Holyoke

Retirement System
Audit Report
January 1, 2015 - December 31, 2019

PUBLIC EMPLOYEE RETIREMENT ADMINISTRATION COMMISSION
COMMONWEALTH OF MASSACHUSETTS

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June 2, 2022

The Public Employee Retirement Administration Commission (PERAC) has completed a review of the audits of the Holyoke Retirement System conducted by the firm of Melanson Certified Public Accountants (CPAs). Melanson conducted these audits in accordance with auditing standards generally accepted in the United States of America. The audits covered the period from January 1, 2015 to December 31, 2019.

We conducted an inspection of the work papers prepared by Melanson. 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 Melanson 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 and credit card 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 Holyoke 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 and credit card statements 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, for those areas tested, the financial records are being maintained and the management functions are being performed in conformity with the standards established by PERAC.

We commend the Holyoke Retirement Board for the exemplary operation of the system.

It should be noted that the financial statements included in this audit report were based on the work performed by Melanson 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, 2019, December 31, 2018, December 31, 2017, December 31, 2016, and December 31, 2015.

In closing, I wish to acknowledge the work of Melanson, who conducted these examinations, and PERAC auditors who conducted limited procedures to supplement the field work, and express my appreciation to the Holyoke Retirement Board and staff for their courtesy and cooperation.

Sincerely,

John W. Parsons, Esq.
Executive Director

SUPPLEMENTARY INFORMATION

SCHEDULE OF ALLOCATION OF INVESTMENTS OWNED

(percentages by category)

	AS OF DECEMBER 31, 2019	
	MARKET VALUE	PERCENTAGE OF TOTAL ASSETS
Cash	$11,957,956	3.8%
Pooled Domestic Equity Funds	75,909,335	23.9%
Pooled International Equity Funds	78,937,522	24.8%
Pooled Domestic Fixed Income Funds	41,844,159	13.2%
Pooled Alternative Investment Funds	44,731,832	14.1%
Pooled Real Estate Funds	35,878,548	11.3%
Hedge Funds	28,916,434	9.1%
Grand Total	$318,175,785	100.0%

For the year ending December 31, 2019, the rate of return for the investments of the Holyoke Retirement System was 20.32%. For the five-year period ending December 31, 2019, the rate of return for the investments of the Holyoke Retirement System averaged 8.68%. For the 35-year period ending December 31, 2019, since PERAC began evaluating the returns of the retirement systems, the rate of return on the investments of the Holyoke Retirement System was 9.44%.

The composite rate of return for all retirement systems for the year ending December 31, 2019 was 16.90%. For the five-year period ending December 31, 2019, the composite rate of return for the investments of all retirement systems averaged 7.95%. For the 35-year period ending December 31, 2019, since PERAC began evaluating the returns of the retirement systems, the composite rate of return on the investments of all retirement systems averaged 9.22%.

SUPPLEMENTARY INFORMATION (Continued)

ADMINISTRATION OF THE SYSTEM

The System is administered by a five-person Board of Retirement consisting of the City Auditor 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:	Tanya Wdowiak		
Appointed Member:	Andrew Melendez	Serves until a successor is appointed	
Elected Member:	John T. McCarthy, Chairperson	Term Expires:	05/31/25
Elected Member:	Cheryl Dugre	Term Expires:	02/01/25
Appointed Member:	Michele Aubrey	Term Expires:	12/31/24

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

SUPPLEMENTARY INFORMATION (Continued)

ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Segal as of January 1, 2020.

The actuarial liability for active members was	$167,971,854
The actuarial liability for inactive members was	5,869,265
The actuarial liability for retired members was	285,011,532
The total actuarial liability was	$458,852,651
System assets as of that date were (actuarial value)	316,590,727
The unfunded actuarial liability was	$142,261,924
The ratio of system's assets to total actuarial liability was	69.0%
As of that date the total covered employee payroll was	$58,386,278

The normal cost for employees on that date was 10.2% of payroll
The normal cost for the employer (including expenses) was 6.4% of payroll

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

Investment Return: 7.25% per annum
Rate of Salary Increase: Varies by group and service

SCHEDULE OF FUNDING PROGRESS AS OF JANUARY 1, 2020

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)
1/1/2020	$316,590,727	$458,852,651	$142,261,924	69.0%	$58,386,278	243.7%
1/1/2018	$283,391,801	$418,522,289	$135,130,488	67.7%	$55,459,355	243.7%
1/1/2016	$247,218,760	$395,317,945	$148,099,185	62.5%	$53,758,378	275.5%
1/1/2014	$212,536,626	$365,625,786	$153,089,160	58.1%	$55,011,023	278.3%

SUPPLEMENTARY INFORMATION (Continued)

MEMBERSHIP EXHIBIT

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Retirement in Past Years										
Superannuation	32	46	31	36	40	36	34	35	50	44
Ordinary Disability	1	0	1	1	1	1	1	1	1	0
Accidental Disability	3	3	3	2	1	3	4	3	2	0
Total Retirements	36	49	35	39	42	40	39	39	53	44
Total Retirees, Beneficiaries and Survivors	892	917	923	926	930	934	936	936	946	962
Total Active Members	1,218	1,240	1,280	1,252	1,148	1,143	1,136	1,130	1,131	1,127
Pension Payments										
Superannuation	$13,316,877	$13,911,602	$14,441,875	$15,202,695	$16,065,772	$16,510,432	$16,746,110	$17,296,292	$17,850,627	$18,443,118
Survivor/Beneficiary Payments	396,358	404,674	383,108	368,814	345,898	315,530	324,735	380,356	414,863	408,056
Ordinary Disability	210,585	205,149	202,304	198,289	223,751	230,029	237,616	228,572	247,918	268,813
Accidental Disability	2,060,071	2,333,415	2,241,664	2,312,714	2,303,123	2,330,509	2,411,137	2,404,485	2,443,501	2,492,364
Other	1,557,351	1,476,214	1,524,736	1,488,563	1,533,741	1,508,687	1,505,552	1,707,940	1,575,887	1,684,819
Total Payments for Year	$17,541,242	$18,331,054	$18,793,687	$19,571,075	$20,472,285	$20,895,188	$21,225,149	$22,017,646	$22,532,797	$23,297,169

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

(A Component Unit of the City of Holyoke, Massachusetts)

Financial Statements, Required Supplementary Information, and Other Information
For the Year Ended December 31, 2019

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INDEPENDENT AUDITORS' REPORT

To the Retirement Board
Holyoke Contributory Retirement System
City of Holyoke, Massachusetts

We have audited the accompanying financial statements of the Holyoke Contributory Retirement System (the System), a component unit of the City of Holyoke, Massachusetts, as of and for the year ended December 31, 2019, and the related notes to the financial statements, which collectively comprise the basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

The System's management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. 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

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significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Holyoke Contributory Retirement System as of December 31, 2019, and the respective changes in fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information
Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis, the Schedule of Changes in the Net Pension Liability, and the Schedules of Net Pension Liability, Contributions, and Investment Returns, listed in the foregoing 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 evidence sufficient to express an opinion or provide any assurance.

Melanson

Greenfield, Massachusetts
November 18, 2020

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MANAGEMENT'S DISCUSSION AND ANALYSIS

As management of the Holyoke Contributory Retirement System (the System), we offer readers this narrative overview and analysis of the financial activities of the System for the year ended December 31, 2019.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the basic financial statements. The basic financial statements are comprised of two components: (1) fund financial statements and (2) notes to financial statements. This report also contains other supplementary information in addition to the basic financial statements themselves.

Fund Financial Statements
A fund is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. Fund accounting is used to ensure and demonstrate compliance with finance-related legal requirements.

The Statement of Fiduciary Net Position presents information on the System's assets and liabilities and the resulting net position held in trust restricted for pension benefits. This statement reflects the System's investments at fair value, as well as cash, receivables, and liabilities.

The Statement of Changes in Fiduciary Net Position presents information showing how the System's net position restricted for pensions changed during the year ended December 31, 2019. It reflects contributions by members and participating employers, investment activity, along with deductions for retirement benefits, refunds, transfers, and administrative expenses.

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

The Required Supplementary Information includes this Management's Discussion and Analysis, the Schedule of Changes in the Net Pension Liability, and the Schedules of Net Pension Liability, Contributions, and Investment Returns.

Financial Highlights

- The System's total net position restricted for pensions was $329,391,515 at December 31, 2019.
- The System's net position increased by $49,926,379, which is primarily due to investment gains during the year.

- Employer and employee contributions to the plan were $23,260,525, which represents a $166,532 increase over the prior year. The employer share of contributions represents 72.81% of the total contributions made to the System.
- Benefits paid to plan participants increased by $976,521 or 3.63%, totaling $27,860,382. At December 31, 2019, there were 935 retirees and beneficiaries in receipt of pension benefits, as further discussed on page 9.
- The System's funded ratio (based on the System's GASB 68 valuation) as of the January 1, 2020 actuarial valuation was 71.79%, with 15 years remaining in its amortization period.

Financial Statement Analysis

The following is a summary of financial statement data for the current and prior fiscal years (in thousands):

FIDUCIARY NET POSITION

	2019	2018
Assets		
Cash and receivables	$ 21,050	$ 17,267
Investments	308,629	262,414
Total Assets	329,679	279,681
Liabilities		
Accounts payable	287	216
Total Liabilities	287	216
Net Position		
Restricted for Pensions	$ 329,392	$ 279,465

The System's total assets as of December 31, 2019 were $329,678,524 and were comprised primarily of cash and investments. Total assets increased $49,997,374, or 17.88%, from the prior year primarily due to an increase in investment value.

CHANGES IN FIDUCIARY NET POSITION

	2019	2018
Additions		
Contributions	$ 23,744	$ 23,591
Investment income (loss), net	55,762	(15,752)
Total Additions	79,506	7,839
Deductions		
Benefit payments	27,860	26,884
Other	1,719	1,430
Total Deductions	29,579	28,314
Change in Net Position	49,927	(20,475)
Net Position Restricted for Pensions		
Beginning of Year	279,465	299,940
End of Year	$ 329,392	$ 279,465

The amount needed to finance benefits is accumulated through the collection of employers' and employee's contributions, reimbursements from the Commonwealth of Massachusetts for pre-1998 COLA and through earnings on investments. Contributions and net investment income for calendar year 2019 resulted in total additions of $79,505,463. Employers' contributions remained the same in calendar year 2019. The System had net investment income of $55,761,714 versus an investment loss of $(15,752,290) in 2018, primarily due to the market performing more favorably in calendar year 2019.

The primary deductions of the System include the payment of pension benefits to participants and beneficiaries, refunds and transfers of member contributions, reimbursement payments in accordance with Massachusetts General Law, Chapter 32, Section 3(8)c, more commonly referred to as 3(8)c reimbursements, and the costs of administering the System. Total deductions for calendar year 2019 were $29,579,084, which represents an increase of $1,265,636, or 4.47%, over deductions of $28,313,448 in calendar year 2018. The payment of pension benefits increased by $976,521 or 3.63% over the previous year.

Requests for Information

This financial report is designed to provide a general overview of the Holyoke Contributory Retirement System's finances. Questions concerning any of the information provided in this report, or requests for additional financial information, should be addressed to:

Holyoke Contributory Retirement System

Ms. Cheryl Dugre, Executive Director

20 Korean Veterans Plaza, Room 207

Holyoke, Massachusetts 01040

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

(A Component Unit of the City of Holyoke, Massachusetts)
Statement of Fiduciary Net Position
December 31, 2019

Assets		
Cash and short-term investments	$	12,169,177
Investments in:		
Alternative investments		47,142,845
Domestic equity		75,909,335
Domestic fixed income		41,844,159
International equity		78,937,522
Real estate equity		35,878,547
Hedge funds		28,916,434
Accounts receivable		8,880,505
Total Assets	$	329,678,524
Liabilities		
Accounts payable	$	287,009
Net Position		
Restricted for pension purposes		329,391,515
Total Liabilities and Net Position	$	329,678,524

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

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HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

(A Component Unit of the City of Holyoke, Massachusetts)
Statement of Changes in Fiduciary Net Position
For the Year Ended December 31, 2019

Additions	
Contributions:	
Employers	$ 17,288,112
Plan members	5,972,413
Other systems and the Commonwealth of Massachusetts	459,437
Other	23,787
Total Contributions	23,743,749
Investment income:	
Appreciation in fair value of investments	57,641,752
Less: Management fees	(1,880,038)
Net Investment Gain	55,761,714
Total Additions	79,505,463
Deductions	
Benefit payments to plan members and beneficiaries	27,860,382
Refunds to plan members	934,902
Transfers to other systems	290,357
Administrative expenses	493,443
Total Deductions	29,579,084
Net Increase	49,926,379
Net Position Restricted for Pensions	
Beginning of Year	279,465,136
End of Year	$ 329,391,515

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

1. Description of Plan

The System is a defined cost sharing, multiple employer public employee retirement system (PERS) of 5 member units, except teachers and administrators under contract employed by the School Department. The pensions of such employees are administered by the Massachusetts Teachers' Retirement Board. Eligible employees must participate in the System. The pension plan provides pension benefits, deferred allowances, and death and disability benefits. Chapter 32 of the Massachusetts General Laws establishes the authority of the System, contribution percentages, and benefits paid. The Holyoke Contributory Retirement Board does not have the authority to amend benefit provisions.

Membership of the plan consisted of the following at January 1, 2020:

Retirees and beneficiaries receiving benefits	935
Inactive members entitled to a return of their employee contributions	227
Inactive members with a vested right to a deferred or immediate benefit	29
Active plan members	1,131
Total	2,322
Number of participating employers	5

Participant Contributions

Participants contribute a set percentage of their gross regular compensation annually. Employee contribution percentages are specified in Chapter 32 of the Massachusetts General Laws. The employee's individual contribution percentage is determined by their date of entry into the system. In addition, all employees hired on or after January 1, 1979 contribute an additional 2% on all gross regular compensation over the rate of $30,000 per year. The percentages are as follows:

Before January 1, 1975	5%
January 1, 1975 – December 31, 1983	7%
January 1, 1984 – June 30, 1996	8%
July 1, 1996 – present	9%

For those members entering a Massachusetts System on or after April 2, 2012 in Group 1, the contribution rate will be reduced to 6% when at least 30 years of creditable service has been attained.

Participant Retirement Benefits

A retirement allowance consists of two parts: an annuity and a pension. A member's accumulated total deductions and a portion of the interest they generate constitute the annuity. The difference between the total retirement allowance and the annuity is the pension. The average retirement benefit is approximately 80-85% pension and 15-20% annuity.

The System provides for retirement allowance benefits up to a maximum of 80% of a member's highest 3-year average annual rate of regular compensation for those hired prior to April 2, 2012 and the highest 5-year average annual rate of regular compensation for those first becoming members of the Massachusetts System on or after that date. However, per Chapter 176 of the Acts of 2011, for members who retire on or after April 2, 2012, if in the 5 years of creditable service immediately preceding retirement, the difference in the annual rate of regular compensation between any 2 consecutive years exceeds 100%, the normal yearly amount of the retirement allowance shall be based on the average annual rate of regular compensation received by the member during the period of 5 consecutive years preceding retirement. Benefit payments are based upon a member's age, length of creditable service, level of compensation, and group classification.

There are 4 classes of membership in the retirement system, but one of these classes, Group 3, is made up exclusively of the Massachusetts State Police. The other three classes are as follows:

- Group 1 – General employees, including clerical, administrative, technical, and all other employees not otherwise classified.
- Group 2 – Certain specified hazardous duty positions.
- Group 4 – Police officers, firefighters, and other specified hazardous positions.

A retirement allowance may be received at any age, upon attaining 20 years of service. The plan also provides for retirement at age 55 if the participant was a member prior to January 1, 1978, with no minimum vesting requirements. If the participant was a member on or after January 1, 1978 and a member of Groups 1 or 2, then a retirement allowance may be received if the participant (1) has at least 10 years of creditable service, (2) is age 55, (3) voluntarily left City employment on or after that date, and (4) left accumulated annuity deductions in the fund. Members of Group 4 have no minimum vesting requirements, however, must be at least age 55. Groups 2 and 4 require that participants perform the duties of the Group position for at least 12 months immediately prior to retirement.

A participant who became a member on or after April 2, 2012 is eligible for a retirement allowance upon 10 years creditable service and reaching ages 60 or 55 for Groups 1 and 2, respectively. Participants in Group 4 must be at least age 55. Groups 2 and 4 require that participants perform the duties of the Group position for at least 12 months immediately prior to retirement.

Methods of Payment
A member may elect to receive his or her retirement allowance in one of three forms of payment as follows:

- Option A – Total annual allowance, payable in monthly installments, commencing at retirement and terminating at the members death.
- Option B – A reduced annual allowance, payable in monthly installments, commencing at retirement and terminating at the death of the member, provided however, that if the total amount of the annuity portion received by the member is less than the amount of his or her accumulated deductions, including interest, the difference or balance of his accumulated deductions will be paid in a lump sum to the retiree's beneficiary or beneficiaries of choice.
- Option C – A reduced annual allowance, payable in monthly installments, commencing at retirement. At the death of the retired employee, 2/3 of the allowance is payable to the member's designated beneficiary (who may be the spouse, or former spouse who has not remarried, child, parent, sister, or brother of the employee) for the life of the beneficiary. For members who retired on or after January 12, 1988, if the beneficiary pre-deceases the retiree, the benefit payable increases (or "pops up" to Option A) based on the factor used to determine the Option C benefit at retirement. For members who retired prior to January 12, 1988, if the System has accepted Section 288 of Chapter 194 of the Acts of 1998 and the beneficiary pre-deceases the retiree, the benefit payable "pops up" to Option A in the same fashion. The Option C became available to accidental disability retirees on November 7, 1996.

Participant Refunds
Employees who resign from service and who are not eligible to receive a retirement allowance are entitled to request a refund of their accumulated total deductions. Members voluntarily withdrawing with at least 10 years of service or involuntarily withdrawing, receive 100% of the regular interest that has accrued on those accumulated total deductions. Members voluntarily withdrawing with less than 10 years of service get credited interest each year at a rate of 3%.

Employer Contributions
Employers are required to contribute at actuarially determined rates as accepted by the Public Employee Retirement Administration Commission (PERAC).

2. Nature of Operations and Summary of Significant Accounting Policies

Nature of Operations
The System is a member of the Massachusetts Contributory Retirement Systems and is governed by Chapter 32 of the Massachusetts General Laws. Because of the significance of

its operational and financial relationship with the City of Holyoke, Massachusetts (the City), the System is included as a pension trust fund in the City's basic financial statements. The System is governed by a five-member board. The five members include two appointed by the City, two elected by the members and retirees, and a fifth member chosen by the other four members with the approval of the Public Employee Retirement Administration Commission.

Summary of Significant Accounting Policies
The accounting policies of the System as reflected in the accompanying financial statements for the year ended December 31, 2019 conform to generally accepted accounting principles for public employee retirement systems (PERS). The more significant accounting policies of the System are summarized below:

Basis of Accounting
The System follows accounting policies mandated by the Commonwealth of Massachusetts. The accounting records are maintained on the accrual basis of accounting. Contributions from the Member's employees are recognized as revenue in the period in which employees provide services to the respective member unit.

Investments
Investment Policy
Investments are reported at fair value in accordance with PERAC requirements. System assets are managed on a total return basis with a long-term objective of achieving and maintaining a fully funded status for the benefits provided through the pension plan.

Rate of Return
For the year ended December 31, 2019, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expenses, was not available. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested throughout the year.

3. Cash and Short-Term Investments

Custodial Credit Risk – Deposits. Custodial credit risk is the risk that in the event of a bank failure, the System's deposits may not be returned. Massachusetts General Law Chapter 32, Section 23, limits the System's deposits "in a bank or trust company to an amount not exceeding ten percent of the capital and surplus of such bank or trust company." The System does not have a deposit policy for custodial credit risk.

As of December 31, 2019, none of the System's bank balance of $12,447,647 was exposed to custodial credit risk as uninsured or uncollateralized, and collateral held by pledging bank's trust department not in the System's name.

4. Investments

All of the System's investments totaling $308,628,842 are in various external investment pools. Some of those investments are in the State investment pool.*

*Fair value is the same as the value of the pool share. The Pension Reserves Investment Trust (PRIT) was created under Massachusetts General Law, Chapter 32, Section 22, in December 1983. The Pension Reserves Investment Trust is operated under contract with a private investment advisor, approved by the Pension Reserves Investment Management Board. The Pension Reserves Investment Management Board shall choose an investment advisor by requesting proposals from advisors and reviewing such proposals based on criteria adopted under Massachusetts General Law, Chapter 30B.

Credit Risk

Generally, credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. Massachusetts General Law, Chapter 32, Section 23, limits the investment of System funds, to the extent not required for current disbursements, in the PRIT Fund or in securities, other than mortgages or collateral loans, which are legal for the investment of funds in savings banks under the laws of the Commonwealth, provided that no more than the established percentage of assets, is invested in any one security.

Due to their nature, none of the System's investments are subject to credit risk disclosure.

Custodial Credit Risk

The custodial credit risk for investments is the risk that, in the event of the failure of the counterparty (e.g., broker-dealer) to a transaction, a government will not be able to recover the value of its investment or collateral securities that are in the possession of another party. The System does not have policies for custodial credit risk.

All of the System's investments of $308,628,842 are exempt from the custodial risk disclosure.

Investments in the State investment pools are not exposed to custodial credit risk because their existence is not evidenced by securities that exist in physical or book entry form.

Concentration of Credit Risk

Massachusetts General Law Chapter 32, Section 23 limits the amount the System may invest in any one issuer or security type, with the exception of the PRIT Fund. The System's policy limits the amount the System may invest in any one issuer to 5%.

Investment issued or explicitly guaranteed by the U.S. government and investment in mutual funds, external investment pools, and other pooled investments are excluded from concentration of credit disclosure.

All of the System's investments are exempt from concentration of credit risk disclosure.

Interest Rate Risk
Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. Generally, the longer the maturity of an investment, the greater the sensitivity of its fair value to changes in market interest rates. The System's policy manages interest rate risk through diversification of investments across asset classes.

Information about the sensitivity of the fair values of the System's investments to market interest rate fluctuations is not applicable as all the System's investments are immediately liquid.

Foreign Currency Risk
Foreign currency risk is the risk that changes in foreign exchange rates will adversely affect the fair value of an investment. The System does not have a formal investment policy related to foreign currency risk.

Fair Value
The System categorizes its fair value measurements within the fair value hierarchy established by Governmental Accounting Standards Board Statement No. 72 Fair Value Measurement and Application (GASB 72).

The hierarchy is based on the valuation inputs used to measure the fair value of the asset. The hierarchy categorizes the inputs to valuation techniques used for fair value measurement into three levels as follows:

- Level 1 – Inputs that reflect quoted prices (unadjusted) in active markets for identical assets or liabilities that the fund has the ability to access at the measurement date.
- Level 2 – Inputs other than quoted prices that are observable for an asset or liability either directly or indirectly, including inputs in markets that are not considered to be active. Because they must often be priced on the basis of transactions involving similar but not identical securities or do not trade with sufficient frequency, certain directly held securities are categorized as level 2.
- Level 3 – Unobservable inputs based on the best information available, using assumptions in determining the fair value of investments and derivative instruments.

  The net asset value (NAV) per share is the amount of net assets attributable to each share of capital stock outstanding at the close of the period. Investments measured at the NAV for fair value are not subject to level classification.

All of the System's investments are measured at net asset value.

Description	Amount	Unfunded Commitments	Redemption Frequency (If currently eligible)	Redemption Notice Period
Alternative investments	$ 47,142,845	$ -	Quarterly	30 Days
Domestic equity	75,909,335	-	Quarterly	30 Days
Domestic fixed income	41,844,159	-	Quarterly	30 Days
International equity	78,937,522	-	Quarterly	30 Days
Real estate equity	35,878,547	-	Quarterly	30 Days
Hedge funds	28,916,434	-	Quarterly	30 Days
Total	$ 308,628,842			

5. Accounts Receivable

Annually the Public Employee Retirement Administration (PERAC) determines the amount of employer contributions (pension appropriations) to be made to the System. The accounts receivable balance primarily represents legal amounts due from employers for pension appropriation not received until after December 31, 2019.

6. Accounts Payable

This balance represents calendar year 2019 expenditures paid after December 31, 2019.

7. Contingencies

There are various pending claims arising in the ordinary course of operations; however, management believes that the probable liability resulting from such claims and litigation would not materially affect the System's financial position.

8. Net Pension Liability of Participating Employers

The net pension liability was based on an actuarial valuation dated January 1, 2020.

Net Pension Liability of Employers

The components of the net pension liability of the participating employers at December 31, 2019 were as follows:

Total pension liability	$ 458,852,651
Plan fiduciary net position	(329,391,515)
Employers' net pension liability	$ 129,461,136
Plan fiduciary net position as a percentage of total pension liability	71.79%

Actuarial Assumptions

A summary of the actuarial assumptions as of the latest actuarial valuation is shown below:

Valuation date	1/1/2020
Actuarial cost method	Entry Age Normal Cost Method
Remaining amortization period	15 years
Actuarial assumptions:	
Investment rate of return	7.25%
Projected salary increases:	
Group 1	4.00%
Group 2	4.25%
Group 4	4.50%
Inflation rate	3.25%
Post-retirement cost-of-living adjustment	3% on first $14,000

Actuarial valuations of the ongoing Systems involve estimates of the reported amounts and assumptions about probability of occurrence of events far into the future. Examples include assumptions about future employment mortality and future salary increases. Amounts determined regarding the net pension liability are subject to continual revision, as actual results are compared with past expectations and new estimates are made about the future.

Mortality rates were based on the following:

- Pre-retirement and beneficiary mortality: RP2014 Blue Collar Employee Mortality Table set forward one year for females projected generationally using Scale MP-2017.
- Mortality for retired members: RP-2014 Blue Collar annuitant Mortality Table set forward one year for females projected generationally using Scale MP-2017.
- Mortality for disabled members: RP-2014 Blue Collar annuitant Mortality Table set forward one year projected generationally using Scale MP-2017.

Changes of Assumptions
The investment return assumption was decreased from 7.50% to 7.25% and the administrative expenses assumption was increased from $507,000 to $535,000. in the most recent valuation. These changes increased the System's unfunded accrued liability by approximately $11.5 million.

Change of Benefit Terms
The cost of living adjustment base was increased from $12,000 to $14,000 in the most recent valuation. Changing this plan provision increase the System's unfunded accrued liability by approximately $4.9 million.

Target Allocations
The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimates ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the System's targeted asset allocation as of December 31, 2019, are summarized in the following table.

Asset Class	Target Asset Allocation	Long-Term Expected Real Rate of Return
Domestic equity	23.00%	6.15%
International developed markets equity	14.00%	6.78%
International emerging markets equity	9.00%	8.65%
Core fixed income	15.00%	1.11%
Real estate	12.00%	4.33%
Hedge fund	10.00%	3.19%
Private equity	17.00%	9.99%
Total	100.00%	

Discount Rate
The discount rate used to measure the total pension liability was 7.25%. The projection of cash flows used to determine the discount rate assumed that contributions from participating employers will be made based on the actuarially determined rates based on the Board's funding policy, which establishes the contractually required rates by Statute. Based on those assumptions, the System's fiduciary net position was projected to be available to make all the projected future benefit payments of current plan members.

Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of Discount Rate

The following presents the net pension liability of the participating employers calculated using the discount rate of 7.25%, as well as what the participating employers' net pension liability would be if it were calculated using a discount rate that is 1 percentage-point lower or 1 percentage-point higher than the current rate:

1% Decrease (6.25%)	Current Discount Rate (7.25%)	1% Increase (8.25%)
$181,431,485	$129,461,136	$85,724,353

Deferred Outflows/(Inflows) of Resources

The following schedule reflects the deferred outflows/(inflows) of resources for the System for the year ended December 31, 2019:

	Deferred Outflows of Resources	Deferred (Inflows) of Resources
Differences between expected and actual experience	$ -	$ (5,028,017)
Changes of assumptions	13,755,079	-
Net difference between projected and actual investment earnings on pension plan investments	-	(13,822,473)
Changes in proportion and differences between employer contributions and proportionate share of contributions	2,855,408	(2,855,408)
Total	$ 16,610,487	$ (21,705,898)

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The following summarizes changes in deferred outflows/(inflows):

	Measurement Year	Amortization Period	Beginning Balance on Prior Measurement Period Deferrals	Current Measurement Period Additions	Amortization of Amounts Recognized in Current Period Pension Expense	End of Year Balance
Deferred Outflows of Resources						
Changes of assumptions:	2019	5.0	$ -	$ 11,453,529	$ (2,290,706)	$ 9,162,823
	2017	6.0	3,480,287	-	(870,072)	2,610,215
	2015	6.0	3,964,082	-	(1,982,041)	1,982,041
Changes in proportion and difference between contributions and proportionate share of contributions:	2019	5.0	-	1,232,031	(246,406)	985,625
	2018	6.0	1,176,859	-	(235,372)	941,487
	2017	6.0	710,377	-	(177,594)	532,783
	2016	6.0	312,781	-	(104,261)	208,520
	2015	6.0	373,988	-	(186,995)	186,993
	2014	6.0	174,033	-	(174,033)	-
Total Deferred Outflows of Resources			10,192,407	12,685,560	(6,267,480)	16,610,487
Deferred (Inflows) of Resources						
Differences between expected and actual experience:	2019	5.0	-	(61,820)	12,364	(49,456)
	2017	6.0	(5,049,306)	-	1,262,327	(3,786,979)
	2015	6.0	(2,383,165)	-	1,191,583	(1,191,582)
Net difference between projected and actual investment earnings on pension plan investments:	2019	5.0	-	(35,002,093)	7,000,419	(28,001,674)
	2018	5.0	30,473,144	-	(7,618,286)	22,854,858
	2017	5.0	(13,204,598)	-	4,401,530	(8,803,068)
	2016	5.0	254,823	-	(127,412)	127,411
	2015	5.0	2,504,902	-	(2,504,902)	-
Changes in proportion and difference between contributions and proportionate share of contributions:	2019	5.0	-	(1,232,031)	246,406	(985,625)
	2018	6.0	(1,176,859)	-	235,372	(941,487)
	2017	6.0	(710,377)	-	177,594	(532,783)
	2016	6.0	(312,781)	-	104,261	(208,520)
	2015	6.0	(373,988)	-	186,995	(186,993)
	2014	6.0	(174,033)	-	174,033	-
Total Deferred (Inflows) of Resources			9,847,762	(36,295,944)	4,742,284	(21,705,898)
Total Collective Deferred Outflows/(Inflows) of Resources			$ 20,040,169	$ (23,610,384)	$ (1,525,196)	$ (5,095,411)

The following schedule reflects the amortization of the balance of deferred outflows/(inflows) of resources:

Fiscal Year	Total
2021	$ (979,710)
2022	(1,897,579)
2023	2,503,955
2024	(4,722,077)
	$ (5,095,411)

9. Subsequent Event

The COVID-19 outbreak in the United States (and across the globe) has resulted in economic uncertainties. The disruption is expected to be temporary, but there is considerable uncertainty around the duration and scope. The extent of the impact of COVID-19 on our operational and financial performance will depend on certain developments, including the duration and spread of the outbreak, impact on our employees, and vendors, all of which are uncertain and cannot be predicted. At this point, the extent to which COVID-19 may impact our financial condition or results of operations is uncertain.

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

(A Component Unit of the City of Holyoke, Massachusetts)
Required Supplementary Information
Schedule of Changes in the Net Pension Liability
For the Year Ended December 31,
(Unaudited)

	2019	2018	2017	2016	2015	2014
Total Pension Liability						
Service cost	$ 8,487,610	$ 8,208,133	$ 8,494,708	$ 8,195,155	$ 8,414,306	$ 8,078,561
Interest on unfunded liability - time value of money	31,865,353	30,988,120	30,750,915	29,801,305	28,952,164	28,008,915
Change of benefit terms	4,948,019	-	-	-	-	-
Differences between expected and actual experience	(61,820)	-	(7,573,960)	-	(7,149,497)	-
Changes of assumptions	11,453,529	-	5,220,431	-	11,892,250	-
Benefit payments, including refunds of member contributions	(28,447,605)	(27,110,977)	(26,331,561)	(25,352,649)	(23,906,564)	(24,597,976)
Net Change in Total Pension Liability	28,245,086	12,085,276	10,560,533	12,643,811	18,202,659	11,489,500
Total Pension Liability - Beginning	430,607,565	418,522,289	407,961,756	395,317,945	377,115,286	365,625,786
Total Pension Liability - Ending (a)	$ 458,852,651	$ 430,607,565	$ 418,522,289	$ 407,961,756	$ 395,317,945	$ 377,115,286
Plan Fiduciary Net Position*						
Contributions - employer	$ 17,307,662	$ 17,303,993	$ 17,303,062	$ 17,310,175	$ 17,141,598	$ 17,152,253
Contributions - member	5,793,814	5,586,334	5,399,567	5,248,292	5,122,280	5,201,136
Net investment gain (loss)	55,743,824	(15,772,290)	41,842,376	18,095,645	6,236,841	12,805,347
Benefit payments, including refunds of member contributions	(28,447,605)	(27,110,977)	(26,331,561)	(25,352,649)	(23,906,564)	(24,597,976)
Administrative expense	(471,317)	(481,566)	(431,355)	(431,621)	(419,464)	(469,547)
Net Change in Plan Fiduciary Net Position	49,926,378	(20,474,506)	37,782,089	14,869,842	4,174,691	10,091,213
Plan Fiduciary Net Position - Beginning	279,465,137	299,939,643	262,157,554	247,287,712	243,113,021	233,021,808
Plan Fiduciary Net Position - Ending (b)	$ 329,391,515	$ 279,465,137	$ 299,939,643	$ 262,157,554	$ 247,287,712	$ 243,113,021
Net Pension Liability (Asset) - Ending (a-b)	$ 129,461,136	$ 151,142,428	$ 118,582,646	$ 145,804,202	$ 148,030,233	$ 134,002,265

* Reflects certain classification differences from page 8.

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See Independent Auditors' Report.

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

(A Component Unit of the City of Holyoke, Massachusetts)
Required Supplementary Information
Schedules of Net Pension Liability, Contributions, and Investment Returns
For the Year Ended December 31,
(Unaudited)

Schedule of Net Pension Liability	2019	2018	2017	2016	2015	2014
Total pension liability	$ 458,852,651	$ 430,607,565	$ 418,522,289	$ 407,961,756	$ 395,317,945	$ 377,115,286
Plan fiduciary net position	(329,391,515)	(279,465,137)	(299,939,643)	(262,157,554)	(247,287,712)	(243,113,021)
Net pension liability	$ 129,461,136	$ 151,142,428	$ 118,582,646	$ 145,804,202	$ 148,030,233	$ 134,002,265
Plan fiduciary net position as a percentage of the total pension liability	71.79%	64.90%	71.67%	64.26%	62.55%	64.47%
Covered payroll	$ 58,386,278	$ 57,852,200	$ 55,459,355	$ 56,166,061	$ 53,758,378	$ 57,502,791
Participating employer net pension liability (asset) as a percentage of covered payroll	221.73%	261.26%	213.82%	259.59%	275.36%	233.04%

Schedule of Contributions	2019	2018	2017	2016	2015	2014
Actuarially determined contribution	$ 17,288,112	$ 17,288,112	$ 17,288,112	$ 17,293,030	$ 17,122,641	$ 17,121,406
Contributions in relation to the actuarially determined contribution	(17,307,662)	(17,303,993)	(17,303,062)	(17,310,175)	(17,141,598)	(17,152,253)
Contribution deficiency (excess)	$ (19,550)	$ (15,881)	$ (14,950)	$ (17,145)	$ (18,957)	$ (30,847)
Covered payroll	$ 58,386,278	$ 57,852,200	$ 55,459,355	$ 56,166,061	$ 53,758,378	$ 57,502,791
Contributions as a percentage of covered payroll	29.64%	29.91%	31.20%	30.82%	31.89%	29.83%

Schedule of Investment Returns						
Year Ended December 31	2019	2019	2018	2017	2016	2015
Annual money weighted rate of return, net of investment expense	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See Independent Auditors' Report.

INDEPENDENT AUDITORS' REPORT

To the Retirement Board
Holyoke Contributory Retirement System
City of Holyoke, Massachusetts

Report on Schedules

We have audited the accompanying schedule of employer allocations of the Holyoke Contributory Retirement System as of and for the year ended December 31, 2019. We have also audited the total for all entities of the rows titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total pension expense (specified totals) included in the accompanying schedule of pension amounts by employer of the Holyoke Contributory Retirement System as of and for the year ended December 31, 2019.

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 the schedules 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 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. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the schedule of employer allocations and specified 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 specified totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and specified totals included in the schedule of pension amounts by employer, 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 schedule of employer allocations and specified 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 specified 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 for the Holyoke Contributory Retirement System as of and for the year ended December 31, 2019, in accordance with accounting principles generally accepted in the United States of America.

Restriction on Use

Our report is intended solely for the information and use of Holyoke Contributory Retirement System management, the Retirement Board, and System employers and their auditors as of and for the year ended December 31, 2019 and is not intended to be and should not be used by anyone other than these specified parties.

Melanson

Greenfield, Massachusetts
November 18, 2020

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

(A Component Unit of the City of Holyoke, Massachusetts)
Schedule of Employer Allocations

Employer	FY 2020 Actual Employer Contributions	Allocation Percentage*
City of Holyoke	$ 11,310,606	67.84%
Gas & Electric	3,796,185	23.04%
Water Works	587,090	3.55%
Waste Water	28,194	0.16%
Housing Authority	862,392	5.40%
Subtotal excluding ERI	16,584,467	100.00%
City of Holyoke - ERI	418,099	
Gas & Electric- ERI	187,237	
Water Works - ERI	26,351	
Housing Authority - ERI	71,958	
Total	$ 17,288,112	

* Allocation percentage calculated using ERI contributions.

See actuarial assumptions in the Holyoke Contributory Retirement Systems' audited financial statements.

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

(A Component Unit of the City of Holyoke, Massachusetts)
Schedule of Pension Amounts by Employer
As of and for the Year Ended December 31, 2019

	City of Holyoke	Holyoke Gas & Electric	Holyoke Water Works	Geriatric Authority	Holyoke Waste Water	Holyoke Housing Authority	Total
Net Pension Liability	$ 87,829,803	$ 29,829,651	$ 4,593,722	$ -	$ 211,128	$ 6,996,832	$ 129,461,136
Deferred Outflows of Resources							
Change of assumptions	$ 9,331,804	$ 3,169,362	$ 488,077	$ -	$ 22,432	$ 743,404	$ 13,755,079
Changes in proportion and differences between employer contributions and proportionate share of contributions	58,701	1,789,198	723,554	1,638	8,143	274,174	2,855,408
Total Deferred Outflows of Resources	$ 9,390,505	$ 4,958,560	$ 1,211,631	$ 1,638	$ 30,575	$ 1,017,578	$ 16,610,487
Deferred Inflows of Resources							
Differences between expected and actual experience	$ 3,411,138	$ 1,158,525	$ 178,411	$ -	$ 8,200	$ 271,743	$ 5,028,017
Net difference between projected and actual investment earnings on pension plan investments	9,377,525	3,184,890	490,468	-	22,543	747,047	13,822,473
Changes in proportion and differences between employer contributions and proportionate share of contributions	2,133,127	-	82,600	159,768	12,634	467,279	2,855,408
Total Deferred Inflows of Resources	$ 14,921,790	$ 4,343,415	$ 751,479	$ 159,768	$ 43,377	$ 1,486,069	$ 21,705,898
Pension Expense							
Proportionate share of pension expense	$ 14,085,447	$ 4,783,843	$ 736,705	$ -	$ 33,859	$ 1,122,096	$ 20,761,950
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(722,923)	709,298	190,204	(157,963)	(6,174)	(12,442)	-
Total Pension Expense	$ 13,362,524	$ 5,493,141	$ 926,909	$ (157,963)	$ 27,685	$ 1,109,654	$ 20,761,950

(Continued)

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

(A Component Unit of the City of Holyoke, Massachusetts)
Schedule of Pension Amounts by Employer
As of and for the Year Ended December 31, 2019
(Continued)

	City of Holyoke	Holyoke Gas & Electric	Holyoke Water Works	Geriatric Authority	Holyoke Waste Water	Holyoke Housing Authority	Total
Contributions							
Actuarially determined contribution	$ 11,728,705	$ 3,983,422	$ 613,441	$ -	$ 28,194	$ 934,350	$ 17,288,112
Contributions made	(11,748,255)	(3,983,422)	(613,441)	-	(28,194)	(934,350)	(17,307,662)
Contribution deficiency / (excess)	$ (19,550)	$ -	$ -	$ -	$ -	$ -	$ (19,550)
Contributions as a percentage of covered payroll	28.99%	31.13%	32.66%	0.00%	59.60%	29.77%	29.64%
Deferred Outflows / (Inflows) Recognized in Future Pension Expense							
June 30, 2021	$ (1,219,576)	$ 344,517	$ 121,443	$ (158,948)	$ (7,788)	$ (59,358)	$ (979,710)
June 30, 2022	(1,900,984)	74,940	108,328	818	(3,258)	(177,423)	(1,897,579)
June 30, 2023	1,182,638	1,018,477	232,866	-	3,942	66,032	2,503,955
June 30, 2024	(3,593,364)	(822,788)	(2,485)	-	(5,699)	(297,741)	(4,722,077)
Total Deferred Outflows / (Inflows) Recognized in Future Pension Expense	$ (5,531,286)	$ 615,146	$ 460,152	$ (158,130)	$ (12,803)	$ (468,490)	$ (5,095,411)
Discount Rate Sensitivity							
1% decrease (6.25%)	$ 123,087,840	$ 41,804,343	$ 6,437,806	$ -	$ 295,884	$ 9,805,612	$ 181,431,485
Current discount rate (7.25%)	$ 87,829,803	$ 29,829,651	$ 4,593,722	$ -	$ 211,128	$ 6,996,832	$ 129,461,136
1% increase (8.25%)	$ 58,157,631	$ 19,752,086	$ 3,041,792	$ -	$ 139,802	$ 4,633,042	$ 85,724,353
Covered Payroll	$ 40,527,947	$ 12,794,112	$ 1,878,285	$ -	$ 47,302	$ 3,138,632	$ 58,386,278

See actuarial assumptions in the Holyoke Contributory Retirement Systems' audited financial statements.

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HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

(A Component Unit of the City of Holyoke, Massachusetts)

**Financial Statements,
Required Supplementary Information,
and Other Information**

For the Year Ended December 31, 2018

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INDEPENDENT AUDITORS' REPORT

To the Retirement Board
Holyoke Contributory Retirement System
City of Holyoke, Massachusetts

We have audited the accompanying financial statements of the Holyoke Contributory Retirement System (the System), a component unit of the City of Holyoke, Massachusetts, as of and for the year ended December 31, 2018, and the related notes to the financial statements, which collectively comprise the basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

The System's management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

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

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Holyoke Contributory Retirement System as of December 31, 2018, and the respective changes in fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis, the Schedule of Changes in the Net Pension Liability, and the Schedules of Net Pension Liability, Contributions, and Investment Returns, listed in the foregoing 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 evidence sufficient to express an opinion or provide any assurance.

Melanson Heath

September 25, 2019

MANAGEMENT'S DISCUSSION AND ANALYSIS

As management of the Holyoke Contributory Retirement System (the System), we offer readers this narrative overview and analysis of the financial activities of the System for the year ended December 31, 2018.

A. OVERVIEW OF THE FINANCIAL STATEMENTS

This discussion and analysis is intended to serve as an introduction to the basic financial statements. The basic financial statements are comprised of two components: (1) fund financial statements and (2) notes to financial statements. This report also contains other supplementary information in addition to the basic financial statements themselves.

Fund financial statements. A fund is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. Fund accounting is used to ensure and demonstrate compliance with finance-related legal requirements.

The Statement of Fiduciary Net Position presents information on the System's assets and liabilities and the resulting net position held in trust restricted for pension benefits. This statement reflects the System's investments at fair value, as well as cash, receivables, and liabilities.

The Statement of Changes in Fiduciary Net Position presents information showing how the System's net position restricted for pensions changed during the year ended December 31, 2018. It reflects contributions by members and participating employers, investment activity, along with deductions for retirement benefits, refunds, transfers, and administrative expenses.

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

The Required Supplementary Information includes this Management's Discussion and Analysis, the Schedule of Changes in the Net Pension Liability, and the Schedules of Net Pension Liability, Contributions, and Investment Returns.

B. FINANCIAL HIGHLIGHTS

- The System's total net position restricted for pensions was $279,465,136 at December 31, 2018.
- The System's net position decreased by $(20,474,507), which is primarily due to investment losses of approximately $(15.7) million during the year.

- Employer and employee contributions to the plan were $23,093,993, which represents a $406,316 increase over the prior year. The employer share of contributions represents 73.28% of the total contributions made to the System.
- Benefits paid to plan participants increased by $911,956 or 3.51%, totaling $26,883,861. At December 31, 2018, there were 935 retirees and beneficiaries in receipt of pension benefits, as further discussed on page 9.
- The System's funded ratio (based on the System's GASB 68 valuation) as of the January 1, 2018 actuarial valuation was 64.90%, with 14 years remaining in its amortization period.

C. FINANCIAL STATEMENT ANALYSIS

The following is a summary of financial statement data for the current and prior fiscal years (in thousands):

FIDUCIARY NET POSITION

	2018	2017
Assets		
Cash and receivables	$ 17,267	$ 14,158
Investments	262,414	285,985
Total assets	279,681	300,143
Liabilities		
Accounts payable	216	203
Total liabilities	216	203
Net Position		
Restricted for pensions	$ 279,465	$ 299,940

The System's total assets as of December 31, 2018 were $279,681,150 and were comprised primarily of cash and investments. Total assets decreased $(20,461,651), or 6.82%, from the prior year primarily due to a decrease in investment values.

CHANGES IN FIDUCIARY NET POSITION

	2018	2017
Additions		
Contributions	$ 23,591	$ 23,512
Investment gain/(loss), net	(15,752)	41,862
Total additions	7,839	65,374
Deductions		
Benefit payments	26,884	25,972
Other	1,430	1,620
Total deductions	28,314	27,592
Change in net position	(20,475)	37,782
Net Position Restricted for Pensions		
Beginning of year	299,940	262,158
End of year	$ 279,465	$ 299,940

The amount needed to finance benefits is accumulated through the collection of employers' and employee's contributions, reimbursements from the Commonwealth of Massachusetts for pre-1998 COLA and through earnings on investments. Contributions and net investment loss for calendar year 2018 resulted in total additions of approximately $7.8 million. Employers' contributions remained the same in calendar year 2018. The System had net investment loss of $(15,752,290) versus a gain of $41,862,377 in 2017, primarily due to the market performing less favorably in 2018.

The primary deductions of the System include the payment of pension benefits to participants and beneficiaries, refunds and transfers of member contributions, reimbursement payments in accordance with Massachusetts General Law, Chapter 32, Section 3(8)c, more commonly referred to as 3(8)c reimbursements, and the costs of administering the System. Total deductions for calendar year 2018 were $28,313,448, which represents an increase of $721,682, or 2.62%, over deductions of $27,591,766 in calendar year 2017. The payment of pension benefits increased by $911,956 or 3.51% over the previous year, due to an increase in retirees and beneficiaries in 2018.

REQUESTS FOR INFORMATION

This financial report is designed to provide a general overview of the Holyoke Contributory Retirement System's finances. Questions concerning any of the information provided in this report, or requests for additional financial information, should be addressed to:

Ms. Cheryl Dugre, Executive Director
Holyoke Contributory Retirement System
20 Korean Veterans Plaza, Room 207
Holyoke, Massachusetts 01040

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

(A Component Unit of the City of Holyoke, Massachusetts)

Statement of Fiduciary Net Position

December 31, 2018

Assets	
Cash and short-term investments	$ 7,946,333
Investments:	
Alternative investments	36,059,840
Domestic equity	90,262,106
Domestic fixed income	38,078,649
International equity	69,403,403
Real estate equity	28,610,261
Accounts receivable	9,320,558
Total assets	$ 279,681,150
Liabilities	
Accounts payable	$ 216,014
Total liabilities	216,014
Net Position	
Restricted for pensions	279,465,136
Total liabilities and net position	$ 279,681,150

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

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

(A Component Unit of the City of Holyoke, Massachusetts)

Statement of Changes in Fiduciary Net Position

For the Year Ended December 31, 2018

Additions	
Contributions:	
Employers	$ 17,288,112
Plan members	5,805,881
Other systems and Commonwealth of Massachusetts	471,857
Other	25,381
Total contributions	23,591,231
Investment income (loss):	
Appreciation (depreciation) in fair value of investments	(13,833,781)
Less: management fees	(1,918,509)
Net investment (loss)	(15,752,290)
Total additions	7,838,941
Deductions	
Benefit payments to plan members and beneficiaries	26,883,861
Refunds to plan members	674,914
Transfers to other systems	253,106
Administrative expenses	501,567
Total deductions	28,313,448
Net (decrease)	(20,474,507)
Net Position Restricted for Pensions	
Beginning of year	299,939,643
End of year	$ 279,465,136

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

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

Notes to Financial Statements

1. Description of Plan

The System is a defined cost sharing, multiple employer public employee retirement system (PERS) of 5 member units, except teachers and administrators under contract employed by the School Department. The pensions of such employees are administered by the Massachusetts Teachers' Retirement Board. Eligible employees must participate in the System. The pension plan provides pension benefits, deferred allowances, and death and disability benefits. Chapter 32 of the Massachusetts General Laws establishes the authority of the System, contribution percentages, and benefits paid. The Holyoke Contributory Retirement Board does not have the authority to amend benefit provisions.

Membership of the plan consisted of the following at December 31, 2018

Retirees and beneficiaries receiving benefits	935
Inactive participants entitled to a return of their employee contributions	205
Inactive participants with a vested right to a deferred or immediate benefit	29
Active plan members	1,138
Total	2,307
Number of participating employers	5

Participant Contributions

Participants contribute a set percentage of their gross regular compensation annually. Employee contribution percentages are specified in Chapter 32 of the Massachusetts General Laws. The employee's individual contribution percentage is determined by their date of entry into the system. In addition, all employees hired on or after January 1, 1979 contribute an additional 2% on all gross regular compensation over the rate of $30,000 per year. The percentages are as follows:

Before January 1, 1975	5%
January 1, 1975 – December 31, 1983	7%
January 1, 1984 – June 30, 1996	8%
July 1, 1996 – present	9%

For those members entering a Massachusetts System on or after April 2, 2012 in Group 1, the contribution rate will be reduced to 6% when at least 30 years of creditable service has been attained.

Employer Contributions

Employers are required to contribute at actuarially determined rates as accepted by the Public Employee Retirement Administration Commission (PERAC).

Participant Retirement Benefits

A retirement allowance consists of two parts: an annuity and a pension. A member's accumulated total deductions and a portion of the interest they generate constitute the annuity. The difference between the total retirement allowance and the annuity is the pension. The average retirement benefit is approximately 80-85% pension and 15-20% annuity.

The System provides for retirement allowance benefits up to a maximum of 80% of a member's highest 3-year average annual rate of regular compensation for those hired prior to April 2, 2012 and the highest 5-year average annual rate of regular compensation for those first becoming members of the Massachusetts System on or after that date. However, per Chapter 176 of the Acts of 2011, for members who retire on or after April 2, 2012, if in the 5 years of creditable service immediately preceding retirement, the difference in the annual rate of regular compensation between any 2 consecutive years exceeds 100%, the normal yearly amount of the retirement allowance shall be based on the average annual rate of regular compensation received by the member during the period of 5 consecutive years preceding retirement. Benefit payments are based upon a member's age, length of creditable service, level of compensation, and group classification.

There are 4 classes of membership in the retirement system, but one of these classes, Group 3, is made up exclusively of the Massachusetts State Police. The other three classes are as follows:

- Group 1 – General employees, including clerical, administrative, technical, and all other employees not otherwise classified.
- Group 2 – Certain specified hazardous duty positions.
- Group 4 – Police officers, firefighters, and other specified hazardous positions.

A retirement allowance may be received at any age, upon attaining 20 years of service. The plan also provides for retirement at age 55 if the participant was a member prior to January 1, 1978, with no minimum vesting requirements. If the participant was a member on or after January 1, 1978 and a member of Groups 1 or 2, then a retirement allowance may be received if the participant (1) has at least 10 years of creditable service, (2) is age 55, (3) voluntarily left City employment on or after that date, and (4) left accumulated annuity deductions in the fund. Members of Group 4 have no minimum vesting requirements, however, must be at least age 55. Groups 2 and 4 require that participants perform the duties of the Group position for at least 12 months immediately prior to retirement.

A participant who became a member on or after April 2, 2012 is eligible for a retirement allowance upon 10 years creditable service and reaching ages 60 or 55 for Groups 1 and 2, respectively. Participants in Group 4 must be at least age 55. Groups 2 and 4 require that participants perform the duties of the Group position for at least 12 months immediately prior to retirement.

Methods of Payment

A member may elect to receive his or her retirement allowance in one of three forms of payment as follows:

- Option A – Total annual allowance, payable in monthly installments, commencing at retirement and terminating at the members death.
- Option B – A reduced annual allowance, payable in monthly installments, commencing at retirement and terminating at the death of the member, provided however, that if the total amount of the annuity portion received by the member is less than the amount of his or her accumulated deductions, including interest, the difference or balance of his accumulated deductions will be paid in a lump sum to the retiree's beneficiary or beneficiaries of choice.
- Option C – A reduced annual allowance, payable in monthly installments, commencing at retirement. At the death of the retired employee, 2/3 of the allowance is payable to the member's designated beneficiary (who may be the spouse, or former spouse who has not remarried, child, parent, sister, or brother of the employee) for the life of the beneficiary. For members who retired on or after January 12, 1988, if the beneficiary pre-deceases the retiree, the benefit payable increases (or "pops up" to Option A) based on the factor used to determine the Option C benefit at retirement. For members who retired prior to January 12, 1988, if the System has accepted Section 288 of Chapter 194 of the Acts of 1998 and the beneficiary pre-deceases the retiree, the benefit payable "pops up" to Option A in the same fashion. The Option C became available to accidental disability retirees on November 7, 1996.

Participant Refunds

Employees who resign from service and who are not eligible to receive a retirement allowance are entitled to request a refund of their accumulated total deductions. Members voluntarily withdrawing with at least 10 years of service or involuntarily withdrawing, receive 100% of the regular interest that has accrued on those accumulated total deductions. Members voluntarily withdrawing with less than 10 years of service get credited interest each year at a rate of 3%.

2. Nature of Operations and Summary of Significant Accounting Policies

Nature of Operations

The System is a member of the Massachusetts Contributory Retirement Systems and is governed by Chapter 32 of the Massachusetts General Laws. Because of the significance of its operational and financial relationship with the City, the System is included as a pension trust fund in the City's basic financial statements. The System is governed by a five-member board. The five members include two appointed by the City, two elected by the members and retirees, and a fifth member chosen by the other four members with the approval of the Public Employee Retirement Administration Commission.

Summary of Significant Accounting Policies

The accounting policies of the System as reflected in the accompanying financial statements for the year ended December 31, 2018 conform to generally accepted accounting principles for public employee retirement systems (PERS). The more significant accounting policies of the System are summarized below:

Basis of Accounting

The System follows accounting policies mandated by the Commonwealth of Massachusetts. The accounting records are maintained on the accrual basis of accounting. Contributions from the Member's employees are recognized as revenue in the period in which employees provide services to the respective member unit.

Investments

Investment Policy

Investments are reported at fair value in accordance with PERAC requirements. System assets are managed on a total return basis with a long-term objective of achieving and maintaining a fully funded status for the benefits provided through the pension plan.

Rate of Return

For the year ended December 31, 2018, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expenses, was not available. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested throughout the year.

3. Cash and Short-Term Investments

Custodial Credit Risk - Deposits. Custodial credit risk is the risk that in the event of a bank failure, the System's deposits may not be returned. Massachusetts General Law Chapter 32, Section 23, limits the System's deposits "in a bank or trust company to an amount not exceeding ten percent of the capital and surplus of such bank or trust company." The System does not have a deposit policy for custodial credit risk.

As of December 31, 2018, none of the System's bank balance of $8,196,496 was exposed to custodial credit risk as uninsured or uncollateralized, and collateral held by pledging bank's trust department not in the System's name.

4. Investments

A. *Credit Risk*

Generally, credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. Massachusetts General Law, Chapter 32, Section 23, limits the investment of System funds, to the extent not required for current disbursements, in the PRIT Fund or in securities, other than mortgages or collateral loans, which are legal for the investment of funds in savings banks under the laws of the Commonwealth, provided that no more than the established percentage of assets, is invested in any one security.

All of the System's investments are reported at fair value and are comprised of pooled investment funds which are exempt from credit risk disclosure.

B. *Custodial Credit Risk*

The custodial credit risk for investments is the risk that, in the event of the failure of the counterparty (e.g., broker-dealer) to a transaction, a government will not be able to recover the value of its investment or collateral securities that are in the possession of another party. The System does not have policies for custodial credit risk.

All of the System's investments of $262,414,259 are comprised of pooled investment funds. Investments in external/State investment pools and in open-end mutual funds are not exposed to custodial credit risk because their existence is not evidenced by securities that exist in physical or book entry form.

C. *Concentration of Credit Risk*

Massachusetts General Law Chapter 32, Section 23 limits the amount the System may invest in any one issuer or security type, with the exception of the PRIT Fund. The System's policy limits the amount the System may invest in any one issuer to 5%.

As of December 31, 2018, the System did not have any investments in one issuer greater than 5% of total investments since all investments are in pooled funds.

D. *Interest Rate Risk*

Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. Generally, the longer the maturity of an investment, the greater the sensitivity of its fair value to changes in market interest rates. The System's policy manages interest rate risk through diversification of investments across asset classes.

E. *Foreign Currency Risk*

Foreign currency risk is the risk that changes in foreign exchange rates will adversely affect the fair value of an investment. The System does not have a formal investment policy related to foreign currency risk.

F. *Fair Value*

The System categorizes its fair value measurements within the fair value hierarchy established by Governmental Accounting Standards Board Statement No. 72 *Fair Value Measurement and Application* (GASB 72).

The hierarchy is based on the valuation inputs used to measure the fair value of the asset. The hierarchy categorizes the inputs to valuation techniques used for fair value measurement into three levels as follows:

- Level 1 – Inputs that reflect quoted prices (unadjusted) in active markets for identical assets or liabilities that the fund has the ability to access at the measurement date.
- Level 2 – Inputs other than quoted prices that are observable for an asset or liability either directly or indirectly, including inputs in markets that are not considered to be active. Because they must often be priced on the basis of transactions involving similar but not identical securities or do not trade with sufficient frequency, certain directly held securities are categorized as level 2.
- Level 3 – Unobservable inputs based on the best information available, using assumptions in determining the fair value of investments and derivative instruments.

The net asset value (NAV) per share is the amount of net assets attributable to each share of capital stock outstanding at the close of the period. Investments measured at the NAV for fair value are not subject to level classification.

The System has the following fair value measurements as of December 31, 2018:

Description	Amount
Investments measured at the net asset value (NAV):	
External investment pools	$ 262,414,259

Description	Amount	Unfunded Commitments	Redemption Frequency (If currently eligible)	Redemption Notice Period
Alternative investments	$ 36,059,840	$ -	Quarterly	30 Days
Domestic equity	90,262,106	-	Quarterly	30 Days
Domestic fixed income	38,078,649	-	Quarterly	30 Days
International equity	69,403,403	-	Quarterly	30 Days
Real estate equity	28,610,261	-	Quarterly	30 Days
Total	$ 262,414,259			

5. Accounts Receivable

Annually the Public Employee Retirement Administration (PERAC) determines the amount of employer contributions (pension appropriations) to be made to the System. The accounts receivable balance primarily represents legal amounts due from employers for pension appropriation not received until after December 31, 2018.

6. Accounts Payable

This balance represents calendar year 2018 expenditures paid after December 31, 2018.

7. Contingencies

There are various pending claims arising in the ordinary course of operations; however, management believes that the probable liability resulting from such claims and litigation would not materially affect the System's financial position.

8. Net Pension Liability of Participating Employers

The net pension liability was based on an actuarial valuation dated January 1, 2018, rolled forward to December 31, 2018.

A. *Net Pension Liability of Employers*

The components of the net pension liability of the participating employers at December 31, 2018 were as follows:

Total pension liability	$ 430,607,565
Plan fiduciary net position	(279,465,137)
Employers' net pension liability	$ 151,142,428
Plan fiduciary net position as a percentage of total pension liability	64.90%

B. *Actuarial Assumptions*

A summary of the actuarial assumptions as of the latest actuarial valuation is shown below:

Valuation date	1/1/2018
Actuarial cost method	Entry Age Normal Cost Method
Remaining amortization period	14 years
Actuarial assumptions:	
Investment rate of return	7.50%
Projected salary increases:	
Group 1	4.00%
Group 2	4.25%
Group 4	4.50%
Inflation rate	3.25%
Post-retirement cost-of-living adjustment	3% on first $12,000

Actuarial valuations of the ongoing Systems involve estimates of the reported amounts and assumptions about probability of occurrence of events far into the future. Examples include assumptions about future employment mortality and future salary increases. Amounts determined regarding the net pension liability are subject to continual revision, as actual results are compared with past expectations and new estimates are made about the future.

Mortality rates were based on the following:

- Pre-retirement and beneficiary mortality: RP2014 Blue Collar Employee Mortality Table set forward one year for females projected generationally using Scale MP-2017.

- Mortality for retired members: RP-2014 Blue Collar annuitant Mortality Table set forward one year for females projected generationally using Scale MP-2017.

- Mortality for disabled members: RP-2014 Blue Collar annuitant Mortality Table set forward one year projected generationally using Scale MP-2017.

C. *Target Allocations*

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimates ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the System's targeted asset allocation as of December 31, 2018, are summarized in the following table.

Asset Class	Target Asset Allocation	Long-Term Expected Real Rate of Return
Domestic equity	29.00%	6.16%
International developed markets equity	20.00%	6.69%
International emerging markets equity	8.00%	9.47%
Core fixed income	13.00%	1.89%
Real estate	10.00%	4.58%
Hedge fund	10.00%	3.68%
Private equity	10.00%	10.00%
Total	100.00%	

D. *Discount Rate*

The discount rate used to measure the total pension liability was 7.5%. The projection of cash flows used to determine the discount rate assumed that contributions from participating employers will be made based on the actuarially determined rates based on the Board's funding policy, which establishes the contractually required rates by Statute. Based on those assumptions, the System's fiduciary net position was projected to be available to make all the 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.

E. *Sensitivity of Discount Rate*

The following presents the net pension liability of the participating employers calculated using the discount rate of 7.5%, as well as what the participating employers' net pension liability would be if it were calculated using a discount rate that is one percentage-point lower or one percentage-point higher than the current rate:

1% Decrease (6.5%)	Current Discount Rate (7.5%)	1% Increase (8.5%)
$198,862,776	$151,142,428	$110,867,975

F. *Deferred Outflows/(Inflows) of Resources*

The following schedule reflects the deferred outflows/(inflows) of resources for the System for the year ended December 31, 2018:

	Deferred Outflows of Resources	Deferred (Inflows) of Resources
Differences between expected and actual experience	$ -	$ (7,432,471)
Changes in assumptions	7,444,369	-
Net difference between projected and actual investment earnings on pension plan investments	20,028,271	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	2,748,038	(2,748,038)
Total	$ 30,220,678	$ (10,180,509)

The following summarizes changes in deferred outflows/(inflows):

	Measurement Year	Amortization Period	Beginning Balance on Prior Measurement Period Deferrals	Current Measurement Period Additions	Amortization of Amounts Recognized in Current Period Pension Expense	End of Year Balance
Deferred Outflows of Resources						
Changes in assumptions:	2017	6.0	$ 5,946,124	$ -	$ (1,982,042)	$ 3,964,082
	2015	6.0	4,350,359	-	(870,072)	3,480,287
Net difference between projected and actual investment earnings on pension plan investments:	2018	5.0	-	38,091,430	(7,618,286)	30,473,144
	2017	5.0	(17,606,129)	-	4,401,531	(13,204,598)
	2016	5.0	382,235	-	(127,412)	254,823
	2015	5.0	5,009,804	-	(2,504,902)	2,504,902
	2014	5.0	1,029,374	-	(1,029,374)	-
Changes in proportion and difference between contributions and proportionate share of contributions	2018	6.0	-	1,412,231	(235,372)	1,176,859
	2017	6.0	887,971	-	(177,594)	710,377
	2016	6.0	417,042	-	(104,261)	312,781
	2015	6.0	560,983	-	(186,995)	373,988
	2014	6.0	348,064	-	(174,031)	174,033
Total Deferred Outflows of Resources			1,325,827	39,503,661	(10,608,810)	30,220,678
Deferred (Inflows) of Resources						
Differences between expected and actual experience:	2017	6.0	(6,311,633)	-	1,262,327	(5,049,306)
	2015	6.0	(3,574,748)	-	1,191,583	(2,383,165)
Changes in proportion and difference between contributions and proportionate share of contributions	2018	6.0	-	(1,412,231)	235,372	(1,176,859)
	2017	6.0	(887,971)	-	177,594	(710,377)
	2016	6.0	(417,042)	-	104,261	(312,781)
	2015	6.0	(560,983)	-	186,995	(373,988)
	2014	6.0	(348,064)	-	174,031	(174,033)
Total Deferred (Inflows) of Resources			(12,100,441)	(1,412,231)	3,332,163	(10,180,509)
Total Collective Deferred Outflows/(Inflows) of Resources			$ (10,774,614)	$ 38,091,430	$ (7,276,647)	$ 20,040,169

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The following schedule reflects the amortization of the balance of deferred outflows/(inflows) of resources:

Fiscal Year	Total
2020	$ 6,247,272
2021	3,742,367
2022	2,824,498
2023	7,226,032
	$ 20,040,169

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Holyoke, Massachusetts)

Schedule of Changes in the Net Pension Liability

Required Supplementary Information

For the Year Ended December 31,

(Unaudited)

	2018	2017	2016	2015	2014
Total Pension Liability					
Service cost	$ 8,208,133	$ 8,494,708	$ 8,195,155	$ 8,414,306	$ 8,078,561
Interest on unfunded liability - time value of money	30,988,120	30,750,915	29,801,305	28,952,164	28,008,915
Differences between expected and actual experience	-	(7,573,960)	-	(7,149,497)	-
Changes of assumptions	-	5,220,431	-	11,892,250	-
Benefit payments, including refunds of member contributions	(27,110,977)	(26,331,561)	(25,352,649)	(23,906,564)	(24,597,976)
Net change in total pension liability	12,085,276	10,560,533	12,643,811	18,202,659	11,489,500
Total pension liability - beginning	418,522,289	407,961,756	395,317,945	377,115,286	365,625,786
Total pension liability - ending (a)	$ 430,607,565	$ 418,522,289	$ 407,961,756	$ 395,317,945	$ 377,115,286
Plan Fiduciary Net Position*					
Contributions - employer	$ 17,303,993	$ 17,303,062	$ 17,310,175	$ 17,141,598	$ 17,152,253
Contributions - member	5,586,334	5,399,567	5,248,292	5,122,280	5,201,136
Net investment gain (loss)	(15,772,290)	41,842,376	18,095,645	6,236,841	12,805,347
Benefit payments, including refunds of member contributions	(27,110,977)	(26,331,561)	(25,352,649)	(23,906,564)	(24,597,976)
Administrative expense	(481,566)	(431,355)	(431,621)	(419,464)	(469,547)
Net change in plan fiduciary net position	(20,474,506)	37,782,089	14,869,842	4,174,691	10,091,213
Plan fiduciary net position - beginning	299,939,643	262,157,554	247,287,712	243,113,021	233,021,808
Plan fiduciary net position - ending (b)	$ 279,465,137	$ 299,939,643	$ 262,157,554	$ 247,287,712	$ 243,113,021
Net pension liability (asset) - ending (a-b)	$ 151,142,428	$ 118,582,646	$ 145,804,202	$ 148,030,233	$ 134,002,265

* Reflects certain classification differences from page 8.

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See Independent Auditors' Report.

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Holyoke, Massachusetts)

Schedules of Net Pension Liability, Contributions, and Investment Returns

Required Supplementary Information

For the Year Ended December 31,

(Unaudited)

Schedule of Net Pension Liability	2018	2017	2016	2015	2014
Total pension liability	$ 430,607,565	$ 418,522,289	$ 407,961,756	$ 395,317,945	$ 377,115,286
Plan fiduciary net position	(279,465,137)	(299,939,643)	(262,157,554)	(247,287,712)	(243,113,021)
Net pension liability (asset)	$ 151,142,428	$ 118,582,646	$ 145,804,202	$ 148,030,233	$ 134,002,265
Plan fiduciary net position as a percentage of the total pension liability	64.90%	71.67%	64.26%	62.55%	64.47%
Covered payroll	$ 57,852,200	$ 55,459,355	$ 56,166,061	$ 53,758,378	$ 57,502,791
Participating employer net pension liability (asset) as a percentage of covered payroll	261.26%	213.82%	259.59%	275.36%	233.04%

Schedule of Contributions	2018	2017	2016	2015	2014
Actuarially determined contribution	$ 17,288,112	$ 17,288,112	$ 17,293,030	$ 17,122,641	$ 17,121,406
Contributions in relation to the actuarially determined contribution	(17,303,993)	(17,303,062)	(17,310,175)	(17,141,598)	(17,152,253)
Contribution deficiency (excess)	$ (15,881)	$ (14,950)	$ (17,145)	$ (18,957)	$ (30,847)
Covered payroll	$ 57,852,200	$ 55,459,355	$ 56,166,061	$ 53,758,378	$ 57,502,791
Contributions as a percentage of covered payroll	29.91%	31.20%	30.82%	31.89%	29.83%

Schedule of Investment Returns

Year Ended December 31	2018	2017	2016	2015	2014
Annual money weighted rate of return, net of investment expense	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable

Schedules are intended to show information for 10 years. Additional years will be displayed as they become available.

See Independent Auditors' Report.

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INDEPENDENT AUDITORS' REPORT

To the Retirement Board
Holyoke Contributory Retirement System
City of Holyoke, Massachusetts

Report on Schedules

We have audited the accompanying schedule of employer allocations of the Holyoke Contributory Retirement System as of and for the year ended December 31, 2018. We have also audited the total for all entities of the rows titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total pension expense (specified totals) included in the accompanying schedule of pension amounts by employer of the Holyoke Contributory Retirement System as of and for the year ended December 31, 2018.

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 the schedules 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 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. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the schedule of employer allocations and specified 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 specified totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and specified totals included in the schedule of pension amounts by employer, 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 schedule of employer allocations and specified 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 specified 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 for the Holyoke Contributory Retirement System as of and for the year ended December 31, 2018, in accordance with accounting principles generally accepted in the United States of America.

Restriction on Use

Our report is intended solely for the information and use of Holyoke Contributory Retirement System management, the Retirement Board, and System employers and their auditors as of and for the year ended December 31, 2018 and is not intended to be and should not be used by anyone other than these specified parties.

Melanson Heath

September 25, 2019

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Holyoke, Massachusetts)

Schedule of Employer Allocations

Employer	FY 2019 Actual Employer Contributions	Allocation Percentage*
City of Holyoke	$ 11,483,566	68.80%
Gas & Electric	3,747,094	22.75%
Water Works	506,140	3.08%
Waste Water	28,211	0.16%
Housing Authority	829,737	5.21%
Subtotal excluding ERI	16,594,748	100.00%
City of Holyoke - ERI	410,728	
Gas & Electric- ERI	186,231	
Water Works - ERI	25,840	
Housing Authority - ERI	70,565	
Total	$ 17,288,112	

* Allocation percentage calculated using ERI contributions.

See actuarial assumptions in the Holyoke Contributory Retirement System's audited financial statements.

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Holyoke, Massachusetts)

Schedule of Pension Amounts by Employer

As of and for the Year Ended December 31, 2018

	City of Holyoke	Holyoke Gas & Electric	Holyoke Water Works	Geriatric Authority	Holyoke Waste Water	Holyoke Housing Authority	Total
Net Pension Liability	$ 103,986,630	$ 34,387,346	$ 4,650,869	$ -	$ 246,636	$ 7,870,947	$ 151,142,428
Deferred Outflows of Resources							
Changes of assumptions	5,121,757	1,693,714	229,074	-	12,148	387,676	7,444,369
Net difference between projected and actual investment earnings on pension plan investments	13,779,535	4,556,756	616,298	-	32,682	1,043,000	20,028,271
Changes in proportion and differences between employer contributions and proportionate share of contributions	125,416	2,132,223	337,936	4,886	10,215	137,362	2,748,038
Total Deferred Outflows of Resources	$ 19,026,708	$ 8,382,693	$ 1,183,308	$ 4,886	$ 55,045	$ 1,568,038	$ 30,220,678
Deferred Inflows of Resources							
Differences between expected and actual experience	$ 5,113,571	$ 1,691,007	$ 228,708	$ -	$ 12,128	$ 387,057	$ 7,432,471
Changes in proportion and differences between employer contributions and proportionate share of contributions	1,673,327	9,126	123,833	320,979	20,720	600,053	2,748,038
Total Deferred Inflows of Resources	$ 6,786,898	$ 1,700,133	$ 352,541	$ 320,979	$ 32,848	$ 987,110	$ 10,180,509
Pension Expense							
Proportionate share of pension expense	$ 13,106,034	$ 4,334,035	$ 586,176	$ -	$ 31,085	$ 992,021	$ 19,049,351
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(473,034)	634,220	66,789	(157,964)	(6,141)	(63,870)	-
Total Pension Expense	$ 12,633,000	$ 4,968,255	$ 652,965	$ (157,964)	$ 24,944	$ 928,151	$ 19,049,351

(Continued)

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of Holyoke, Massachusetts)

Schedule of Pension Amounts by Employer

As of and for the Year Ended December 31, 2018

(Continued)

	City of Holyoke	Holyoke Gas & Electric	Holyoke Water Works	Geriatric Authority	Holyoke Waste Water	Holyoke Housing Authority	Total
Contributions							
Actuarially determined contribution	$ 11,894,294	$ 3,933,325	$ 531,980	$ -	$ 28,211	$ 900,302	$ 17,288,112
Contributions made	(11,910,175)	(3,933,325)	(531,980)	-	(28,211)	(900,302)	(17,303,993)
Contribution deficiency / (excess)	$ (15,881)	$ -	$ -	$ -	$ -	$ -	$ (15,881)
Contributions as a percentage of covered payroll	29.56%	30.31%	30.81%	0.00%	58.37%	32.10%	29.91%
Deferred Outflows / (Inflows) Recognized in Future Pension Expense							
June 30, 2020	$ 3,825,113	$ 2,055,575	$ 259,030	$ (157,963)	$ 4,052	$ 261,465	$ 6,247,272
June 30, 2021	2,269,737	1,346,625	147,953	(158,948)	(51)	137,051	3,742,367
June 30, 2022	1,579,537	1,079,707	139,164	818	4,478	20,794	2,824,498
June 30, 2023	4,705,319	2,010,489	242,961	-	11,683	255,580	7,226,032
June 30, 2024	(139,896)	190,164	41,659	-	2,035	(93,962)	-
Total Deferred Outflows / (Inflows) Recognized in Future Pension Expense	$ 12,239,810	$ 6,682,560	$ 830,767	$ (316,093)	$ 22,197	$ 580,928	$ 20,040,169
Discount Rate Sensitivity							
1% decrease (6.5%)	$ 136,818,431	$ 45,244,497	$ 6,119,292	$ -	$ 324,506	$ 10,356,050	$ 198,862,776
Current discount rate (7.5%)	$ 103,986,630	$ 34,387,346	$ 4,650,869	$ -	$ 246,636	$ 7,870,947	$ 151,142,428
1% increase (8.5%)	$ 76,277,636	$ 25,224,257	$ 3,411,566	$ -	$ 180,915	$ 5,773,601	$ 110,867,975
Covered Payroll	$ 40,296,383	$ 12,976,188	$ 1,726,453	$ -	$ 48,332	$ 2,804,844	$ 57,852,200

See actuarial assumptions in the Holyoke Contributory Retirement System's audited financial statements.

HOLYOKE, MASSACHUSETTS
CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of
Holyoke, Massachusetts)

Financial Statements,
Required Supplementary Information,
and Other Information

For the Year Ended December 31, 2017

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INDEPENDENT AUDITORS' REPORT

To the Retirement System Board
City of Holyoke, Massachusetts

We have audited the accompanying financial statements of the Holyoke Contributory Retirement System (the System), a component unit of the City of Holyoke, Massachusetts, as of and for the year ended December 31, 2017, and the related notes to the financial statements, which collectively comprise the basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

The System's 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. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control.

Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Holyoke Contributory Retirement System as of December 31, 2017, and the respective changes in fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis and the Schedules of Changes in the Net Pension Liability and Schedules of Net Pension Liability, Contributions, and Investment Returns, listed in the foregoing 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 evidence sufficient to express an opinion or provide any assurance.

Melanson Heath

January 23, 2019

MANAGEMENT'S DISCUSSION AND ANALYSIS

As management of the Holyoke Contributory Retirement System (the System), we offer readers this narrative overview and analysis of the financial activities of the System for the year ended December 31, 2017.

A. OVERVIEW OF THE FINANCIAL STATEMENTS

This discussion and analysis is intended to serve as an introduction to the basic financial statements. The basic financial statements comprised of two components: (1) fund financial statements and (2) notes to financial statements. This report also contains other supplementary information in addition to the basic financial statements themselves.

Fund financial statements. A fund is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. Fund accounting is used to ensure and demonstrate compliance with finance-related legal requirements.

The Statement of Fiduciary Net Position presents information on the System's assets and liabilities and the resulting net position held in trust for pension benefits. This statement reflects the System's investments at fair value, as well as cash, receivables and other assets and liabilities.

The Statement of Changes in Fiduciary Net Position presents information showing how the System's net position available for benefits changed during the year ended December 31, 2017. It reflects contributions by members and participating employers along with deductions for retirement benefits, refunds and transfers, and administrative expenses. Investment income during the period is also presented showing income from investing.

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

B. FINANCIAL HIGHLIGHTS

- The System's total net position available for benefits were $299,939,643 at December 31, 2017, which is a change of $37,782,089, in comparison to the prior year.
- Employer and employee contributions to the plan were $22,687,677 which represents a $146,354 increase over the preceding year. The employer share of contributions represents 73.5% of the total contributions.
- Benefits paid to plan participants were $25,971,905. At December 31, 2017, there were 935 retirees and beneficiaries in receipt of pension benefits.

C. FINANCIAL STATEMENT ANALYSIS

The following is a summary of financial statement data for the current and prior fiscal years (in thousands):

FIDUCIARY NET POSITION

	2017	2016
Assets		
Cash and receivables	$ 14,158	$ 14,849
Investments	285,985	247,492
Total assets	300,143	262,341
Liabilities		
Accounts payable	203	183
Net position	$ 299,940	$ 262,158

CHANGES IN FIDUCIARY NET POSITION

	2017	2016
Additions		
Contributions	$ 23,512	$ 23,551
Investment income, net	41,862	18,146
Total additions	65,374	41,697
Deductions		
Benefit payments	25,972	25,018
Other	1,620	1,809
Total deductions	27,592	26,827
Change in net position	37,782	14,870
Net position - beginning of year	262,158	247,288
Net position - end of year	$ 299,940	$ 262,158

The System's total assets as of December 31, 2017 were $300,142,801 and were mostly comprised of investments. Total assets increased approximately $37.8 million from the prior year primarily due to an increase in investment value.

The System was 71.67% funded based on its actuarial valuation of January 1, 2018 with 15 years remaining in its amortization period.

The amount needed to finance benefits is accumulated through the collection of employers' and employee's contributions, reimbursements from the Commonwealth of Massachusetts for pre-1998 COLA and through earnings on investments. Contributions and net investment gain for calendar year 2017 resulted in total additions of $65,373,855. Employer's contributions decreased by

$4,918. The System had net investment gain of $41,862,377 versus a gain of $18,145,647 in 2016.

The primary deductions of the System include the payment of pension benefits to participants and beneficiaries, refunds of contributions, and the costs of administering the System. Total deductions for 2017 were $27,591,766, which represents an increase of 2.9% over deductions of $26,826,758 in 2016. The payment of pension benefits increased by $954,257 or 3.8% over the previous year.

REQUESTS FOR INFORMATION

This financial report is designed to provide a general overview of the Holyoke, Contributory Retirement System's finances. Questions concerning any of the information provided in this report, or requests for additional financial information, should be addressed to:

Ms. Cheryl Dugre, Executive Director
Holyoke Contributory Retirement System
20 Korean Veterans Plaza, Room 207
Holyoke, Massachusetts 01040

CITY OF HOLYOKE, MASSACHUSETTS
CONTRIBUTORY RETIREMENT SYSTEM

(A Component Unit of the City of Holyoke, Massachusetts)

Statement of Fiduciary Net Position

December 31, 2017

Assets		
Cash and short-term investments	$	5,059,670
Pooled investments		
Alternative investments		40,544,770
Domestic equity		109,686,871
Domestic fixed income		31,187,419
International equity		78,290,214
Real estate equity		26,275,911
Accounts receivable		9,097,946
Total Assets	$	300,142,801
Liabilities and Net Position		
Accounts payable	$	203,158
Total Liabilities		203,158
Net position restricted for pensions		299,939,643
Total Liabilities and Net Position	$	300,142,801

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

CITY OF HOLYOKE, MASSACHUSETTS
CONTRIBUTORY RETIREMENT SYSTEM

(A Component Unit of the City of Holyoke, Massachusetts)

Statement of Changes in Fiduciary Net Position

For the Year Ended December 31, 2017

Additions	
Contributions:	
Employers	$ 17,288,112
Plan members	5,399,565
Other systems and Commonwealth of Massachusetts	808,851
Other	14,950
Total contributions	23,511,478
Investment income:	
Appreciation in fair value of investments	43,684,825
Less: management fees	(1,822,448)
Net investment gain	41,862,377
Total additions	65,373,855
Deductions	
Benefit payments to plan members and beneficiaries	25,971,905
Refunds to plan members	444,483
Transfers to other systems	724,024
Administrative expenses	451,354
Total deductions	27,591,766
Net increase	37,782,089
Net Position Restricted for Pensions	
Beginning of year	262,157,554
End of year	$ 299,939,643

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

1. Description of Plan

The System is a defined cost sharing, multiple employer public employee retirement system (PERS) of 5-member units, except school department employees who serve in a teaching capacity. The pensions of such employees are administered by the Massachusetts Teachers' Retirement Board. Eligible employees must participate in the System. The pension plan provides pension benefits, deferred allowances, and death and disability benefits. Chapter 32 of the Massachusetts General Laws establishes the authority of the System, contribution percentages and benefits paid. The System Retirement Board does not have the authority to amend benefit provisions.

Membership of the plan consisted of the following at December 31, 2017:

Retiree participants and beneficiaries receiving benefits	935
Inactive participants entitled to a return of their employee contributions	29
Inactive partticipants with a vested right to a deferred or immediate benefit	227
Active participants	1,131
Total	2,322
Number of participating employers	5

Participant Contributions

Participants contribute a set percentage of their gross regular compensation annually. Employee contribution percentages are specified in Chapter 32 of the Massachusetts General Laws. The employee's individual contribution percentage is determined by their date of entry into the system. In addition, all employees hired on or after January 1, 1979 contribute an additional 2% on all gross regular compensation over the rate of $30,000 per year. The percentages are as follows:

Before January 1, 1975	5%
January 1, 1975 - December 31, 1983	7%
January 1, 1984 - June 30, 1996	8%
Beginning July 1, 1996	9%

For those members entering a Massachusetts System on or after April 2, 2012 in Group 1, the contribution rate will be reduced to 6% when at least 30 years of creditable service has been attained.

Employer Contributions

Employers are required to contribute at actuarially determined rates as accepted by the Public Employee Retirement Administration Commission (PERAC).

Participant Retirement Benefits

The System provides for retirement allowance benefits up to a maximum of 80% of a member's highest three-year average annual rate of regular compensation for those hired prior to April 2, 2012 and the highest five-year average annual rate of regular compensation for those first becoming members of the Massachusetts System on or after that date. However, per Chapter 176 of the Acts of 2011, for members who retire on or after April 2, 2012, if in the 5 years of creditable service immediately preceding retirement, the difference in the annual rate of regular compensation between any 2 consecutive years exceeds 100 percent, the normal yearly amount of the retirement allowance shall be based on the average annual rate of regular compensation received by the member during the period of 5 consecutive years preceding retirement. Benefit payments are based upon a member's age, length of creditable service, level of compensation and group classification.

If a participant was a member prior to April 1, 2012, a retirement allowance may be received at any age, upon attaining 20 years of service. The plan also provides for retirement at age 55 if the participant was a member prior to January 1, 1978, with no minimum vesting requirements. If the participant was a member on or after January 1, 1978 and a member of Groups 1 or 2, then a retirement allowance may be received if the participant (1) has at least 10 years of creditable service, (2) is age 55, (3) voluntarily left member employment on or after that date, and (4) left accumulated annuity deductions in the fund. Members of Group 4, have no minimum vesting requirements, however, must be at least age 55. Groups 2 and 4 require that participants perform the duties of the Group position for at least 12 months immediately prior to retirement.

A participant who became a member on or after April 2, 2012 is eligible for a retirement allowance upon 10 years creditable service and reaching ages 60 or 55 for Groups 1 and 2, respectively. Participants in Group 4 must be at least age 55. Groups 2 and 4 require that participants perform the duties of the Group position for at least 12 months immediately prior to retirement.

A retirement allowance consists of two parts: an annuity and a pension. A member's accumulated total deductions and a portion of the interest they generate constitute the annuity. The difference between the total retirement allowance and the annuity is the pension. The average retirement benefit is approximately 80-85% pension and 15-20% annuity.

Participant Refunds

Employees who resign from service and who are not eligible to receive a retirement allowance are entitled to request a refund of their accumulated total deductions. Members voluntarily withdrawing with at least 10 years of service or involuntarily withdrawing, receive 100% of the regular interest that has accrued on those accumulated total deductions. Members voluntarily withdrawing with less than 10 years of service get credited interest each year at a rate of 3%.

2. Nature of Operations and Summary of Significant Accounting Policies

Nature of Operations

The System is a member of the Massachusetts Contributory Retirement Systems and is governed by Chapter 32 of the Massachusetts General Laws. Because of the significance of its operational and financial relationship with the City, the System is included as a pension trust fund in the City's basic financial systems. The system is governed by a five-member board. The five members include two appointed by the City, two elected by the members and retirees, and a fifth member chosen by the other four members with the approval of the Public Employee Retirement Administration Commission.

Summary of Significant Accounting Policies

The accounting policies of the System as reflected in the accompanying financial statements for the year ended December 31, 2017 conform to generally accepted accounting principles for PERS. The more significant accounting policies of the System are summarized below:

Basis of Accounting

The System follows accounting policies mandated by the Commonwealth of Massachusetts. The accounting records are maintained on the accrual basis of accounting. Contributions from the Member's employees are recognized as revenue in the period in which employees provide services to the Member unit.

Investments

Investment Policy

Investments are reported at fair value in accordance with PERAC requirements. System assets are managed on a total return basis with a long-term objective of achieving and maintaining a fully funded status for the benefits provided through the pension plan.

Rate of Return

For the year ended December 31, 2017, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expenses, was not available. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

3. Cash and Short-Term Investments

Custodial Credit Risk - Deposits. Custodial credit risk is the risk that in the event of a bank failure, the System's deposits may not be returned. Massachusetts General Law Chapter 32, Section 23, limits the System's deposits "in a bank or trust company to an amount not exceeding ten percent of the capital and surplus of such bank or trust company." The System does not have a deposit policy for custodial credit risk.

As of December 31, 2017, none of the System's bank balance of $5,326,905 was exposed to custodial credit risk as uninsured, uncollateralized, and/or collateral held by pledging bank's trust department not in the System's name.

4. Investments

A. Credit Risk

Generally, credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. Massachusetts General Law, Chapter 32, Section 23, limits the investment of System funds, to the extent not required for current disbursements, in the Pension Reserve Investment Trust (PRIT) fund or in securities, other than mortgages or collateral loans, which are legal for the investment of funds in savings banks under the laws of the Commonwealth, provided that no more than the established percentage of assets, is invested in any one security.

All of the System's investments are reported at fair value and are comprised of pooled investment funds which are exempt from credit risk disclosure.

B. Custodial Credit Risk

The custodial credit risk for investments is the risk that, in the event of the failure of the counterparty (e.g., broker-dealer) to a transaction, a government will not be able to recover the value of its investment or collateral securities that are in the possession of another party. The System does not have a formal investment policy, but manages custodial credit risk through diversification and the "prudent person" principles outlines in PERAC guidelines.

All the System's investments of $285,985,185 are comprised of pooled investment funds, which are exempt from custodial credit risk disclosure.

C. Concentration of Credit Risk

Massachusetts General Law Chapter 32, Section 23 limits the amount the System may invest in any one issuer or security type, except for the PRIT Fund. The System's investment policy limits the amount of System may invest in any one issuer to 5%.

The System does not have an investment in one issuer greater than 5% of total investments since all investments are pooled.

D. Interest Rate Risk

Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. Generally, the longer the maturity of an investment, the greater the sensitivity of its fair value to changes in market interest rates. The System's investment policy manages interest rate risk through diversification of investments across asset classes.

Due to the nature of the System's investments, they are not subject to interest rate risk disclosure.

E. Foreign Currency Risk

Foreign currency risk is the risk that changes in foreign exchange rates will adversely affect the fair value of an investment. The System policy does not specifically address foreign currency risk.

F. Fair Value

The System categorizes its fair value measurements within the fair value hierarchy established by Governmental Accounting Standards Board Statement No. 72 *Fair Value Measurement and Application* (GASB 72). The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

All of the System's investments are in pooled funds, which are not measured at fair value, but instead measured at net asset value (NAV) The System has the following investments as of December 31, 2017:

Description	Amount
Investments measured at the net asset value (NAV):	
External investment pool	$ 285,985,185

Description	Amount	Unfunded Commitments	Redemption Frequency (If currently eligible)	Redemption Notice Period
Alternative investments	$ 40,544,770	$ -	Quarterly	30 days
Domestic equity	109,686,871	-	Quarterly	30 days
Domestic fixed income	31,187,419	-	Quarterly	30 days
International equity	78,290,214	-	Quarterly	30 days
Real estate equity	26,275,911	-	Quarterly	30 days
Total	$ 285,985,185			

5. Accounts Receivable

Annually the Public Employee Retirement Administration (PERAC) determines the amount of employer contributions (pension appropriations) to be made to the System. The accounts receivable balance primarily represents legal amounts due from employers for pension appropriation not received until after December 31, 2017.

6. Net Pension Liability of Participating Employers

The net pension liability was based on an actuarial valuation dated January 1, 2018.

The components of the net pension liability of the participating employers at December 31, 2017 were as follows:

A. Net Pension Liability of Employers

Total pension liability	$ 418,522,289
Plan fiduciary net position	(299,939,643)
Employers' net pension liability	$ 118,582,646
Plan fiduciary net position as a percentage of total pension liability	71.67%

B. *Actuarial Assumptions*

A summary of the actuarial assumptions as of the latest actuarial valuation is shown below:

Valuation date	1/1/2018
Actuarial cost method	Entry Age Normal Cost
Actuarial assumptions:	
Investment rate of return	7.5%
Projected salary increases	4 – 4.5%
Post-retirement cost-of-living adjustment	3% on first $12,000

Actuarial valuation of the ongoing Systems involves estimates of the reported amounts and assumptions about probability of occurrence of events far into the future. Examples include assumptions about future employment mortality and future salary increases. Amounts determined regarding the net pension liability are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future.

Pre-retirement and post-retirement rates for mortality were based on RP-2014 Blue Collar Employee and Healthy Annuitant Mortality table projected generationally with Scale MP-2017. For disabled retirees, the table is set forward one year.

Changes of assumptions

Investment rate of return was reduced from 7.625% to 7.5%.

The mortality assumption for pre-retirement and post-retirement participants were updated from the RP-2000 Employee and Health Annuitant Mortality Tables projected generationally from 2009 with Scale BB2D to the RP-2014 Blue Collar Employee and Healthy Annuitant Mortality Tables projected generationally with Scale MP-2017.

The long-term salary increase assumption was lowered by 0.25% to 4% for Group 1 participants, 4.25% for Group 2 participants and 4.5% for Group 4 participants.

These changes in assumptions had the effect of increasing the System's total pension liability by approximately $5.2 million.

C. *Target Allocations*

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimates ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the System's targeted asset allocation as of December 31, 2017, are summarized in the following table.

Asset Class	Target Asset Allocation	Long-term Expected Real Rate of Return
Domestic equity	31.00%	6.15%
International developed markets equity	20.00%	7.11%
International emerging markets equity	8.00%	9.41%
Core fixed income	12.00%	1.68%
Real estate	10.00%	4.90%
Hedge funds, GTAA, & Risk parity	6.00%	3.94%
Private equity	13.00%	10.28%
Total	100.00%	

D. *Discount Rate*

The discount rate used to measure the total pension liability was 7.5%. The projection of cash flows used to determine the discount rate assumed that contributions from participating employers will be made based on the actuarially determined rates based on the Board's funding policy, which establishes the contractually required rates by Statute. Based on those assumptions, the System's fiduciary net position was projected to be available to make all the 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.

E. *Sensitivity of Discount Rate*

The following presents the net pension liability of the participating employers calculated using the discount rate of 7.5%, as well as what the participating employers' net pension liability would be if it were calculated using a discount rate that is one-percentage-point lower or one-percentage-point higher than the current rate:

1% Decrease (6.5%)	Current Discount Rate (7.5%)	1% Increase (8.5%)
$165,284,195	$118,582,646	$79,171,425

F. Deferred Outflows and Inflows of Resources

The following schedule reflects the deferred outflows and inflows of resources for the System for the year ended December 31, 2017:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ -	$ 9,886,381
Changes of assumptions	10,296,483	-
Net difference between projected and actual earnings on pension plan investments	-	11,184,356
Changes in proportion and differences between contributions and proportionate share of contributions	2,214,060	2,214,060
Total	$ 12,510,543	$ 23,284,797

The following summarizes changes in deferred outflows and inflows:

	Measurement Year	Amortization Period	Beginning Balance on Prior Measurement Period Deferrals	Current Measurement Period Additions	Amortization of Amounts Recognized in Current Period Pension Expense	End of Year Balance
Deferred Outflows of Resources:						
Change in assumptions:	2017	6	$ -	$ 5,220,431	$ (870,072)	$ 4,350,359
	2015	6	7,928,166	-	(1,982,042)	5,946,124
Changes in proportion and differences between contributions and proportionate share of contributions:	2017	6	-	1,065,565	(177,594)	887,971
	2016	6	521,303		(104,261)	417,042
	2015	6	747,978	-	(186,995)	560,983
	2014	6	522,095	-	(174,031)	348,064
Total Deferred Outflows of Resources			9,719,542	6,285,996	(3,494,995)	12,510,543
Deferred (Inflows) of Resources:						
Difference between expected and actual experience:	2017	6	-	(7,573,960)	1,262,327	(6,311,633)
	2015	6	(4,766,331)	-	1,191,583	(3,574,748)
Net difference between projected and actual earning on pension plan investments:	2017	5	-	(22,007,661)	4,401,532	(17,606,129)
	2016	5	509,647	-	(127,412)	382,235
	2015	5	7,514,706	-	(2,504,902)	5,009,804
	2014	5	2,059,468	-	(1,029,734)	1,029,734
Changes in proportion and differences between contributions and proportionate share of contributions:	2017	6	-	(1,065,565)	177,594	(887,971)
	2016	6	(521,303)		104,261	(417,042)
	2015	6	(747,978)	-	186,995	(560,983)
	2014	6	(522,095)	-	174,031	(348,064)
Total Deferred (Inflows) of Resources			3,526,114	(30,647,186)	3,836,275	(23,284,797)
Total Collective Deferred Outflows (Inflows) of Resources			$ 13,245,656	$ (24,361,190)	$ 341,280	$ (10,774,254)

The following schedule reflects the amortization of the balance of deferred outflows and inflows of resources:

Year ended June 30:	
2019	$ 341,280
2020	1,371,014
2021	3,875,918
2022	4,793,788
2023	392,254
Total	$ 10,774,254

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7. Contingencies

There are various pending claims arising in the ordinary course of operations; however, management believes that the probable liability resulting from such claims and litigation would not materially affect the System's financial position.

CITY OF HOLYOKE, MASSACHUSETTS
CONTRIBUTORY RETIREMENT SYSTEM

Schedule of Changes in the Net Pension Liability

(Unaudited)

	For the Year Ending December 31			
	2017	2016	2015	2014
Total pension liability				
Service cost	$ 8,494,708	8,195,155	8,414,306	8,078,561
Interest on unfunded liability - time value of $	30,750,915	29,801,305	28,952,164	28,008,915
Differences between expected and actual experience	(7,573,960)	-	(7,149,497)	-
Changes of assumptions	5,220,431	-	11,892,250	-
Benefit payments, including refunds of member contributions	(26,331,561)	(25,352,649)	(23,906,564)	(24,597,976)
Net change in total pension liability	10,560,533	12,643,811	18,202,659	11,489,500
Total pension liability - beginning	407,961,756	395,317,945	377,115,286	365,625,786
Total pension liability - ending (a)	$ 418,522,289	$ 407,961,756	$ 395,317,945	$ 377,115,286
Plan fiduciary net position *				
Contributions - employer	$ 17,303,062	$ 17,310,175	$ 17,141,598	$ 17,152,253
Contributions - member	5,399,567	5,248,292	5,122,280	5,201,136
Net investment income	41,842,376	18,095,645	6,236,841	12,805,347
Benefit payments, including refunds of member contributions	(26,331,561)	(25,352,649)	(23,906,564)	(24,597,976)
Administrative expense	(431,355)	(431,621)	(419,464)	(469,547)
Net change in plan fiduciary net position	37,782,089	14,869,842	4,174,691	10,091,213
Plan fiduciary net position - beginning	262,157,554	247,287,712	243,113,021	233,021,808
Plan fiduciary net position - ending (b)	$ 299,939,643	$ 262,157,554	$ 247,287,712	$ 243,113,021
Net pension liability (asset) - ending (a-b)	$ 118,582,646	$ 145,804,202	$ 148,030,233	$ 134,002,265

* Reflects certain classification differences from page 7

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See Independent Auditors' Report.

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CITY OF HOLYOKE, MASSACHUSETTS
CONTRIBUTORY RETIREMENT SYSTEM

Schedules of Net Pension Liability, Contributions, and Investment Returns

(Unaudited)

	For the Year Ending December 31,			
Schedule of Net Pension Liability	2017	2016	2015	2014
Total pension liability	$ 418,522,289	$ 407,961,756	$ 395,317,945	$ 377,115,286
Plan fiduciary net position	(299,939,643)	(262,157,554)	(247,287,712)	(243,113,021)
Net pension liability	$ 118,582,646	$ 145,804,202	$ 148,030,233	$ 134,002,265
Plan fiduciary net position as a percentage of the total pension liability	71.67%	64.26%	62.55%	64.47%
Covered employee payroll	$ 55,459,355	$ 56,166,061	$ 53,758,378	$ 57,502,791
Participating employer net pension liability as a percentage of covered employee payroll	213.82%	259.59%	275.36%	233.04%
Schedule of Contributions	2017	2016	2015	2014
Actuarially determined contribution	$ 17,288,112	$ 17,293,030	$ 17,122,641	$ 17,121,406
Contributions in relation to the actuarially determined contribution	(17,303,062)	(17,310,175)	(17,141,598)	(17,152,253)
Contribution deficiency (excess)	$ (14,950)	$ (17,145)	$ (18,957)	$ (30,847)
Covered employee payroll	$ 55,459,355	$ 56,166,061	$ 53,758,378	$ 57,502,791
Contributions as a percentage of covered employee payroll	31.20%	30.82%	31.89%	29.83%
Schedule of Investment Returns *Year Ended December 31*	2017	2016	2015	2014
Annual money weighted rate of return, net of investment expense	Unavailable	Unavailable	Unavailable	Unavailable

Schedules are intended to show information for 10 years. Additional years will be displayed as they become available.

See Independent Auditors' Report.

GASB REPORTS

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INDEPENDENT AUDITORS' REPORT

To the Retirement System Board
City of Holyoke, Massachusetts

Report on Schedules

We have audited the accompanying schedule of employer allocations of the Holyoke Contributory Retirement System as of and for the year ended December 31, 2017. We have also audited the total for all entities of the net pension liability, deferred outflows of resources, deferred inflows of resources, and pension expense (specified totals) included in the accompanying schedule of pension amounts by employer of the Holyoke Contributory Retirement System as of and for the year ended December 31, 2017.

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 the schedules 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 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. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the schedule of employer allocations and specified 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 specified totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and specified totals included in the schedule of pension amounts by employer, 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 schedule of employer allocations and specified 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 specified 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 for the Holyoke Contributory Retirement System as of and for the year ended December 31, 2017, in accordance with accounting principles generally accepted in the United States of America.

Restriction on Use

Our report is intended solely for the information and use of Holyoke Contributory Retirement System management, the Retirement Board, System employers and their auditors as of and for the year ended December 31, 2017 and is not intended to be and should not be used by anyone other than these specified parties.

Melanson Heath

January 23, 2019

CITY OF HOLYOKE, MASSACHUSETTS
CONTRIBUTORY RETIREMENT SYSTEM

SCHEDULE OF EMPLOYER ALLOCATIONS

Employer	FY 2018 Actual Employer Contributions	ERI	Total	Employer Allocation Percentage
City of Holyoke	$ 11,606,507	$ 400,630	$ 12,007,137	69.45%
Gas & Electric	3,595,891	184,461	3,780,352	21.87%
Holyoke Housing Authority	906,862	68,675	975,537	5.64%
Water Works	473,362	25,149	498,511	2.88%
Waste Water	26,575	-	26,575	0.16%
Total	$ 16,609,197	$ 678,915	$ 17,288,112	100.00%

See actuarial assumptions in the City of Holyoke, Massachusetts (Contributory Retirement System) audited financial statements.

CITY OF HOLYOKE, MASSACHUSETTS
CONTRIBUTORY RETIREMENT SYSTEM

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

As of and for the Year Ended December 31, 2017

Net Pension Liability	City of Holyoke	Holyoke Gas and Electric	Holyoke Water Works	Geriatric Authority	Holyoke Waste Water	Holyoke Housing Authority	Total
Beginning net pension liability	$ 102,104,322	$ 30,715,656	$ 4,342,775	$ -	$ 238,263	$ 8,403,186	$ 145,804,202
Ending net pension liability	$ 82,359,373	25,930,197	$ 3,419,388	$ -	$ 182,283	$ 6,691,405	$ 118,582,646
Deferred Outflows of Resources							
Changes of assumptions	$ 7,151,231	$ 2,251,508	$ 296,904	$ -	$ 15,828	$ 581,012	$ 10,296,483
Changes in proportion and differences between employer contributions and proportionate share of contributions	181,026	1,624,562	194,988	7,412	29	206,043	2,214,060
Total Deferred Outflows of Resources	$ 7,332,257	$ 3,876,070	$ 491,892	$ 7,412	$ 15,857	$ 787,055	$ 12,510,543
Deferred Inflows of Resources							
Difference between expected and actual experience	$ 6,866,402	$ 2,161,832	$ 285,079	$ -	$ 15,197	$ 557,871	$ 9,886,381
Net difference between projected and actual investment earnings on pension plan investments	7,767,887	2,445,658	322,506	-	17,192	631,113	11,184,356
Changes in proportion and differences between employer contributions and proportionate share of contributions	1,362,590	8,239	164,035	481,469	28,890	168,837	2,214,060
Total Deferred Inflows of Resources	$ 15,996,879	$ 4,615,729	$ 771,620	$ 481,469	$ 61,279	$ 1,357,821	$ 23,284,797
Pension Expense							
Proportionate share of pension expense	$ 9,793,877	$ 3,083,524	$ 406,621	$ -	$ 21,676	$ 795,718	$ 14,101,416
Proportion changes and differences between employer contributions and proportionate share recognized as expense	(333,137)	444,054	25,133	(157,964)	(8,177)	30,091	-
Total Pension Expense	$ 9,460,740	$ 3,527,578	$ 431,754	$ (157,964)	$ 13,499	$ 825,809	$ 14,101,416
Contributions							
Actuarially determined contribution	$ 12,007,137	$ 3,780,352	$ 498,511	$ -	$ 26,575	$ 975,537	$ 17,288,112
Contributions made	(12,022,087)	(3,780,352)	(498,511)	-	(26,575)	(975,537)	(17,303,062)
Contribution deficiency / (excess)	$ (14,950)	$ -	$ -	$ -	$ -	$ -	$ (14,950)
Contributions as a percentage of covered employee payroll	31.1%	30.4%	30.0%	n/a	57.2%	36.3%	31.2%
Deferred Inflows / (Outflows) Recognized In Future Pension Expense							
June 30, 2019	$ (570,166)	$ 369,427	$ 15,292	$ (157,964)	$ (8,702)	$ 10,833	$ (341,280)
June 30, 2020	(1,285,352)	144,256	(14,397)	(157,963)	(10,285)	(47,273)	(1,371,014)
June 30, 2021	(2,857,077)	(542,528)	(120,625)	(158,948)	(14,152)	(182,588)	(3,875,918)
June 30, 2022	(3,553,268)	(801,325)	(127,637)	818	(9,536)	(302,840)	(4,793,788)
June 30, 2023	(398,759)	90,511	(32,361)	-	(2,747)	(48,898)	(392,254)
Total Deferred Inflows / (Outflows) Recognized in Future Pension Expense	$ (8,664,622)	$ (739,659)	$ (279,728)	$ (474,057)	$ (45,422)	$ (570,766)	$ (10,774,254)
Discount Rate Sensitivity							
1% decrease (6.5%)	$ 114,795,066	$ 36,142,318	$ 4,766,049	$ -	$ 254,072	$ 9,326,690	$ 165,284,195
Current discount rate (7.5%)	$ 82,359,373	$ 25,930,197	$ 3,419,388	$ -	$ 182,283	$ 6,691,405	$ 118,582,646
1% increase (8.5%)	$ 54,987,042	$ 17,312,235	$ 2,282,946	$ -	$ 121,701	$ 4,467,501	$ 79,171,425
Covered employee payroll	$ 38,634,574	$ 12,424,286	$ 1,663,334	$ -	$ 46,473	$ 2,690,688	$ 55,459,355

See actuarial assumptions in the City of Holyoke, Massachusetts (Contributory Retirement System) audited financial statements.

HOLYOKE, MASSACHUSETTS
CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of
Holyoke, Massachusetts)

Financial Statements,
Required Supplementary Information,
and Other Information

For the Year Ended December 31, 2016

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INDEPENDENT AUDITORS' REPORT

To the Retirement System Board
City of Holyoke, Massachusetts

We have audited the accompanying financial statements of the Holyoke, Massachusetts Contributory Retirement System (the System), a component unit of the City of Holyoke, as of and for the year ended December 31, 2016, and the related notes to the financial statements, which collectively comprise the basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

The System's 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. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control.

Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the System as of December 31, 2016, and the respective changes in fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis and the Schedules of Changes in the Net Pension Liability, of Net Pension Liability, of Contributions, and of Investment Returns, listed in the foregoing 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 evidence sufficient to express an opinion or provide any assurance.

Melanson Heath

November 15, 2017

MANAGEMENT'S DISCUSSION AND ANALYSIS

As management of the Holyoke Contributory Retirement System, we offer readers this narrative overview and analysis of the financial activities of the System for the year ended December 31, 2016.

A. OVERVIEW OF THE FINANCIAL STATEMENTS

This discussion and analysis is intended to serve as an introduction to the basic financial statements. The basic financial statements comprised of two components: (1) fund financial statements and (2) notes to financial statements. This report also contains other supplementary information in addition to the basic financial statements themselves.

Fund financial statements. A fund is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. Fund accounting is used to ensure and demonstrate compliance with finance-related legal requirements.

The Statement of Fiduciary Net Position Available for Benefits presents information on the System's assets and liabilities and the resulting net position held in trust for pension benefits. This statement reflects the System's investments at fair value, as well as cash, receivables and other assets and liabilities.

The Statement of Changes in Fiduciary Net Position Available for Benefits presents information showing how the System's net position available for benefits changed during the year ended December 31, 2016. It reflects contributions by members and participating employers along with deductions for retirement benefits, refunds and transfers, and administrative expenses. Investment income during the period is also presented showing income from investing.

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

The Required Supplemental Information includes this Management's Discussion and Analysis and Schedules of Changes in the Net Pension Liability, of Net Pension Liability, of Contributions, and of Investment Returns.

B. FINANCIAL HIGHLIGHTS

- The System's total net position available for benefits were $262,157,554 at December 31, 2016, which is an increase of $14,869,842, in comparison to the prior year.

- Employer and employee contributions to the plan were $22,541,323 which represents a $29,894 increase over the preceding year. The employer share of contributions represents 73.4% of the total contributions.
- Benefits paid to plan participants were $25,017,648. At December 31, 2016, there were 927 retirees and beneficiaries in receipt of pension benefits.

C. FINANCIAL STATEMENT ANALYSIS

The following is a summary of financial statement data for the current and prior fiscal years (in thousands):

FIDUCIARY NET POSITION

	2016	2015
Assets		
Cash and receivables	$ 14,849	$ 21,747
Investments	247,492	225,735
Total assets	262,341	247,482
Liabilities		
Accounts payable	183	194
Net position	$ 262,158	$ 247,288

CHANGES IN FIDUCIARY NET POSITION

	2016	2015
Additions:		
Contributions	$ 23,551	$ 23,843
Investment income, net	18,146	6,255
Total additions	41,697	30,098
Deductions:		
Benefit payments	25,018	24,601
Other	1,809	1,322
Total deductions	26,827	25,923
Change in net position	14,870	4,175
Net position - beginning of year	247,288	243,113
Net position - end of year	$ 262,158	$ 247,288

The System's total assets as of December 31, 2016 were $262,340,442 and were mostly comprised of cash and investments. Total assets increased approximately $14.9 million from the prior year primarily due to an increase in investment value.

The System was 64.26% funded based on its actuarial valuation of January 1, 2016 (rolled forward to December 31, 2016) with 18 years remaining in its amortization period.

The amount needed to finance benefits is accumulated through the collection of employers' and employee's contributions, reimbursements from the Commonwealth of Massachusetts for pre-1998 COLA and through earnings on investments. Contributions and net investment gain for calendar year 2016 resulted in a net gain of $41,696,600. Employer's contributions increased by $170,389. The System had net investment gain of $18,145,647 versus a gain of $6,255,452 in 2015.

The primary deductions of the System include the payment of pension benefits to participants and beneficiaries, refunds of contributions, and the costs of administering the System. Total deductions for 2016 were $26,826,758, which represents an increase of 3.5% over deductions of $25,923,351 in 2015. The payment of pension benefits increased by $416,244 or 1.7% over the previous year.

REQUESTS FOR INFORMATION

This financial report is designed to provide a general overview of the Holyoke, Contributory Retirement System's finances. Questions concerning any of the information provided in this report, or requests for additional financial information, should be addressed to:

Ms. Cheryl Dugre, Executive Director
Holyoke Contributory Retirement System
20 Korean Veterans Plaza, Room 207
Holyoke, Massachusetts 01040

CITY OF HOLYOKE, MASSACHUSETTS
CONTRIBUTORY RETIREMENT SYSTEM

(A Component Unit of the City of Holyoke, Massachusetts)

Statement of Fiduciary Net Position

December 31, 2016

ASSETS	
Cash and short-term investments	$ 5,794,597
Investments	247,491,467
Accounts receivable	9,054,378
Total Assets	$ 262,340,442
LIABILITIES AND NET POSITION	
Accounts payable	$ 182,888
Total Liabilities	182,888
Net position restricted for pensions	262,157,554
Total Liabilities and Net Position	$ 262,340,442

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

CITY OF HOLYOKE, MASSACHUSETTS
CONTRIBUTORY RETIREMENT SYSTEM

(A Component Unit of the City of Holyoke, Massachusetts)

Statement of Changes in Fiduciary Net Position

For the Year Ended December 31, 2016

Additions:	
Contributions:	
Employers	$ 17,293,030
Plan members	5,248,293
Other systems and Commonwealth of Massachusetts	983,372
Other	26,258
Total contributions	23,550,953
Investment income:	
Appreciation in fair value of investments	20,226,973
Less: management fees	(2,081,326)
Net investment gain	18,145,647
Total additions	41,696,600
Deductions:	
Benefit payments to plan members and beneficiaries	25,017,648
Refunds to plan members	617,229
Transfers to other systems	710,259
Administrative expenses	481,622
Total deductions	26,826,758
Net increase	14,869,842
Net position restricted for pensions:	
Beginning of year	247,287,712
End of year	$ 262,157,554

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

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

Notes to Financial Statements

1. Description of Plan

The System is a defined cost sharing, multiple employer public employee retirement system (PERS) of 6-member units, except school department employees who serve in a teaching capacity. The pensions of such employees are administered by the Massachusetts Teachers' Retirement Board. Eligible employees must participate in the System. The pension plan provides pension benefits, deferred allowances, and death and disability benefits. Chapter 32 of the Massachusetts General Laws establishes the authority of the System, contribution percentages and benefits paid. The System Retirement Board does not have the authority to amend benefit provisions.

Membership of the plan consisted of the following at December 31, 2016:

Retire participants and beneficiaries receiving benefits	927
Inactive participants entitled to a return of their employee contributions	138
Inactive partticipants with a vested right to a deferred or immediate benefit	22
Active participants	1,250
Total	2,337
Number of participating employers	6

Participant Contributions

Participants contribute a set percentage of their gross regular compensation annually. Employee contribution percentages are specified in Chapter 32 of the Massachusetts General Laws. The employee's individual contribution percentage is determined by their date of entry into the system. In addition, all employees hired on or after January 1, 1979 contribute an additional 2% on all gross regular compensation over the rate of $30,000 per year. The percentages are as follows:

Before January 1, 1975	5%
January 1, 1975 - December 31, 1983	7%
January 1, 1984 - June 30, 1996	8%
Beginning July 1, 1996	9%

For those members entering a Massachusetts System on or after April 2, 2012 in Group 1, the contribution rate will be reduced to 6% when at least 30 years of creditable service has been attained.

Employer Contributions

Employers are required to contribute at actuarially determined rates as accepted by the Public Employee Retirement Administration Commission (PERAC).

Participant Retirement Benefits

The System provides for retirement allowance benefits up to a maximum of 80% of a member's highest three-year average annual rate of regular compensation for those hired prior to April 2, 2012 and the highest five-year average annual rate of regular compensation for those first becoming members of the Massachusetts System on or after that date. However, per Chapter 176 of the Acts of 2011, for members who retire on or after April 2, 2012, if in the 5 years of creditable service immediately preceding retirement, the difference in the annual rate of regular compensation between any 2 consecutive years exceeds 10 percent, the normal yearly amount of the retirement allowance shall be based on the average annual rate of regular compensation received by the member during the period of 5 consecutive years preceding retirement. Benefit payments are based upon a member's age, length of creditable service, level of compensation and group classification.

If a participant was a member prior to February 1, 2012, a retirement allowance may be received at any age, upon attaining 20 years of service. The plan also provides for retirement at age 55 if the participant was a member prior to January 1, 1978, with no minimum vesting requirements. If the participant was a member on or after January 1, 1978 and a member of Groups 1 or 2, then a retirement allowance may be received if the participant (1) has at least 10 years of creditable service, (2) is age 55, (3) voluntarily left member employment on or after that date, and (4) left accumulated annuity deductions in the fund. Members of Group 4, have no minimum vesting requirements, however, must be at least age 55. Groups 2 and 4 require that participants perform the duties of the Group position for at least 12 months immediately prior to retirement.

A participant who became a member on or after April 2, 2012 is eligible for a retirement allowance upon 10 years creditable service and reaching ages 60 or 55 for Groups 1 and 2, respectively. Participants in Group 4 must be at least age 55. Groups 2 and 4 require that participants perform the duties of the Group position for at least 12 months immediately prior to retirement.

A retirement allowance consists of two parts: an annuity and a pension. A member's accumulated total deductions and a portion of the interest they generate constitute the annuity. The difference between the total retirement allowance and the annuity is the pension. The average retirement benefit is approximately 80-85% pension and 15-20% annuity.

Participant Refunds

Employees who resign from service and who are not eligible to receive a retirement allowance are entitled to request a refund of their accumulated total deductions. Members voluntarily withdrawing with at least 10 years of service or involuntarily withdrawing, receive 100% of the regular interest that has accrued on those accumulated total deductions. Members voluntarily withdrawing with less than 10 years of service get credited interest each year at a rate of 3%.

2. Nature of Operations and Summary of Significant Accounting Policies

Nature of Operations

The System is a member of the Massachusetts Contributory Retirement Systems and is governed by Chapter 32 of the Massachusetts General Laws. Because of the significance of its operational and financial relationship with the City, the System is included as a pension trust fund in the City's basic financial systems. The system is governed by a five-member board. The five members include two appointed by the City, two elected by the members and retirees, and a fifth member chosen by the other four members with the approval of the Public Employee Retirement Administration Commission.

Summary of Significant Accounting Policies

The accounting policies of the System as reflected in the accompanying financial statements for the year ended December 31, 2016 conform to generally accepted accounting principles for PERS. The more significant accounting policies of the System are summarized below:

Basis of Accounting

The System follows accounting policies mandated by the Commonwealth of Massachusetts. The accounting records are maintained on the accrual basis of accounting. Contributions from the Member's employees are recognized as revenue in the period in which employees provide services to the Member unit.

Investments

Investment Policy

Investments are reported at fair value in accordance with PERAC requirements. System assets are managed on a total return basis with a long-term objective of achieving and maintaining a fully funded status for the benefits provided through the pension plan.

Rate of Return

For the year ended December 31, 2016, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expenses, was not available. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

3. Cash and Short-Term Investments

Custodial Credit Risk - Deposits. Custodial credit risk is the risk that in the event of a bank failure, the System's deposits may not be returned. Massachusetts General Law Chapter 32, Section 23, limits the System's deposits "in a bank or trust company to an amount not exceeding ten percent of the capital and surplus of such bank or trust company." The System does not have a deposit policy for custodial credit risk.

As of December 31, 2016, none of the System's bank balance of $6,021,400 was exposed to custodial credit risk as uninsured, uncollateralized, and/or collateral held by pledging bank's trust department not in the System's name.

4. Investments

A. *Credit Risk*

Generally, credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. Massachusetts General Law, Chapter 32, Section 23, limits the investment of System funds, to the extent not required for current disbursements, in the Pension Reserve Investment Trust (PRIT) fund or in securities, other than mortgages or collateral loans, which are legal for the investment of funds in savings banks under the laws of the Commonwealth, provided that no more than the established percentage of assets, is invested in any one security.

All of the System's investments are reported at fair value and are comprised of pooled investment funds which are exempt from credit risk disclosure.

B. *Custodial Credit Risk*

The custodial credit risk for investments is the risk that, in the event of the failure of the counterparty (e.g., broker-dealer) to a transaction, a government will not be able to recover the value of its investment or collateral securities that are in the possession of another party. The System does not have a formal investment policy, but manages custodial credit risk through diversification and the "prudent person" principles outlines in PERAC guidelines.

All the System's investments of $247,491,467 are comprised of pooled investment funds, which are exempt from custodial credit risk disclosure.

C. *Concentration of Credit Risk*

Massachusetts General Law Chapter 32, Section 23 limits the amount the System may invest in any one issuer or security type, except for the PRIT Fund. The System's investment policy limits the amount of System may invest in any one issuer to 5%.

The System does not have an investment in one issuer greater than 5% of total investments.

D. *Interest Rate Risk*

Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. Generally, the longer the maturity of an investment, the greater the sensitivity of its fair value to changes in market interest rates. The System's investment policy manages interest rate risk through diversification of investments across asset classes.

Due to the nature of the System's investments, they are not subject to interest rate risk disclosure.

E. *Foreign Currency Risk*

Foreign currency risk is the risk that changes in foreign exchange rates will adversely affect the fair value of an investment. The System policy does not specifically address foreign currency risk.

F. *Fair Value*

The System categorizes its fair value measurements within the fair value hierarchy established by Governmental Accounting Standards Board Statement No. 72 *Fair Value Measurement and Application* (GASB 72). The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

All of the System's investments are in pooled funds, which are not measured at fair value, but instead measured at net asset value (NAV) The System has the following investments as of December 31, 2016:

Description	Amount
Investments measured at the net asset value (NAV):	
External investment pool	$ 247,491,467

Description	Amount	Unfunded Commitments	Redemption Frequency (If currently eligible)	Redemption Notice Period
Alternative investments	$ 43,246,339	$ -	Quarterly	30 days
Domestic equity	93,335,266	-	Quarterly	30 days
Domestic fixed income	24,995,016	-	Quarterly	30 days
International equity	51,022,076	-	Quarterly	30 days
Real estate equity	34,892,770	-	Quarterly	30 days
Total	$ 247,491,467			

5. Accounts Receivable

Annually the Public Employee Retirement Administration (PERAC) determines the amount of employer contributions (pension appropriations) to be made to the System. The accounts receivable balance primarily represents legal amounts due from employers for pension appropriation not received until after December 31, 2016.

6. Contingencies

There are various pending claims arising in the ordinary course of operations; however, management believes that the probable liability resulting from such claims and litigation would not materially affect the System's financial position.

7. Net Pension Liability of Participating Employers

The net pension liability was based on an actuarial valuation dated January 1, 2016, and rolled forward to December 31, 2016.

The components of the net pension liability of the participating employers at December 31, 2016 were as follows:

A. *Net Pension Liability of Employers*

Total pension liability	$ 407,961,756
Plan fiduciary net position	(262,157,554)
Employers' net pension liability	$ 145,804,202
Plan fiduciary net position as a percentage of total pension liability	64.26%

B. *Actuarial Assumptions*

A summary of the actuarial assumptions as of the latest actuarial valuation is shown below:

Valuation Date	1/1/2016
Actuarial cost method	Entry Age Normal Cost
Actuarial assumptions:	
Investment rate of return	7.625%
Projected salary increases	4.25 – 4.75%
Post-retirement cost-of-living adjustment	3% on first $12,000

Actuarial valuation of the ongoing Systems involves estimates of the reported amounts and assumptions about probability of occurrence of events far into the future. Examples include assumptions about future employment mortality and future salary increases. Amounts determined regarding the net pension liability are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future.

Pre-retirement rates for mortality were based on RP-2000 Employees table projected generationally with Scale BB2D and a base year of 2009 and post-retirement rates for mortality were based on RP-2000 Healthy Annuitant table projected generationally with Scale BB2D and a base year of 2009. For disabled retirees, the rates reflect the RP-2000 Healthy Annuitant table projected generationally with Scale BB and a base year of 2015.

Changes of assumptions

Investment rate of return was reduced from 7.75% in 2013 to 7.625% in 2016. While the mortality tables did not change, the Scale was changed from AA to BB2D, along with other modifications in how the tables were used, to better reflect a general improvement in mortality. Total changes in assumptions had the effect of increasing the total pension liability by $12 million.

C. Target Allocations

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

Asset Class	Target Asset Allocation	Long-term Expected Real Rate of Return
Domestic equity	34.00%	6.44%
International developed markets equity	16.00%	7.40%
International emerging markets equity	6.00%	9.42%
Core fixed income	16.00%	2.02%
High-yield fixed income	0.00%	4.43%
Real Estate	13.00%	5.00%
Commodities	1.00%	4.43%
Hedge Funds, GTAA, & Risk parity	1.00%	3.75%
Private equity	13.00%	10.47%
Total	100.00%	

D. Discount Rate

The discount rate used to measure the total pension liability was 7.625%. The projection of cash flows used to determine the discount rate assumed that contributions from participating employers will be made based on the actuarially determined rates based on the Board's funding policy, which establishes the contractually required rates by Statute. Based on those assumptions, the System's fiduciary net position was projected to be available to make all the 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.

E. Sensitivity of Discount Rate

The following presents the net pension liability of the participating employers calculated using the discount rate of 7.625%, as well as what the participating employers' net pension liability would be if it were calculated using a discount rate that is 1 percentage-point lower (6.625%) or 1 percentage-point higher (8.625%) than the current rate (in thousands):

	1% Decrease (6.625%)	Current Discount Rate (7.625%)	1% Increase (8.625%)
Participating employers' net pension liability	$191,153	$145,804	$107,503

F. *Deferred Outflows/Inflows of Resources*

The following schedule reflects the deferred outflows/inflows of resources for the System for the year ended December 31, 2016:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ -	$ (4,766,331)
Changes of assumptions	7,928,166	-
Net difference between projected and actual earnings on pension plan investments	10,083,821	-
Changes in proportion and differences between contributions and proportionate share of contributions	1,791,376	(1,791,376)
Total	$ 19,803,363	$ (6,557,707)

The following summarizes changes in deferred outflows/inflows, excluding employer-specific amounts:

	Measurement Year	Amortization Period	Beginning Balance on Prior Measurement Period Deferrals	Current Measurement Period Additions	Amortization of Amounts Recognized in Current Period Pension Expense	End of Year Balance
Deferred (Inflows) of Resources:						
Difference between expected and actual experience	2015	6	$ (5,957,914)	$ -	$ 1,191,583	$ (4,766,331)
Changes in proportion and differences between contributions and proportionate share of contributions:	2016	6	-	(625,564)	104,261	(521,303)
	2015	6	(934,973)	-	186,995	(747,978)
	2014	6	(696,126)	-	174,031	(522,095)
Total Deferred (Inflows) of Resources			$ (7,589,013)	$ (625,564)	$ 1,656,870	$ (6,557,707)
Deferred Outflows of Resources:						
Change in assumptions	2015	6	$ 9,910,208	$ -	$ (1,982,042)	$ 7,928,166
Net difference between projected and actual earning on pension plan investments:	2016	5	-	637,059	(127,412)	509,647
	2015	5	10,019,608	-	(2,504,902)	7,514,706
	2014	5	3,089,202	-	(1,029,734)	2,059,468
Changes in proportion and differences between contributions and proportionate share of contributions:	2016	6	-	625,564	(104,261)	521,303
	2015	6	934,973	-	(186,995)	747,978
	2014	6	696,126	-	(174,031)	522,095
Total Deferred Outflows of Resources			24,650,117	1,262,623	(6,109,377)	19,803,363
Total Collective Deferred (Inflows) Outflows of Resources			$ 17,061,104	$ 637,059	$ (4,452,507)	$ 13,245,656

The following schedule reflects the amortization of the balance of deferred outflows/inflows of resources, excluding employer-specific amounts:

Year ended June 30:	
2018	$ 4,452,507
2019	4,452,507
2020	3,422,773
2021	917,869
Total	$ 13,245,656

CITY OF HOLYOKE, MASSACHUSETTS
CONTRIBUTORY RETIREMENT SYSTEM

Schedule of Changes in the Net Pension Liability

(Unaudited)

	2016	2015	2014
Total pension liability			
Service cost	$ 8,195,155	$ 8,414,306	$ 8,078,561
Interest on unfunded liability - time value of $	29,801,305	28,952,164	28,008,915
Differences between expected and actual experience	-	(7,149,497)	-
Changes of assumptions	-	11,892,250	-
Benefit payments, including refunds of member contributions	(25,352,649)	(23,906,564)	(24,597,976)
Net change in total pension liability	12,643,811	18,202,659	11,489,500
Total pension liability - beginning	395,317,945	377,115,286	365,625,786
Total pension liability - ending (a)	$ 407,961,756	$ 395,317,945	$ 377,115,286
Plan fiduciary net position *			
Contributions - employer	$ 17,310,175	$ 17,141,598	$ 17,152,253
Contributions - member	5,248,292	5,122,280	5,201,136
Net investment income	18,095,645	6,236,841	12,805,347
Benefit payments, including refunds of member contributions	(25,352,649)	(23,906,564)	(24,597,976)
Administrative expense	(431,621)	(419,464)	(469,547)
Net change in plan fiduciary net position	14,869,842	4,174,691	10,091,213
Plan fiduciary net position - beginning	247,287,712	243,113,021	233,021,808
Plan fiduciary net position - ending (b)	$ 262,157,554	$ 247,287,712	$ 243,113,021
Net pension liability (asset) - ending (a-b)	$ 145,804,202	$ 148,030,233	$ 134,002,265

*** Reflects certain classification differences from page 7**

Schedule is intended to show information for 10 years.
Additional years will be displayed as they become available.

CITY OF HOLYOKE, MASSACHUSETTS
CONTRIBUTORY RETIREMENT SYSTEM

Schedules of Net Pension Liability, Contributions, and Investment Returns

(Unaudited)

Schedule of Net Pension Liability	2016	2015	2014
Total pension liability	$ 407,961,756	$ 395,317,945	$ 377,115,286
Plan fiduciary net position	262,157,554	247,287,712	243,113,021
Net pension liability (asset)	$ 145,804,202	$ 148,030,233	$ 134,002,265
Plan fiduciary net position as a percentage of the total pension liability	64.26%	62.55%	64.47%
Covered payroll	$ 56,166,061	$ 53,758,378	$ 57,502,791
Participating employer net pension liability (asset) as a percentage of covered payroll	259.59%	275.36%	233.04%

Schedule of Contributions	2016	2015	2014
Actuarially determined contribution	$ 17,293,030	$ 17,122,641	$ 17,121,406
Contributions in relation to the actuarially determined contribution	17,310,175	17,141,598	17,152,253
Contribution deficiency (excess)	$ (17,145)	$ (18,957)	$ (30,847)
Covered payroll	$ 56,166,061	$ 53,758,378	$ 57,502,791
Contributions as a percentage of covered payroll	30.82%	31.89%	29.83%

Schedule of Investment Returns *Year Ended December 31*	2016	2015	2014
Annual money weighted rate of return, net of investment expense	Unavailable	Unavailable	Unavailable

Schedules are intended to show information for 10 years.
Additional years will be displayed as they become available.

GASB REPORTS

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INDEPENDENT AUDITORS' REPORT

To the Retirement System Board
City of Holyoke, Massachusetts

Report on Schedules

We have audited the accompanying schedule of employer allocations of the Holyoke Contributory Retirement System as of and for the year ended December 31, 2016. We have also audited the total for all entities of the net pension liability, deferred outflows of resources, deferred inflows of resources, and pension expense (specified totals) included in the accompanying schedule of pension amounts by employer of the Holyoke Contributory Retirement System as of and for the year ended December 31, 2016.

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 the schedules 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 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. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the schedule of employer allocations and specified 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 specified totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and specified totals included in the schedule of pension amounts by employer, 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 schedule of employer allocations and specified 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 specified 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 for the Holyoke Contributory Retirement System as of and for the year ended December 31, 2016, in accordance with accounting principles generally accepted in the United States of America.

Restriction on Use

Our report is intended solely for the information and use of Holyoke Contributory Retirement System management, the Retirement Board, System employers and their auditors as of and for the year ended December 31, 2016 and is not intended to be and should not be used by anyone other than these specified parties.

Melanson Heath

November 15, 2017

CITY OF HOLYOKE, MASSACHUSETTS
CONTRIBUTORY RETIREMENT SYSTEM

SCHEDULE OF EMPLOYER ALLOCATIONS

Employer	FY 2016 Actual Employer Contributions	ERI	Total	Employer Allocation Percentage
City of Holyoke	$ 11,712,639	$ 393,946	$ 12,106,585	70.03%
Gas & Electric	3,458,286	183,692	3,641,978	21.07%
Holyoke Housing Authority	928,968	67,404	996,372	5.76%
Water Works	490,243	24,683	514,926	2.98%
Waste Water	28,251	-	28,251	0.16%
Total	$ 16,618,387	$ 669,725	$ 17,288,112	100.00%

See actuarial assumptions in the City of Holyoke, Massachusetts (Contributory Retirement System) audited financial statements.

CITY OF HOLYOKE, MASSACHUSETTS
CONTRIBUTORY RETIREMENT SYSTEM

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

As of and for the year ended December 31, 2016

Net Pension Liability	City of Holyoke	Holyoke Gas and Electric	Holyoke Water Works	Geriatric Authority	Holyoke Waste Water	Holyoke Housing Authority	Total
Beginning net pension liability	$ 104,326,326	$ 30,700,334	$ 4,193,761	$ -	$ 242,008	$ 8,567,804	$ 148,030,233
Ending net pension liability	$ 102,104,322	30,715,656	$ 4,342,775	$ -	$ 238,263	$ 8,403,186	$ 145,804,202
Deferred Outflows of Resources							
Net difference between projected and actual investment earnings on pension plan investments	$ 7,061,537	$ 2,124,295	$ 300,346	$ -	$ 16,478	$ 581,165	$ 10,083,821
Changes of assumptions	5,551,986	1,670,177	236,140	-	12,956	456,927	7,928,166
Changes in proportion and differences between employer contributions and proportionate share of contributions	236,198	1,009,742	260,730	9,938	44	274,724	1,791,376
Total Deferred Outflows of Resources	$ 12,849,701	$ 4,804,214	$ 797,216	$ 9,938	$ 29,478	$ 1,312,816	$ 19,803,363
Deferred Inflows of Resources							
Difference between expected and actual experience	$ 3,337,784	$ 1,004,093	$ 141,965	$ -	$ 7,789	$ 274,700	$ 4,766,331
Changes in proportion and differences between employer contributions and proportionate share of contributions	992,939	7,094	78,349	641,959	24,207	46,828	1,791,376
Total Deferred Inflows of Resources	$ 4,330,723	$ 1,011,187	$ 220,314	$ 641,959	$ 31,996	$ 321,528	$ 6,557,707
Pension Expense							
Proportionate share of pension expense	$ 13,235,079	$ 3,981,458	$ 562,924	$ -	$ 30,884	$ 1,089,247	$ 18,899,592
Proportion changes and differences between employer contributions and proportionate share recognized as expense	(206,810)	267,765	46,182	(157,964)	(6,031)	56,858	-
Total Pension Expense	$ 13,028,269	$ 4,249,223	$ 609,106	$ (157,964)	$ 24,853	$ 1,146,105	$ 18,899,592
Contributions							
Actuarially determined contribution	$ 12,106,585	$ 3,641,978	$ 514,926	$ -	$ 28,251	$ 996,372	$ 17,288,112
Contributions made	(12,123,730)	(3,641,978)	(514,926)	(4,918)	(28,251)	(996,372)	(17,310,175)
Contribution deficiency / (excess)	$ (17,145)	$ -	$ -	$ (4,918)	$ -	$ -	$ (22,063)
Contributions as a percentage of covered payroll	30.2%	32.0%	31.8%	n/a	34.3%	33.3%	30.8%
Deferred Inflows / (Outflows) Recognized in Future Pension Expense							
June 30, 2018	$ 2,911,209	$ 1,205,747	$ 178,799	$ (157,964)	$ 1,245	$ 313,471	$ 4,452,507
June 30, 2019	2,911,209	1,205,746	178,800	(157,964)	1,245	313,471	4,452,507
June 30, 2020	2,190,100	988,818	148,133	(157,963)	(439)	254,124	3,422,773
June 30, 2021	603,965	322,083	39,527	(158,948)	(4,548)	115,790	917,869
June 30, 2022	(97,505)	70,633	31,643	818	(21)	(5,568)	-
Total Deferred Inflows / (Outflows) Recognized in Future Pension Expense	$ 8,518,976	$ 3,793,027	$ 576,902	$ (632,021)	$ (2,518)	$ 991,288	$ 13,245,656
Discount Rate Sensitivity							
1% decrease (6.625%)	$ 133,861,515	$ 40,269,051	$ 5,693,495	$ -	$ 312,369	$ 11,016,803	$ 191,153,233
Current discount rate (7.6255%)	$ 102,104,322	$ 30,715,656	$ 4,342,775	$ -	$ 238,263	$ 8,403,186	$ 145,804,202
1% increase (8.625)	$ 75,282,356	$ 22,646,905	$ 3,201,964	$ -	$ 175,673	$ 6,195,738	$ 107,502,636
Covered Payroll	$ 40,066,823	$ 11,381,012	$ 1,619,312	$ -	$ 82,452	$ 2,996,462	$ 56,166,061

See actuarial assumptions in the City of Holyoke, Massachusetts (Contributory Retirement System) audited financial statements.

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HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM
(A Component Unit of the City of
Holyoke, Massachusetts)

Financial Statements,
Required Supplementary Information,
and Other Information

For the Year Ended December 31, 2015
(With Independent Auditors' Report Thereon)

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INDEPENDENT AUDITORS' REPORT

To the Retirement System Board
City of Holyoke, Massachusetts

We have audited the accompanying financial statements of the Holyoke Contributory Retirement System (the System), a component unit of the City of Holyoke, Massachusetts as of and for the year ended December 31, 2015, and the related notes to the financial statements, which collectively comprise the basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

The System's 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. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

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

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Holyoke Contributory Retirement System as of December 31, 2015, and the respective changes in fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United State of America require that the Management's Discussion and Analysis and the Schedules of Changes in the Net Pension Liability, of Net Pension Liability, of Contributions, and of Investment Returns, listed in the foregoing 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 evidence sufficient to express an opinion or provide any assurance.

Melanson Heath

May 25, 2017

MANAGEMENT'S DISCUSSION AND ANALYSIS

As management of the Holyoke Contributory Retirement System (the System), we offer readers this narrative overview and analysis of the financial activities of the System for the year ended December 31, 2015.

A. OVERVIEW OF THE FINANCIAL STATEMENTS

This discussion and analysis is intended to serve as an introduction to the basic financial statements. The basic financial statements comprised of two components: (1) fund financial statements and (2) notes to financial statements. This report also contains other supplementary information in addition to the basic financial statements themselves.

Fund financial statements. A fund is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. Fund accounting is used to ensure and demonstrate compliance with finance-related legal requirements.

The Statement of Fiduciary Net Position presents information on the System's assets and liabilities and the resulting net position held in trust for pension benefits. This statement reflects the System's investments at fair value, as well as cash, receivables and other assets and liabilities.

The Statement of Changes in Fiduciary Net Position presents information showing how the System's net position available for benefits changed during the year ended December 31, 2015. It reflects contributions by members and participating employers along with deductions for retirement benefits, refunds and transfers, and administrative expenses. Investment income during the period is also presented showing income from investing.

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

The Required Supplemental Information includes this management's discussion and analysis and Schedules of Changes in the Net Pension Liability, of Net Pension Liability, of Contributions, and of Investment Returns.

B. FINANCIAL HIGHLIGHTS

- The System's total net position available for benefits was $247,287,712 at December 31, 2015, which is an increase of $4,174,691 in comparison to the prior year.

- Employer and employee contributions to the plan were $22,511,429 which represents a $29,723 increase over the preceding year. The employer share of contributions represents 71.82% of the total contributions.
- Benefits paid to plan participants were $24,601,404. At December 31, 2015, there were 935 retirees and beneficiaries in receipt of pension benefits.
- The System's funded ratio as of the January 1, 2016 actuarial report was 62.55%.

C. FINANCIAL STATEMENT ANALYSIS

The following is a summary of financial statement data for the current and prior fiscal years (in thousands).

FIDUCIARY NET POSITION

	2015	2014
Assets		
Cash and receivables	$ 21,747	$ 12,711
Investments	225,735	230,586
Total assets	247,482	243,297
Liabilities		
Accounts payable	194	184
Net Position	$ 247,288	$ 243,113

CHANGES IN FIDUCIARY NET POSITION

	2015	2014
Additions		
Contributions	$ 23,843	$ 22,949
Investment income, net	6,255	12,819
Total Additions	30,098	35,768
Deductions		
Benefit payments	24,601	23,851
Other	1,322	1,826
Total Deductions	25,923	25,677
Changes in net position	4,175	10,091
Net position - beginning of year	243,113	233,022
Net position - end of year	$ 247,288	$ 243,113

The System's total assets as of December 31, 2015 were $247,481,574 and were mostly comprised of cash and investments. Total assets increased by $4,184,423 or 1.72% from the prior year.

The System was 62.55% funded based on its actuarial valuation of January 1, 2016, with 6 years remaining in the amortization period for the 2010 ERI liability and 16 years remaining for the remaining unfunded liability.

The amount needed to finance benefits is accumulated through the collection of employers' and employee's contributions, reimbursements from the Commonwealth of Massachusetts for pre-1998 COLA and through earnings on investments. Contributions and net investment gain for calendar year 2015 resulted in total additions of $30,098,042. Employers' contributions increased by $1,235 in comparison to the prior year. The System had net investment gain of $6,255,452 in 2015, versus a net gain of $12,818,813 in 2014.

The primary deductions of the System include the payment of pension benefits to participants and beneficiaries, refunds of contributions, and the costs of administering the System. Total deductions for 2015 were $25,923,351, which represents an increase of .96% over deductions of $25,677,182 in 2014. The payment of pension benefits increased by $750,683 or 3.15% over the previous year.

REQUESTS FOR INFORMATION

This financial report is designed to provide a general overview of the Holyoke Contributory Retirement System's finances. Questions concerning any of the information provided in this report, or requests for additional financial information, should be addressed to:

Holyoke Contributory Retirement System
20 Korean Veterans Plaza
Room 207
Holyoke, Massachusetts 01040

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

(A Component Unit of the City of Holyoke, Massachusetts)

Statement of Fiduciary Net Position

December 31, 2015

ASSETS	
Cash and short-term investments	$ 14,034,503
Investments	225,734,823
Accounts receivable	7,712,248
Total Assets	$ 247,481,574
LIABILITIES AND NET POSITION	
Accounts payable	$ 193,862
Total Liabilities	193,862
Net position restricted for pensions	247,287,712
Total Liabilities and Net Position	$ 247,481,574

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

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

(A Component Unit of the City of Holyoke, Massachusetts)

Statement of Changes in Fiduciary Net Position

For the Year Ended December 31, 2015

Additions:	
Contributions:	
Employers	$ 17,122,641
Plan members	5,388,788
Other systems and Commonwealth of Massachusetts	1,302,815
Other	28,346
Total contributions	23,842,590
Investment income:	
Appreciation in fair value of investments	9,453,550
Less: management fees	(3,198,098)
Net investment gain	6,255,452
Total additions	30,098,042
Deductions:	
Benefit payments to plan members and beneficiaries	24,601,404
Refunds to plan members	605,190
Transfers to other systems	277,293
Administrative expenses	439,464
Total deductions	25,923,351
Net increase	4,174,691
Net position restricted for pensions:	
Beginning of year	243,113,021
End of year	$ 247,287,712

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

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

Notes to Financial Statements

1. Description of Plan

The System's plan is a defined benefit multiple employer cost sharing pension plan covering the employees of 6 member units, except school department employees who serve in a teaching capacity. The pensions of such employees are administered by the Massachusetts Teachers' Retirement Board. Eligible employees must participate in the System. The pension plan provides pension benefits, deferred allowances, and death and disability benefits. Chapter 32 of the Massachusetts General Laws establishes the authority of the System, contribution percentages and benefits paid. The System Retirement Board does not have the authority to amend benefit provisions.

Membership of the plan consisted of the following at December 31, 2015:

Retirees and beneficiaries receiving benefits	935
Inactive participants entitled to a return of their employee contributions	205
Inactive participants with a vested right to a deferred or immediate benefit	29
Active plan members	1,138
Total	2,307
Number of participating employers	6

Participant Contributions

Participants contribute a set percentage of their gross regular compensation annually. Employee contribution percentages are specified in Chapter 32 of the Massachusetts General Laws. The employee's individual contribution percentage is determined by their date of entry into the system. In addition, all employees hired on or after January 1, 1979 contribute an additional 2% on all gross regular compensation over the rate of $30,000 per year. The percentages are as follows:

Before January 1, 1975	5%
January 1, 1975 - December 31, 1983	7%
January 1, 1984 - June 30, 1996	8%
Beginning July 1, 1996	9%

For those members entering a Massachusetts System on or after April 2, 2012 in Group 1, the contribution rate will be reduced to 6% when at least 30 years of creditable service has been attained.

Employer Contributions

Employers are required to contribute at actuarially determined rates as accepted by the Public Employee Retirement Administration Commission (PERAC).

Participant Retirement Benefits

The System provides for retirement allowance benefits up to a maximum of 80% of a member's highest three-year average annual rate of regular compensation for those hired prior to April 2, 2012 and the highest five-year average annual rate of regular compensation for those first becoming members of the Massachusetts System on or after that date. However, per Chapter 176 of the Acts of 2011, for members who retire on or after April 2, 2012, if in the 5 years of creditable service immediately preceding retirement, the difference in the annual rate of regular compensation between any 2 consecutive years exceeds 100 percent, the normal yearly amount of the retirement allowance shall be based on the average annual rate of regular compensation received by the member during the period of 5 consecutive years preceding retirement. Benefit payments are based upon a member's age, length of creditable service, level of compensation and group classification.

A retirement allowance may be received at any age, upon attaining 20 years of service. The plan also provides for retirement at age 55 if the participant was a member prior to January 1, 1978, with no minimum vesting requirements. If the participant was a member on or after January 1, 1978 and a member of Groups 1 or 2, then a retirement allowance may be received if the participant (1) has at least 10 years of creditable service, (2) is age 55, (3) voluntarily left City employment on or after that date, and (4) left accumulated annuity deductions in the fund. Members of Group 4, have no minimum vesting requirements, however, must be at least age 55. Groups 2 and 4 require that participants perform the duties of the Group position for at least 12 months immediately prior to retirement.

A participant who became a member on or after April 2, 2012 is eligible for a retirement allowance upon 10 years creditable service and reaching ages 60 or 55 for Groups 1 and 2, respectively. Participants in Group 4 must be at least age 55. Groups 2 and 4 require that participants perform the duties of the Group position for at least 12 months immediately prior to retirement.

A retirement allowance consists of two parts: an annuity and a pension. A member's accumulated total deductions and a portion of the interest they generate constitute the annuity. The difference between the total retirement allowance and the annuity is the pension. The average retirement benefit is approximately 80-85% pension and 15-20% annuity.

Participant Refunds

Employees who resign from service and who are not eligible to receive a retirement allowance are entitled to request a refund of their accumulated total deductions. Members voluntarily withdrawing with at least 10 years of service or involuntarily withdrawing, receive 100% of the regular interest that has accrued on those accumulated total deductions. Members voluntarily withdrawing with less than 10 years of service get credited interest each year at a rate of 3%.

2. Nature of Operations and Summary of Significant Accounting Policies

Nature of Operations

The System is a member of the Massachusetts Contributory Retirement Systems and is governed by Chapter 32 of the Massachusetts General Laws. Because of the significance of its operational and financial relationship with the City, the System is included as a pension trust fund in the City's basic financial systems. The System is governed by a five-member board. The five members include two appointed by the City, two elected by the members and retirees, and a fifth member chosen by the other four members with the approval of the Public Employee Retirement Administration Commission.

Summary of Significant Accounting Policies

The accounting policies of the System as reflected in the accompanying financial statements for the year ended December 31, 2015 conform to generally accepted accounting principles for public employee retirement systems (PERS). The more significant accounting policies of the System are summarized below:

Basis of Accounting

The System follows accounting policies mandated by the Commonwealth of Massachusetts. The accounting records are maintained on the accrual basis of accounting. Contributions from the City's employees are recognized as revenue in the period in which employees provide services to the City.

Investments

Investment Policy

Investments are reported at fair value in accordance with PERAC requirements. System assets are managed on a total return basis with a long-term objective of achieving and maintaining a fully funded status for the benefits provided through the pension plan.

Rate of Return

The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested. For the year ended December 31, 2015, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expenses, was not available.

3. Cash and Short-Term Investments

Custodial Credit Risk - Deposits. Custodial credit risk is the risk that in the event of a bank failure, the System's deposits may not be returned. Massachusetts General Law Chapter 32, Section 23, limits the System's deposits "in a bank or trust company to an amount not exceeding ten percent of the capital and surplus of such bank or trust company." The System does not have a deposit policy for custodial credit risk.

As of December 31, 2015, none of the System's bank balance of $12,175,572 was exposed to custodial credit risk as uninsured, uncollateralized, and collateral held by pledging bank's trust department not in the System's name.

4. Investments

A. Credit Risk

Generally, credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. Massachusetts General Law, Chapter 32, Section 23, limits the investment of System funds, to the extent not required for current disbursements, in the PRIT Fund or in securities, other than mortgages or collateral loans, which are legal for the investment of funds in savings banks under the laws of the Commonwealth, provided that no more than the established percentage of assets, is invested in any one security.

All of the System's investments are reported at fair value and are comprised of pooled investment funds, which are exempt from credit risk disclosure.

B. Custodial Credit Risk

The custodial credit risk for investments is the risk that, in the event of the failure of the counterparty (e.g., broker-dealer) to a transaction, a government will not be able to recover the value of its investment or collateral securities that are in the possession of another party. The System's investment policy manages custodial credit risk through diversification and the "prudent person" principles outlined in PERAC guidelines.

All of the System's investments of $225,734,823 are comprised of pooled investment funds, which are exempt from custodial credit risk disclosure.

C. *Concentration of Credit Risk*

Massachusetts General Law Chapter 32, Section 23 limits the amount the System may invest in any one issuer or security type, with the exception of the PRIT Fund. The System's investment policy limits the amount the System may invest in any one issuer to 5%.

The System does not have an investment in one issuer greater than 5% of total investments.

D. *Interest Rate Risk*

Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. Generally, the longer the maturity of an investment, the greater the sensitivity of its fair value to changes in market interest rates. The System's investment policy manages interest rate risk through diversification and pooled fund selection.

Due to the nature of the System's investments, they are not subject to interest rate risk disclosure.

E. *Foreign Currency Risk*

Foreign currency risk is the risk that changes in foreign exchange rates will adversely affect the fair value of an investment. The System's policy does not specifically address foreign currency risk.

F. *Fair Value*

The System categorizes its fair value measurements within the fair value hierarchy established by Governmental Accounting Standards Board Statement No. 72 Fair Value Measurement and Application (GASB 72). The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

All of the System's investments are in pooled funds, which are not measured at fair value, but instead measured at net asset value (NAV). The following summarizes the System's pooled investments at December 31, 2015:

Description	
Investments measured at the net asset value (NAV):	
External investment pool	$ 225,734,823

Description	Value	Unfunded Commitments	Redemption Frequency (If currently eligible)	Redemption Notice Period
Domestic equity	$ 74,480,950	$ -	Quarterly	30 days
International equity	46,553,561	-	Quarterly	30 days
Domestic fixed income	33,611,200	-	Quarterly	30 days
Alternative investments	43,083,643	-	Quarterly	30 days
Real estate equity	25,887,518	-	Quarterly	30 days
State pool	2,117,951	-	Quarterly	30 days

5. Accounts Receivable

Annually, the Public Employee Retirement Administration (PERAC) determines the amount of employer contributions (pension appropriations) to be made to the System. The accounts receivable this balance represents primarily legal amounts due from employers for pension appropriation not received until after December 31, 2015.

6. Accounts Payable

This balance primarily represents payment for withholdings from retiree benefits paid after December 31, 2015.

7. Net Pension Liability of Participating Employers

The net pension liability was based on an actuarial valuation dated January 1, 2016.

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

A. *Net Pension Liability of Employers*

Total pension liability	$ 395,317,945
Plan fiduciary net position	(247,287,712)
Employers' net pension liability	$ 148,030,233
Plan fiduciary net position as a percentage of total pension liability	62.55%

B. *Actuarial Assumptions*

A summary of the actuarial assumptions as of the latest actuarial valuation is shown below:

Valuation Date	1/1/2016
Actuarial cost method	Entry Age
Actuarial assumptions:	
Investment rate of return	7.625%
Projected salary increases	4.25 - 4.75%
Inflation rate	3.50%
Post-retirement cost-of-living adjustment	3% on first $12,000

Pre-retirement rates for mortality were based on RP-2000 Employees table projected generationally with Scale BB2D and a base year of 2009 and post-retirement rates for mortality were based on RP-2000 Healthy Annuitant table projected generationally with Scale BB2D and a base year of 2009. For disabled retirees, the rates reflect the RP-2000 Healthy Annuitant table projected generationally with Scale BB and a base year of 2015.

Changes of assumptions

Investment rate of return was reduced from 7.75% in 2013 to 7.625% in 2015. While the mortality tables did not change, the Scale was changed from AA to BB2D, along with other modifications in how the tables were used, to better reflect a general improvement in mortality. Total changes in assumptions had the effect of increasing the total pension liability by $12 million.

C. *Target Allocations*

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

Asset Class	Target Asset Allocation	Long-term Expected Real Rate of Return
Cash	5.19%	1.11%
Domestic equity	31.26%	6.49%
International developed markets equity	14.74%	7.16%
International developed markets equity	4.82%	9.46%
Core fixed income	12.05%	1.68%
High-yield fixed income	2.08%	4.76%
Real estate	10.88%	4.37%
Commodities	0.97%	4.13%
Hedge fund, GTAA, Risk parity	0.89%	3.60%
Private equity	17.12%	11.04%
	100.00%	

D. *Discount Rate*

The discount rate used to measure the total pension liability was 7.625%. The projection of cash flows used to determine the discount rate assumed that contributions from participating employers will be made based on the actuarially determined rates based on the Board's funding policy, which establishes the contractually required rates by Statute. Based on those assumptions, the System's fiduciary net position was projected to be available to make all the 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.

E. *Sensitivity of Discount Rate*

The following presents the net pension liability of the participating employers calculated using the discount rate of 7.625%, as well as what the participating employers' net pension liability would be if it were calculated using a discount rate that is 1 percentage-point lower (6.625%) or 1 percentage-point higher (8.625%) than the current rate:

	1% Decrease (6.625%)	Current Discount Rate (7.625%)	1% Discount (8.625%)
Participating employers' net pension liability	$192,275,093	$148,030,233	$110,667,049

F. *Deferred Outflows/Inflows of Resources*

The following schedule reflects the deferred outflows/inflows of resources for the System for the year ended December 31, 2015:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Net difference between projected and actual earnings on pension plan investments	$ 13,108,810	$ -
Differences between expected and actual experience	-	(5,957,914)
Changes of assumptions	9,910,208	
Changes in proportion and difference between contributions and proportionate	1,631,099	(1,631,099)
Total	$ 24,650,117	$ (7,589,013)

The following summarizes changes in deferred outflows/inflows:

Deferred Outflows (Inflows) of Resources	Measurement Year	Period	Beginning Balance on Prior Measurement Period Deferrals	Current Measurement Period Additions	Amortization of Amounts Recognized in Current Period Pension Expense	End of Year Balance
Net Differences between projected and actual earnings on pension plan investments	2014	5	$ 4,118,936	$ -	$ (1,029,734)	$ 3,089,202
	2015	5	-	12,524,510	(2,504,902)	10,019,608
Difference between expected and actual experience	2015	6	-	(7,149,497)	1,191,583	(5,957,914)
Changes of assumptions	2015	6	-	11,892,250	(1,982,042)	9,910,208
Changes in proportion and differences between contributions and proportionate share of contributions	2014	6	870,157	-	(174,031)	696,126
	2014	6	(870,157)	-	174,031	(696,126)
	2015	6	-	1,121,968	(186,995)	934,973
	2015	6	-	(1,121,968)	186,995	(934,973)
Total Collective Deferred Outflows (Inflows)			$ 4,118,936	$ 17,267,263	$ (4,325,095)	$ 17,061,104

The following schedule reflects the amortization of the balance of deferred outflows/inflows of resources:

	Deferred Outflows	Deferred Inflows
Year ended June 30:		
2017	$ 5,877,704	$ (1,552,609)
2018	5,877,704	(1,552,609)
2019	5,877,704	(1,552,609)
2020	4,847,970	(1,552,609)
2021	2,169,035	(1,378,577)
Total	$ 24,650,117	$ (7,589,013)

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

Schedule of Changes in the Net Pension Liability

(Unaudited)

	2015	2014
Total pension liability		
Service cost	$ 8,414,306	$ 8,078,561
Interest on unfunded liability - time value of $	28,952,164	28,008,915
Differences between expected and actual experience	(7,149,497)	-
Changes of assumptions	11,892,250	-
Benefit payments, including refunds of member contributions	(23,906,564)	(24,597,976)
Net change in total pension liability	18,202,659	11,489,500
Total pension liability - beginning	377,115,286	365,625,786
Total pension liability - ending (a)	$ 395,317,945	$ 377,115,286
Plan fiduciary net position *		
Contributions - employer	$ 17,141,598	$ 17,152,253
Contributions - member	5,122,280	5,201,136
Net investment income	6,236,841	12,805,347
Benefit payments, including refunds of member contributions	(23,906,564)	(24,597,976)
Administrative expense	(419,464)	(469,547)
Net change in plan fiduciary net position	4,174,691	10,091,213
Plan fiduciary net position - beginning	243,113,021	233,021,808
Plan fiduciary net position - ending (b)	$ 247,287,712	$ 243,113,021
Net pension liability (asset) - ending (a-b)	$ 148,030,233	$ 134,002,265

* Reflects certain classification differences from page 7.

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

Schedules of Net Pension Liability, Contributions, and Investment Returns

(Unaudited)

Schedule of Net Pension Liability	2015	2014
Total pension liability	$ 395,317,945	$ 377,115,286
Plan fiduciary net position	247,287,712	243,113,021
Net pension liability (asset)	$ 148,030,233	$ 134,002,265
Plan fiduciary net position as a percentage of the total pension liability	62.55%	64.47%
Covered employee payroll	$ 53,758,378	$ 57,502,791
Participating employer net pension liability (asset) as a percentage of covered employee payroll	275.36%	233.04%

Schedule of Contributions	2015	2014
Actuarially determined contribution	$ 17,118,305	$ 17,118,305
Contributions in relation to the actuarially determined contribution	17,137,262	17,149,152
Contribution deficiency (excess)	$ (18,957)	$ (30,847)
Covered employee payroll	$ 53,758,378	$ 57,502,791
Contributions as a percentage of covered employee payroll	31.88%	29.82%

Schedule of Investment Returns *Year Ended December 31*	2015	2014
Annual money weighted rate of return, net of investment expense	unavailable	unavailable

Schedules are intended to show information for 10 years. Additional years will be displayed as they become available.

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INDEPENDENT AUDITORS' REPORT

To the Retirement System Board
City of Holyoke, Massachusetts

Report on Schedules

We have audited the accompanying schedule of employer allocations of the Holyoke Contributory Retirement System as of and for the year ended December 31, 2015. 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 Holyoke Contributory Retirement System as of and for the year ended December 31, 2015.

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 the schedules 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. 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 specified column totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer, 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 schedule of employer allocations and 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 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 pension expense for the Holyoke Contributory Retirement System as of and for the year ended December 31, 2015, in accordance with accounting principles generally accepted in the United States of America.

Restriction on Use

Our report is intended solely for the information and use of Holyoke Contributory Retirement System management, the Retirement Board, and System employers and their auditors as of and for the year ended December 31, 2015 and their auditors and is not intended to be and should not be used by anyone other than these specified parties.

Melanson Heath

May 25, 2017

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

Schedule of Employer Allocations

	FY 2015			
Employer	Pension Fund Appropriation	ERI	Total Employer Contributions	Employer Allocation Percentage
City of Holyoke	$ 11,680,059	$ 384,300	$ 12,064,359	70.48%
Gas & Electric	3,368,203	182,002	3,550,205	20.74%
Holyoke Housing Authority	925,186	65,600	990,786	5.79%
Water Works	460,947	24,022	484,969	2.83%
Waste Water	27,986	-	27,986	0.16%
Total	$ 16,462,381	$ 655,924	$ 17,118,305	100.00%

See actuarial assumptions in the Holyoke Contributory Retirement System audited financial statements.

HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

Schedule of Pension Amounts by Employer

As of and for the year ended December 31, 2015

Entity	12/31/15 Net Pension Liability	Deferred Outflows of Resources: Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Deferred Outflows of Resources: Changes of Assumptions	Deferred Outflows of Resources: Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Deferred Outflows of Resources: Total Deferred Outflows of Resources	Deferred Inflows of Resources: Differences Between Expected and Actual Experience	Deferred Inflows of Resources: Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Deferred Inflows of Resources: Total Deferred Inflows of Resources	Pension Expense: Proportionate Share of Plan Pension Expense	Pension Expense: Net Amortization of Deferred Amounts From Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Pension Expense: Total Employer Pension Expense
City of Holyoke	$104,326,326	$9,238,613	$6,984,355	$293,481	$ 16,516,449	$4,198,921	$672,007	$4,870,928	$12,846,007	($109,306)	$12,736,701
Gas & Electric	30,700,334	2,718,667	2,055,301	850,636	5,624,604	1,235,626	4,026	1,239,652	3,780,223	197,131	3,977,354
Holyoke Housing Authority	8,567,804	758,721	573,590	343,405	1,675,716	344,837	25,243	370,080	1,054,979	62,426	1,117,405
Water Works	4,193,761	371,378	280,760	135,972	788,110	168,790	97,252	266,042	516,390	14,542	530,932
Waste Water	242,008	21,431	16,202	59	37,692	9,740	30,122	39,862	29,799	(6,009)	23,790
Geriatric Authority	-	-	-	7,546	7,546	-	802,449	802,449	-	(158,784)	(158,784)
Total for All Entities	$148,030,233	$13,108,810	$9,910,208	$1,631,099	$24,650,117	$5,957,914	$1,631,099	$7,589,013	$18,227,398	$ -	$18,227,398

(Continued)

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HOLYOKE CONTRIBUTORY RETIREMENT SYSTEM

Schedule of Pension Amounts by Employer (Continued)

As of and for the year ended December 31, 2015

	Deferred inflows / (Outflows) Recognized in Future Pension Expense					
Entity	30-Jun 2017	30-Jun 2018	30-Jun 2019	30-Jun 2020	30-Jun 2021	Total
City of Holyoke	$ 2,938,864	$ 2,938,864	$ 2,938,864	$ 2,213,142	$ 615,787	$ 11,645,521
Gas & Electric	1,094,122	1,094,122	1,094,123	880,563	222,022	4,384,952
Holyoke Housing Authority	312,757	312,757	312,757	253,157	114,208	1,305,636
Water Works	137,074	137,074	137,073	107,905	2,942	522,068
Waste Water	1,062	1,062	1,062	(623)	(4,733)	(2,170)
Geriatric Authority	(158,784)	(158,784)	(158,784)	(158,783)	(159,768)	(794,903)
Total	$ 4,325,095	$ 4,325,095	$ 4,325,095	$ 3,295,361	$ 790,458	17,061,104

See actuarial assumptions in the Holyoke Contributory Retirement System audited financial statements.

COMMONWEALTH OF MASSACHUSETTS
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