investments at the measurement date.
- *Level 2* – Inputs (other than quoted prices included in Level 1) are either directly or indirectly observable for the investment through correlation with market data at the measurement date and for the duration of the instrument’s anticipated life.
- *Level 3* – Inputs reflect the System’s best estimate of what market participants would use in pricing the investment at the measurement date.

The remaining investments not categorized under the fair value hierarchy are shown at net asset value (“NAV”). These are investments in non-governmental entities for which a readily determinable fair value is not available, such as member units or an ownership interest in partners’ capital to which a proportionate share of net assets is attributed. Investments at NAV are commonly calculated by subtracting the fair value of liabilities from the fair value of assets.

The following table presents the fair value of the System’s investments by type as of December 31, 2016:

	December 31, 2016	Fair Value Measurements Using		
		Level 1	Level 2	Level 3
Investments by fair value level				
Debt securities:				
U.S. governments and agencies	\$ 10,798,140	\$ 2,767,945	\$ 8,030,195	\$ -
Foreign governments	341,828	-	341,828	-
Corporate bonds	6,485,152	6,485,152	-	-
Asset-based securities	2,553,407	-	2,553,407	-
Equity securities	6,342	6,117	-	225
Mutual funds:				
Domestic equity mutual funds	30,668,341	5,180,616	25,487,725	-
International equity mutual funds	46,402,278	46,402,278	-	-
Balanced mutual funds	16,818,492	16,818,492	-	-
Domestic fixed income mutual funds	17,827,955	17,827,955	-	-
Total investments by fair value level	<u>131,901,935</u>	<u>\$ 95,488,555</u>	<u>\$ 36,413,155</u>	<u>\$ 225</u>
Investments measured at the net asset value (NAV)				
Private equity funds	5,805,382			
State Treasurer investment pools	<u>38,767,173</u>			
Total investments measured at the NAV	<u>44,572,555</u>			
Total investments measured at fair value	<u>\$ 176,474,490</u>			

Equity and debt securities and mutual funds classified in Level 1 are valued using prices quoted in active markets for those securities. Debt securities and mutual funds classified in Level 2 were valued using observable inputs from similar securities, including basing value on yield currently available on comparable securities of issued with similar credit ratings. The equity securities classified in Level 3 are investments in private companies who were formerly publicly-traded in the United States.

Investments Measured at NAV By Asset Class	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Private equity funds	\$ 5,805,382	\$ -	Quarterly	30 to 60 days
State Treasurer investment pools	38,767,173	-	Monthly	30 days
	<u>\$ 44,572,555</u>	<u>\$ -</u>		

Investments measured at NAV include comingled/pooled funds in a private equity fund and investments in the State Treasurer investment pool.

Private equity funds generally include investments in which the System is a general partner in a private equity, venture capital fund or similar investment vehicle. The value of these investments are recorded at values determined in good faith by the general partners of the private equity and venture capital firms after consideration of pertinent information, including current financial position and operative results, price-earnings multiples and available market prices of similar companies' securities, the nature of the securities, marketability, restrictions on disposition and other appropriation and do not necessarily represent amounts which might ultimately be realized, since such amounts depend on future circumstances and cannot reasonably be determined until individual securities are liquidated. In addition, fair values of real estate funds are generally based on independent, third-party appraisals. By their very nature, these investments are illiquid and typically cannot be resold or redeemed. Distributions from each fund will be received as the underlying investments are liquidated. It is expected that the underlying assets for the funds will be liquidated over an average of ten years.

The State Treasurer investment pool is administered by the Commonwealth of Massachusetts' Pension Reserve Investment Management Board, or PRIM. The System maintains several Massachusetts Pension Reserve Investment Trust, or PRIT funds, each of which consists of a diverse set of investments that includes private equity, venture and real estate investments. The determination of the fair value of these investments is very subjective and the period-end values are reported to the System as NAV. Investments in the PRIT funds are more liquid than investments in private equity and real estate holdings, but generally cannot be resold to third parties. The System may liquidate its investment in the PRIT funds at any time with less than thirty days' notice. Distributions from the PRIT funds may be received regularly and, upon receipt, are deposited into an accompanying short-term cash investment account.

Because of the inherent uncertainty of valuations used in many of the System's investments measured at NAV, estimated values may differ significantly from the values that would have been used had a readily available market for positions in privately held companies or the real estate existed at December 31, 2016. These differences could have a material adverse effect on the System's financial statements.

Fair Value of Financial Instruments – The carrying amounts of cash and cash equivalents, accounts receivable and other current assets and accounts payable approximate their fair value due to the relatively short-term maturities.

Revenue Recognition – Contributions are recognized as additions in the period in which they become due pursuant to formal commitments, and statutory or contractual requirements. Contributions appropriated by the City and the Authority are on a fiscal-year basis. Investment purchases and sales are recorded on their trade dates. Interest and dividends are recorded when earned. Investment income is allocated to the various funds on the basis of a rate determined annually by PERAC.

Derivatives – The System may invest in derivative products such as currency hedges to minimize the currency risk on international investments. The System does not have any direct holdings that are classified as derivatives at December 31, 2016. At December 31, 2016, the System maintained investments with PRIT totaling approximately \$38.8 million, a portion of which may include derivatives at the discretion of the PRIT fund managers.

3. SYSTEM ADMINISTRATION

The System is administered by a five-person Board consisting of the City Auditor, two members who are elected by the participants in or retired from the service of the System, one member appointed by the City Mayor and one member appointed by the other members of the Board.

At December 31, 2016, the Board was comprised as follows:

		<u>Term Expires</u>
Ex-Officio Member:	Ms. Aleesha Nunley (City Auditor)	No specified date
Appointed Member:	Mr. John Granara	December 20, 2017
Elected Member:	Mr. Patrick Ripley	July 1, 2017
Elected Member:	Mr. Rick Jordan	December 19, 2017
Board Appointed Member:	Mr. James Vieira	January 27, 2018

The Board is required to meet at least once a month and keep a record of its proceedings. The Board annually submits a financial statement of condition for the System with the Commissioner of PERAC. Retirement allowances are approved by the Board and, in certain circumstances, submitted to a PERAC for verification prior to payments being made. Expenses incurred by the System must be approved by two members of the Board.

4. DEPOSITS AND INVESTMENTS

Massachusetts General Laws Chapter 32 and PERAC regulations require the System to invest funds only in pre-approved investment instruments, which include but are not necessarily limited to bank deposits, money markets, certificates of deposit, U.S. obligations, repurchase agreements, certain corporate bonds and equities and investment pools.

Investment Policy – The investment of the System’s funds is the responsibility of the Board. The Board adopted an investment policy statement in March 2008, which has not been amended since its adoption. The investment objective is to ensure that the System’s assets are invested to enhance and preserve principal, both in real and nominal terms. The System’s investment policy seeks a long-term investment return of 8.0%.

The System’s investment policy requires diversification within its investment portfolio. Effective March 2008, the System’s portfolio target weights at the broad asset class level were as follows:

Asset Class	Target Allocation
Equities:	41% to 65%
Domestic Large Cap	21% to 31%
Domestic Small/Mid Cap	6% to 12%
International	14% to 22%
Fixed Income:	25% to 40%
Domestic	25% to 25%
International	0% to 5%
Real Estate	2% to 6%
Hedge Funds	4% to 9%
Private Equity	0% to 4%

Custody of Investments – State Street Bank and Trust is the custodian of the System’s investment portfolio and provided the System with investment transaction and reporting services for all of 2016.

Rate of Return – The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested. The 2016 money-weighted rate of return was approximately 5.13%.

Investment Management – New England Pension Consultants provided investment advisory services to the System throughout all of 2016. At December 31, 2016, the System had contracted with the following companies to serve as investment managers:

Investment Advisor	Investment Type
Bank of New York Mellon Corporation	International balanced funds
Columbia Management Investment Advisers LLC	Fixed income
Lazard Asset Management LLC	International equities
Loomis, Sayles & Company, L.P.	Domestic fixed income
Pension Reserves Investment Management Board	Alternative investments, real estate and hedge funds
RhumbLine Advisers Limited Partnership	Domestic equities
Standard Life Investments	Hedge funds
Wellington Management Company LLP	Domestic fixed income
Western Asset Management Company	International equities and emerging markets
William Blair & Company LLC	Global equities, fixed income and currencies

Custodial Credit Risk: Deposits – Deposits are subject to the risk of bank failure. The System may be unable to recover the full amount of its deposits in any one bank institution in the event of a bank failure. The System’s policy for custodial credit risk of deposits is to rely on Federal Deposit Insurance Corporation (“FDIC”) insurance coverage for the first \$250,000 of deposits held at each financial institution. At December 31, 2016, \$209,607 of the System’s bank deposits was not covered by FDIC or other depository insurance.

Custodial Credit Risk: Investments – Custodial credit risk for investments is the risk that, in the event of a 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 the outside party. The System’s policy for custodial credit risk of investments intends that all investments are either insured and/or registered in the name of the System. At December 31, 2016, the System was not exposed to custodial credit risk on its investments.

Interest Rate Risk: Deposits – This is the risk that fair value losses may arise due to increasing interest rates, such risk is reduced by the fact that the System maintains such funds in highly liquid bank accounts; thereby, allowing for timely re-allocation of such holdings should the need arise.

Interest Rate Risk: Investments – Debt securities are subject to interest rate risk. Debt securities may be adversely affected by changes in interest rates, which may negatively affect the fair value of individual debt instruments. The System does not have a formal investment policy that limits investments maturities as a means of managing its exposure to fair value losses arising from increasing interest rates.

Foreign Currency Risk: Deposits and Investments –The System did not hold any specific security denominated in a foreign currency at December 31, 2016.

Securities Credit Risk: Investments – In the case of investments, there is the risk that in the event of an invested party will be unable to fulfill its obligations, such as to provide required payments to investors, to meet current or future performance expectations, to abide by industry regulations and proper operational practices, ceasing to exist, or filing for bankruptcy. In those instances, the System may not be able to recover the full amount of its principal investment and/or investment earnings. As previously noted, PERAC and Massachusetts statutory regulations have been enacted to reduce this risk. In evaluating its credit risk, the System relies on credit ratings assigned by Moody’s Investor Services, Inc. and Standard and Poor’s Financial Services, LLC. The System does voluntarily self-impose certain investment restrictions; however, those can be changed at the Board’s discretion. The System maintains a significant portion (approximately 98%) of its monetary assets as investment holdings.

None of the System's mutual funds or pooled investments were subject to credit quality ratings from leading credit rating agencies. The following table summarizes the credit ratings for the System's fixed income securities (excluding pooled fixed income investments):

Moody's Rating Scale	Fair Value
Aaa	\$ 4,318,769
Aa1	92,382
Aa2	86,484
Aa3	221,256
A1	411,950
A2	340,321
A3	935,947
Baa1	1,984,539
Baa2	1,088,729
Baa3	1,219,333
Ba1	143,365
Ba2	33,449
B1	39,900
Not Rated	<u>9,262,103</u>
	<u>\$ 20,178,527</u>

At December 31, 2016, uninsured short-term investment funds with fair values of \$3,363,773 were reported as cash equivalents. These funds represent temporary holdings of excess cash resources. The System intends to reinvest these amounts in less than one year. Accordingly, the fair values of these amounts have been classified as cash equivalents in these financial statements. These funds are not insured by the FDIC.

Concentration of Credit Risk: Investments – The following investments held by the System at December 31, 2016 represent approximately 79.7% of the System's total investments:

Rhumblin Advisers S&P 500 Pooled Index Fund	11.8%
Lazard International Strategic Equity Portfolio	11.0%
Loomis Salyes MSFD Fund	10.1%
William Blair Macro Allocation Fund	9.5%
Bank of New York Mellon EB DV Synamic Growth Fund	8.6%
PRIM Hedge Fund	8.5%
PRIM Core Real Estate Fund	7.1%
Standard Life Investments Global Alternative Return Fund	6.7%
PRIM Alternative Investments Fund	6.4%

5. FUNDING POLICY

Employee Contributions – Employees whose creditable service began prior to January 1, 1975, contribute 5% of their base salary or wage; those whose service date is subsequent to January 1, 1975, and prior to January 1, 1984, contribute 7%; those whose service date is subsequent to January 1, 1984, and prior to July 1, 1996, contribute 8%, and those whose service date is subsequent to July 1, 1996, contribute 9%. In addition, employees hired on or after January 1, 1979 contribute an additional 2% on earnings in excess of \$30,000.

Employer Contributions (Funding) – Under the provisions of Chapter 32 of Massachusetts General Law, participating employers are assessed their share of the total retirement cost based on independent actuarial study.

Employer contributions of \$11,000,000 were made in 2016. Employer contributions as a percentage of covered payroll was approximately 27% in 2016.

Cost of Living Adjustment (COLA) – Through 1998, the Massachusetts Legislature was able to grant cost-of-living increases to benefits being paid to retirees. These increases were expressed as a percentage of the retiree's allowance subject to a maximum dollar increase. All COLA's granted from 1982 through June 30, 1998, are reimbursed to the System by the Commonwealth of Massachusetts since the Commonwealth was financially responsible for COLA adjustments during this time frame; any COLA's granted thereafter by the Board are required to be funded by the System directly. A COLA may be approved in excess of the Consumer Price Index, or CPI, but is not to exceed 3% annually on the first \$16,000 of a retirement allowance. The System has historically approved a COLA annually, usually at the maximum 3% rate.

The Commonwealth is expected to continue funding the cost-of-living amounts granted to retirees prior to 1998 for the duration of their selected retirement option.

6. ACTUARIAL VALUATION

The System is statutorily required to adopt the funding schedule that will fully amortize the unfunded actuarial accrued liability by June 30, 2040. As of the latest actuarial valuation, the System has selected a funding schedule that fully amortizes the unfunded actuarial accrued liability by June 30, 2032.

The components of the System's net pension liability at December 31, 2016 were as follows:

Total pension liability	\$ 273,886,661
Plan fiduciary net position	<u>175,940,178</u>
Net pension liability	<u>\$ 97,946,483</u>
Plan fiduciary net position as a percentage of total pension liability	64.2%

The total pension liability was determined by an actuarial valuation as of January 1, 2016 and updated to roll forward to December 31, 2016. The significant actuarial assumptions used in the January 1, 2016 report were as follows:

Actuarial cost method:	Individual entry age normal
Asset valuation method:	5-year smoothing
Investment rate of return:	7.5% per annum
Projected salary increases:	4.50% per year
Cost of living adjustments:	3% on the first \$16,000 of benefits
Mortality rates:	Pre-retirement and post-retirement rates reflect the RP-2014 Blue Collar mortality table with Scale MP-2014, fully generational. Group 1 and 2 retirees are set forward 5 years for males and 3 years for females, fully generational. Group 4 retirees are set forward 3 years for males and six years for females, fully generational.
Disabled life mortality:	RP-2000 mortality table set forward 6 years for Group 1 and 2 and 2 years for Group 4.

Discount Rate – The discount rate used to measure the total pension liability in the January 1, 2016 actuarial valuation report was 7.5%. The projection of cash flows used to determine the discount rate assumed plan member contributions were made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially-determined contribution rates and the member rate. Based on those assumptions, the System’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.

Expected Rate of Return – The System’s investment policy targets a nominal rate of return of 8.0%, which considers the actuarial rate of return target of 7.5% plus an additional 0.5%. This long-term expected rate of return is presented neither in arithmetic or geometric means.

Sensitivity Analysis – The following illustrates the net position liability at December 31, 2016 calculated using the current discount rate of 7.5%, as well as the projection of what the net position liability would be if it were calculated using a discount rate that is 1.0% lower (6.5%) and 1.0% higher (8.5%) that the current rate:

	1% Decrease (6.5%)	Current Discount (7.5%)	1% Increase (8.5%)
Net pension liability	\$ 124,698,708	\$ 97,946,483	\$ 74,956,480

7. NET POSITION RESTRICTED FOR PENSIONS

Net position restricted for pensions, as of December 31, 2016, were comprised of four funds:

<u>Description</u>	<u>Amount</u>	<u>Purpose</u>
Annuity Savings Fund	\$ 47,978,610	Active members' contribution balance
Annuity Reserve Fund	12,121,783	Retired members' contribution balance
Military Service Fund	4,843	Members' contributions account while on military leave
Pension Fund	3,051,231	Amounts appropriated to fund future retirement
Pension Reserve Fund	<u>112,783,711</u>	Remaining net assets
	<u>\$ 175,940,178</u>	

8. COMMITMENTS AND CONTINGENCIES

The System is subject to a variety of claims that arise from time to time in the ordinary course of business. Although management of the System currently believes that resolving claims against the System, individually or in aggregate, will not have a material adverse impact on the System's financial position or its results of operations, these matters are subject to inherent uncertainties and management's views of these matters may change in the future.

* * * * *

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

REQUIRED SUPPLEMENTARY INFORMATION - UNAUDITED
DECEMBER 31, 2016

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS

	2016	2015	2014
Total pension liability:			
Service cost	\$ 5,909,037	\$ 5,709,214	\$ 5,976,621
Interest	19,766,673	21,228,946	20,587,820
Changes in benefit terms	-	-	-
Differences between expected and actual experience	-	(5,235,568)	-
Changes in assumptions	-	(13,742,413)	-
Interest on benefit payments	-	(659,019)	(630,332)
Benefit payments, including refunds of member contributions	(18,536,212)	(17,897,397)	(17,118,357)
Net change in total pension liability	7,139,498	(10,596,237)	8,815,752
Total pension liability - beginning of year	<u>266,747,163</u>	<u>277,343,400</u>	<u>268,527,648</u>
Total pension liability - end of year (a)	<u>\$ 273,886,661</u>	<u>\$ 266,747,163</u>	<u>\$ 277,343,400</u>
Plan fiduciary net position:			
Contributions - employer	\$ 11,000,000	\$ 10,500,000	\$ 10,011,299
Contributions - members	3,928,047	3,722,994	3,659,843
Contributions - nonemployer contributing entities	1,207,605	269,723	637,868
Net investment income	8,196,559	464,885	8,740,674
Benefit payments, including refunds of member contributions	(18,536,212)	(18,009,941)	(17,118,357)
Administrative expenses	(310,145)	(256,147)	(272,089)
Other	44,323	33,055	71,499
Net change in plan fiduciary net position	5,530,177	(3,275,431)	5,730,737
Plan fiduciary net position - beginning of year	<u>170,410,001</u>	<u>173,685,432</u>	<u>167,954,695</u>
Plan fiduciary net position - end of year (b)	<u>\$ 175,940,178</u>	<u>\$ 170,410,001</u>	<u>\$ 173,685,432</u>
Net pension liability - end of year (a) - (b)	<u>\$ 97,946,483</u>	<u>\$ 96,337,162</u>	<u>\$ 103,657,968</u>
Plan fiduciary net position as a percentage of the total pension liability	64.2%	63.9%	62.6%
Covered-employee payroll	\$ 40,702,740	\$ 39,326,319	\$ 37,863,532
Net pension liability as a percentage of covered-employee payroll	240.6%	245.0%	273.8%

Note: This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, information is presented for those years in which information is available.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

REQUIRED SUPPLEMENTARY INFORMATION - UNAUDITED
DECEMBER 31, 2016

SCHEDULE OF CONTRIBUTIONS

	<u>2016</u>	<u>2015</u>	<u>2014</u>
Actuarially-determined contribution	\$ 11,000,000	\$ 10,500,000	\$ 10,011,299
Contributions in relation to the actuarially-determined contribution	<u>11,000,000</u>	<u>10,500,000</u>	<u>10,011,299</u>
Contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Covered-employee payroll	\$ 40,702,740	\$ 39,326,319	\$ 37,863,532
Contribution as a percentage of covered-employee payroll	27.0%	26.7%	26.4%

SCHEDULE OF INVESTMENT RETURNS

	<u>2016</u>	<u>2015</u>	<u>2014</u>
Annual money-weighted rate of return, net of investment expense	5.13%	0.28%	5.54%

Note: These schedules are presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, information is presented for those years in which information is available.

See independent auditors' report.

**MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)**

**NOTES TO REQUIRED SUPPLEMENTARY INFORMATION
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2016**

A. CHANGES OF BENEFIT TERMS

The System may be amended or terminated in whole or in part at any time by the Massachusetts Legislature, provided that no such modification, amendment or termination shall be made that would deprive a current member of superannuation pension rights or benefits provided under applicable laws of Massachusetts, if such member has paid the stipulated contributions specified in sections or provisions of such laws. There were no significant changes to the System's benefit terms in 2016.

B. SIGNIFICANT ACTUARIAL ASSUMPTIONS AND METHODS

The significant actuarial assumptions used in the January 1, 2016 report were as follows:

Actuarial cost method:	Individual entry age normal
Asset valuation method:	5-year smoothing
Investment rate of return:	7.5% per annum
Projected salary increases:	4.50% per year
Cost of living adjustments:	3% on the first \$16,000 of benefits
Mortality rates:	Pre-retirement and post-retirement rates reflect the RP-2014 Blue Collar mortality table with Scale MP-2014, fully generational. Group 1 and 2 retirees are set forward 5 years for males and 3 years for females, fully generational. Group 4 retirees are set forward 3 years for males and six years for females, fully generational.
Disabled life mortality:	RP-2000 mortality table set forward 6 years for Group 1 and 2 and 2 years for Group 4.

C. CHANGES OF ASSUMPTIONS

The mortality tables used in the January 1, 2016 actuarial valuation report were updated from the January 1, 2014 actuarial valuation report.



ROSELLI, CLARK & ASSOCIATES
CERTIFIED PUBLIC ACCOUNTANTS

500 West Cummings Park
Suite 4900
Woburn, MA 01801
Telephone: (781) 933-0073
www.roselliclark.com

INDEPENDENT AUDITORS' REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH GOVERNMENT AUDITING STANDARDS

To the Medford Retirement Board
Medford Contributory Retirement System
Medford, Massachusetts

We have audited, 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, the financial statements of the Medford Contributory Retirement System (the "System"), a component unit of the City of Medford, Massachusetts, as of and for the year ended December 31, 2016, and the related notes to the financial statements which collectively comprise the System's basic financial statements and have issued our report thereon dated August 28, 2017.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the System's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we do not express an opinion on the effectiveness of the System's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or, significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the System's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Roselli, Clark & Associates

Roselli, Clark & Associates
Certified Public Accountants
Woburn, Massachusetts
August 28, 2017



ROSELLI, CLARK & ASSOCIATES
CERTIFIED PUBLIC ACCOUNTANTS

500 West Cummings Park
Suite 4900
Woburn, MA 01801

Telephone: (781) 933-0073

www.roselliclark.com

**INDEPENDENT AUDITORS' REPORT ON AUDIT OF SPECIFIC ELEMENTS, ACCOUNTS
AND ITEMS OF FINANCIAL STATEMENTS**

To the Medford Retirement Board
Medford Contributory Retirement System
Medford, Massachusetts

We have audited the accompanying schedule of employer allocations of the Medford Contributory Retirement System (the "System"), a component unit of the City of Medford, Massachusetts, as of and for the year ended December 31, 2016. We have also audited the total for all entities of the columns titled net pension liability, total deferred outflows of resources, total deferred inflows of resources and total pension expense (specified column totals) included in the accompanying schedule of pension amounts by employer of the System as of and for the year ended December 31, 2016, and the related notes thereto.

Management's Responsibility for the Schedules

Management is responsible for the preparation and fair presentation of these schedules 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 opinions on the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer 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 Audit 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 schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer 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 schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer.

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

Opinions

In our opinion, the schedules referred to above present fairly, in all material respects, the employer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total pension expense for the total of all participating entities of the System as of and for the year ended December 31, 2016, in accordance with accounting principles generally accepted in the United States of America.

Other Matters

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the System as of and for the year ended December 31, 2016, and our report thereon, dated August 28, 2017, expressed an unmodified opinion on those financial statements.

Roselli, Clark & Associates

Roselli, Clark & Associates
Certified Public Accountants
Woburn, Massachusetts
August 28, 2017

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
 (A Component Unit of the City of Medford, Massachusetts)

SCHEDULE OF EMPLOYER ALLOCATIONS
FOR THE YEAR ENDED DECEMBER 31, 2016

Employer	Actual Employer Contributions	Employer Allocation Percentage
City of Medford	\$ 10,401,268	94.56%
Medford Housing Authority	<u>598,732</u>	<u>5.44%</u>
Total	<u>\$ 11,000,000</u>	<u>100.00%</u>

See notes to schedule of employer allocations and schedule of pension amounts by employer.

MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER
FOR THE YEAR ENDED DECEMBER 31, 2016

	City of Medford	Medford Housing Authority	Total
Net pension liability	\$ 92,313,973	\$ 5,632,510	\$ 97,946,483
Deferred outflows of resources:			
Differences between expected and actual experience	\$ -	\$ -	\$ -
Difference between projected and actual investment earnings on pension plan investments	12,020,069	733,401	12,753,470
Changes of assumptions	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	270,247	270,247
Total deferred outflows of resources	<u>\$ 12,020,069</u>	<u>\$ 1,003,648</u>	<u>\$ 13,023,717</u>
Deferred inflows of resources:			
Differences between expected and actual experience	\$ 2,874,162	\$ 175,366	\$ 3,049,528
Difference between projected and actual investment earnings on pension plan investments	-	-	-
Changes of assumptions	7,544,148	460,305	8,004,453
Changes in proportion and differences between employer contributions and proportionate share of contributions	270,247	-	270,247
Total deferred inflows of resources	<u>\$ 10,688,557</u>	<u>\$ 635,671</u>	<u>\$ 11,324,228</u>
Pension expense (income):			
Proportionate share of plan pension expense	\$ 8,487,874	\$ 517,885	\$ 9,005,759
Proportionate share of plan pension revenue	(488,826)	(29,826)	(518,652)
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(99,398)	99,398	-
Total employer pension expense	<u>\$ 7,899,650</u>	<u>\$ 587,457</u>	<u>\$ 8,487,107</u>

See notes to schedule of employer allocations and schedule of pension amounts by employer.

**MEDFORD CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Medford, Massachusetts)**

**NOTES TO PENSION SCHEDULES
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2016**

A. INTRODUCTION

GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*, establishes financial reporting requirements for governments that provide employees with pension benefits. GASB 68 requires employers to recognize a net pension liability or net pension asset as employees earn pension benefits. Employers participating in the Medford Contributory Retirement System (the “System”) will recognize their proportionate share of the collective pension amounts for all benefits provided by the Retirement System.

B. METHOD OF PROPORTIONATE SHARE ALLOCATION

The basis for the proportionate share allocation by employer as found in the Schedule of Employer Allocations and Schedule of Pension Amounts by Employer is consistent with the manner in which employer contributions to the System are determined. The net pension liability, deferred outflows of resources, deferred inflows of resources and pension expense is based upon actual historical employer contributions to the System from the census data submitted to the System for pay periods ending December 31, 2016.

C. EXPECTED FUTURE AMORTIZATION OF DEFERRED BALANCES

The following table summarizes the expected amortization of the deferred outflows of resources and inflows of resources into pension expense (income).

	2017	2018	2019	2020	Total
<u>City of Medford</u>					
Difference between projected and actual investment earnings on pension plan investments, net	\$ 4,003,092	\$ 4,003,092	\$ 3,183,065	\$ 830,820	\$ 12,020,069
Difference between expected and actual experience	(1,030,165)	(1,030,165)	(813,832)	-	(2,874,162)
Changes of assumptions	(2,703,996)	(2,703,996)	(2,136,156)	-	(7,544,148)
Net effect of change in proportion of beginning reported balances	(99,398)	(99,398)	(71,451)	-	(270,247)
<u>Medford Housing Authority</u>					
Difference between projected and actual investment earnings on pension plan investments, net	244,247	244,247	194,214	50,693	733,401
Difference between expected and actual experience	(62,855)	(62,855)	(49,656)	-	(175,366)
Changes of assumptions	(164,984)	(164,984)	(130,337)	-	(460,305)
Net effect of change in proportion of beginning reported balances	99,398	99,398	71,451	-	270,247
<u>Total</u>					
Difference between projected and actual investment earnings on pension plan investments, net	4,247,339	4,247,339	3,377,279	881,513	12,753,470
Difference between expected and actual experience	(1,093,020)	(1,093,020)	(863,488)	-	(3,049,528)
Changes of assumptions	(2,868,980)	(2,868,980)	(2,266,493)	-	(8,004,453)
Net effect of change in proportion of beginning reported balances	-	-	-	-	-



COMMONWEALTH OF MASSACHUSETTS

Public Employee Retirement Administration Commission

Five Middlesex Avenue, Suite 304 | Somerville, MA 02145

Phone: 617-666-4446 | Fax: 617-628-4002

TTY: 617-591-8917 | Web: www.mass.gov/perac