



HAMPSHIRE COUNTY RETIREMENT SYSTEM

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

**Disclosures as of
December 31, 2021**

KMS Actuarial, LLC
52 Hunt Road
Kingston, NH 03848

October, 2022



October 24, 2022

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, 2021. Results are based on liabilities developed in an actuarial valuation performed as of January 1, 2022.

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 6.9%, 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

October 24, 2022

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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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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, 2021 (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, 2021	December 31, 2020	% Change
Valuation Date	January 1, 2022	January 1, 2020	
Membership Data			
Active Plan Members	1,981	1,976	0.3%
Inactive Members Currently in Receipt	1,392	1,406	(1.0%)
Inactive Members Deferred	851	774	9.9%
Total Plan Members	4,224	4,156	1.6%
Covered Payroll	\$90,501,248	\$87,719,692	3.2%
Net Pension Liability			
Discount Rate	6.90%	7.15%	
Total Pension Liability (TPL)	\$606,316,440	\$580,562,055	4.4%
Fiduciary Net Position (FNP)	476,562,413	401,980,115	18.6%
Net Pension Liability (NPL)	\$129,754,027	\$178,581,940	(27.3%)
FNP as % of TPL	78.6%	69.2%	13.6%
Pension Expense			
Pension Expense (Income)	(\$5,112,488)	\$17,386,583	(129.4%)
Deferred Outflows	\$26,364,845	\$15,059,246	
Deferred Inflows	\$56,211,713	\$29,280,485	
Recognition Period	7.08	7.12	

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, 2022 and is shown in Section 1, Total Pension Liability.

Benefit Changes

This report reflects the elimination of the Hampshire Council of Governments (HCOG) unit and the associated reduction in liability due to the transfer of all inactive members and 65 retirees to the State Retirement System (SRS). The liability reduction is offset by approximately \$1.162 million in liability that is still due to be transferred to the SRS. The \$1.162 million liability value was provided by the Hampshire County Retirement System via email on June 9, 2022 and consists of trust earnings of \$576,900 and \$296,084 on the annuity savings and annuity reserve funds for inactive and retired members, respectively and \$289,617 of retired members annuity reserve fund balances. All other benefit provisions remained the same from the prior measurement date.

All other 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

Some Actuarial Assumptions and Methods used in this valuation have changed since the last valuation, including decreasing the investment return rate from 7.15% to 6.9% and updating the mortality and mortality improvement rates. 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 (Income)

The Pension Income for the fiscal year ending December 31, 2021 is \$5,112,488 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.

COVID-19 Pandemic

The assumptions in this report do not reflect the potential impacts of the COVID-19 pandemic on the System. Especially in the short range, the pandemic is likely to materially affect the economic and demographic experience, in a way not anticipated by the assumptions on which the projections are based.

Fiduciary Net Position

Fiscal Year Ended December 31

2020

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SECTION 1 - PRINCIPAL VALUATION RESULTS

Fiduciary Net Position			
Fiscal Year Ended December 31		2021	2020
Asset Activity			
Market value as of beginning of year	\$	401,980,115	\$ 359,018,033
Contributions - employer		28,089,796	26,114,304
Contributions - member		8,579,543	8,376,499
Net investment income		73,547,508	41,619,584
Benefit payments, including refunds of member contributions		(34,822,644)	(32,280,113)
Administrative expenses		(811,905)	(868,192)
Other		0	0
Market Value as of end of year	\$	476,562,413	\$ 401,980,115
Money-Weighted Rate of Return		18.36%	11.64%
(Gain) / Loss on Pension Plan Investments			
Projected earnings	\$	28,654,229	\$ 25,614,181
Actual earnings		73,547,508	41,619,584
(Gain) / Loss on pension plan investments	\$	(44,893,279)	\$ (16,005,403)

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, 2021 measurement date was developed from an actuarial valuation as of January 1, 2022.

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, 2020 to the end of the measurement period, December 31, 2021 is shown below:

Measurement Date

December 31, 2021

1. Total Pension Liability, beginning of year:			
a. Actives	\$	267,733,185	
b. Retired and Disabled Members and Beneficiaries		305,454,222	
c. Inactive Members		7,374,648	
d. Total Pension Liability at 7.15% (a. + b. + c.)	\$		580,562,055
2. Service Cost	\$		14,760,890
3. Benefit Payments			(34,822,644)
4. Interest [7.15% x (1.d. + 2. + .5 x 3)]	\$		41,320,681
5. Changes of benefit terms			(12,399,813)
6. Differences between expected and actual experience			5,606,152
7. Changes of assumptions or other inputs			11,289,119
8. Total Pension Liability, end of year (1.d. + 2. + 3. + 4. + 5. + 6. + 7.)			
a. Actives	\$	247,206,617	
b. Retired and Disabled Members and Beneficiaries		351,701,341	
c. Inactive Members		7,408,482	
d. Total Pension Liability at 6.9% (a. + b. + c.)	\$		606,316,440

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, 2021, pension plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefits	1,392
Inactive plan members entitled to but not yet receiving benefits	851
Active plan members	1,981
	<u>4,224</u>

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, 2022 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, 2021, were as follows:

Total Pension Liability	\$ 606,316,440
Fiduciary Net Position	(476,562,413)
Net Pension Liability	\$ 129,754,027

Fiduciary Net Position as a percentage of the Total Pension Liability 78.6%

Actuarial assumptions

The Total Pension Liability was determined by an actuarial valuation as of January 1, 2022, 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	6.9%, 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-2020. 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-2020.

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 geometric real rates of return for each major asset class included in the pension plan's target asset allocation as of December 31, 2021 (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 Return ¹
Cash	2.0%	0.00%
Domestic Equity	22.0%	3.90%
Non-US Developed Equity	11.0%	4.00%
Emerging Equity	6.0%	6.30%
Private Equity	18.0%	7.70%
Core Bonds	11.0%	0.70%
Value Add Fixed Income - Public	12.0%	4.00%
Real Estate	18.0%	3.60%
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 6.9%. 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 6.9%, as well as what the Net Pension Liability would be if it were calculated using a discount rate 1-percentage point lower (5.9%) or 1-percentage point higher (7.9%) than the current rate:

	1% Decrease (5.9%)	Current Discount Rate (6.9%)	1% Increase (7.9%)
Total Pension Liability	\$ 676,267,777	\$ 606,316,440	\$ 547,210,880
Fiduciary Net Position	476,562,413	476,562,413	476,562,413
Net Pension Liability	\$ 199,705,364	\$ 129,754,027	\$ 70,648,467

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net Pension Liability and Related Ratios

Fiscal Year Ended December 31	2021	2020	2019	2018	2017
Total Pension Liability					
Service cost	\$ 14,760,890	\$ 14,261,729	\$ 13,282,271	\$ 12,771,414	\$ 11,029,438
Interest	41,320,681	39,817,266	38,884,736	37,396,643	36,888,260
Changes of benefit terms	(12,399,813)	-	-	-	-
Differences between expected and actual experience	5,606,152	-	(6,620,290)	-	(434,874)
Changes of assumptions	11,289,119	-	20,488,858	-	(9,996,849)
Benefit payments, including refunds of member contributions	(34,822,644)	(32,280,113)	(31,865,798)	(29,543,223)	(28,662,890)
Net change in Total Pension Liability	\$ 25,754,385	\$ 21,798,882	\$ 34,169,777	\$ 20,624,834	\$ 8,823,085
Total Pension Liability—beginning	\$ 580,562,055	\$ 558,763,173	\$ 524,593,396	\$ 503,968,562	\$ 495,145,477
Total Pension Liability—ending (a)	\$ 606,316,440	\$ 580,562,055	\$ 558,763,173	\$ 524,593,396	\$ 503,968,562
Fiduciary Net Position					
Contributions—employer	\$ 28,089,796	\$ 26,114,304	\$ 24,294,506	\$ 22,597,993	\$ 21,331,218
Contributions—member	8,579,543	8,376,499	8,334,804	8,378,578	7,689,443
Net investment income	73,547,508	41,619,584	50,071,334	(9,664,404)	43,201,653
Benefit payments, including refunds of member contributions	(34,822,644)	(32,280,113)	(31,865,798)	(29,543,223)	(28,662,890)
Administrative expenses	(811,905)	(868,192)	(842,974)	(870,363)	(817,067)
Other	-	-	-	-	-
Net change in Fiduciary Net Position	\$ 74,582,298	\$ 42,962,082	\$ 49,991,872	\$ (9,101,419)	\$ 42,742,357
Fiduciary Net Position—beginning	\$ 401,980,115	\$ 359,018,033	\$ 309,026,161	\$ 318,127,580	\$ 275,385,223
Fiduciary Net Position—ending (b)	\$ 476,562,413	\$ 401,980,115	\$ 359,018,033	\$ 309,026,161	\$ 318,127,580
Net Pension Liability and Related Ratios					
Net Pension Liability—ending (a) – (b)	\$ 129,754,027	\$ 178,581,940	\$ 199,745,140	\$ 215,567,235	\$ 185,840,982
Fiduciary Net Position as a percentage of the Total Pension Liability	78.60%	69.24%	64.25%	58.91%	63.12%
Covered Payroll	\$ 90,501,248	\$ 87,719,692	\$ 85,426,619	\$ 84,192,999	\$ 76,767,518
Net Pension Liability as a percentage of Covered Payroll	143.37%	203.58%	233.82%	256.04%	242.08%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

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

Fiscal Year Ended December 31	2016	2015	2014	2013	2012
Total Pension Liability					
Service cost	\$ 10,605,229	\$ 10,269,070	\$ 9,850,427		
Interest	34,627,268	34,842,587	33,371,689		
Changes of benefit terms	-	\$ -	\$ -		
Differences between expected and actual experience	(4,348,735)	-	-		
Changes of assumptions	16,610,091	\$ -	\$ -		
Benefit payments, including refunds of member contributions	(26,880,118)	(25,512,793)	(24,412,587)		
Net change in Total Pension Liability	<u>\$ 30,613,735</u>	<u>\$ 19,598,864</u>	<u>\$ 18,809,529</u>		
Total Pension Liability--beginning	<u>\$ 464,531,742</u>	<u>\$ 444,932,878</u>	<u>\$ 426,123,349</u>		
Total Pension Liability--ending (a)	<u><u>\$ 495,145,477</u></u>	<u><u>\$ 464,531,742</u></u>	<u><u>\$ 444,932,878</u></u>		
Fiduciary Net Position					
Contributions--employer	\$ 19,693,436	\$ 18,620,753	\$ 17,442,179		
Contributions--member	7,446,905	7,322,347	7,559,814		
Net investment income	19,015,995	\$ (1,011,242)	\$ 12,015,152		
Benefit payments, including refunds of member contributions	(26,880,118)	(25,512,793)	(24,412,587)		
Administrative expenses	(796,827)	\$ (929,899)	\$ (841,318)		
Other	-	-	-		
Net change in Fiduciary Net Position	<u>\$ 18,479,391</u>	<u>\$ (1,510,834)</u>	<u>\$ 11,763,240</u>		
Fiduciary Net Position--beginning	<u>\$ 256,905,832</u>	<u>\$ 258,416,666</u>	<u>\$ 246,653,426</u>		
Fiduciary Net Position--ending (b)	<u><u>\$ 275,385,223</u></u>	<u><u>\$ 256,905,832</u></u>	<u><u>\$ 258,416,666</u></u>		
Net Pension Liability and Related Ratios					
Net Pension Liability--ending (a) - (b)	<u><u>\$ 219,760,254</u></u>	<u><u>\$ 207,625,910</u></u>	<u><u>\$ 186,516,212</u></u>		
Fiduciary Net Position as a percentage of the Total Pension Liability	55.62%	55.30%	58.08%		
Covered Payroll	\$ 78,914,925	\$ 80,914,245	\$ 77,139,934		
Net Pension Liability as a percentage of Covered Payroll	278.48%	256.60%	241.79%		

Note: Only 8 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	2021	2020	2019	2018	2017
Actuarially Determined Contribution	\$ 28,089,796	\$ 26,114,304	\$ 24,294,506	\$ 22,597,993	\$ 21,331,218
Contributions in relation to the Actuarially Determined Contribution	28,089,796	26,114,304	24,294,506	22,597,993	21,331,218
Contribution deficiency (excess)	\$ -	\$ -	\$ -	\$ -	\$ -
Covered Payroll	\$ 90,501,248	\$ 87,719,692	\$ 85,426,619	\$ 84,192,999	\$ 76,767,518
Contributions as a percentage of Covered Payroll	31.04%	29.77%	28.44%	26.84%	27.79%

The contribution shown above, \$28,089,796, represents the actual contributions made by member units of the Hampshire County Retirement System for the 2022 fiscal year.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.2 - Schedule of Employer Contributions (continued)

Fiscal Year Ended December 31	2016	2015	2014	2013	2012
Actuarially Determined Contribution	\$ 19,693,436	\$ 18,620,753	\$ 17,349,877		
Contributions in relation to the Actuarially Determined Contribution	<u>19,693,436</u>	<u>\$ 18,620,753</u>	<u>\$ 17,349,877</u>		
Contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>		
Covered Payroll	\$ 78,914,925	\$ 80,914,245	\$ 77,139,934		
Contributions as a percentage of Covered Payroll	24.96%	23.01%	22.49%		

Note: Only 8 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	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Annual money-weighted rate of return, net of investment expense	18.36%	11.64%	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 8 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

This report reflects the elimination of the Hampshire Council of Governments (HCOG) unit and the associated reduction in liability due to the transfer of all inactive members and 65 retirees to the State Retirement System (SRS). The liability reduction is offset by approximately \$1.162 million in liability that is still due to be transferred to the SRS. The \$1.162 million liability value was provided by the Hampshire County Retirement System via email on June 9, 2022 and consists of trust earnings of \$576,900 and \$296,084 on the annuity savings and annuity reserve funds for inactive and retired members, respectively and \$289,617 of retired members annuity reserve fund balances. All other benefit provisions remained the same from the prior measurement date.

Changes of assumptions

Some Actuarial Assumptions and Methods used in this valuation have changed since the last valuation, including decreasing the investment return rate from 7.15% to 6.9% and updating the mortality and mortality improvement rates. 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, 2032.
2002 & 2003 ERI	Level dollar amount to reduce the 2002 and 2003 ERI Actuarial Accrued Liability to zero on or before June 30, 2028.

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.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Notes to the Required Supplementary Information

Salary increases	Group 1: 6% - 4.25%, based on service Group 4: 7% - 4.75%, based on service
Payroll growth	3.25% per year
Investment rate of return	6.9%, 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, 2021		
	Experience Losses	Experience Gains	Amounts Recognized in Pension Expense through December 31, 2021	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) + (c)
2016	\$ -	\$ 4,348,735	\$ (4,348,735)	\$ -	\$ -
2017	-	434,874	(320,230)	-	114,644
2018	-	-	-	-	-
2019	-	6,620,290	(2,789,448)	-	3,830,842
2020	-	-	-	-	-
2021	5,606,152	-	791,829	4,814,323	-
Total				<u>\$ 4,814,323</u>	<u>\$ 3,945,486</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, 2021		
	Increases in the Total Pension Liability	Decreases in the Total Pension Liability	Amounts Recognized in Pension Expense through December 31, 2021	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) + (c)
2016	\$ 16,610,091	\$ -	\$ 16,610,091	\$ -	\$ -
2017	-	9,996,849	(7,361,450)	-	2,635,399
2018	-	-	-	-	-
2019	20,488,858	-	8,632,947	11,855,911	-
2020	-	-	-	-	-
2021	11,289,119	-	1,594,508	9,694,611	-
Total				<u>\$ 21,550,522</u>	<u>\$ 2,635,399</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, 2021		
	Investment Earnings Less Than Projected	Investment Earnings Greater Than Projected	Amounts Recognized in Pension Expense through December 31, 2021	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) + (c)
2016	\$ 231,820	\$ -	\$ 231,820	\$ -	\$ -
2017	-	22,564,985	(22,564,985)	-	-
2018	33,385,880	-	26,708,704	6,677,176	-
2019	-	26,975,353	(16,185,213)	-	10,790,140
2020	-	16,005,403	(6,402,162)	-	9,603,241
2021	-	44,893,279	(8,978,656)	-	35,914,623
Subtotal				\$ 6,677,176	\$ 56,308,004
Net				\$ -	\$ 49,630,828

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, 2021	
	Proportionate Share* Outflows	Proportionate Share* Inflows	Amounts Recognized in Pension Expense through December 31, 2021	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) - (c)
2016	\$ 2,001,045	\$ 2,001,045	\$ 2,001,045	\$ -	\$ -
2017	2,338,865	2,338,865	1,722,286	616,579	616,579
2018	2,185,181	2,185,181	1,287,294	897,887	897,887
2019	3,112,389	3,112,389	1,311,400	1,800,989	1,800,989
2020	4,101,135	4,101,135	1,152,005	2,949,130	2,949,130
2021	2,164,088	2,164,088	305,659	1,858,429	1,858,429
Total				<u>\$ 8,123,014</u>	<u>\$ 8,123,014</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		
2022	\$	(8,099,797)
2023	\$	(14,454,343)
2024	\$	(7,845,566)
2025	\$	(4,644,485)
2026	\$	2,620,074
Thereafter	\$	2,577,249
Total Deferred Outflows	\$	34,487,859
Total Deferred Inflows	\$	64,334,727

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.2 - Pension Expense

The Pension Expense and deferred outflows and inflows of resources primarily result from changes in the components of the net pension liability (NPL). Most changes in the NPL are included in the Pension Expense in the period of the change, including service cost, interest on total pension liability, changes in benefit terms and projected earnings on the pension plan's investments. Other changes in the net pension liability are included in Pension Expense over the current and future periods. These include the effects on the total pension liability of changes of economic and demographic assumptions and differences between expected and actual experience. In addition, the effect on the net pension liability of differences between the projected earnings on pension plan investments and actual experience with regard to those earnings are included in Pension Expense over the current and future periods. The Pension Expense for the reporting period ending December 31, 2021 is presented below:

Fiscal Year Ended December 31, 2021

1. Service cost		\$ 14,760,890
2. Interest on the total pension liability		
a. Total Pension Liability, beginning of year	580,562,055	
b. Service cost, beginning of year	14,760,890	
c. Benefit payments, including refunds of employee contributions	(34,822,644)	
d. Interest on Total Pension Liability		41,320,681
3. Differences between expected and actual experience		(287,303)
4. Changes of benefit terms		(12,399,813)
5. Changes of assumptions		3,325,553
6. Employee contributions		(8,579,543)
7. Projected earnings on pension plan investments		
a. Fiduciary Net Position, beginning of year	401,980,115	
b. Employer contributions	28,089,796	
c. Employee contributions	8,579,543	
d. Benefit payments, including refunds of employee contributions	(34,822,644)	
e. Administrative expenses and other	(811,905)	
f. Total projected earnings		(28,654,229)
8. Differences between projected and actual earnings on plan investments		(15,410,629)
9. Pension plan administrative expenses		811,905
10. Other changes in Fiduciary Net Position		-
11. Total Pension Expense (Income)		\$ (5,112,488)

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 2021 and 2020, based on employer contributions made for the 2022 fiscal year and 2021 fiscal year, respectively, shows the proportionate relationship of each employer to all employers and each employer's allocation percentage.

Entity	2021		2020	
	Employer Contribution	Proportionate Share of Total Employer Contribution	Employer Contribution	Proportionate Share of Total Employer Contribution
Hampshire County Group Insurance Trust	104,644	0.372534%	97,107	0.371854%
Amherst	7,423,375	26.427301%	6,934,966	26.556197%
Amherst-Pelham Regional School District	1,663,550	5.922257%	1,590,908	6.092094%
Amherst Housing Authority	242,331	0.862701%	222,325	0.851353%
Belchertown	3,843,858	13.684179%	3,511,513	13.446703%
Belchertown Housing Authority	19,276	0.068623%	20,444	0.078287%
Belchertown Water District	68,844	0.245085%	48,554	0.185929%
Chesterfield	104,644	0.372534%	99,663	0.381641%
Chesterfield-Goshen Regional School District	93,628	0.333317%	99,663	0.381641%
Cummington	71,598	0.254890%	58,776	0.225072%
Foothills Health District	16,523	0.058822%	15,333	0.058715%
Gateway Regional School District	625,104	2.225378%	595,421	2.280057%
Goshen	63,337	0.225480%	58,776	0.225072%
Granby	1,307,487	4.654669%	1,184,368	4.535323%
Granby Housing Authority	22,030	0.078427%	30,665	0.117426%
Hadley	1,604,642	5.712544%	1,421,611	5.443802%
Hadley Housing Authority	-	0.000000%	10,222	0.039143%
Hampshire County Regional Housing Authority	11,205	0.039890%	10,222	0.039143%
Hampshire Regional School District	593,145	2.111603%	537,679	2.058944%
Hatfield	680,179	2.421445%	636,308	2.436626%
Hatfield Housing Authority	8,261	0.029409%	7,666	0.029356%
Huntington	134,463	0.478690%	137,872	0.527956%
Middlefield	57,829	0.205872%	49,426	0.189268%
Pelham	253,346	0.901915%	222,325	0.851353%
Plainfield	79,858	0.284295%	68,997	0.264212%
Quabbin Health District	74,997	0.266990%	70,053	0.268255%
Southampton	961,939	3.424514%	880,868	3.373125%
South Hadley	3,774,831	13.438442%	3,480,341	13.327336%
South Hadley Housing Authority	68,844	0.245085%	65,033	0.249032%
South Hadley-Easthampton Veteran's District	16,523	0.058822%	15,333	0.058715%

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 2021 and 2020, based on employer contributions made for the 2022 fiscal year and 2021 fiscal year, respectively, shows the proportionate relationship of each employer to all employers and each employer's allocation percentage.

Entity	2021		2020	
	Employer Contribution	Proportionate Share of Total Employer Contribution	Employer Contribution	Proportionate Share of Total Employer Contribution
South Hadley Fire District No.1	680,179	2.421445%	618,420	2.368127%
South Hadley Fire District No.2	278,130	0.990146%	278,545	1.066638%
Ware	2,318,539	8.254026%	2,239,747	8.576706%
Ware Housing Authority	74,984	0.266944%	69,861	0.267520%
Westhampton	225,808	0.803879%	217,213	0.831778%
Williamsburg	295,613	1.052386%	307,852	1.178864%
Worthington	226,252	0.805460%	200,228	0.766737%
Total	28,089,796	100.000000%	26,114,304	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, inactive and retirees) as of the beginning of the measurement period

For 2021:

- ◆ 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 2021) 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 2021 (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, 2021	\$ 401,980,115	12	1.00	\$ 475,770,713
Monthly net external cash flows:				
January	(2,703,040)	11	0.92	(3,154,613)
February	(2,013,540)	10	0.83	(2,317,152)
March	(1,864,529)	9	0.75	(2,115,748)
April	(2,515,565)	8	0.67	(2,814,693)
May	(1,649,191)	7	0.58	(1,819,563)
June	(2,008,418)	6	0.50	(2,184,996)
July	23,588,706	5	0.42	25,304,703
August	(1,960,342)	4	0.33	(2,073,622)
September	(2,457,638)	3	0.25	(2,563,399)
October	(1,984,370)	2	0.17	(2,040,899)
November	(2,187,828)	1	0.08	(2,218,772)
December	(1,209,546)	0	0.00	(1,209,546)
Ending value - December 31, 2021				\$ 476,562,413
Money-weighted rate of return				18.36%

Note: Beginning and ending values are based on amounts reported in the System's 2021 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)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2016	(4,348,735)	5.10	(85,270)	-	-	-	-	-	-	-	-	-
2017	(434,874)	6.79	(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)	(111,578)	-	-	-	-
2020	-	7.12	-	-	-	-	-	-	-	-	-	-
2021	5,606,152	7.08	791,829	791,829	791,829	791,829	791,829	791,829	791,829	63,349	-	-
Net Increase (Decrease) in Pension Expense			(287,303)	(202,033)	(188,585)	(137,987)	(137,987)	680,251	791,829	63,349	-	-

Year	Changes of Assumptions	Recognition Period (Years)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2016	16,610,091	5.10	325,686	-	-	-	-	-	-	-	-	-
2017	(9,996,849)	6.79	(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	345,315	-	-	-	-
2020	-	7.12	-	-	-	-	-	-	-	-	-	-
2021	11,289,119	7.08	1,594,508	1,594,508	1,594,508	1,594,508	1,594,508	1,594,508	1,594,508	127,563	-	-
Net Increase (Decrease) in Pension Expense			3,325,553	2,999,867	3,309,048	4,472,157	4,472,157	1,939,823	1,594,508	127,563	-	-

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

Year	Differences between Projected and Actual Earnings on Pension Plan Investments	Recognition Period (Years)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2016	231,820	5	-	-	-	-	-	-	-	-	-	-
2017	(22,564,985)	5	(4,512,997)	-	-	-	-	-	-	-	-	-
2018	33,385,880	5	6,677,176	6,677,176	-	-	-	-	-	-	-	-
2019	(26,975,353)	5	(5,395,071)	(5,395,070)	(5,395,070)	-	-	-	-	-	-	-
2020	(16,005,403)	5	(3,201,081)	(3,201,081)	(3,201,080)	(3,201,080)	-	-	-	-	-	-
2021	(44,893,279)	5	(8,978,656)	(8,978,656)	(8,978,656)	(8,978,656)	(8,978,655)	-	-	-	-	-
Net Increase (Decrease) in Pension Expense			(15,410,629)	(10,897,631)	(17,574,806)	(12,179,736)	(8,978,655)	-	-	-	-	-

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Hampshire County Group Insurance Trust
◆ Current Proportionate Share		0.372534%
◆ Prior Proportionate Share		0.371854%
Beginning Net Pension Liability	\$ 178,581,940	\$ 664,064
Ending Net Pension Liability	\$ 129,754,027	\$ 483,378
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 17,935
◆ Changes of Assumptions	21,550,522	80,283
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	115,606
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 213,824
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 14,698
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	184,892
◆ Changes of Assumptions	2,635,399	9,818
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	1,339,617
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 1,549,025
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (19,046)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(214,101)
Total Employer Pension Expense	\$ (5,112,488)	\$ (233,147)
Covered Payroll:	\$ 90,501,248	\$ 324,000
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 483,378
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 743,970
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 263,189
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (246,207)
◆ 2023	\$ (14,454,343)	\$ (276,023)
◆ 2024	\$ (7,845,566)	\$ (275,228)
◆ 2025	\$ (4,644,485)	\$ (265,982)
◆ 2026	\$ 2,620,074	\$ (271,761)
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Amherst
◆ Current Proportionate Share		26.427301%
◆ Prior Proportionate Share		26.556197%
Beginning Net Pension Liability	\$ 178,581,940	\$ 47,424,571
Ending Net Pension Liability	\$ 129,754,027	\$ 34,290,486
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 1,272,297
◆ Changes of Assumptions	21,550,522	5,695,224
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	518,666
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 7,486,187
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 1,042,684
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	13,116,088
◆ Changes of Assumptions	2,635,399	696,465
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	1,424,604
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 16,279,841
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (1,351,094)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(96,332)
Total Employer Pension Expense	\$ (5,112,488)	\$ (1,447,426)
Covered Payroll:	\$ 90,501,248	\$ 23,140,627
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 34,290,486
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 52,776,738
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 18,670,483
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (2,225,117)
◆ 2023	\$ (14,454,343)	\$ (3,920,316)
◆ 2024	\$ (7,845,566)	\$ (2,262,327)
◆ 2025	\$ (4,644,485)	\$ (1,524,947)
◆ 2026	\$ 2,620,074	\$ 1,139,053
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Amherst-Pelham Regional School District
◆ Current Proportionate Share		5.922257%
◆ Prior Proportionate Share		6.092094%
Beginning Net Pension Liability	\$ 178,581,940	\$ 10,879,380
Ending Net Pension Liability	\$ 129,754,027	\$ 7,684,367
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 285,117
◆ Changes of Assumptions	21,550,522	1,276,277
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	186,698
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 1,748,092
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 233,662
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	2,939,265
◆ Changes of Assumptions	2,635,399	156,075
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	282,582
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 3,611,584
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (302,775)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	4,749
Total Employer Pension Expense	\$ (5,112,488)	\$ (298,026)
Covered Payroll:	\$ 90,501,248	\$ 5,350,589
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 7,684,367
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 11,827,066
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 4,183,984
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (474,322)
◆ 2023	\$ (14,454,343)	\$ (850,492)
◆ 2024	\$ (7,845,566)	\$ (464,687)
◆ 2025	\$ (4,644,485)	\$ (298,408)
◆ 2026	\$ 2,620,074	\$ 224,417
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Amherst Housing Authority
◆ Current Proportionate Share		0.862701%
◆ Prior Proportionate Share		0.851353%
Beginning Net Pension Liability	\$ 178,581,940	\$ 1,520,363
Ending Net Pension Liability	\$ 129,754,027	\$ 1,119,390
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 41,533
◆ Changes of Assumptions	21,550,522	185,917
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	301,121
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 528,571
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 34,038
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	428,166
◆ Changes of Assumptions	2,635,399	22,736
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	160,129
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 645,069
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (44,105)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	24,595
Total Employer Pension Expense	\$ (5,112,488)	\$ (19,510)
Covered Payroll:	\$ 90,501,248	\$ 829,937
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 1,119,390
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 1,722,861
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 609,485
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (44,318)
◆ 2023	\$ (14,454,343)	\$ (94,756)
◆ 2024	\$ (7,845,566)	\$ (29,559)
◆ 2025	\$ (4,644,485)	\$ (33,182)
◆ 2026	\$ 2,620,074	\$ 85,317
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Belchertown
◆ Current Proportionate Share		13.684179%
◆ Prior Proportionate Share		13.446703%
Beginning Net Pension Liability	\$ 178,581,940	\$ 24,013,384
Ending Net Pension Liability	\$ 129,754,027	\$ 17,755,773
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 658,801
◆ Changes of Assumptions	21,550,522	2,949,012
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	1,199,888
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 4,807,701
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 539,907
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	6,791,571
◆ Changes of Assumptions	2,635,399	360,633
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	4,964
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 7,697,075
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (699,602)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	247,359
Total Employer Pension Expense	\$ (5,112,488)	\$ (452,243)
Covered Payroll:	\$ 90,501,248	\$ 12,212,383
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 17,755,773
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 27,328,040
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 9,667,663
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (871,292)
◆ 2023	\$ (14,454,343)	\$ (1,740,277)
◆ 2024	\$ (7,845,566)	\$ (836,168)
◆ 2025	\$ (4,644,485)	\$ (407,303)
◆ 2026	\$ 2,620,074	\$ 965,666
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Belchertown Housing Authority
◆ Current Proportionate Share		0.068623%
◆ Prior Proportionate Share		0.078287%
Beginning Net Pension Liability	\$ 178,581,940	\$ 139,806
Ending Net Pension Liability	\$ 129,754,027	\$ 89,041
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 3,304
◆ Changes of Assumptions	21,550,522	14,789
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	5,024
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 23,117
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 2,708
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	34,058
◆ Changes of Assumptions	2,635,399	1,808
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	100,746
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 139,320
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (3,508)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(16,477)
Total Employer Pension Expense	\$ (5,112,488)	\$ (19,985)
Covered Payroll:	\$ 90,501,248	\$ -
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 89,041
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 137,043
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 48,481
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (22,061)
◆ 2023	\$ (14,454,343)	\$ (26,958)
◆ 2024	\$ (7,845,566)	\$ (24,449)
◆ 2025	\$ (4,644,485)	\$ (22,299)
◆ 2026	\$ 2,620,074	\$ (20,436)
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Belchertown Water District
◆ Current Proportionate Share		0.245085%
◆ Prior Proportionate Share		0.185929%
Beginning Net Pension Liability	\$ 178,581,940	\$ 332,035
Ending Net Pension Liability	\$ 129,754,027	\$ 318,008
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 11,799
◆ Changes of Assumptions	21,550,522	52,817
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	143,868
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 208,484
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 9,670
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	121,638
◆ Changes of Assumptions	2,635,399	6,459
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	81,817
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 219,584
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (12,530)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	3,791
Total Employer Pension Expense	\$ (5,112,488)	\$ (8,739)
Covered Payroll:	\$ 90,501,248	\$ 235,756
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 318,008
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 489,449
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 173,149
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (17,871)
◆ 2023	\$ (14,454,343)	\$ (30,436)
◆ 2024	\$ (7,845,566)	\$ (2,934)
◆ 2025	\$ (4,644,485)	\$ 4,848
◆ 2026	\$ 2,620,074	\$ 35,293
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Chesterfield
◆ Current Proportionate Share		0.372534%
◆ Prior Proportionate Share		0.381641%
Beginning Net Pension Liability	\$ 178,581,940	\$ 681,543
Ending Net Pension Liability	\$ 129,754,027	\$ 483,378
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 17,935
◆ Changes of Assumptions	21,550,522	80,283
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	43,022
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 141,240
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 14,698
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	184,892
◆ Changes of Assumptions	2,635,399	9,818
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	40,777
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 250,185
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (19,046)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	3,335
Total Employer Pension Expense	\$ (5,112,488)	\$ (15,711)
Covered Payroll:	\$ 90,501,248	\$ 344,030
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 483,378
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 743,970
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 263,189
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (27,244)
◆ 2023	\$ (14,454,343)	\$ (52,531)
◆ 2024	\$ (7,845,566)	\$ (32,841)
◆ 2025	\$ (4,644,485)	\$ (16,621)
◆ 2026	\$ 2,620,074	\$ 20,292
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Chesterfield-Goshen Regional School District
◆ Current Proportionate Share		0.333317%
◆ Prior Proportionate Share		0.381641%
Beginning Net Pension Liability	\$ 178,581,940	\$ 681,543
Ending Net Pension Liability	\$ 129,754,027	\$ 432,492
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 16,047
◆ Changes of Assumptions	21,550,522	71,832
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	58,560
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 146,439
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 13,151
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	165,428
◆ Changes of Assumptions	2,635,399	8,784
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	108,398
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 295,761
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (17,041)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(1,535)
Total Employer Pension Expense	\$ (5,112,488)	\$ (18,576)
Covered Payroll:	\$ 90,501,248	\$ 356,362
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 432,492
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 665,651
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 235,483
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (26,442)
◆ 2023	\$ (14,454,343)	\$ (50,416)
◆ 2024	\$ (7,845,566)	\$ (37,754)
◆ 2025	\$ (4,644,485)	\$ (22,786)
◆ 2026	\$ 2,620,074	\$ (11,924)
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Cummington
◆ Current Proportionate Share		0.254890%
◆ Prior Proportionate Share		0.225072%
Beginning Net Pension Liability	\$ 178,581,940	\$ 401,938
Ending Net Pension Liability	\$ 129,754,027	\$ 330,730
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 12,271
◆ Changes of Assumptions	21,550,522	54,930
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	111,908
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 179,109
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 10,057
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	126,504
◆ Changes of Assumptions	2,635,399	6,717
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	70,887
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 214,165
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (13,031)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	13,793
Total Employer Pension Expense	\$ (5,112,488)	\$ 762
Covered Payroll:	\$ 90,501,248	\$ 261,062
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 330,730
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 509,028
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 180,076
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (6,881)
◆ 2023	\$ (14,454,343)	\$ (23,000)
◆ 2024	\$ (7,845,566)	\$ (8,823)
◆ 2025	\$ (4,644,485)	\$ (11,804)
◆ 2026	\$ 2,620,074	\$ 15,452
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Foothills Health District
◆ Current Proportionate Share		0.058822%
◆ Prior Proportionate Share		0.058715%
Beginning Net Pension Liability	\$ 178,581,940	\$ 104,854
Ending Net Pension Liability	\$ 129,754,027	\$ 76,324
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 2,832
◆ Changes of Assumptions	21,550,522	12,676
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	5,341
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 20,849
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 2,321
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	29,194
◆ Changes of Assumptions	2,635,399	1,550
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	-
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 33,065
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (3,007)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	2,814
Total Employer Pension Expense	\$ (5,112,488)	\$ (193)
Covered Payroll:	\$ 90,501,248	\$ 155,493
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 76,324
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 117,471
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 41,557
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (1,957)
◆ 2023	\$ (14,454,343)	\$ (6,260)
◆ 2024	\$ (7,845,566)	\$ (4,506)
◆ 2025	\$ (4,644,485)	\$ (2,643)
◆ 2026	\$ 2,620,074	\$ 3,150
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Gateway Regional School District
◆ Current Proportionate Share		2.225378%
◆ Prior Proportionate Share		2.280057%
Beginning Net Pension Liability	\$ 178,581,940	\$ 4,071,770
Ending Net Pension Liability	\$ 129,754,027	\$ 2,887,517
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 107,137
◆ Changes of Assumptions	21,550,522	479,580
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	-
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 586,717
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 87,802
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	1,104,473
◆ Changes of Assumptions	2,635,399	58,648
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	528,062
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 1,778,985
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (113,772)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(142,505)
Total Employer Pension Expense	\$ (5,112,488)	\$ (256,277)
Covered Payroll:	\$ 90,501,248	\$ 2,128,532
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 2,887,517
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 4,444,198
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 1,572,195
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (318,493)
◆ 2023	\$ (14,454,343)	\$ (451,281)
◆ 2024	\$ (7,845,566)	\$ (268,466)
◆ 2025	\$ (4,644,485)	\$ (184,827)
◆ 2026	\$ 2,620,074	\$ 30,799
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Goshen
◆ Current Proportionate Share		0.225480%
◆ Prior Proportionate Share		0.225072%
Beginning Net Pension Liability	\$ 178,581,940	\$ 401,938
Ending Net Pension Liability	\$ 129,754,027	\$ 292,570
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 10,855
◆ Changes of Assumptions	21,550,522	48,592
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	24,476
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 83,923
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 8,896
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	111,908
◆ Changes of Assumptions	2,635,399	5,942
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	128,624
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 255,370
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (11,528)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(21,639)
Total Employer Pension Expense	\$ (5,112,488)	\$ (33,167)
Covered Payroll:	\$ 90,501,248	\$ 157,636
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 292,570
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 450,297
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 159,298
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (40,299)
◆ 2023	\$ (14,454,343)	\$ (53,344)
◆ 2024	\$ (7,845,566)	\$ (35,404)
◆ 2025	\$ (4,644,485)	\$ (34,925)
◆ 2026	\$ 2,620,074	\$ (7,475)
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Granby
◆ Current Proportionate Share		4.654669%
◆ Prior Proportionate Share		4.535323%
Beginning Net Pension Liability	\$ 178,581,940	\$ 8,099,268
Ending Net Pension Liability	\$ 129,754,027	\$ 6,039,620
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 224,091
◆ Changes of Assumptions	21,550,522	1,003,105
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	661,379
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 1,888,575
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 183,649
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	2,310,151
◆ Changes of Assumptions	2,635,399	122,669
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	164,769
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 2,781,238
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (237,969)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	69,173
Total Employer Pension Expense	\$ (5,112,488)	\$ (168,796)
Covered Payroll:	\$ 90,501,248	\$ 4,215,231
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 6,039,620
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 9,295,624
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 3,288,452
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (307,164)
◆ 2023	\$ (14,454,343)	\$ (594,145)
◆ 2024	\$ (7,845,566)	\$ (258,247)
◆ 2025	\$ (4,644,485)	\$ (127,424)
◆ 2026	\$ 2,620,074	\$ 394,317
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Granby Housing Authority
◆ Current Proportionate Share		0.078427%
◆ Prior Proportionate Share		0.117426%
Beginning Net Pension Liability	\$ 178,581,940	\$ 209,702
Ending Net Pension Liability	\$ 129,754,027	\$ 101,762
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 3,776
◆ Changes of Assumptions	21,550,522	16,901
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	438
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 21,115
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 3,094
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	38,924
◆ Changes of Assumptions	2,635,399	2,067
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	76,034
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 120,119
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (4,010)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(13,405)
Total Employer Pension Expense	\$ (5,112,488)	\$ (17,415)
Covered Payroll:	\$ 90,501,248	\$ 73,709
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 101,762
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 156,623
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 55,408
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (19,774)
◆ 2023	\$ (14,454,343)	\$ (24,710)
◆ 2024	\$ (7,845,566)	\$ (19,356)
◆ 2025	\$ (4,644,485)	\$ (16,889)
◆ 2026	\$ 2,620,074	\$ (18,275)
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Hadley
◆ Current Proportionate Share		5.712544%
◆ Prior Proportionate Share		5.443802%
Beginning Net Pension Liability	\$ 178,581,940	\$ 9,721,647
Ending Net Pension Liability	\$ 129,754,027	\$ 7,412,256
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 275,020
◆ Changes of Assumptions	21,550,522	1,231,083
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	1,262,106
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 2,768,209
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 225,388
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	2,835,183
◆ Changes of Assumptions	2,635,399	150,548
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	52,783
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 3,263,902
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (292,053)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	266,746
Total Employer Pension Expense	\$ (5,112,488)	\$ (25,307)
Covered Payroll:	\$ 90,501,248	\$ 5,241,893
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 7,412,256
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 11,408,257
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 4,035,825
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (188,309)
◆ 2023	\$ (14,454,343)	\$ (564,740)
◆ 2024	\$ (7,845,566)	\$ (233,739)
◆ 2025	\$ (4,644,485)	\$ (35,930)
◆ 2026	\$ 2,620,074	\$ 527,025
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Hadley Housing Authority
◆ Current Proportionate Share		0.000000%
◆ Prior Proportionate Share		0.039143%
Beginning Net Pension Liability	\$ 178,581,940	\$ 69,903
Ending Net Pension Liability	\$ 129,754,027	\$ -
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ -
◆ Changes of Assumptions	21,550,522	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	229
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 229
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	-
◆ Changes of Assumptions	2,635,399	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	64,938
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 64,938
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ -
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(10,668)
Total Employer Pension Expense	\$ (5,112,488)	\$ (10,668)
Covered Payroll:	\$ 90,501,248	\$ -
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ -
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ -
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ -
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (10,673)
◆ 2023	\$ (14,454,343)	\$ (10,658)
◆ 2024	\$ (7,845,566)	\$ (10,606)
◆ 2025	\$ (4,644,485)	\$ (10,621)
◆ 2026	\$ 2,620,074	\$ (22,151)
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Hampshire County Regional Housing Authority
◆ Current Proportionate Share		0.039890%
◆ Prior Proportionate Share		0.039143%
Beginning Net Pension Liability	\$ 178,581,940	\$ 69,903
Ending Net Pension Liability	\$ 129,754,027	\$ 51,759
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 1,920
◆ Changes of Assumptions	21,550,522	8,596
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	17,608
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 28,124
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 1,574
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	19,798
◆ Changes of Assumptions	2,635,399	1,051
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	7,774
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 30,197
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (2,039)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	2,931
Total Employer Pension Expense	\$ (5,112,488)	\$ 892
Covered Payroll:	\$ 90,501,248	\$ -
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 51,759
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 79,662
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 28,182
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (304)
◆ 2023	\$ (14,454,343)	\$ (3,411)
◆ 2024	\$ (7,845,566)	\$ (2,345)
◆ 2025	\$ (4,644,485)	\$ 1,133
◆ 2026	\$ 2,620,074	\$ 2,854
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Hampshire Regional School District
◆ Current Proportionate Share		2.111603%
◆ Prior Proportionate Share		2.058944%
Beginning Net Pension Liability	\$ 178,581,940	\$ 3,676,903
Ending Net Pension Liability	\$ 129,754,027	\$ 2,739,890
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 101,659
◆ Changes of Assumptions	21,550,522	455,061
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	147,767
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 704,487
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 83,313
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	1,048,006
◆ Changes of Assumptions	2,635,399	55,649
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	275,179
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 1,462,147
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (107,955)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(37,593)
Total Employer Pension Expense	\$ (5,112,488)	\$ (145,548)
Covered Payroll:	\$ 90,501,248	\$ 1,945,047
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 2,739,890
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 4,216,985
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 1,491,815
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (208,870)
◆ 2023	\$ (14,454,343)	\$ (341,915)
◆ 2024	\$ (7,845,566)	\$ (193,652)
◆ 2025	\$ (4,644,485)	\$ (109,374)
◆ 2026	\$ 2,620,074	\$ 96,151
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Hatfield
◆ Current Proportionate Share		2.421445%
◆ Prior Proportionate Share		2.436626%
Beginning Net Pension Liability	\$ 178,581,940	\$ 4,351,375
Ending Net Pension Liability	\$ 129,754,027	\$ 3,141,923
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 116,576
◆ Changes of Assumptions	21,550,522	521,834
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	301,005
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 939,415
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 95,538
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	1,201,783
◆ Changes of Assumptions	2,635,399	63,815
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	364,017
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 1,725,153
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (123,796)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	6,627
Total Employer Pension Expense	\$ (5,112,488)	\$ (117,169)
Covered Payroll:	\$ 90,501,248	\$ 2,334,699
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 3,141,923
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 4,835,756
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 1,710,714
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (189,115)
◆ 2023	\$ (14,454,343)	\$ (354,338)
◆ 2024	\$ (7,845,566)	\$ (236,660)
◆ 2025	\$ (4,644,485)	\$ (157,822)
◆ 2026	\$ 2,620,074	\$ 152,197
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Hatfield Housing Authority
◆ Current Proportionate Share		0.029409%
◆ Prior Proportionate Share		0.029356%
Beginning Net Pension Liability	\$ 178,581,940	\$ 52,424
Ending Net Pension Liability	\$ 129,754,027	\$ 38,160
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 1,416
◆ Changes of Assumptions	21,550,522	6,338
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	287
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 8,041
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 1,160
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	14,596
◆ Changes of Assumptions	2,635,399	775
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	42,593
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 59,124
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (1,504)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(7,952)
Total Employer Pension Expense	\$ (5,112,488)	\$ (9,456)
Covered Payroll:	\$ 90,501,248	\$ 24,527
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 38,160
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 58,732
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 20,777
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (10,698)
◆ 2023	\$ (14,454,343)	\$ (12,545)
◆ 2024	\$ (7,845,566)	\$ (10,523)
◆ 2025	\$ (4,644,485)	\$ (9,602)
◆ 2026	\$ 2,620,074	\$ (7,715)
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Huntington
◆ Current Proportionate Share		0.478690%
◆ Prior Proportionate Share		0.527956%
Beginning Net Pension Liability	\$ 178,581,940	\$ 942,834
Ending Net Pension Liability	\$ 129,754,027	\$ 621,119
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 23,046
◆ Changes of Assumptions	21,550,522	103,160
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	77,568
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 203,774
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 18,887
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	237,578
◆ Changes of Assumptions	2,635,399	12,615
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	152,551
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 421,631
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (24,473)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(19,632)
Total Employer Pension Expense	\$ (5,112,488)	\$ (44,105)
Covered Payroll:	\$ 90,501,248	\$ 486,463
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 621,119
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 955,969
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 338,187
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (58,518)
◆ 2023	\$ (14,454,343)	\$ (89,319)
◆ 2024	\$ (7,845,566)	\$ (53,781)
◆ 2025	\$ (4,644,485)	\$ (18,359)
◆ 2026	\$ 2,620,074	\$ 2,120
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Middlefield
◆ Current Proportionate Share		0.205872%
◆ Prior Proportionate Share		0.189268%
Beginning Net Pension Liability	\$ 178,581,940	\$ 337,998
Ending Net Pension Liability	\$ 129,754,027	\$ 267,127
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 9,911
◆ Changes of Assumptions	21,550,522	44,366
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	35,557
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 89,834
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 8,123
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	102,176
◆ Changes of Assumptions	2,635,399	5,426
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	31,711
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 147,436
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (10,525)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(47)
Total Employer Pension Expense	\$ (5,112,488)	\$ (10,572)
Covered Payroll:	\$ 90,501,248	\$ 195,698
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 267,127
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 411,137
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 145,445
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (16,750)
◆ 2023	\$ (14,454,343)	\$ (29,754)
◆ 2024	\$ (7,845,566)	\$ (16,462)
◆ 2025	\$ (4,644,485)	\$ (12,156)
◆ 2026	\$ 2,620,074	\$ 17,520
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Pelham
◆ Current Proportionate Share		0.901915%
◆ Prior Proportionate Share		0.851353%
Beginning Net Pension Liability	\$ 178,581,940	\$ 1,520,363
Ending Net Pension Liability	\$ 129,754,027	\$ 1,170,271
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 43,421
◆ Changes of Assumptions	21,550,522	194,367
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	127,229
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 365,017
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 35,585
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	447,628
◆ Changes of Assumptions	2,635,399	23,769
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	100,769
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 607,751
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (46,110)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(13,648)
Total Employer Pension Expense	\$ (5,112,488)	\$ (59,758)
Covered Payroll:	\$ 90,501,248	\$ 887,891
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 1,170,271
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 1,801,172
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 637,189
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (87,896)
◆ 2023	\$ (14,454,343)	\$ (144,264)
◆ 2024	\$ (7,845,566)	\$ (74,123)
◆ 2025	\$ (4,644,485)	\$ (19,001)
◆ 2026	\$ 2,620,074	\$ 82,550
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Plainfield
◆ Current Proportionate Share		0.284295%
◆ Prior Proportionate Share		0.264212%
Beginning Net Pension Liability	\$ 178,581,940	\$ 471,834
Ending Net Pension Liability	\$ 129,754,027	\$ 368,885
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 13,687
◆ Changes of Assumptions	21,550,522	61,267
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	34,284
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 109,238
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 11,217
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	141,098
◆ Changes of Assumptions	2,635,399	7,492
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	56,969
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 216,776
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (14,535)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(7,663)
Total Employer Pension Expense	\$ (5,112,488)	\$ (22,198)
Covered Payroll:	\$ 90,501,248	\$ 307,923
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 368,885
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 567,753
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 200,850
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (31,444)
◆ 2023	\$ (14,454,343)	\$ (49,391)
◆ 2024	\$ (7,845,566)	\$ (30,183)
◆ 2025	\$ (4,644,485)	\$ (21,188)
◆ 2026	\$ 2,620,074	\$ 24,668
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Quabbin Health District
◆ Current Proportionate Share		0.266990%
◆ Prior Proportionate Share		0.268255%
Beginning Net Pension Liability	\$ 178,581,940	\$ 479,055
Ending Net Pension Liability	\$ 129,754,027	\$ 346,431
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 12,854
◆ Changes of Assumptions	21,550,522	57,538
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	33,076
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 103,468
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 10,534
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	132,509
◆ Changes of Assumptions	2,635,399	7,036
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	17,972
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 168,051
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (13,650)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	6,677
Total Employer Pension Expense	\$ (5,112,488)	\$ (6,973)
Covered Payroll:	\$ 90,501,248	\$ 269,745
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 346,431
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 533,194
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 188,624
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (14,880)
◆ 2023	\$ (14,454,343)	\$ (32,341)
◆ 2024	\$ (7,845,566)	\$ (17,098)
◆ 2025	\$ (4,644,485)	\$ (10,583)
◆ 2026	\$ 2,620,074	\$ 10,319
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Southampton
◆ Current Proportionate Share		3.424514%
◆ Prior Proportionate Share		3.373125%
Beginning Net Pension Liability	\$ 178,581,940	\$ 6,023,791
Ending Net Pension Liability	\$ 129,754,027	\$ 4,443,445
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 164,867
◆ Changes of Assumptions	21,550,522	738,001
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	305,775
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 1,208,643
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 135,114
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	1,699,615
◆ Changes of Assumptions	2,635,399	90,250
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	-
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 1,924,979
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (175,078)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	78,167
Total Employer Pension Expense	\$ (5,112,488)	\$ (96,911)
Covered Payroll:	\$ 90,501,248	\$ 2,953,336
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 4,443,445
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 6,838,938
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 2,419,367
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (194,001)
◆ 2023	\$ (14,454,343)	\$ (413,536)
◆ 2024	\$ (7,845,566)	\$ (202,784)
◆ 2025	\$ (4,644,485)	\$ (124,509)
◆ 2026	\$ 2,620,074	\$ 218,494
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	South Hadley
◆ Current Proportionate Share		13.438442%
◆ Prior Proportionate Share		13.327336%
Beginning Net Pension Liability	\$ 178,581,940	\$ 23,800,215
Ending Net Pension Liability	\$ 129,754,027	\$ 17,436,920
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 646,970
◆ Changes of Assumptions	21,550,522	2,896,054
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	946,233
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 4,489,257
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 530,212
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	6,669,610
◆ Changes of Assumptions	2,635,399	354,157
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	595,298
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 8,149,277
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (687,039)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(59,822)
Total Employer Pension Expense	\$ (5,112,488)	\$ (746,861)
Covered Payroll:	\$ 90,501,248	\$ 12,165,871
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 17,436,920
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 26,837,290
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 9,494,053
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (1,153,901)
◆ 2023	\$ (14,454,343)	\$ (1,972,841)
◆ 2024	\$ (7,845,566)	\$ (930,670)
◆ 2025	\$ (4,644,485)	\$ (416,435)
◆ 2026	\$ 2,620,074	\$ 813,827
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	South Hadley Housing Authority
◆ Current Proportionate Share		0.245085%
◆ Prior Proportionate Share		0.249032%
Beginning Net Pension Liability	\$ 178,581,940	\$ 444,726
Ending Net Pension Liability	\$ 129,754,027	\$ 318,008
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 11,799
◆ Changes of Assumptions	21,550,522	52,817
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	5,037
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 69,653
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 9,670
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	121,638
◆ Changes of Assumptions	2,635,399	6,459
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	13,722
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 151,489
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (12,530)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	490
Total Employer Pension Expense	\$ (5,112,488)	\$ (12,040)
Covered Payroll:	\$ 90,501,248	\$ 224,182
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 318,008
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 489,449
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 173,149
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (19,750)
◆ 2023	\$ (14,454,343)	\$ (35,815)
◆ 2024	\$ (7,845,566)	\$ (21,488)
◆ 2025	\$ (4,644,485)	\$ (13,730)
◆ 2026	\$ 2,620,074	\$ 8,947
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	South Hadley- Easthampton Veteran's District
◆ Current Proportionate Share		0.058822%
◆ Prior Proportionate Share		0.058715%
Beginning Net Pension Liability	\$ 178,581,940	\$ 104,854
Ending Net Pension Liability	\$ 129,754,027	\$ 76,324
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 2,832
◆ Changes of Assumptions	21,550,522	12,676
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	405
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 15,913
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 2,321
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	29,194
◆ Changes of Assumptions	2,635,399	1,550
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	11,398
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 44,463
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (3,007)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(2,741)
Total Employer Pension Expense	\$ (5,112,488)	\$ (5,748)
Covered Payroll:	\$ 90,501,248	\$ 60,000
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 76,324
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 117,471
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 41,557
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (7,514)
◆ 2023	\$ (14,454,343)	\$ (11,226)
◆ 2024	\$ (7,845,566)	\$ (7,247)
◆ 2025	\$ (4,644,485)	\$ (5,387)
◆ 2026	\$ 2,620,074	\$ 2,824
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	South Hadley Fire District No.1
◆ Current Proportionate Share		2.421445%
◆ Prior Proportionate Share		2.368127%
Beginning Net Pension Liability	\$ 178,581,940	\$ 4,229,048
Ending Net Pension Liability	\$ 129,754,027	\$ 3,141,923
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 116,576
◆ Changes of Assumptions	21,550,522	521,834
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	88,279
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 726,689
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 95,538
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	1,201,783
◆ Changes of Assumptions	2,635,399	63,815
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	221,260
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 1,582,396
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (123,796)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(58,220)
Total Employer Pension Expense	\$ (5,112,488)	\$ (182,016)
Covered Payroll:	\$ 90,501,248	\$ 2,386,190
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 3,141,923
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 4,835,756
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 1,710,714
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (255,060)
◆ 2023	\$ (14,454,343)	\$ (400,924)
◆ 2024	\$ (7,845,566)	\$ (208,646)
◆ 2025	\$ (4,644,485)	\$ (123,133)
◆ 2026	\$ 2,620,074	\$ 132,056
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	South Hadley Fire District No.2
◆ Current Proportionate Share		0.990146%
◆ Prior Proportionate Share		1.066638%
Beginning Net Pension Liability	\$ 178,581,940	\$ 1,904,822
Ending Net Pension Liability	\$ 129,754,027	\$ 1,284,754
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 47,669
◆ Changes of Assumptions	21,550,522	213,382
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	73,985
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 335,036
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 39,066
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	491,418
◆ Changes of Assumptions	2,635,399	26,094
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	250,358
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 806,936
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (50,621)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(44,149)
Total Employer Pension Expense	\$ (5,112,488)	\$ (94,770)
Covered Payroll:	\$ 90,501,248	\$ 914,104
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 1,284,754
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 1,977,375
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 699,523
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (129,844)
◆ 2023	\$ (14,454,343)	\$ (192,903)
◆ 2024	\$ (7,845,566)	\$ (118,685)
◆ 2025	\$ (4,644,485)	\$ (51,960)
◆ 2026	\$ 2,620,074	\$ 21,492
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Ware
◆ Current Proportionate Share		8.254026%
◆ Prior Proportionate Share		8.576706%
Beginning Net Pension Liability	\$ 178,581,940	\$ 15,316,447
Ending Net Pension Liability	\$ 129,754,027	\$ 10,709,931
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 397,375
◆ Changes of Assumptions	21,550,522	1,778,786
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	704,367
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 2,880,528
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 325,661
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	4,096,541
◆ Changes of Assumptions	2,635,399	217,527
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	939,805
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 5,579,534
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (421,986)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(41,887)
Total Employer Pension Expense	\$ (5,112,488)	\$ (463,873)
Covered Payroll:	\$ 90,501,248	\$ 7,539,842
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 10,709,931
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 16,483,732
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 5,831,343
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (715,056)
◆ 2023	\$ (14,454,343)	\$ (1,242,327)
◆ 2024	\$ (7,845,566)	\$ (703,123)
◆ 2025	\$ (4,644,485)	\$ (423,418)
◆ 2026	\$ 2,620,074	\$ 384,918
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Ware Housing Authority
◆ Current Proportionate Share		0.266944%
◆ Prior Proportionate Share		0.267520%
Beginning Net Pension Liability	\$ 178,581,940	\$ 477,743
Ending Net Pension Liability	\$ 129,754,027	\$ 346,370
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 12,852
◆ Changes of Assumptions	21,550,522	57,528
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	33,622
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 104,002
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 10,532
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	132,486
◆ Changes of Assumptions	2,635,399	7,035
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	2,158
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 152,211
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (13,647)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	8,586
Total Employer Pension Expense	\$ (5,112,488)	\$ (5,061)
Covered Payroll:	\$ 90,501,248	\$ 240,153
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 346,370
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 533,101
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 188,592
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (13,341)
◆ 2023	\$ (14,454,343)	\$ (31,019)
◆ 2024	\$ (7,845,566)	\$ (16,034)
◆ 2025	\$ (4,644,485)	\$ (7,365)
◆ 2026	\$ 2,620,074	\$ 19,550
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Westhampton
◆ Current Proportionate Share		0.803879%
◆ Prior Proportionate Share		0.831778%
Beginning Net Pension Liability	\$ 178,581,940	\$ 1,485,405
Ending Net Pension Liability	\$ 129,754,027	\$ 1,043,066
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 38,701
◆ Changes of Assumptions	21,550,522	173,240
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	31,071
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 243,012
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 31,717
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	398,972
◆ Changes of Assumptions	2,635,399	21,185
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	113,005
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 564,879
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (41,098)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(11,107)
Total Employer Pension Expense	\$ (5,112,488)	\$ (52,205)
Covered Payroll:	\$ 90,501,248	\$ 786,580
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 1,043,066
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 1,605,390
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 567,928
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (72,773)
◆ 2023	\$ (14,454,343)	\$ (126,458)
◆ 2024	\$ (7,845,566)	\$ (83,794)
◆ 2025	\$ (4,644,485)	\$ (60,576)
◆ 2026	\$ 2,620,074	\$ 21,734
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Williamsburg
◆ Current Proportionate Share		1.052386%
◆ Prior Proportionate Share		1.178864%
Beginning Net Pension Liability	\$ 178,581,940	\$ 2,105,237
Ending Net Pension Liability	\$ 129,754,027	\$ 1,365,513
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 50,665
◆ Changes of Assumptions	21,550,522	226,795
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	60,856
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 338,316
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 41,522
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	522,308
◆ Changes of Assumptions	2,635,399	27,735
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	264,816
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 856,381
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (53,803)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(19,713)
Total Employer Pension Expense	\$ (5,112,488)	\$ (73,516)
Covered Payroll:	\$ 90,501,248	\$ 1,038,898
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 1,365,513
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 2,101,671
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 743,494
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ (102,878)
◆ 2023	\$ (14,454,343)	\$ (174,824)
◆ 2024	\$ (7,845,566)	\$ (125,583)
◆ 2025	\$ (4,644,485)	\$ (96,508)
◆ 2026	\$ 2,620,074	\$ (18,272)
◆ Thereafter	\$ 2,577,249	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2021	Hampshire County Retirement System	Worthington
◆ Current Proportionate Share		0.805460%
◆ Prior Proportionate Share		0.766737%
Beginning Net Pension Liability	\$ 178,581,940	\$ 1,369,254
Ending Net Pension Liability	\$ 129,754,027	\$ 1,045,116
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,814,323	\$ 38,777
◆ Changes of Assumptions	21,550,522	173,581
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	460,673
Total Deferred Outflows of Resources	\$ 34,487,859	\$ 673,031
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 3,945,486	\$ 31,779
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	49,630,828	399,756
◆ Changes of Assumptions	2,635,399	21,227
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	8,123,014	31,925
Total Deferred Inflows of Resources	\$ 64,334,727	\$ 484,687
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ (5,112,488)	\$ (41,179)
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	101,003
Total Employer Pension Expense	\$ (5,112,488)	\$ 59,824
Covered Payroll:	\$ 90,501,248	\$ 712,859
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 129,754,027	\$ 1,045,116
◆ 1% decrease in the discount rate: 5.9%	\$ 199,705,364	\$ 1,608,546
◆ 1% increase in the discount rate: 7.9%	\$ 70,648,467	\$ 569,045
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2022	\$ (8,099,797)	\$ 31,220
◆ 2023	\$ (14,454,343)	\$ (24,849)
◆ 2024	\$ (7,845,566)	\$ 12,407
◆ 2025	\$ (4,644,485)	\$ 47,231
◆ 2026	\$ 2,620,074	\$ 122,335
◆ Thereafter	\$ 2,577,249	\$ -

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 6.9%; the municipal bond rate is 2.06%, based on the December 2021 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 6.9%.