



HAMPSHIRE COUNTY RETIREMENT SYSTEM

FINANCIAL REPORTING AND DISCLOSURES Governmental Accounting Standards Board Statements 67 and 68

**Disclosures as of
December 31, 2019**

KMS Actuarial, LLC
52 Hunt Road
Kingston, NH 03848

July, 2020



July 30, 2020

Mr. Patrick E. Brock
Chairman
Hampshire County Retirement System
99 Industrial Drive, Suite 2
Northampton, MA 01060-2326

Dear Patrick:

We are pleased to present the enclosed report providing financial reporting and disclosures under Governmental Accounting Standards Board (GASB) Statement No. 67, Financial Reporting for Pension Plans (GASB 67), and GASB Statement No. 68, Accounting and Financial Reporting for Pensions (GASB 68) for the Hampshire County Retirement System and participating employers as of December 31, 2019. Results are based on liabilities developed in an actuarial valuation performed as of January 1, 2020.

The Principal Valuation Results are provided in Section 1. The Notes to the Financial Statements and the Required Supplementary Information are provided in Sections 2 and 3, respectively. Employer Reporting Amounts Under GASB 68 are provided in Section 4. Finally, a Glossary of Terms is provided in Section 5.

The financial reporting and disclosures contained in this report are based on the member data provided by the Hampshire County Retirement Board, asset information reported to the Public Employee Retirement Administration Commission (PERAC) by the Retirement Board and plan provisions contained in Chapter 32 of the Massachusetts General Laws. Although we did not audit the data used in the valuation and disclosure calculations, we believe that the information is complete and reliable.

Liabilities presented in this report are based on a long-term investment return rate of 7.15%, net of investment expense, compounded annually.

This report was completed in accordance with generally accepted actuarial standards and procedures, and conforms to the Code of Professional Conduct of the American Academy of Actuaries. The actuarial assumptions used in the determination of costs are reasonably related to the experience of the Plan and to reasonable expectations, and represent our best estimate of anticipated long-term experience under the Plan.

K M S A C T U A R I E S

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Mr. Patrick E. Brock

July 30, 2020

Page 2

Future actuarial valuation results may differ significantly from the current results presented in this report. Examples of potential sources of volatility include plan experience differing from that anticipated by the economic or demographic assumptions, the effect of new entrants, changes in economic or demographic assumptions, the effect of law changes and the delayed effect of smoothing techniques.

Our valuation follows generally accepted actuarial methods and we perform such tests as we consider necessary to assure the accuracy of the results. The amounts presented in this report have been appropriately determined according to the actuarial assumptions and methods stated herein.

This report is intended for the sole use of the Hampshire County Retirement System and participating employers and is intended to provide information to comply with the stated purpose of the report. It may not be appropriate for other purposes.

The undersigned credentialed actuaries are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinion contained herein. They are available to answer any questions with regard to this report.

Respectfully submitted,



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TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
SECTION 1 - PRINCIPAL VALUATION RESULTS	4
Fiduciary Net Position	
Total Pension Liability	
SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS	7
Plan Description	
Net Pension Liability	
Long-Term Real Rates of Return	
Discount Rate	
SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION	11
Exhibit 3.1 - Changes in Net Pension Liability and Related Ratios	
Exhibit 3.2 - Schedule of Employer Contributions	
Exhibit 3.3 - Investment Returns	
Notes to Required Supplementary Information	
SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68	17
Exhibit 4.1 - Deferred Outflows of Resources and Deferred Inflows of Resources	
Exhibit 4.2 - Pension Expense	
Exhibit 4.3 - Proportionate Share of Contributions	
Exhibit 4.4 - Pension Amounts by Employer	
SECTION 5 - GLOSSARY OF TERMS	25
Appendix A CALCULATION OF MONEY-WEIGHTED RATE OF RETURN	
Appendix B SCHEDULE OF DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED INFLOWS OF RESOURCES	
Appendix C SCHEDULE OF PENSION AMOUNTS BY EMPLOYER	
Appendix D CALCULATION OF SINGLE DISCOUNT RATE	

EXECUTIVE SUMMARY

GASB 67 and GASB 68

In June 2012, the GASB approved two related Statements that significantly changed the way pension plans and governments account and report pension liabilities. Effective for plans with fiscal years beginning after June 15, 2013, **GASB Statement No. 67**, *Financial Reporting for Pension Plans*, replaced the requirements of Statement No. 25 and effective for employers with fiscal years beginning after June 15, 2014, **GASB Statement No. 68**, *Accounting and Financial Reporting for Pensions*, replaced the requirements of Statement No. 27.

The pension standards reflect changes from those previously in place regarding how governments calculate total pension liability and pension expense. Further, the standards contain requirements for disclosing information in the notes to financial statements and presenting required supplementary information following the notes.

GASB 67 requires defined benefit pension plans, such as the Hampshire County Retirement System, to present a statement of fiduciary net position (pension plan assets) and a statement of changes in fiduciary net position. Further, the statement requires that notes to financial statements include descriptive information such as the types of benefits provided, the classes of plan members covered and the composition of the pension plan's retirement board. Finally, GASB 67 requires pension plans to present in required supplementary information the sources of the changes in the net pension liability and information about the actuarially determined contributions compared with the actual contributions made to the plan and related ratios.

GASB 67 and GASB 68 require projected benefit payments be discounted to their actuarial present value using the single rate that reflects a long-term expected rate of return on pension plan investments to the extent that the pension plan's assets are sufficient to pay benefits and pension plan assets are expected to be invested using a strategy to achieve that return and a tax-exempt, high-quality municipal bond rate to the extent that the conditions for use of the long-term expected rate of return are not met.

GASB 68 establishes standards for measuring and recognizing liabilities, deferred outflows of resources, deferred inflows of resources and pension expense by state and local governments.

The effective date for GASB 67 is for plan years beginning after June 15, 2013, which is the fiscal year ending December 31, 2014 for the Hampshire County Retirement System. The effective date for GASB 68 is for employers' fiscal years beginning after June 15, 2014. The disclosures prepared as of December 31, 2019 (the measurement date) presents information to assist the Hampshire County Retirement Board in providing the required information under GASB 68 to participating employers.

GASB Statement No. 73, *Accounting and Financial Reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement 68, and Amendments to Certain Provisions of GASB Statements 67 and 68*, clarifies the application of certain provisions of Statements 67 and 68 with regard to the following issues:

- (1) Information about investment-related factors that significantly affect trends in the amounts reported for GASB 67 and GASB 68 should be limited to those factors over which the pension plan or participating governments have influence (such as an investment policy) and
- (2) The contribution-related schedules in the RSI should exclude amounts associated with payables to the pension plan that arose in a prior fiscal year.

GASB Statement No. 82, *Pension Issues - An Amendment of GASB Statements No. 67, No. 68, and No. 73*, clarifies the definition of covered payroll, that a deviation from the Actuarial Standards of Practice with respect to selection of assumptions is not considered to be in conformity with GASB 67, GASB 68 and GASB 73, and that employer-paid member contributions are to be classified as plan member contributions.

EXECUTIVE SUMMARY

A summary of principal results from the current disclosures and prior disclosures follows.

Disclosure Date	December 31, 2019	December 31, 2018	% Change
Valuation Date	January 1, 2020	January 1, 2018	
Membership Data			
Active Plan Members	1,968	2,008	(2.0%)
Inactive Members Currently in Receipt	1,357	1,308	3.7%
Inactive Members Deferred	723	671	7.7%
Total Plan Members	4,048	3,987	1.5%
Covered Payroll	\$85,426,619	\$84,192,999	1.5%
Net Pension Liability			
Discount Rate	7.15%	7.45%	
Total Pension Liability (TPL)	\$558,763,173	\$524,593,396	6.5%
Fiduciary Net Position (FNP)	359,018,033	309,026,161	16.2%
Net Pension Liability (NPL)	\$199,745,140	\$215,567,235	(7.3%)
FNP as % of TPL	64.3%	58.9%	9.2%
Pension Expense			
Pension Expense	\$25,478,730	\$27,764,540	(8.2%)
Deferred Outflows	\$21,193,776	\$27,594,231	
Deferred Inflows	\$22,979,536	\$12,373,672	
Recognition Period	7.12	6.79	

EXECUTIVE SUMMARY

Fiduciary Net Position

Pension plan investments are reported at market value as of the measurement date. The fiduciary net position as of the current and prior measurement dates are shown in Section 1, Fiduciary Net Position.

Total Pension Liability

The Total Pension Liability is based on liabilities developed in an actuarial valuation performed as of January 1, 2020 and is shown in Section 1, Total Pension Liability.

Benefit Changes

All benefit provisions remained the same from the prior measurement date. The Plan provisions used in these disclosures are detailed in Section 5, Summary of Plan Provisions, in the most recent funding actuarial report.

Assumption Changes

Most of the Actuarial Assumptions and Methods used in these disclosures are the same as the last measurement date, except the mortality and mortality improvement rates were updated and the investment return assumption was reduced from 7.45% to 7.15%. The Actuarial Assumptions and Methods used in these disclosures are detailed in Section 6, Actuarial Assumptions and Methods, in the most recent funding valuation report.

Pension Expense

The Pension Expense for the fiscal year ending December 31, 2019 is \$25,478,730 and is developed in Exhibit 4.2. Pension Expense, as well as the Net Pension Liability and Deferred Outflows of Resources and Deferred Inflows of Resources, are developed for each member unit and are shown in Appendix C. Amounts by employer are developed using a proportionate share, the proportion of each employer's contribution to the aggregate amount of employer contributions, as shown in Exhibit 4.3.

SECTION 1 - PRINCIPAL VALUATION RESULTS

Fiduciary Net Position

Asset information was provided by the Hampshire County Retirement Board. The Trust Fund Composition, Asset Activity and the Gain or Loss on Pension Plan Investments for the current and prior fiscal years are as follows:

Fiscal Year Ended December 31 **2019** **2018**

Trust Fund Composition at Fiscal Year-End		
Cash	\$ 3,982,274	\$ 8,021,407
Individually Owned Short Term Investments	0	0
Fixed Income Securities	0	0
Equities (at market value)	0	0
Pooled Short Term Funds	0	0
Pooled Domestic Equity Funds	64,019,755	54,517,916
Pooled International Equity Funds	75,676,573	74,876,797
Pooled Global Equity Funds	0	0
Pooled Domestic Fixed Income Funds	100,497,250	61,179,320
Pooled International Fixed Income Funds	0	0
Pooled Global Fixed Income Funds	30,858,871	27,745,694
Pooled Alternative/Private Equity	35,557,442	34,004,506
Pooled Real Estate Funds	47,818,694	47,917,632
Pooled Domestic Balanced Funds	0	0
Pooled International Balanced Funds	0	0
Hedge Funds	0	0
PRIT Cash	0	0
PRIT Fund	0	0
Interest Due and Accrued	0	0
Prepaid Expenses	0	0
Accounts Receivable (A)	611,839	763,485
Land	0	0
Buildings	0	0
Accumulated Depreciation - Buildings	0	0
Accounts Payable (A)	(4,665)	(596)
Auditor or Other Adjustments	0	0
Total Market Value of Assets	\$ 359,018,033	\$ 309,026,161

SECTION 1 - PRINCIPAL VALUATION RESULTS

Fiscal Year Ended December 31	Fiduciary Net Position	
	2019	2018
Asset Activity		
Market value as of beginning of year	\$ 309,026,161	\$ 318,127,580
Contributions - employer	24,294,506	22,597,993
Contributions - member	8,334,804	8,378,578
Net investment income	50,071,334	(9,664,404)
Benefit payments, including refunds of member contributions	(31,865,798)	(29,543,223)
Administrative expenses	(842,974)	(870,363)
Other	0	0
Market Value as of end of year	\$ 359,018,033	\$ 309,026,161

Money-Weighted Rate of Return	16.30%	-3.02%
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(Gain) / Loss on Pension Plan Investments		
Projected earnings	\$ 23,095,981	\$ 23,721,476
Actual earnings	50,071,334	(9,664,404)
(Gain) / Loss on pension plan investments	\$ (26,975,353)	\$ 33,385,880

SECTION 1 - PRINCIPAL VALUATION RESULTS

Total Pension Liability

The Total Pension Liability, developed using the Entry Age Normal funding method, is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service. The total pension liability as of the December 31, 2019 measurement date was developed from an actuarial valuation as of January 1, 2020.

The Service Cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year. Only active employees who have not reached the age at which the probability of retirement is 100% incur a service cost.

Actuarial gains and losses arise from the difference between estimates and actual experience, excluding amounts related to benefit changes and changes in assumptions or other inputs.

The development of the Total Pension Liability from the beginning of the measurement period, December 31, 2018 to the end of the measurement period, December 31, 2019 is shown below:

Measurement Date	December 31, 2019
1. Total Pension Liability, beginning of year:	
a. Actives	\$ 255,588,743
b. Retired and Disabled Members and Beneficiaries	262,591,390
c. Inactive Members	6,413,263
d. Total Pension Liability at 7.45% (a. + b. + c.)	\$ 524,593,396
2. Service Cost	\$ 13,282,271
3. Benefit Payments	(31,865,798)
4. Interest [7.45% x (1.d. + 2. + .5 x 3)]	\$ 38,884,736
5. Changes of benefit terms	-
6. Differences between expected and actual experience	(6,620,290)
7. Changes of assumptions or other inputs	20,488,858
8. Total Pension Liability, end of year (1.d. + 2. + 3. + 4. + 5. + 6. + 7.)	
a. Actives	\$ 235,605,919
b. Retired and Disabled Members and Beneficiaries	316,274,708
c. Inactive Members	6,882,546
d. Total Pension Liability at 7.15% (a. + b. + c.)	\$ 558,763,173

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Plan Description

Plan administration

The Hampshire County Retirement System (the "System") is a cost-sharing, multiple-employer defined benefit pension plan that provides pensions for eligible employees of 37 participating employers. The System is a member of the Massachusetts Contributory Retirement System and is governed by Chapter 32 of the Massachusetts General Laws. The System does not have the authority to amend benefit provisions.

The System is governed by a Retirement Board made up of five elected and appointed members.

Plan membership

At December 31, 2019, pension plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefits	1,357
Inactive plan members entitled to but not yet receiving benefits	723
Active plan members	1,968
	<hr/>
	4,048

Benefits provided

The System provides retirement, disability and death benefits. Retirement benefits are determined as a percentage of the member's 3-year (5-year for members hired after April 1, 2012) final average compensation times the member's years of service. The percentage is based on the age of the member at retirement and his or her Group classification. Cost-of-living adjustments of 3% of the first \$13,000 of the annual retirement allowance are provided at the discretion of the System's Retirement Board. A summary of the benefits is outlined in the January 1, 2020 actuarial valuation report.

Contributions

Plan members are required to contribute a percentage of their annual compensation that varies according to their membership date, as follows:

Prior to 1975	5% of Salary
1975 - 1983	7% of Salary
1984 - June 30, 1996	8% of Salary
July 1, 1996 - present	9% of Salary
1979 - present	An additional 2% of Salary in excess of \$30,000.
Group 1 members hired on or after April 2, 2012	6% of Salary with 30 or more years of creditable service.

Employer contributions are determined in accordance with the requirements set forth in Section 22D and Section 22F of Chapter 32 of the Massachusetts General Laws ("M.G.L."). The appropriation is comprised of the annual employer normal cost and amortization payments to pay the unfunded actuarial accrued liability.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Net Pension Liability

The components of the Net Pension Liability at December 31, 2019, were as follows:

Total Pension Liability	\$ 558,763,173
Fiduciary Net Position	(359,018,033)
Net Pension Liability	\$ 199,745,140

Fiduciary Net Position as a percentage of the Total Pension Liability 64.3%

Actuarial assumptions

The Total Pension Liability was determined by an actuarial valuation as of January 1, 2020, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.4% per year
Salary increases	Group 1: 6% - 4.25%, based on service Group 4: 7% - 4.75%, based on service
Investment rate of return	7.15%, net of pension plan investment expense, including inflation

Mortality rates were based on the RP-2014 Blue Collar Mortality Table with full generational mortality improvement using Scale MP-2018. For disabled lives, the mortality rates were based on the RP-2014 Blue Collar Mortality Table set forward one year with full generational mortality improvement using Scale MP-2018.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Long-Term Real Rates of Return

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

Asset Class	Target Allocation	Long-Term Expected Real Rates of Return¹
Large Cap Equities	15.5%	5.00%
Small/Mid Cap Equities	4.5%	5.20%
International Equities (Unhedged)	16.5%	5.20%
Emerging International Equities	6.0%	7.10%
Private Equity	10.0%	8.80%
Core Fixed Income	20.0%	0.20%
High-Yield Bonds	3.0%	3.40%
Bank Loans	3.0%	2.70%
EMD (Local Currency)	6.0%	3.20%
Private Debt	1.5%	5.40%
Real Estate	12.0%	3.30%
Cash	2.0%	-0.60%
Total	100%	

¹ Provided by NEPC (inclusive of fees). Inflation of 2.4% is added to the long-term expected real rates of return to approximate the long-term expected rate of return.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Discount Rate

The discount rate used to measure the Total Pension Liability is 7.15%. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current contribution rates and that contributions from participating employers will be made in accordance with Sections 22D and 22F of Chapter 32 of the Massachusetts General Laws. Based on those assumptions, the pension plan's Fiduciary Net Position was projected to be available to make all projected benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability.

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

The following presents the Net Pension Liability calculated using the discount rate of 7.15%, as well as what the Net Pension Liability would be if it were calculated using a discount rate 1-percentage point lower (6.15%) or 1-percentage point higher (8.15%) than the current rate:

	1% Decrease (6.15%)	Current Discount Rate (7.15%)	1% Increase (8.15%)
Total Pension Liability	\$ 623,433,095	\$ 558,763,173	\$ 504,160,051
Fiduciary Net Position	359,018,033	359,018,033	359,018,033
Net Pension Liability	\$ 264,415,062	\$ 199,745,140	\$ 145,142,018

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net Pension Liability and Related Ratios

Fiscal Year Ended December 31	2019	2018	2017	2016	2015
Total Pension Liability					
Service cost	\$ 13,282,271	\$ 12,771,414	\$ 11,029,438	\$ 10,605,229	\$ 10,269,070
Interest	38,884,736	37,396,643	36,888,260	34,627,268	34,842,587
Changes of benefit terms	-	-	-	-	-
Differences between expected and actual experience	(6,620,290)	-	(434,874)	(4,348,735)	-
Changes of assumptions	20,488,858	-	(9,996,849)	16,610,091	-
Benefit payments, including refunds of member contributions	(31,865,798)	(29,543,223)	(28,662,890)	(26,880,118)	(25,512,793)
Net change in Total Pension Liability	<u>\$ 34,169,777</u>	<u>\$ 20,624,834</u>	<u>\$ 8,823,085</u>	<u>\$ 30,613,735</u>	<u>\$ 19,598,864</u>
Total Pension Liability—beginning	\$ 524,593,396	\$ 503,968,562	\$ 495,145,477	\$ 464,531,742	\$ 444,932,878
Total Pension Liability—ending (a)	<u>\$ 558,763,173</u>	<u>\$ 524,593,396</u>	<u>\$ 503,968,562</u>	<u>\$ 495,145,477</u>	<u>\$ 464,531,742</u>
Fiduciary Net Position					
Contributions—employer	\$ 24,294,506	\$ 22,597,993	\$ 21,331,218	\$ 19,693,436	\$ 18,620,753
Contributions—member	8,334,804	8,378,578	7,689,443	7,446,905	7,322,347
Net investment income	50,071,334	(9,664,404)	43,201,653	19,015,995	(1,011,242)
Benefit payments, including refunds of member contributions	(31,865,798)	(29,543,223)	(28,662,890)	(26,880,118)	(25,512,793)
Administrative expenses	(842,974)	(870,363)	(817,067)	(796,827)	(929,899)
Other	-	-	-	-	-
Net change in Fiduciary Net Position	<u>\$ 49,991,872</u>	<u>\$ (9,101,419)</u>	<u>\$ 42,742,357</u>	<u>\$ 18,479,391</u>	<u>\$ (1,510,834)</u>
Fiduciary Net Position—beginning	\$ 309,026,161	\$ 318,127,580	\$ 275,385,223	\$ 256,905,832	\$ 258,416,666
Fiduciary Net Position—ending (b)	<u>\$ 359,018,033</u>	<u>\$ 309,026,161</u>	<u>\$ 318,127,580</u>	<u>\$ 275,385,223</u>	<u>\$ 256,905,832</u>
Net Pension Liability and Related Ratios					
Net Pension Liability—ending (a) – (b)	<u>\$ 199,745,140</u>	<u>\$ 215,567,235</u>	<u>\$ 185,840,982</u>	<u>\$ 219,760,254</u>	<u>\$ 207,625,910</u>
Fiduciary Net Position as a percentage of the Total Pension Liability	64.25%	58.91%	63.12%	55.62%	55.30%
Covered Payroll	\$ 85,426,619	\$ 84,192,999	\$ 76,767,518	\$ 78,914,925	\$ 80,914,245
Net Pension Liability as a percentage of Covered Payroll	233.82%	256.04%	242.08%	278.48%	256.60%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net Pension Liability and Related Ratios (continued)

Fiscal Year Ended December 31	2014	2013	2012	2011	2010
Total Pension Liability					
Service cost	\$ 9,850,427				
Interest	33,371,689				
Changes of benefit terms	-				
Differences between expected and actual experience	-				
Changes of assumptions	-				
Benefit payments, including refunds of member contributions	(24,412,587)				
Net change in Total Pension Liability	<u>\$ 18,809,529</u>				
Total Pension Liability--beginning	<u>\$ 426,123,349</u>				
Total Pension Liability--ending (a)	<u><u>\$ 444,932,878</u></u>				
Fiduciary Net Position					
Contributions--employer	\$ 17,442,179				
Contributions--member	7,559,814				
Net investment income	12,015,152				
Benefit payments, including refunds of member contributions	(24,412,587)				
Administrative expenses	(841,318)				
Other	-				
Net change in Fiduciary Net Position	<u>\$ 11,763,240</u>				
Fiduciary Net Position--beginning	<u>\$ 246,653,426</u>				
Fiduciary Net Position--ending (b)	<u><u>\$ 258,416,666</u></u>				
Net Pension Liability and Related Ratios					
Net Pension Liability--ending (a) -- (b)	<u><u>\$ 186,516,212</u></u>				
Fiduciary Net Position as a percentage of the Total Pension Liability	58.08%				
Covered Payroll	\$ 77,139,934				
Net Pension Liability as a percentage of Covered Payroll	241.79%				

Note: Only 6 years are presented here and on the previous page, beginning with the year of implementation; 10 years of information will be required.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.2 - Schedule of Employer Contributions

Fiscal Year Ended December 31	2019	2018	2017	2016	2015
Actuarially Determined Contribution	\$ 24,294,506	\$ 22,597,993	\$ 21,331,218	\$ 19,693,436	\$ 18,620,753
Contributions in relation to the Actuarially Determined Contribution	<u>24,294,506</u>	<u>22,597,993</u>	<u>21,331,218</u>	<u>19,693,436</u>	<u>18,620,753</u>
Contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Covered Payroll	\$ 85,426,619	\$ 84,192,999	\$ 76,767,518	\$ 78,914,925	\$ 80,914,245
Contributions as a percentage of Covered Payroll	28.44%	26.84%	27.79%	24.96%	23.01%

The contribution shown above, \$24,294,506, represents the actual contributions made by member units of the Hampshire County Retirement System for the 2020 fiscal year.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.2 - Schedule of Employer Contributions (continued)

Fiscal Year Ended December 31	2014	2013	2012	2011	2010
Actuarially Determined Contribution	\$ 17,349,877				
Contributions in relation to the Actuarially Determined Contribution	<u>17,349,877</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Contribution deficiency (excess)	<u>\$ -</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Covered Payroll	\$ 77,139,934				
Contributions as a percentage of Covered Payroll	22.49%				

Note: Only 6 years are presented here and on the previous page, beginning with the year of implementation; 10 years of information will be required.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.3 - Investment Returns

Fiscal Year Ended December 31	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Annual money-weighted rate of return, net of investment expense	16.30%	-3.02%	15.77%	7.43%	-0.68%	4.84%				

The money-weighted rate of return considers the changing amounts actually invested during a period and weights the amount of pension plan investments by the proportion of time they are available to earn a return during that period. The rate of return is then calculated by solving, through an iterative process, for the rate that equates the sum of the weighted external cash flows into and out of the pension plan investments to the ending fair value of pension plan investments.

Appendix A shows the details of the calculation of the money-weighted rate of return for the current fiscal year.

Note: Only 6 years are presented here, beginning with the year of implementation; 10 years of information will be required.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Notes to the Required Supplementary Information

Changes of benefit terms

All benefit provisions remained the same from the prior measurement date. The Plan provisions used in these disclosures are detailed in Section 5, Summary of Plan Provisions, in the most recent funding actuarial report.

Changes of assumptions

Most of the Actuarial Assumptions and Methods used in these disclosures are the same as the last measurement date, except the mortality and mortality improvement rates were updated and the investment return assumption was reduced from 7.45% to 7.15%. The Actuarial Assumptions and Methods used in these disclosures are detailed in Section 6, Actuarial Assumptions and Methods, in the most recent funding valuation report.

Methods and assumptions used in calculations of Actuarially Determined Contributions

The Actuarially Determined Contributions in the schedule of employers' contributions are calculated as of July 1 of the fiscal year in which contributions are reported. The following actuarial methods and assumptions were used to determine contributions reported in that schedule:

Actuarial cost method	Entry Age Normal
Amortization method	UAAL Increasing dollar amount at 4% to reduce the Unfunded Actuarial Accrued Liability to zero on or before June 30, 2033. The annual increase in appropriation is further limited to 7.50%.
Asset valuation method	The Actuarial Value of Assets is the market value of assets as of the valuation date reduced by the sum of: a) 80% of gains and losses of the prior year, b) 60% of gains and losses of the second prior year, c) 40% of gains and losses of the third prior year, and d) 20% of gains and losses of the fourth prior year. Investment gains and losses are determined by the excess or deficiency of the expected return over the actual return on the market value. The actuarial valuation of assets is further constrained to be not less than 90% or more than 110% of market value.
Inflation	2.4% per year
Salary increases	Group 1: 6% - 4.25%, based on service Group 4: 7% - 4.75%, based on service
Payroll growth	3.5% per year
Investment rate of return	7.15%, net of pension plan investment expense, including inflation.

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.1 - Deferred Outflows of Resources and Deferred Inflows of Resources

Deferred Outflows of Resources and Deferred Inflows of Resources arising from differences between expected and actual experience are recognized in Pension Expense over the average expected remaining service life of all active and inactive members.

				Balances at December 31, 2019	
	Experience Losses	Experience Gains	Amounts Recognized in Pension Expense through December 31, 2019	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) - (c)
2015	\$ -	\$ -	\$ -	\$ -	\$ -
2016	-	4,348,735	(3,410,772)	-	937,963
2017	-	434,874	(192,138)	-	242,736
2018	-	-	-	-	-
2019	-	6,620,290	(929,816)	-	5,690,474
				<u>\$ -</u>	<u>\$ 6,871,173</u>

Deferred Outflows of Resources and Deferred Inflows of Resources arising from changes of assumptions are recognized in Pension Expense over the average expected remaining service life of all active and inactive members.

				Balances at December 31, 2019	
	Increases in the Total Pension Liability	Decreases in the Total Pension Liability	Amounts Recognized in Pension Expense through December 31, 2019	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) - (c)
2015	\$ -	\$ -	\$ -	\$ -	\$ -
2016	16,610,091	-	13,027,524	3,582,567	-
2017	-	9,996,849	(4,416,870)	-	5,579,979
2018	-	-	-	-	-
2019	20,488,858	-	2,877,649	17,611,209	-
				<u>\$ 21,193,776</u>	<u>\$ 5,579,979</u>

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.1 - Deferred Outflows of Resources and Deferred Inflows of Resources

Deferred Outflows of Resources and Deferred Inflows of Resources arising from differences between projected and actual earnings on Pension Plan investments are recognized in Pension Expense over five years.

				Balances at December 31, 2019	
Year	Investment Earnings Less Than Projected (a)	Investment Earnings Greater Than Projected (b)	Amounts Recognized in Pension Expense through December 31, 2019 (c)	Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2015	\$ 21,341,884	\$ -	\$ 21,341,884	\$ -	\$ -
2016	231,820	-	185,456	46,364	-
2017	-	22,564,985	(13,538,991)	-	9,025,994
2018	33,385,880	-	13,354,352	20,031,528	-
2019	-	26,975,353	(5,395,071)	-	21,580,282
Subtotal				<u>\$ 20,077,892</u>	<u>\$ 30,606,276</u>
Net				<u>\$ -</u>	<u>\$ 10,528,384</u>

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.1 - Deferred Outflows of Resources and Deferred Inflows of Resources

Deferred Outflows of Resources and Deferred Inflows of Resources arising from changes in proportion and differences between employer contributions and proportionate share of contributions are recognized in Pension Expense over the average expected remaining service life of all active and inactive members.

				Balances at December 31, 2019	
	Proportionate Share* Outflows	Proportionate Share* Inflows	Amounts Recognized in Pension Expense through December 31, 2019	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) - (c)
2015	\$ 3,057,911	\$ 3,057,911	\$ 2,884,823	\$ 173,088	\$ 173,088
2016	2,001,045	2,001,045	1,569,447	431,598	431,598
2017	2,338,865	2,338,865	1,033,371	1,305,494	1,305,494
2018	2,185,181	2,185,181	643,646	1,541,535	1,541,535
2019	3,112,389	3,112,389	437,134	2,675,255	2,675,255
				<u>\$ 6,126,970</u>	<u>\$ 6,126,970</u>

* Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions

Amounts reported as Deferred Outflows of Resources and Deferred Inflows of Resources will be recognized in Pension Expense as follows:

Year ended December 31		
2020	\$	(368,843)
2021	\$	(2,578,979)
2022	\$	1,693,603
2023	\$	(4,660,944)
2024	\$	1,947,833
Thereafter	\$	2,181,570
Total Deferred Outflows	\$	27,320,746
Total Deferred Inflows	\$	29,106,506

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.2 - Pension Expense

Fiscal Year Ended December 31, 2019

1. Service cost		\$ 13,282,271
2. Interest on the total pension liability		
a. Total Pension Liability, beginning of year	524,593,396	
b. Service cost, beginning of year	13,282,271	
c. Benefit payments, including refunds of employee contributions	<u>(31,865,798)</u>	
d. Interest on Total Pension Liability		38,884,736
3. Differences between expected and actual experience		(1,846,555)
4. Changes of benefit terms		-
5. Changes of assumptions		4,662,240
6. Employee contributions		(8,334,804)
7. Projected earnings on pension plan investments		
a. Fiduciary Net Position, beginning of year	309,026,161	
b. Employer contributions	24,294,506	
c. Employee contributions	8,334,804	
d. Benefit payments, including refunds of employee contributions	<u>(31,865,798)</u>	
e. Administrative expenses and other	<u>(842,974)</u>	
f. Total projected earnings		(23,095,981)
8. Differences between projected and actual earnings on plan investments		1,083,849
9. Pension plan administrative expenses		842,974
10. Other changes in Fiduciary Net Position		<u>-</u>
11. Total Pension Expense		<u>\$ 25,478,730</u>

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.3 - Proportionate Share of Contributions

The basis of an employer's allocation of the collective pension amount is consistent with the manner in which contributions to the plan are made. The schedule of employer allocations for 2019 and 2018, based on employer contributions made for the 2020 fiscal year and 2019 fiscal year, respectively, shows the proportionate relationship of each employer to all employers and each employer's allocation percentage.

Entity	2019		2018	
	Employer Contribution	Proportionate Share of Total Employer Contribution	Employer Contribution	Proportionate Share of Total Employer Contribution
Hampshire Council of Governments	314,913	1.296230%	282,659	1.250815%
Amherst	6,563,247	27.015355%	6,211,314	27.486131%
Amherst-Pelham Regional School District	1,471,400	6.056513%	1,358,348	6.010923%
Amherst Housing Authority	177,997	0.732664%	189,499	0.838566%
Belchertown	3,180,707	13.092289%	2,907,783	12.867439%
Belchertown Housing Authority	33,226	0.136763%	30,848	0.136508%
Belchertown Water District	54,586	0.224685%	41,866	0.185264%
Chesterfield	87,812	0.361448%	83,732	0.370528%
Chesterfield-Goshen Regional School District	94,932	0.390755%	81,529	0.360780%
Cummington	66,452	0.273527%	57,291	0.253523%
Foothills Health District	14,240	0.058614%	13,221	0.058505%
Gateway Regional School District	593,326	2.442223%	568,500	2.515710%
Goshen	68,826	0.283299%	70,511	0.312023%
Granby	1,034,848	4.259597%	980,077	4.337009%
Granby Housing Authority	28,480	0.117228%	28,645	0.126759%
Hadley	1,271,770	5.234805%	1,105,022	4.889912%
Hadley Housing Authority	9,493	0.039075%	8,815	0.039008%
Hampshire County Regional Housing Authority	9,493	0.039075%	6,610	0.029250%
Hampshire Regional School District	534,839	2.201481%	485,682	2.149226%
Hatfield	557,726	2.295688%	583,924	2.583964%
Hatfield Housing Authority	14,240	0.058614%	13,221	0.058505%
Huntington	125,629	0.517109%	105,436	0.466572%
Middlefield	47,466	0.195378%	48,477	0.214519%
Pelham	201,732	0.830361%	185,093	0.819068%
Plainfield	64,079	0.263759%	70,511	0.312023%
Quabbin Health District	67,833	0.279211%	58,870	0.260510%
Southampton	811,816	3.341562%	745,799	3.300289%
South Hadley	3,211,066	13.217252%	2,869,344	12.697340%
South Hadley Housing Authority	61,706	0.253992%	57,291	0.253523%
South Hadley-Granby-Eton Veteran's District	14,240	0.058614%	15,424	0.068254%

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.3 - Proportionate Share of Contributions

The basis of an employer's allocation of the collective pension amount is consistent with the manner in which contributions to the plan are made. The schedule of employer allocations for 2019 and 2018, based on employer contributions made for the 2020 fiscal year and 2019 fiscal year, respectively, shows the proportionate relationship of each employer to all employers and each employer's allocation percentage.

Entity	2019		2018	
	Employer Contribution	Proportionate Share of Total Employer Contribution	Employer Contribution	Proportionate Share of Total Employer Contribution
South Hadley Fire District No.1	593,326	2.442223%	555,279	2.457205%
South Hadley Fire District No.2	249,197	1.025734%	229,162	1.014081%
Ware	1,969,540	8.106936%	1,900,394	8.409570%
Ware Housing Authority	60,378	0.248525%	56,311	0.249186%
Westhampton	204,104	0.840124%	200,517	0.887322%
Williamsburg	286,176	1.177945%	276,992	1.225737%
Worthington	143,665	0.591348%	113,996	0.504452%
Total	24,294,506	100.000000%	22,597,993	100.000000%

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.4 - Pension Amounts by Employer

The Schedule of Pension Amounts by Employer is provided in Appendix C. The schedule shows the Net Pension Liability, the various categories of Deferred Outflows of Resources and Deferred Inflows of Resources and Pension Expense for each employer. The schedule includes the differences between expected and actual experience, differences between projected and actual investment earnings and changes of assumptions. Further, each employer is required to recognize Deferred Outflows of Resources and Deferred Inflows of Resources related to (1) the net impact from changes in proportion between periods and (2) differences between actual contributions made by an employer and their proportionate share of contributions.

Each employer's allocation of Pension Expense and Net Pension Liability can be based on the proportion of its contributions to the aggregate amount of employer contributions.

Under GASB 68, gains and losses (investment, experience or assumption changes) and changes in employer's proportionate shares related to pensions are recognized in Pension Expense systematically over time.

The first amortized amounts are recognized in Pension Expense for the year the gain or loss occurs. The remaining amounts are categorized as Deferred Inflows and Deferred Outflows to be recognized in future Pension Expense.

The amortization period differs depending on the source of the gain or loss:

Difference between projected and actual earnings

5 year straight-line amortization

All other amounts

Straight-line amortization over the average expected remaining service lives of all members that are provided with benefits (actives, inactives and retirees) as of the beginning of the measurement period

For 2019:

- ◆ Net Pension Liability, Deferred Outflows of Resources, Deferred Inflows of Resources and Pension Expense are allocated to each employer based on its proportionate share of Total Employer Contribution shown in Exhibit 4.3.
- ◆ The difference between expected and actual experience is amortized over the average of the expected future service lives of all participants, with the first amortized amount recognized in Pension Expense in the current year. Similar Deferred Outflows of Resources and Deferred Inflows of Resources were established during prior years, with the first amortized amount recognized in Pension Expense in 2016.
- ◆ Net difference between projected and actual investment earnings (gain on pension plan investments for 2019) is amortized over 5 years, with the first amortized amount recognized in Pension Expense in the current year. Similar Deferred Outflows of Resources and Deferred Inflows of Resources were established during prior years, with the first amortized amount recognized in Pension Expense in 2014.
- ◆ The change in Total Pension Liability as a result of changes in assumptions is amortized over the average of the expected future service lives of all participants, with the first amortized amount recognized in Pension Expense in the current year. Similar Deferred Outflows of Resources and Deferred Inflows of Resources were established during prior years, with the first amortized amount recognized in Pension Expense in 2016.

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.4 - Pension Amounts by Employer

For 2019 (continued):

- ◆ There are no differences between employer contributions and the proportionate share of contributions because the Plan utilizes employer contributions as the method of allocation.

- ◆ The net effect of the change in the employer's proportionate shares of the collective Net Pension Liability, collective Deferred Outflows and Deferred Inflows is amortized over the average expected remaining service lives of all members, with the first amortized amount recognized in Pension Expense in the current year. Similar Deferred Outflows of Resources and Deferred Inflows of Resources were established during prior years, with the first amortized amount recognized in 2015.

- ◆ No adjustments have been made for employer contributions made subsequent to the measurement date as defined in paragraph 57 of GASB 68.

SECTION 5 - GLOSSARY OF TERMS

Actuarial Assumptions – Assumptions, based upon past experience or standard tables, used to predict the occurrence of future events affecting the commencement, amount and duration of pension benefits, such as: changes in compensation, mortality, withdrawal, disablement and retirement; rates of investment earnings and asset appreciation or depreciation; and any other relevant items.

Actuarial Cost Method (or Funding Method) – A procedure for allocating the Actuarial Present Value of projected benefit payments to the current year (Service Cost) and the past (Total Pension Liability).

Actuarial (Experience) Gain or Loss – A measure of the difference between actual experience and that expected based upon the set of Actuarial Assumptions during the period between the valuation date and the most recent immediately preceding valuation date.

Actuarial Present Value of Projected Benefit Payments – The dollar value on the valuation date of all benefits expected to be paid to current members based upon the Actuarial Assumptions and the terms of the Plan.

Actuarially Determined Contribution – A target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.

Actuarial Valuation Date – The date as of which an actuarial valuation is performed. This date may be up to 24 months prior to the measurement date and up to 30 months prior to the employer's reporting date.

Covered Payroll – The payroll on which contributions to a pension plan are based.

Deferred Inflow of Resources – Acquisition of resources by a government that is applicable to future reporting periods. Under GASB 68, deferred inflows of resources are made up of experience gains, assumption changes reducing the Total Pension Liability and investment gains that are recognized in future reporting periods.

Deferred Outflow of Resources – Consumption of resources by a government that is applicable to future reporting periods. Under GASB 68, deferred outflows of resources are made up of experience losses, assumption changes increasing the Total Pension Liability and investment losses that are recognized in future reporting periods.

Discount Rate – Single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the sum of:

- (1) a long-term expected rate of return on pension plan investments *to the extent that the pension plan's assets are sufficient to pay benefits and pension plan assets are expected to be invested using a strategy to achieve that return and*
- (2) a tax-exempt, high-quality municipal bond rate *to the extent that the conditions for use of the long-term expected rate of return are not met.*

Entry Age Normal Actuarial Cost Method – A method under which the actuarial present value of the projected benefits of each individual in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age.

SECTION 5 - GLOSSARY OF TERMS

Fiduciary Net Position – The fair market value of assets as of the measurement date.

Funded Ratio – The Actuarial Value of Assets expressed as a percentage of the Actuarial Accrued Liability.

GASB – Governmental Accounting Standards Board.

Long-Term Expected Rate of Return – Long-term expected rate of return on pension plan investments expected to be used to finance the payment of benefits, net of investment expenses.

Measurement Date – The date as of which the Total Pension Liability and Fiduciary Net Position are measured.

Municipal Bond Rate – Yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher.

Net Pension Liability – The liability of the employer for benefits provided through a defined benefit pension plan. It is calculated as the Total Pension Liability less the Fiduciary Net Position.

Present Value of Future Benefits – The actuarial present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value of money and the probabilities of payment.

Reporting Date – The last day of the Plan or employer's fiscal year.

Service Cost – The portion of the actuarial present value of projected benefit amounts that is attributed to a valuation year.

Total Pension Liability – The portion of the actuarial present value of projected benefit amounts that is attributed to past periods of employee service using the Entry Age Normal cost method based on the requirements of GASB 67 and GASB 68.

Unfunded Actuarial Accrued Liability – The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.

APPENDIX A - CALCULATION OF MONEY-WEIGHTED RATE OF RETURN

	Plan Investments/ Net External Cash Flows (a)	Periods Invested (b)	Period Weight (c)=(b)÷12	(d)=(a) x (1+r _{mw}) ^(c)
Beginning value - January 1, 2019	\$ 309,026,161	12	1.00	\$ 359,408,523
Monthly net external cash flows:				
January	(1,820,315)	11	0.92	(2,090,612)
February	(1,985,166)	10	0.83	(2,251,427)
March	(2,079,508)	9	0.75	(2,328,925)
April	(1,855,200)	8	0.67	(2,051,727)
May	(956,521)	7	0.58	(1,044,617)
June	21,808,973	6	0.50	23,519,700
July	(3,618,725)	5	0.42	(3,853,772)
August	(2,124,345)	4	0.33	(2,234,033)
September	(2,235,054)	3	0.25	(2,321,060)
October	(1,899,228)	2	0.17	(1,947,642)
November	(970,173)	1	0.08	(982,461)
December	(2,803,914)	0	0.00	(2,803,914)
Ending value - December 31, 2019				\$ 359,018,033
Money-weighted rate of return				16.30%

Note: Beginning and ending values are based on amounts reported in the System's 2019 Annual Statement, and monthly cash flows are based on amounts provided by the Retirement Board.

APPENDIX B - SCHEDULE OF DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED INFLOWS OF RESOURCES

Year	Differences between Expected and Actual Experience	Recognition Period (Years)											
			2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
2015	-	5.30	-	-	-	-	-	-	-	-	-	-	-
2016	(4,348,735)	5.10	(852,693)	(852,693)	(85,270)	-	-	-	-	-	-	-	-
2017	(434,874)	6.79	(64,046)	(64,046)	(64,046)	(64,046)	(50,598)	-	-	-	-	-	-
2018	-	6.79	-	-	-	-	-	-	-	-	-	-	-
2019	(6,620,290)	7.12	(929,816)	(929,816)	(929,816)	(929,816)	(929,816)	(929,816)	(929,816)	(929,816)	(111,578)	-	-
Net Increase (Decrease) in Pension Expense			(1,846,555)	(1,846,555)	(1,079,132)	(993,862)	(980,414)	(929,816)	(929,816)	(929,816)	(111,578)	-	-

Year	Changes of Assumptions	Recognition Period (Years)											
			2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
2015	-	5.30	-	-	-	-	-	-	-	-	-	-	-
2016	16,610,091	5.10	3,256,881	3,256,881	325,686	-	-	-	-	-	-	-	-
2017	(9,996,849)	6.79	(1,472,290)	(1,472,290)	(1,472,290)	(1,472,290)	(1,163,109)	-	-	-	-	-	-
2018	-	6.79	-	-	-	-	-	-	-	-	-	-	-
2019	20,488,858	7.12	2,877,649	2,877,649	2,877,649	2,877,649	2,877,649	2,877,649	2,877,649	2,877,649	345,315	-	-
Net Increase (Decrease) in Pension Expense			4,662,240	4,662,240	1,731,045	1,405,359	1,714,540	2,877,649	2,877,649	2,877,649	345,315	-	-

Year	Differences between Projected and Actual Earnings on Pension Plan Investments	Recognition Period (Years)											
			2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
2015	21,341,884	5	4,268,377	-	-	-	-	-	-	-	-	-	-
2016	231,820	5	46,364	46,364	-	-	-	-	-	-	-	-	-
2017	(22,564,985)	5	(4,512,997)	(4,512,997)	(4,512,997)	-	-	-	-	-	-	-	-
2018	33,385,880	5	6,677,176	6,677,176	6,677,176	6,677,176	-	-	-	-	-	-	-
2019	(26,975,353)	5	(5,395,071)	(5,395,071)	(5,395,071)	(5,395,070)	(5,395,070)	-	-	-	-	-	-
Net Increase (Decrease) in Pension Expense			1,083,849	(3,184,528)	(3,230,892)	1,282,106	(5,395,070)	-	-	-	-	-	-

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Hampshire Council of Governments
◆ Current Proportionate Share		1.296230%
◆ Prior Proportionate Share		1.250815%
Beginning Net Pension Liability	\$ 215,567,235	\$ 2,696,346
Ending Net Pension Liability	\$ 199,745,140	\$ 2,589,157
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	274,720
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	226,586
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 501,306
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 89,066
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	136,472
◆ Changes of Assumptions	5,579,979	72,329
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	15,928
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 313,795
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 330,263
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	11,651
Total Employer Pension Expense	\$ 25,478,730	\$ 341,914
Covered Payroll:	\$ 85,426,619	\$ 324,242
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 2,589,157
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 3,427,428
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 1,881,375
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ 44,037
◆ 2021	\$ (2,578,979)	\$ 13,928
◆ 2022	\$ 1,693,603	\$ 67,379
◆ 2023	\$ (4,660,944)	\$ (21,134)
◆ 2024	\$ 1,947,833	\$ 83,301
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Amherst
◆ Current Proportionate Share		27.015355%
◆ Prior Proportionate Share		27.486131%
Beginning Net Pension Liability	\$ 215,567,235	\$ 59,251,093
Ending Net Pension Liability	\$ 199,745,140	\$ 53,961,857
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	5,725,574
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	957,362
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 6,682,936
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 1,856,271
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	2,844,281
◆ Changes of Assumptions	5,579,979	1,507,450
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	940,233
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 7,148,235
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 6,883,170
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	5,238
Total Employer Pension Expense	\$ 25,478,730	\$ 6,888,408
Covered Payroll:	\$ 85,426,619	\$ 22,430,264
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 53,961,859
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 71,432,668
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 39,210,632
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (124,139)
◆ 2021	\$ (2,578,979)	\$ (627,989)
◆ 2022	\$ 1,693,603	\$ 538,039
◆ 2023	\$ (4,660,944)	\$ (1,194,528)
◆ 2024	\$ 1,947,833	\$ 943,318
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Amherst-Pelham Regional School District
◆ Current Proportionate Share		6.056513%
◆ Prior Proportionate Share		6.010923%
Beginning Net Pension Liability	\$ 215,567,235	\$ 12,957,581
Ending Net Pension Liability	\$ 199,745,140	\$ 12,097,591
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	1,283,604
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	219,773
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 1,503,377
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 416,154
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	637,653
◆ Changes of Assumptions	5,579,979	337,952
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	10,806
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 1,402,565
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 1,543,123
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	31,808
Total Employer Pension Expense	\$ 25,478,730	\$ 1,574,931
Covered Payroll:	\$ 85,426,619	\$ 744,165
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 12,097,591
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 16,014,334
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 8,790,546
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ 11,947
◆ 2021	\$ (2,578,979)	\$ (115,268)
◆ 2022	\$ 1,693,603	\$ 144,121
◆ 2023	\$ (4,660,944)	\$ (240,581)
◆ 2024	\$ 1,947,833	\$ 300,593
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Amherst Housing Authority
◆ Current Proportionate Share		0.732664%
◆ Prior Proportionate Share		0.838566%
Beginning Net Pension Liability	\$ 215,567,235	\$ 1,807,673
Ending Net Pension Liability	\$ 199,745,140	\$ 1,463,460
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	155,279
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	189,412
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 344,691
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 50,343
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	77,138
◆ Changes of Assumptions	5,579,979	40,882
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	275,255
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 443,618
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 186,673
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(31,384)
Total Employer Pension Expense	\$ 25,478,730	\$ 155,289
Covered Payroll:	\$ 85,426,619	\$ 5,268,523
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 1,463,460
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 1,937,273
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 1,063,403
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (26,653)
◆ 2021	\$ (2,578,979)	\$ (30,985)
◆ 2022	\$ 1,693,603	\$ 1,282
◆ 2023	\$ (4,660,944)	\$ (40,892)
◆ 2024	\$ 1,947,833	\$ (1,679)
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Belchertown
◆ Current Proportionate Share		13.092289%
◆ Prior Proportionate Share		12.867439%
Beginning Net Pension Liability	\$ 215,567,235	\$ 27,737,983
Ending Net Pension Liability	\$ 199,745,140	\$ 26,151,212
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	2,774,750
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	555,703
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 3,330,453
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 899,594
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	1,378,407
◆ Changes of Assumptions	5,579,979	730,547
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	45,553
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 3,054,101
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 3,335,749
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	57,900
Total Employer Pension Expense	\$ 25,478,730	\$ 3,393,649
Covered Payroll:	\$ 85,426,619	\$ 11,391,900
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 26,151,212
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 34,617,985
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 19,002,413
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ 91,376
◆ 2021	\$ (2,578,979)	\$ (255,275)
◆ 2022	\$ 1,693,603	\$ 293,843
◆ 2023	\$ (4,660,944)	\$ (537,530)
◆ 2024	\$ 1,947,833	\$ 683,938
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Belchertown Housing Authority
◆ Current Proportionate Share		0.136763%
◆ Prior Proportionate Share		0.136508%
Beginning Net Pension Liability	\$ 215,567,235	\$ 294,266
Ending Net Pension Liability	\$ 199,745,140	\$ 273,178
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	28,985
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	17,045
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 46,030
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 9,397
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	14,399
◆ Changes of Assumptions	5,579,979	7,631
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	-
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 31,427
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 34,846
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	24,182
Total Employer Pension Expense	\$ 25,478,730	\$ 59,028
Covered Payroll:	\$ 85,426,619	\$ 71,967
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 273,178
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 361,623
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 198,501
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ 8,811
◆ 2021	\$ (2,578,979)	\$ (820)
◆ 2022	\$ 1,693,603	\$ 4,997
◆ 2023	\$ (4,660,944)	\$ (4,229)
◆ 2024	\$ 1,947,833	\$ 5,844
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Belchertown Water District
◆ Current Proportionate Share		0.224685%
◆ Prior Proportionate Share		0.185264%
Beginning Net Pension Liability	\$ 215,567,235	\$ 399,369
Ending Net Pension Liability	\$ 199,745,140	\$ 448,796
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	47,619
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	88,189
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 135,808
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 15,438
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	23,656
◆ Changes of Assumptions	5,579,979	12,537
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	54,315
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 105,946
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 57,247
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	14,952
Total Employer Pension Expense	\$ 25,478,730	\$ 72,199
Covered Payroll:	\$ 85,426,619	\$ 158,503
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 448,796
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 594,100
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 326,112
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ 14,123
◆ 2021	\$ (2,578,979)	\$ (7,143)
◆ 2022	\$ 1,693,603	\$ 646
◆ 2023	\$ (4,660,944)	\$ (10,622)
◆ 2024	\$ 1,947,833	\$ 32,858
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Chesterfield
◆ Current Proportionate Share		0.361448%
◆ Prior Proportionate Share		0.370528%
Beginning Net Pension Liability	\$ 215,567,235	\$ 798,738
Ending Net Pension Liability	\$ 199,745,140	\$ 721,975
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	76,604
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	33,581
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 110,185
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 24,836
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	38,055
◆ Changes of Assumptions	5,579,979	20,169
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	49,115
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 132,175
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 92,092
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(21,039)
Total Employer Pension Expense	\$ 25,478,730	\$ 71,053
Covered Payroll:	\$ 85,426,619	\$ 329,092
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 721,975
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 955,723
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 524,613
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (5,027)
◆ 2021	\$ (2,578,979)	\$ (9,223)
◆ 2022	\$ 1,693,603	\$ 5,815
◆ 2023	\$ (4,660,944)	\$ (18,767)
◆ 2024	\$ 1,947,833	\$ 5,212
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Chesterfield-Goshen Regional School District
◆ Current Proportionate Share		0.390755%
◆ Prior Proportionate Share		0.360780%
Beginning Net Pension Liability	\$ 215,567,235	\$ 777,723
Ending Net Pension Liability	\$ 199,745,140	\$ 780,514
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	82,816
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	103,094
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 185,910
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 26,849
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	41,140
◆ Changes of Assumptions	5,579,979	21,804
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	49,057
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 138,850
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 99,559
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(1,071)
Total Employer Pension Expense	\$ 25,478,730	\$ 98,488
Covered Payroll:	\$ 85,426,619	\$ 330,329
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 780,514
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 1,033,215
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 567,150
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (4,990)
◆ 2021	\$ (2,578,979)	\$ 4,128
◆ 2022	\$ 1,693,603	\$ 22,914
◆ 2023	\$ (4,660,944)	\$ (4,710)
◆ 2024	\$ 1,947,833	\$ 29,718
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Cummington
◆ Current Proportionate Share		0.273527%
◆ Prior Proportionate Share		0.253523%
Beginning Net Pension Liability	\$ 215,567,235	\$ 546,511
Ending Net Pension Liability	\$ 199,745,140	\$ 546,357
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	57,971
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	102,306
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 160,277
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 18,795
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	28,798
◆ Changes of Assumptions	5,579,979	15,263
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	2,472
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 65,328
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 69,691
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	16,096
Total Employer Pension Expense	\$ 25,478,730	\$ 85,787
Covered Payroll:	\$ 85,426,619	\$ 193,253
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 546,357
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 723,246
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 397,002
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ 17,565
◆ 2021	\$ (2,578,979)	\$ 12,334
◆ 2022	\$ 1,693,603	\$ 23,992
◆ 2023	\$ (4,660,944)	\$ 6,689
◆ 2024	\$ 1,947,833	\$ 34,369
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Foothills Health District
◆ Current Proportionate Share		0.058614%
◆ Prior Proportionate Share		0.058505%
Beginning Net Pension Liability	\$ 215,567,235	\$ 126,118
Ending Net Pension Liability	\$ 199,745,140	\$ 117,079
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	12,423
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	11,649
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 24,072
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 4,027
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	6,171
◆ Changes of Assumptions	5,579,979	3,271
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	-
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 13,469
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 14,934
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	6,355
Total Employer Pension Expense	\$ 25,478,730	\$ 21,289
Covered Payroll:	\$ 85,426,619	\$ 51,012
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 117,079
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 154,984
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 85,074
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ 3,661
◆ 2021	\$ (2,578,979)	\$ 1,244
◆ 2022	\$ 1,693,603	\$ 3,742
◆ 2023	\$ (4,660,944)	\$ (548)
◆ 2024	\$ 1,947,833	\$ 2,504
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Gateway Regional School District
◆ Current Proportionate Share		2.442223%
◆ Prior Proportionate Share		2.515710%
Beginning Net Pension Liability	\$ 215,567,235	\$ 5,423,047
Ending Net Pension Liability	\$ 199,745,140	\$ 4,878,222
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	517,599
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	-
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 517,599
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 167,809
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	257,127
◆ Changes of Assumptions	5,579,979	136,276
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	420,232
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 981,444
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 622,247
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(173,170)
Total Employer Pension Expense	\$ 25,478,730	\$ 449,077
Covered Payroll:	\$ 85,426,619	\$ 1,986,378
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 4,878,222
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 6,457,605
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 3,544,692
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (145,011)
◆ 2021	\$ (2,578,979)	\$ (144,697)
◆ 2022	\$ 1,693,603	\$ (36,088)
◆ 2023	\$ (4,660,944)	\$ (182,656)
◆ 2024	\$ 1,947,833	\$ 44,607
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Goshen
◆ Current Proportionate Share		0.283299%
◆ Prior Proportionate Share		0.312023%
Beginning Net Pension Liability	\$ 215,567,235	\$ 672,620
Ending Net Pension Liability	\$ 199,745,140	\$ 565,875
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	60,042
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	45,224
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 105,266
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 19,466
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	29,827
◆ Changes of Assumptions	5,579,979	15,808
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	73,695
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 138,796
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 72,181
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(5,240)
Total Employer Pension Expense	\$ 25,478,730	\$ 66,941
Covered Payroll:	\$ 85,426,619	\$ 200,862
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 565,875
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 749,084
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 411,185
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (3,807)
◆ 2021	\$ (2,578,979)	\$ (12,575)
◆ 2022	\$ 1,693,603	\$ (868)
◆ 2023	\$ (4,660,944)	\$ (17,586)
◆ 2024	\$ 1,947,833	\$ 1,306
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Granby
◆ Current Proportionate Share		4.259597%
◆ Prior Proportionate Share		4.337009%
Beginning Net Pension Liability	\$ 215,567,235	\$ 9,349,170
Ending Net Pension Liability	\$ 199,745,140	\$ 8,508,338
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	902,769
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	110,210
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 1,012,979
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 292,684
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	448,467
◆ Changes of Assumptions	5,579,979	237,685
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	315,592
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 1,294,428
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 1,085,291
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(100,605)
Total Employer Pension Expense	\$ 25,478,730	\$ 984,686
Covered Payroll:	\$ 85,426,619	\$ 3,787,058
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 8,508,338
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 11,263,016
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 6,182,465
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (79,149)
◆ 2021	\$ (2,578,979)	\$ (151,225)
◆ 2022	\$ 1,693,603	\$ 31,452
◆ 2023	\$ (4,660,944)	\$ (230,424)
◆ 2024	\$ 1,947,833	\$ 147,897
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Granby Housing Authority
◆ Current Proportionate Share		0.117228%
◆ Prior Proportionate Share		0.126759%
Beginning Net Pension Liability	\$ 215,567,235	\$ 273,251
Ending Net Pension Liability	\$ 199,745,140	\$ 234,158
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	24,845
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	447
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 25,292
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 8,055
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	12,342
◆ Changes of Assumptions	5,579,979	6,541
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	17,287
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 44,225
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 29,868
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(2,687)
Total Employer Pension Expense	\$ 25,478,730	\$ 27,181
Covered Payroll:	\$ 85,426,619	\$ 99,759
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 234,158
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 309,969
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 170,147
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (3,119)
◆ 2021	\$ (2,578,979)	\$ (5,864)
◆ 2022	\$ 1,693,603	\$ (873)
◆ 2023	\$ (4,660,944)	\$ (8,274)
◆ 2024	\$ 1,947,833	\$ (803)
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Hadley
◆ Current Proportionate Share		5.234805%
◆ Prior Proportionate Share		4.889912%
Beginning Net Pension Liability	\$ 215,567,235	\$ 10,541,048
Ending Net Pension Liability	\$ 199,745,140	\$ 10,456,269
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	1,109,453
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	853,204
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 1,962,657
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 359,693
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	551,140
◆ Changes of Assumptions	5,579,979	292,101
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	174,761
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 1,377,695
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 1,333,762
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	122,198
Total Employer Pension Expense	\$ 25,478,730	\$ 1,455,960
Covered Payroll:	\$ 85,426,619	\$ 4,730,401
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 10,456,269
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 13,841,613
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 7,597,902
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ 63,245
◆ 2021	\$ (2,578,979)	\$ (599)
◆ 2022	\$ 1,693,603	\$ 230,712
◆ 2023	\$ (4,660,944)	\$ (115,360)
◆ 2024	\$ 1,947,833	\$ 406,964
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Hadley Housing Authority
◆ Current Proportionate Share		0.039075%
◆ Prior Proportionate Share		0.039008%
Beginning Net Pension Liability	\$ 215,567,235	\$ 84,088
Ending Net Pension Liability	\$ 199,745,140	\$ 78,050
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	8,281
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	263
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 8,544
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 2,685
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	4,114
◆ Changes of Assumptions	5,579,979	2,180
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	271
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 9,250
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 9,956
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	20
Total Employer Pension Expense	\$ 25,478,730	\$ 9,976
Covered Payroll:	\$ 85,426,619	\$ 34,297
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 78,050
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 103,319
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 56,714
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (124)
◆ 2021	\$ (2,578,979)	\$ (1,036)
◆ 2022	\$ 1,693,603	\$ 629
◆ 2023	\$ (4,660,944)	\$ (1,839)
◆ 2024	\$ 1,947,833	\$ 1,664
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Hampshire County Regional Housing Authority
◆ Current Proportionate Share		0.039075%
◆ Prior Proportionate Share		0.029250%
Beginning Net Pension Liability	\$ 215,567,235	\$ 63,054
Ending Net Pension Liability	\$ 199,745,140	\$ 78,050
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	8,281
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	27,298
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 35,579
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 2,685
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	4,114
◆ Changes of Assumptions	5,579,979	2,180
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	13,346
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 22,325
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 9,956
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	2,744
Total Employer Pension Expense	\$ 25,478,730	\$ 12,700
Covered Payroll:	\$ 85,426,619	\$ 32,759
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 78,050
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 103,319
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 56,714
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ 2,600
◆ 2021	\$ (2,578,979)	\$ 1,701
◆ 2022	\$ 1,693,603	\$ 3,367
◆ 2023	\$ (4,660,944)	\$ 312
◆ 2024	\$ 1,947,833	\$ 5,274
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Hampshire Regional School District
◆ Current Proportionate Share		2.201481%
◆ Prior Proportionate Share		2.149226%
Beginning Net Pension Liability	\$ 215,567,235	\$ 4,633,028
Ending Net Pension Liability	\$ 199,745,140	\$ 4,397,352
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	466,577
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	97,947
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 564,524
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 151,268
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	231,780
◆ Changes of Assumptions	5,579,979	122,842
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	121,677
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 627,567
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 560,909
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	8,280
Total Employer Pension Expense	\$ 25,478,730	\$ 569,189
Covered Payroll:	\$ 85,426,619	\$ 1,694,128
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 4,397,352
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 5,821,048
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 3,195,274
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (12,229)
◆ 2021	\$ (2,578,979)	\$ (68,364)
◆ 2022	\$ 1,693,603	\$ 25,455
◆ 2023	\$ (4,660,944)	\$ (113,302)
◆ 2024	\$ 1,947,833	\$ 105,397
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Hatfield
◆ Current Proportionate Share		2.295688%
◆ Prior Proportionate Share		2.583964%
Beginning Net Pension Liability	\$ 215,567,235	\$ 5,570,180
Ending Net Pension Liability	\$ 199,745,140	\$ 4,585,525
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	486,543
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	214,418
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 700,961
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 157,741
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	241,699
◆ Changes of Assumptions	5,579,979	128,099
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	508,758
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 1,036,297
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 584,912
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(782)
Total Employer Pension Expense	\$ 25,478,730	\$ 584,130
Covered Payroll:	\$ 85,426,619	\$ 2,125,045
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 4,585,525
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 6,070,144
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 3,332,008
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (31,549)
◆ 2021	\$ (2,578,979)	\$ (88,337)
◆ 2022	\$ 1,693,603	\$ 10,138
◆ 2023	\$ (4,660,944)	\$ (147,094)
◆ 2024	\$ 1,947,833	\$ (78,494)
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Hatfield Housing Authority
◆ Current Proportionate Share		0.058614%
◆ Prior Proportionate Share		0.058505%
Beginning Net Pension Liability	\$ 215,567,235	\$ 126,118
Ending Net Pension Liability	\$ 199,745,140	\$ 117,079
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	12,423
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	4,313
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 16,736
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 4,027
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	6,171
◆ Changes of Assumptions	5,579,979	3,271
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	404
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 13,873
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 14,934
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	3,589
Total Employer Pension Expense	\$ 25,478,730	\$ 18,523
Covered Payroll:	\$ 85,426,619	\$ 23,681
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 117,079
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 154,984
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 85,074
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ 3,373
◆ 2021	\$ (2,578,979)	\$ (1,197)
◆ 2022	\$ 1,693,603	\$ 944
◆ 2023	\$ (4,660,944)	\$ (2,759)
◆ 2024	\$ 1,947,833	\$ 2,502
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Huntington
◆ Current Proportionate Share		0.517109%
◆ Prior Proportionate Share		0.466572%
Beginning Net Pension Liability	\$ 215,567,235	\$ 1,005,777
Ending Net Pension Liability	\$ 199,745,140	\$ 1,032,899
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	109,595
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	99,427
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 209,022
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 35,531
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	54,443
◆ Changes of Assumptions	5,579,979	28,855
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	121,864
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 240,693
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 131,753
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	5,894
Total Employer Pension Expense	\$ 25,478,730	\$ 137,647
Covered Payroll:	\$ 85,426,619	\$ 450,555
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 1,032,899
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 1,367,313
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 750,542
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (5,924)
◆ 2021	\$ (2,578,979)	\$ (22,622)
◆ 2022	\$ 1,693,603	\$ (641)
◆ 2023	\$ (4,660,944)	\$ (33,884)
◆ 2024	\$ 1,947,833	\$ 31,400
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Middlefield
◆ Current Proportionate Share		0.195378%
◆ Prior Proportionate Share		0.214519%
Beginning Net Pension Liability	\$ 215,567,235	\$ 462,433
Ending Net Pension Liability	\$ 199,745,140	\$ 390,257
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	41,408
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	14,153
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 55,561
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 13,425
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	20,570
◆ Changes of Assumptions	5,579,979	10,902
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	35,436
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 80,333
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 49,780
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(6,131)
Total Employer Pension Expense	\$ 25,478,730	\$ 43,649
Covered Payroll:	\$ 85,426,619	\$ 163,280
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 390,257
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 516,608
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 283,575
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (4,374)
◆ 2021	\$ (2,578,979)	\$ (7,878)
◆ 2022	\$ 1,693,603	\$ 442
◆ 2023	\$ (4,660,944)	\$ (11,895)
◆ 2024	\$ 1,947,833	\$ (1,067)
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Pelham
◆ Current Proportionate Share		0.830361%
◆ Prior Proportionate Share		0.819068%
Beginning Net Pension Liability	\$ 215,567,235	\$ 1,765,643
Ending Net Pension Liability	\$ 199,745,140	\$ 1,658,605
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	175,985
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	34,717
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 210,702
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 57,056
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	87,424
◆ Changes of Assumptions	5,579,979	46,334
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	176,232
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 367,046
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 211,565
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(15,523)
Total Employer Pension Expense	\$ 25,478,730	\$ 196,042
Covered Payroll:	\$ 85,426,619	\$ 743,473
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 1,658,605
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 2,195,598
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 1,205,202
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (23,541)
◆ 2021	\$ (2,578,979)	\$ (54,774)
◆ 2022	\$ 1,693,603	\$ (20,491)
◆ 2023	\$ (4,660,944)	\$ (72,312)
◆ 2024	\$ 1,947,833	\$ 14,774
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Plainfield
◆ Current Proportionate Share		0.263759%
◆ Prior Proportionate Share		0.312023%
Beginning Net Pension Liability	\$ 215,567,235	\$ 672,620
Ending Net Pension Liability	\$ 199,745,140	\$ 526,846
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	55,901
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	14,243
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 70,144
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 18,123
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	27,770
◆ Changes of Assumptions	5,579,979	14,718
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	85,266
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 145,877
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 67,203
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	11,223
Total Employer Pension Expense	\$ 25,478,730	\$ 78,426
Covered Payroll:	\$ 85,426,619	\$ 230,298
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 526,846
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 697,419
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 382,825
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (2,139)
◆ 2021	\$ (2,578,979)	\$ (20,062)
◆ 2022	\$ 1,693,603	\$ (9,547)
◆ 2023	\$ (4,660,944)	\$ (26,189)
◆ 2024	\$ 1,947,833	\$ (17,796)
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Quabbin Health District
◆ Current Proportionate Share		0.279211%
◆ Prior Proportionate Share		0.260510%
Beginning Net Pension Liability	\$ 215,567,235	\$ 561,574
Ending Net Pension Liability	\$ 199,745,140	\$ 557,711
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	59,175
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	53,458
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 112,633
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 19,185
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	29,396
◆ Changes of Assumptions	5,579,979	15,580
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	760
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 64,921
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 71,139
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	9,500
Total Employer Pension Expense	\$ 25,478,730	\$ 80,639
Covered Payroll:	\$ 85,426,619	\$ 215,288
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 557,711
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 738,277
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 405,253
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ 8,470
◆ 2021	\$ (2,578,979)	\$ 2,921
◆ 2022	\$ 1,693,603	\$ 14,920
◆ 2023	\$ (4,660,944)	\$ (3,318)
◆ 2024	\$ 1,947,833	\$ 24,719
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Southampton
◆ Current Proportionate Share		3.341562%
◆ Prior Proportionate Share		3.300289%
Beginning Net Pension Liability	\$ 215,567,235	\$ 7,114,341
Ending Net Pension Liability	\$ 199,745,140	\$ 6,674,608
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	708,203
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	295,846
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 1,004,049
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 229,605
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	351,812
◆ Changes of Assumptions	5,579,979	186,458
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	61,568
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 829,443
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 851,388
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(5,818)
Total Employer Pension Expense	\$ 25,478,730	\$ 845,570
Covered Payroll:	\$ 85,426,619	\$ 2,068,648
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 6,674,608
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 8,835,594
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 4,850,011
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (8,232)
◆ 2021	\$ (2,578,979)	\$ (30,939)
◆ 2022	\$ 1,693,603	\$ 117,043
◆ 2023	\$ (4,660,944)	\$ (97,221)
◆ 2024	\$ 1,947,833	\$ 193,955
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	South Hadley
◆ Current Proportionate Share		13.217252%
◆ Prior Proportionate Share		12.697340%
Beginning Net Pension Liability	\$ 215,567,235	\$ 27,371,305
Ending Net Pension Liability	\$ 199,745,140	\$ 26,400,818
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	2,801,235
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	1,055,600
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 3,856,835
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 908,180
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	1,391,563
◆ Changes of Assumptions	5,579,979	737,520
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	1,141,549
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 4,178,812
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 3,367,588
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	258,282
Total Employer Pension Expense	\$ 25,478,730	\$ 3,625,870
Covered Payroll:	\$ 85,426,619	\$ 929,607
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 26,400,818
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 34,948,405
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 19,183,786
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (20,901)
◆ 2021	\$ (2,578,979)	\$ (462,107)
◆ 2022	\$ 1,693,603	\$ 97,019
◆ 2023	\$ (4,660,944)	\$ (707,866)
◆ 2024	\$ 1,947,833	\$ 771,878
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	South Hadley Housing Authority
◆ Current Proportionate Share		0.253992%
◆ Prior Proportionate Share		0.253523%
Beginning Net Pension Liability	\$ 215,567,235	\$ 546,511
Ending Net Pension Liability	\$ 199,745,140	\$ 507,336
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	53,830
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	14,471
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 68,301
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 17,452
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	26,741
◆ Changes of Assumptions	5,579,979	14,173
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	1,062
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 59,428
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 64,714
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	2,927
Total Employer Pension Expense	\$ 25,478,730	\$ 67,641
Covered Payroll:	\$ 85,426,619	\$ 11,514,267
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 507,336
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 671,592
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 368,649
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ 4,468
◆ 2021	\$ (2,578,979)	\$ (3,581)
◆ 2022	\$ 1,693,603	\$ 6,882
◆ 2023	\$ (4,660,944)	\$ (9,749)
◆ 2024	\$ 1,947,833	\$ 10,853
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	South Hadley- Granby-Eton Veteran's District
◆ Current Proportionate Share		0.058614%
◆ Prior Proportionate Share		0.068254%
Beginning Net Pension Liability	\$ 215,567,235	\$ 147,133
Ending Net Pension Liability	\$ 199,745,140	\$ 117,079
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	12,423
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	240
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 12,663
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 4,027
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	6,171
◆ Changes of Assumptions	5,579,979	3,271
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	17,071
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 30,540
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 14,934
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(2,716)
Total Employer Pension Expense	\$ 25,478,730	\$ 12,218
Covered Payroll:	\$ 85,426,619	\$ 211,852
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 117,079
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 154,984
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 85,074
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (2,932)
◆ 2021	\$ (2,578,979)	\$ (4,311)
◆ 2022	\$ 1,693,603	\$ (1,815)
◆ 2023	\$ (4,660,944)	\$ (5,514)
◆ 2024	\$ 1,947,833	\$ (3,305)
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	South Hadley Fire District No.1
◆ Current Proportionate Share		2.442223%
◆ Prior Proportionate Share		2.457205%
Beginning Net Pension Liability	\$ 215,567,235	\$ 5,296,929
Ending Net Pension Liability	\$ 199,745,140	\$ 4,878,222
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	517,599
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	7,791
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 525,390
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 167,809
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	257,127
◆ Changes of Assumptions	5,579,979	136,276
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	220,953
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 782,165
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 622,247
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(52,472)
Total Employer Pension Expense	\$ 25,478,730	\$ 569,775
Covered Payroll:	\$ 85,426,619	\$ 53,598
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 4,878,222
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 6,457,605
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 3,544,692
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (56,525)
◆ 2021	\$ (2,578,979)	\$ (114,751)
◆ 2022	\$ 1,693,603	\$ (11,113)
◆ 2023	\$ (4,660,944)	\$ (158,298)
◆ 2024	\$ 1,947,833	\$ 83,912
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	South Hadley Fire District No.2
◆ Current Proportionate Share		1.025734%
◆ Prior Proportionate Share		1.014081%
Beginning Net Pension Liability	\$ 215,567,235	\$ 2,186,027
Ending Net Pension Liability	\$ 199,745,140	\$ 2,048,854
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	217,392
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	83,049
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 300,441
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 70,480
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	107,993
◆ Changes of Assumptions	5,579,979	57,236
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	226,195
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 461,904
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 261,344
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(31,457)
Total Employer Pension Expense	\$ 25,478,730	\$ 229,887
Covered Payroll:	\$ 85,426,619	\$ 2,902,825
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 2,048,854
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 2,712,195
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 1,488,771
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (3,030)
◆ 2021	\$ (2,578,979)	\$ (61,350)
◆ 2022	\$ 1,693,603	\$ (23,020)
◆ 2023	\$ (4,660,944)	\$ (88,341)
◆ 2024	\$ 1,947,833	\$ 14,278
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Ware
◆ Current Proportionate Share		8.106936%
◆ Prior Proportionate Share		8.409570%
Beginning Net Pension Liability	\$ 215,567,235	\$ 18,128,277
Ending Net Pension Liability	\$ 199,745,140	\$ 16,193,210
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	1,718,166
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	100,618
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 1,818,784
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 557,042
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	853,529
◆ Changes of Assumptions	5,579,979	452,365
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	651,166
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 2,514,102
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 2,065,544
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(165,840)
Total Employer Pension Expense	\$ 25,478,730	\$ 1,899,704
Covered Payroll:	\$ 85,426,619	\$ 7,329,473
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 16,193,210
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 21,435,960
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 11,766,570
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (111,499)
◆ 2021	\$ (2,578,979)	\$ (296,059)
◆ 2022	\$ 1,693,603	\$ 45,706
◆ 2023	\$ (4,660,944)	\$ (472,218)
◆ 2024	\$ 1,947,833	\$ 138,752
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Ware Housing Authority
◆ Current Proportionate Share		0.248525%
◆ Prior Proportionate Share		0.249186%
Beginning Net Pension Liability	\$ 215,567,235	\$ 537,163
Ending Net Pension Liability	\$ 199,745,140	\$ 496,417
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	52,672
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	22,626
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 75,298
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 17,077
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	26,166
◆ Changes of Assumptions	5,579,979	13,868
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	1,890
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 59,001
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 63,321
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	27,346
Total Employer Pension Expense	\$ 25,478,730	\$ 90,667
Covered Payroll:	\$ 85,426,619	\$ 220,174
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 496,417
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 657,138
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 360,715
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ 11,562
◆ 2021	\$ (2,578,979)	\$ (3,042)
◆ 2022	\$ 1,693,603	\$ 7,271
◆ 2023	\$ (4,660,944)	\$ (9,237)
◆ 2024	\$ 1,947,833	\$ 9,743
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Westhampton
◆ Current Proportionate Share		0.840124%
◆ Prior Proportionate Share		0.887322%
Beginning Net Pension Liability	\$ 215,567,235	\$ 1,912,776
Ending Net Pension Liability	\$ 199,745,140	\$ 1,678,107
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	178,054
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	65,416
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 243,470
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 57,726
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	88,451
◆ Changes of Assumptions	5,579,979	46,879
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	119,199
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 312,255
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 214,053
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(21,554)
Total Employer Pension Expense	\$ 25,478,730	\$ 192,499
Covered Payroll:	\$ 85,426,619	\$ 721,895
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 1,678,107
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 2,221,415
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 1,219,373
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (32,086)
◆ 2021	\$ (2,578,979)	\$ (22,815)
◆ 2022	\$ 1,693,603	\$ 16,527
◆ 2023	\$ (4,660,944)	\$ (39,462)
◆ 2024	\$ 1,947,833	\$ 9,051
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Williamsburg
◆ Current Proportionate Share		1.177945%
◆ Prior Proportionate Share		1.225737%
Beginning Net Pension Liability	\$ 215,567,235	\$ 2,642,288
Ending Net Pension Liability	\$ 199,745,140	\$ 2,352,889
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	249,651
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	119,513
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 369,164
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 80,939
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	124,019
◆ Changes of Assumptions	5,579,979	65,729
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	120,009
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 390,696
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 300,126
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(53,773)
Total Employer Pension Expense	\$ 25,478,730	\$ 246,353
Covered Payroll:	\$ 85,426,619	\$ 1,018,509
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 2,352,889
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 3,114,665
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 1,709,694
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ (23,430)
◆ 2021	\$ (2,578,979)	\$ (15,910)
◆ 2022	\$ 1,693,603	\$ 36,495
◆ 2023	\$ (4,660,944)	\$ (43,430)
◆ 2024	\$ 1,947,833	\$ 24,743
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Hampshire County Retirement System	Worthington
◆ Current Proportionate Share		0.591348%
◆ Prior Proportionate Share		0.504452%
Beginning Net Pension Liability	\$ 215,567,235	\$ 1,087,433
Ending Net Pension Liability	\$ 199,745,140	\$ 1,181,188
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Changes of Assumptions	21,193,776	125,329
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	287,778
Total Deferred Outflows of Resources	\$ 27,320,746	\$ 413,107
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 6,871,173	\$ 40,633
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	10,528,384	62,259
◆ Changes of Assumptions	5,579,979	32,997
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	6,126,970	57,997
Total Deferred Inflows of Resources	\$ 29,106,506	\$ 193,886
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 25,478,730	\$ 150,668
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	71,077
Total Employer Pension Expense	\$ 25,478,730	\$ 221,745
Covered Payroll:	\$ 85,426,619	\$ 645,259
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.15%	\$ 199,745,140	\$ 1,181,188
◆ 1% decrease in the discount rate: 6.15%	\$ 264,415,062	\$ 1,563,612
◆ 1% increase in the discount rate: 8.15%	\$ 145,142,018	\$ 858,294
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ (368,843)	\$ 76,329
◆ 2021	\$ (2,578,979)	\$ 25,563
◆ 2022	\$ 1,693,603	\$ 46,287
◆ 2023	\$ (4,660,944)	\$ 3,824
◆ 2024	\$ 1,947,833	\$ 67,218
◆ Thereafter	\$ 2,181,570	\$ -

APPENDIX D - CALCULATION OF SINGLE DISCOUNT RATE

Under GASB 67, a series of projections and calculations are used to determine the discount rate for the purpose of the measurement of the Total Pension Liability. The discount rate is the single rate that reflects (1) the long-term expected rate of return on pension plan investments that are expected to be used to finance the payment of benefits, to the extent that the pension plan's Fiduciary Net Position is projected to be sufficient to make projected benefit payments and pension plan assets are expected to be invested using a strategy to achieve that return, and (2) a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher, to the extent that the conditions for use of the long-term expected rate of return are not met.

Projected cash flows into and out of the pension plan are assumed to be contributions to the pension plan, benefit payments, pension plan administrative expenses and pension plan investment earnings. These projected cash flows are used to project the pension plan's Fiduciary Net Position at the beginning of each period. The pension plan's projected Fiduciary Net Position at the beginning of each period is compared to the amount of benefit payments projected to occur in that period.

It is assumed that the pension plan's Fiduciary Net Position is expected to always be invested using a strategy to achieve the long-term expected rate of return on pension plan investments.

The benefit payments that are projected to occur in a period are discounted using the long-term expected rate of return on pension plan investments if the amount of the pension plan's beginning Fiduciary Net Position is projected to be sufficient to make the benefit payments in that period. In periods in which benefit payments are projected to be greater than the amount of the pension plan's Fiduciary Net Position, they are discounted using a municipal bond rate as required by GASB 67.

For purposes of this valuation, the long-term expected rate of return on pension plan investments is 7.15%; the municipal bond rate is 2.74%, based on the December 2019 Bond Buyer Index as published by the Federal Reserve. For each period, the pension plan's Fiduciary Net Position is projected to be sufficient to make the benefit payments in that period, therefore, the resulting single discount rate is based solely on the long-term expected rate of return of 7.15%.