



HAMPSHIRE COUNTY RETIREMENT SYSTEM

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

**Disclosures as of
December 31, 2022**

KMS Actuarial, LLC
52 Hunt Road
Kingston, NH 03848

February, 2025



February 14, 2025

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, 2022. Results are based on liabilities developed in an actuarial valuation performed as of January 1, 2022 and rolled forward to the plan's measurement date of December 31, 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 assumption 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

February 14, 2025

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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.

KMS Actuaries is completely independent of the Hampshire County Retirement System and any of its officers or key personnel. None of the actuaries signing this report or anyone closely associated with them has a relationship with the Hampshire County Retirement System, other than as consulting actuary for this assignment, that would impair our independence.

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, 2022 (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, 2022	December 31, 2021	% Change
Valuation Date	January 1, 2022	January 1, 2022	
Membership Data			
Active Plan Members	2,079	1,981	4.9%
Inactive Members Currently in Receipt	1,444	1,392	3.7%
Inactive Members Deferred	844	851	(0.8%)
Total Plan Members	4,367	4,224	3.4%
Covered Payroll	\$96,766,143	\$90,501,248	6.9%
Net Pension Liability			
Discount Rate	6.90%	6.90%	
Total Pension Liability (TPL)	\$628,533,971	\$606,316,440	3.7%
Fiduciary Net Position (FNP)	428,475,759	476,562,413	(10.1%)
Net Pension Liability (NPL)	\$200,058,212	\$129,754,027	54.2%
FNP as % of TPL	68.2%	78.6%	(13.2%)
Pension Expense			
Pension Expense (Income)	\$24,997,617	(\$5,112,488)	
Deferred Outflows	\$49,775,358	\$26,364,845	
Deferred Inflows	\$4,114,733	\$56,211,713	
Recognition Period	7.08	7.08	

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 rolled forward to the plan's measurement date of December 31, 2022 and is shown in Section 1, Total Pension Liability.

Benefit Changes

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

Assumption Changes

All of the Actuarial Assumptions and Methods used in these disclosures are the same as the last measurement date. 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 Expense for the fiscal year ending December 31, 2022 is \$24,997,617 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.

SECTION 1 - PRINCIPAL VALUATION RESULTS

Fiduciary Net Position

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

Fiscal Year Ended December 31 **2022** **2021**

Trust Fund Composition at Fiscal Year-End			
Cash	\$	3,784,841	\$ 4,672,747
Individually Owned Short Term Investments		0	0
Fixed Income Securities		0	0
Equities (at market value)		0	0
Pooled Short Term Funds		0	0
Pooled Domestic Equity Funds		99,901,537	113,556,554
Pooled International Equity Funds		78,009,957	85,293,033
Pooled Global Equity Funds		0	0
Pooled Domestic Fixed Income Funds		95,820,213	122,082,112
Pooled International Fixed Income Funds		0	0
Pooled Global Fixed Income Funds		0	0
Pooled Alternative/Private Equity		73,099,926	72,375,837
Pooled Real Estate Funds		76,777,125	77,562,890
Pooled Domestic Balanced Funds		0	0
Pooled International Balanced Funds		0	0
Hedge Funds		0	0
PRIT Cash		0	0
PRIT Fund		0	0
Interest Due and Accrued		0	0
Prepaid Expenses		0	0
Accounts Receivable (A)		1,082,194	1,075,053
Land		0	0
Buildings		0	0
Accumulated Depreciation - Buildings		0	0
Accounts Payable (A)		(34)	(55,813)
Auditor or Other Adjustments		0	0
Total Market Value of Assets	\$	428,475,759	\$ 476,562,413

SECTION 1 - PRINCIPAL VALUATION RESULTS

Fiduciary Net Position		
Fiscal Year Ended December 31	2022	2021
Asset Activity		
Market value as of beginning of year	\$ 476,562,413	\$ 401,980,115
Contributions - employer	30,200,925	28,089,796
Contributions - member	9,302,082	8,579,543
Net investment income	(51,386,805)	73,547,508
Benefit payments, including refunds of member contributions	(35,418,801)	(34,822,644)
Administrative expenses	(784,055)	(811,905)
Other	0	0
Market Value as of end of year	\$ 428,475,759	\$ 476,562,413

Money-Weighted Rate of Return	-10.78%	18.36%
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(Gain) / Loss on Pension Plan Investments		
Projected earnings	\$ 32,872,815	\$ 28,654,229
Actual earnings	(51,386,805)	73,547,508
(Gain) / Loss on pension plan investments	\$ 84,259,620	\$ (44,893,279)

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, 2022 measurement date was developed from an actuarial valuation as of January 1, 2022 and rolled forward to the pension plan's fiscal year-end.

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, 2021 to the end of the measurement period, December 31, 2022 is shown below:

Measurement Date

December 31, 2022

1. Total Pension Liability, beginning of year:		
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
2. Service Cost	\$	15,923,710
3. Benefit Payments		(35,418,801)
4. Interest [6.9% x (1.d. + 2. + .5 x 3)]	\$	41,712,622
5. Changes of benefit terms		-
6. Differences between expected and actual experience		-
7. Changes of assumptions or other inputs		-
8. Total Pension Liability, end of year (1.d. + 2. + 3. + 4. + 5. + 6. + 7.)		
a. Actives	\$	281,286,320
b. Retired and Disabled Members and Beneficiaries		339,327,984
c. Inactive Members		7,919,667
d. Total Pension Liability at 6.9% (a. + b. + c.)	\$	628,533,971

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, 2022, pension plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefits	1,444
Inactive plan members entitled to but not yet receiving benefits	844
Active plan members	2,079
	<u>4,367</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, 2022, were as follows:

Total Pension Liability	\$ 628,533,971
Fiduciary Net Position	(428,475,759)
Net Pension Liability	\$ 200,058,212

Fiduciary Net Position as a percentage of the Total Pension Liability 68.2%

Actuarial assumptions

The Total Pension Liability was determined by an actuarial valuation as of January 1, 2022, rolled forward to the measurement date of December 31, 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, 2022 (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%	4.50%
Non-US Developed Equity	11.0%	4.30%
Emerging Equity	6.0%	7.00%
Private Equity	18.0%	7.60%
Core Bonds	11.0%	2.10%
Value Add Fixed Income - Public	12.0%	5.20%
Real Estate	18.0%	3.10%
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	\$ 699,196,027	\$ 628,533,971	\$ 566,528,179
Fiduciary Net Position	428,475,759	428,475,759	428,475,759
Net Pension Liability	\$ 270,720,268	\$ 200,058,212	\$ 138,052,420

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net Pension Liability and Related Ratios

Fiscal Year Ended December 31	2022	2021	2020	2019	2018
Total Pension Liability					
Service cost	\$ 15,923,710	\$ 14,760,890	\$ 14,261,729	\$ 13,282,271	\$ 12,771,414
Interest	41,712,622	41,320,681	39,817,266	38,884,736	37,396,643
Changes of benefit terms	-	(12,399,813)	-	-	-
Differences between expected and actual experience	-	5,606,152	-	(6,620,290)	-
Changes of assumptions	-	11,289,119	-	20,488,858	-
Benefit payments, including refunds of member contributions	(35,418,801)	(34,822,644)	(32,280,113)	(31,865,798)	(29,543,223)
Net change in Total Pension Liability	\$ 22,217,531	\$ 25,754,385	\$ 21,798,882	\$ 34,169,777	\$ 20,624,834
Total Pension Liability--beginning	\$ 606,316,440	\$ 580,562,055	\$ 558,763,173	\$ 524,593,396	\$ 503,968,562
Total Pension Liability--ending (a)	<u>\$ 628,533,971</u>	<u>\$ 606,316,440</u>	<u>\$ 580,562,055</u>	<u>\$ 558,763,173</u>	<u>\$ 524,593,396</u>
Fiduciary Net Position					
Contributions--employer	\$ 30,200,925	\$ 28,089,796	\$ 26,114,304	\$ 24,294,506	\$ 22,597,993
Contributions--member	9,302,082	8,579,543	8,376,499	8,334,804	8,378,578
Net investment income	(51,386,805)	73,547,508	41,619,584	50,071,334	(9,664,404)
Benefit payments, including refunds of member contributions	(35,418,801)	(34,822,644)	(32,280,113)	(31,865,798)	(29,543,223)
Administrative expenses	(784,055)	(811,905)	(868,192)	(842,974)	(870,363)
Other	-	-	-	-	-
Net change in Fiduciary Net Position	\$ (48,086,654)	\$ 74,582,298	\$ 42,962,082	\$ 49,991,872	\$ (9,101,419)
Fiduciary Net Position--beginning	\$ 476,562,413	\$ 401,980,115	\$ 359,018,033	\$ 309,026,161	\$ 318,127,580
Fiduciary Net Position--ending (b)	<u>\$ 428,475,759</u>	<u>\$ 476,562,413</u>	<u>\$ 401,980,115</u>	<u>\$ 359,018,033</u>	<u>\$ 309,026,161</u>
Net Pension Liability and Related Ratios					
Net Pension Liability--ending (a) -- (b)	<u>\$ 200,058,212</u>	<u>\$ 129,754,027</u>	<u>\$ 178,581,940</u>	<u>\$ 199,745,140</u>	<u>\$ 215,567,235</u>
Fiduciary Net Position as a percentage of the Total Pension Liability	68.17%	78.60%	69.24%	64.25%	58.91%
Covered Payroll	\$ 96,766,143	\$ 90,501,248	\$ 87,719,692	\$ 85,426,619	\$ 84,192,999
Net Pension Liability as a percentage of Covered Payroll	206.74%	143.37%	203.58%	233.82%	256.04%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

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

Fiscal Year Ended December 31	2017	2016	2015	2014	2013
Total Pension Liability					
Service cost	\$ 11,029,438	\$ 10,605,229	\$ 10,269,070	\$ 9,850,427	
Interest	36,888,260	34,627,268	34,842,587	33,371,689	
Changes of benefit terms	-	-	-	-	
Differences between expected and actual experience	(434,874)	(4,348,735)	-	-	
Changes of assumptions	(9,996,849)	16,610,091	-	-	
Benefit payments, including refunds of member contributions	(28,662,890)	(26,880,118)	(25,512,793)	(24,412,587)	
Net change in Total Pension Liability	\$ 8,823,085	\$ 30,613,735	\$ 19,598,864	\$ 18,809,529	
Total Pension Liability--beginning	\$ 495,145,477	\$ 464,531,742	\$ 444,932,878	\$ 426,123,349	
Total Pension Liability--ending (a)	<u>\$ 503,968,562</u>	<u>\$ 495,145,477</u>	<u>\$ 464,531,742</u>	<u>\$ 444,932,878</u>	
Fiduciary Net Position					
Contributions--employer	\$ 21,331,218	\$ 19,693,436	\$ 18,620,753	\$ 17,442,179	
Contributions--member	7,689,443	7,446,905	7,322,347	7,559,814	
Net investment income	43,201,653	19,015,995	(1,011,242)	12,015,152	
Benefit payments, including refunds of member contributions	(28,662,890)	(26,880,118)	(25,512,793)	(24,412,587)	
Administrative expenses	(817,067)	(796,827)	(929,899)	(841,318)	
Other	-	-	-	-	
Net change in Fiduciary Net Position	\$ 42,742,357	\$ 18,479,391	\$ (1,510,834)	\$ 11,763,240	
Fiduciary Net Position--beginning	\$ 275,385,223	\$ 256,905,832	\$ 258,416,666	\$ 246,653,426	
Fiduciary Net Position--ending (b)	<u>\$ 318,127,580</u>	<u>\$ 275,385,223</u>	<u>\$ 256,905,832</u>	<u>\$ 258,416,666</u>	
Net Pension Liability and Related Ratios					
Net Pension Liability--ending (a) - (b)	<u>\$ 185,840,982</u>	<u>\$ 219,760,254</u>	<u>\$ 207,625,910</u>	<u>\$ 186,516,212</u>	
Fiduciary Net Position as a percentage of the Total Pension Liability	63.12%	55.62%	55.30%	58.08%	
Covered Payroll	\$ 76,767,518	\$ 78,914,925	\$ 80,914,245	\$ 77,139,934	
Net Pension Liability as a percentage of Covered Payroll	242.08%	278.48%	256.60%	241.79%	

Note: Only 9 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	2022	2021	2020	2019	2018
Actuarially Determined Contribution	\$ 30,200,925	\$ 28,089,796	\$ 26,114,304	\$ 24,294,506	\$ 22,597,993
Contributions in relation to the Actuarially Determined Contribution	30,200,925	28,089,796	26,114,304	24,294,506	22,597,993
Contribution deficiency (excess)	\$ -	\$ -	\$ -	\$ -	\$ -
Covered Payroll	\$ 96,766,143	\$ 90,501,248	\$ 87,719,692	\$ 85,426,619	\$ 84,192,999
Contributions as a percentage of Covered Payroll	31.21%	31.04%	29.77%	28.44%	26.84%

The contribution shown above, \$30,200,925, represents the actual contributions made by member units of the Hampshire County Retirement System for the 2023 fiscal year.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.2 - Schedule of Employer Contributions (continued)

Fiscal Year Ended December 31	2017	2016	2015	2014	2013
Actuarially Determined Contribution	\$ 21,331,218	\$ 19,693,436	\$ 18,620,753	\$ 17,349,877	
Contributions in relation to the Actuarially Determined Contribution	<u>21,331,218</u>	<u>\$ 19,693,436</u>	<u>\$ 18,620,753</u>	<u>\$ 17,349,877</u>	
Contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	
Covered Payroll	\$ 76,767,518	\$ 78,914,925	\$ 80,914,245	\$ 77,139,934	
Contributions as a percentage of Covered Payroll	27.79%	24.96%	23.01%	22.49%	

Note: Only 9 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	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Annual money-weighted rate of return, net of investment expense	-10.78%	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 9 years are presented here, beginning with the year of implementation; 10 years of information will be required.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Notes to the Required Supplementary Information

Changes of benefit terms

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

Changes of assumptions

All of the Actuarial Assumptions and Methods used in these disclosures are the same as the last measurement date. 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: <ul style="list-style-type: none">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, andd) 20% of gains and losses of the fourth prior year. Investment gains and losses are determined by the excess or deficiency of the expected return over the actual return on the market value. The actuarial valuation of assets is further constrained to be not less than 90% or more than 110% of market value.	
Inflation	2.4% per year	
Salary increases	Group 1: 6% - 4.25%, based on service Group 4: 7% - 4.75%, based on service	
Payroll growth	3.25% 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, 2022		
	Experience Losses	Experience Gains	Amounts Recognized in Pension Expense through December 31, 2022	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) + (c)
2017	\$ -	\$ 434,874	\$ (384,276)	\$ -	\$ 50,598
2018	-	-	-	-	-
2019	-	6,620,290	(3,719,264)	-	2,901,026
2020	-	-	-	-	-
2021	5,606,152	-	1,583,658	4,022,494	-
2022	-	-	-	-	-
Total				<u>\$ 4,022,494</u>	<u>\$ 2,951,624</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, 2022		
	Increases in the Total Pension Liability	Decreases in the Total Pension Liability	Amounts Recognized in Pension Expense through December 31, 2022	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) + (c)
2017	\$ -	\$ 9,996,849	\$ (8,833,740)	\$ -	\$ 1,163,109
2018	-	-	-	-	-
2019	20,488,858	-	11,510,596	8,978,262	-
2020	-	-	-	-	-
2021	11,289,119	-	3,189,016	8,100,103	-
2022	-	-	-	-	-
Total				<u>\$ 17,078,365</u>	<u>\$ 1,163,109</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, 2022	
	Investment Earnings Less Than Projected	Investment Earnings Greater Than Projected	Amounts Recognized in Pension Expense through December 31, 2022	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) + (c)
2017	\$ -	\$ 22,564,985	\$ (22,564,985)	\$ -	\$ -
2018	33,385,880	-	33,385,880	-	-
2019	-	26,975,353	(21,580,283)	-	5,395,070
2020	-	16,005,403	(9,603,243)	-	6,402,160
2021	-	44,893,279	(17,957,312)	-	26,935,967
2022	84,259,620	-	16,851,924	67,407,696	-
Subtotal				\$ 67,407,696	\$ 38,733,197
Net				\$ 28,674,499	\$ -

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, 2022	
	Proportionate Share* Outflows	Proportionate Share* Inflows	Amounts Recognized in Pension Expense through December 31, 2022	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) - (c)
2017	\$ 2,338,865	\$ 2,338,865	\$ 2,066,743	\$ 272,122	\$ 272,122
2018	2,185,181	2,185,181	1,609,117	576,064	576,064
2019	3,112,389	3,112,389	1,748,534	1,363,855	1,363,855
2020	4,101,135	4,101,135	1,728,007	2,373,128	2,373,128
2021	2,164,088	2,164,088	611,322	1,552,766	1,552,766
2022	2,082,355	2,082,355	294,118	1,788,237	1,788,237
Total				<u>\$ 7,926,172</u>	<u>\$ 7,926,172</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

2023	\$	2,397,581
2024	\$	9,006,358
2025	\$	12,207,439
2026	\$	19,471,998
2027	\$	2,386,337
Thereafter	\$	190,912
Total Deferred Outflows	\$	57,701,530
Total Deferred Inflows	\$	12,040,905

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, 2022 is presented below:

Fiscal Year Ended December 31, 2022

1. Service cost		\$ 15,923,710
2. Interest on the total pension liability		
a. Total Pension Liability, beginning of year	606,316,440	
b. Service cost, beginning of year	15,923,710	
c. Benefit payments, including refunds of employee contributions	(35,418,801)	
d. Interest on Total Pension Liability		41,712,622
3. Differences between expected and actual experience		(202,033)
4. Changes of benefit terms		-
5. Changes of assumptions		2,999,867
6. Employee contributions		(9,302,082)
7. Projected earnings on pension plan investments		
a. Fiduciary Net Position, beginning of year	476,562,413	
b. Employer contributions	30,200,925	
c. Employee contributions	9,302,082	
d. Benefit payments, including refunds of employee contributions	(35,418,801)	
e. Administrative expenses and other	(784,055)	
f. Total projected earnings		(32,872,815)
8. Differences between projected and actual earnings on plan investments		5,954,293
9. Pension plan administrative expenses		784,055
10. Other changes in Fiduciary Net Position		-
11. Total Pension Expense (Income)		\$ 24,997,617

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 2022 and 2021, based on employer contributions made for the 2023 fiscal year and 2022 fiscal year, respectively, shows the proportionate relationship of each employer to all employers and each employer's allocation percentage.

Entity	2022		2021	
	Employer Contribution	Proportionate Share of Total Employer Contribution	Employer Contribution	Proportionate Share of Total Employer Contribution
Hampshire County Group Insurance Trust	106,719	0.353363%	104,644	0.372534%
Amherst	7,796,557	25.815623%	7,423,375	26.427301%
Amherst-Pelham Regional School District	1,766,011	5.847539%	1,663,550	5.922257%
Amherst Housing Authority	272,725	0.903035%	242,331	0.862701%
Belchertown	4,100,480	13.577332%	3,843,858	13.684179%
Belchertown Housing Authority	-	0.000000%	19,276	0.068623%
Belchertown Water District	77,074	0.255204%	68,844	0.245085%
Chesterfield	112,647	0.372992%	104,644	0.372534%
Chesterfield-Goshen Regional School District	115,612	0.382809%	93,628	0.333317%
Cummington	87,452	0.289567%	71,598	0.254890%
Foothills Health District	51,265	0.169746%	16,523	0.058822%
Gateway Regional School District	696,635	2.306668%	625,104	2.225378%
Goshen	50,395	0.166866%	63,337	0.225480%
Granby	1,433,186	4.745504%	1,307,487	4.654669%
Granby Housing Authority	24,125	0.079882%	22,030	0.078427%
Hadley	1,734,867	5.744417%	1,604,642	5.712544%
Hadley Housing Authority	-	0.000000%	-	0.000000%
Hampshire County Regional Housing Authority	-	0.000000%	11,205	0.039890%
Hampshire Regional School District	668,725	2.214253%	593,145	2.111603%
Hatfield	764,816	2.532426%	680,179	2.421445%
Hatfield Housing Authority	8,893	0.029446%	8,261	0.029409%
Huntington	162,841	0.539192%	134,463	0.478690%
Middlefield	65,217	0.215944%	57,829	0.205872%
Pelham	290,512	0.961931%	253,346	0.901915%
Plainfield	100,790	0.333731%	79,858	0.284295%
Quabbin Health District	95,432	0.315990%	74,997	0.266990%
Southampton	978,288	3.239265%	961,939	3.424514%
South Hadley	4,019,387	13.308821%	3,774,831	13.438442%
South Hadley Housing Authority	75,389	0.249625%	68,844	0.245085%
South Hadley-Easthampton Veteran's District	20,751	0.068710%	16,523	0.058822%

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 2022 and 2021, based on employer contributions made for the 2023 fiscal year and 2022 fiscal year, respectively, shows the proportionate relationship of each employer to all employers and each employer's allocation percentage.

Entity	2022		2021	
	Employer Contribution	Proportionate Share of Total Employer Contribution	Employer Contribution	Proportionate Share of Total Employer Contribution
South Hadley Fire District No.1	782,603	2.591321%	680,179	2.421445%
South Hadley Fire District No.2	299,404	0.991374%	278,130	0.990146%
Ware	2,516,037	8.330993%	2,318,539	8.254026%
Ware Housing Authority	83,425	0.276233%	74,984	0.266944%
Westhampton	257,903	0.853957%	225,808	0.803879%
Williamsburg	344,622	1.141097%	295,613	1.052386%
Worthington	240,140	0.795141%	226,252	0.805460%
Total	30,200,925	100.000000%	28,089,796	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 2022:

- ◆ 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 (loss on pension plan investments for 2022) 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 2022 (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, 2022	\$ 476,562,413	12	1.00	\$ 425,186,742
Monthly net external cash flows:				
January	(2,202,522)	11	0.92	(1,983,849)
February	(2,493,888)	10	0.83	(2,267,742)
March	(2,642,985)	9	0.75	(2,426,273)
April	(2,131,548)	8	0.67	(1,975,461)
May	(1,336,543)	7	0.58	(1,250,503)
June	(1,960,415)	6	0.50	(1,851,731)
July	26,893,770	5	0.42	25,645,430
August	(2,023,805)	4	0.33	(1,948,298)
September	(3,232,445)	3	0.25	(3,141,566)
October	(1,956,925)	2	0.17	(1,920,072)
November	(2,285,745)	1	0.08	(2,264,120)
December	(1,326,798)	0	0.00	(1,326,798)
Ending value - December 31, 2022				\$ 428,475,759
Money-weighted rate of return				-10.78%

Note: Beginning and ending values are based on amounts reported in the System's 2022 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)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
2017	(434,874)	6.79	(64,046)	(50,598)	-	-	-	-	-	-	-	-
2018	-	6.79	-	-	-	-	-	-	-	-	-	-
2019	(6,620,290)	7.12	(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	63,349	-	-	-
2022	-	7.08	-	-	-	-	-	-	-	-	-	-
Net Increase (Decrease) in Pension Expense			(202,033)	(188,585)	(137,987)	(137,987)	680,251	791,829	63,349	-	-	-

Year	Changes of Assumptions	Recognition Period (Years)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
2017	(9,996,849)	6.79	(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	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	127,563	-	-	-
2022	-	7.08	-	-	-	-	-	-	-	-	-	-
Net Increase (Decrease) in Pension Expense			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)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
2017	(22,564,985)	5	-	-	-	-	-	-	-	-	-	-
2018	33,385,880	5	6,677,176	-	-	-	-	-	-	-	-	-
2019	(26,975,353)	5	(5,395,070)	(5,395,070)	-	-	-	-	-	-	-	-
2020	(16,005,403)	5	(3,201,081)	(3,201,080)	(3,201,080)	-	-	-	-	-	-	-
2021	(44,893,279)	5	(8,978,656)	(8,978,656)	(8,978,656)	(8,978,655)	-	-	-	-	-	-
2022	84,259,620	5	16,851,924	16,851,924	16,851,924	16,851,924	16,851,924	-	-	-	-	-
Net Increase (Decrease) in Pension Expense			5,954,293	(722,882)	4,672,188	7,873,269	16,851,924	-	-	-	-	-

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Hampshire County Group Insurance Trust
◆ Current Proportionate Share		0.353363%
◆ Prior Proportionate Share		0.372534%
Beginning Net Pension Liability	\$ 129,754,027	\$ 483,378
Ending Net Pension Liability	\$ 200,058,212	\$ 706,932
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 14,214
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	101,325
◆ Changes of Assumptions	17,078,365	60,349
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	69,995
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 245,883
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 10,430
◆ Changes of Assumptions	1,163,109	4,110
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	1,104,248
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 1,118,788
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 88,332
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(220,355)
Total Employer Pension Expense	\$ 24,997,617	\$ (132,023)
Covered Payroll:	\$ 96,766,143	\$ 343,550
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 706,932
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 956,626
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 487,827
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ (218,026)
◆ 2024	\$ 9,006,358	\$ (218,498)
◆ 2025	\$ 12,207,439	\$ (209,865)
◆ 2026	\$ 19,471,998	\$ (195,440)
◆ 2027	\$ 2,386,337	\$ (27,102)
◆ Thereafter	\$ 190,912	\$ (3,974)

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Amherst
◆ Current Proportionate Share		25.815623%
◆ Prior Proportionate Share		26.427301%
Beginning Net Pension Liability	\$ 129,754,027	\$ 34,290,486
Ending Net Pension Liability	\$ 200,058,212	\$ 51,646,273
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 1,038,430
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	7,402,498
◆ Changes of Assumptions	17,078,365	4,408,887
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	305,690
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 13,155,505
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 761,980
◆ Changes of Assumptions	1,163,109	300,268
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	1,965,420
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 3,027,668
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 6,453,289
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(222,444)
Total Employer Pension Expense	\$ 24,997,617	\$ 6,230,845
Covered Payroll:	\$ 96,766,143	\$ 24,958,871
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 51,646,273
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 69,888,124
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 35,639,093
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 380,643
◆ 2024	\$ 9,006,358	\$ 1,998,206
◆ 2025	\$ 12,207,439	\$ 2,716,006
◆ 2026	\$ 19,471,998	\$ 4,707,973
◆ 2027	\$ 2,386,337	\$ 427,466
◆ Thereafter	\$ 190,912	\$ (102,457)

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Amherst-Pelham Regional School District
◆ Current Proportionate Share		5.847539%
◆ Prior Proportionate Share		5.922257%
Beginning Net Pension Liability	\$ 129,754,027	\$ 7,684,367
Ending Net Pension Liability	\$ 200,058,212	\$ 11,698,483
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 235,217
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	1,676,753
◆ Changes of Assumptions	17,078,365	998,664
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	134,307
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 3,044,941
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 172,597
◆ Changes of Assumptions	1,163,109	68,013
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	337,968
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 578,578
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 1,461,746
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(11,474)
Total Employer Pension Expense	\$ 24,997,617	\$ 1,450,272
Covered Payroll:	\$ 96,766,143	\$ 5,911,412
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 11,698,483
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 15,830,474
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 8,072,670
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 128,887
◆ 2024	\$ 9,006,358	\$ 509,755
◆ 2025	\$ 12,207,439	\$ 673,642
◆ 2026	\$ 19,471,998	\$ 1,087,150
◆ 2027	\$ 2,386,337	\$ 77,658
◆ Thereafter	\$ 190,912	\$ (10,729)

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Amherst Housing Authority
◆ Current Proportionate Share		0.903035%
◆ Prior Proportionate Share		0.862701%
Beginning Net Pension Liability	\$ 129,754,027	\$ 1,119,390
Ending Net Pension Liability	\$ 200,058,212	\$ 1,806,596
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 36,325
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	258,941
◆ Changes of Assumptions	17,078,365	154,224
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	280,174
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 729,664
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 26,654
◆ Changes of Assumptions	1,163,109	10,503
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	109,461
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 146,618
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 225,737
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	34,651
Total Employer Pension Expense	\$ 24,997,617	\$ 260,388
Covered Payroll:	\$ 96,766,143	\$ 897,560
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 1,806,596
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 2,444,699
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 1,246,662
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 60,685
◆ 2024	\$ 9,006,358	\$ 128,548
◆ 2025	\$ 12,207,439	\$ 126,215
◆ 2026	\$ 19,471,998	\$ 218,040
◆ 2027	\$ 2,386,337	\$ 37,762
◆ Thereafter	\$ 190,912	\$ 11,796

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Belchertown
◆ Current Proportionate Share		13.577332%
◆ Prior Proportionate Share		13.684179%
Beginning Net Pension Liability	\$ 129,754,027	\$ 17,755,773
Ending Net Pension Liability	\$ 200,058,212	\$ 27,162,569
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 546,147
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	3,893,232
◆ Changes of Assumptions	17,078,365	2,318,786
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	960,018
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 7,718,183
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 400,752
◆ Changes of Assumptions	1,163,109	157,919
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	148,632
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 707,303
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 3,394,010
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	213,013
Total Employer Pension Expense	\$ 24,997,617	\$ 3,607,023
Covered Payroll:	\$ 96,766,143	\$ 12,528,294
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 27,162,569
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 36,756,591
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 18,743,836
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 539,123
◆ 2024	\$ 9,006,358	\$ 1,436,170
◆ 2025	\$ 12,207,439	\$ 1,861,616
◆ 2026	\$ 19,471,998	\$ 2,792,271
◆ 2027	\$ 2,386,337	\$ 376,623
◆ Thereafter	\$ 190,912	\$ 5,077

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Belchertown Housing Authority
◆ Current Proportionate Share		0.000000%
◆ Prior Proportionate Share		0.068623%
Beginning Net Pension Liability	\$ 129,754,027	\$ 89,041
Ending Net Pension Liability	\$ 200,058,212	\$ -
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	-
◆ Changes of Assumptions	17,078,365	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	2,343
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 2,343
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ -
◆ Changes of Assumptions	1,163,109	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	175,617
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 175,617
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ -
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(31,972)
Total Employer Pension Expense	\$ 24,997,617	\$ (31,972)
Covered Payroll:	\$ 96,766,143	\$ -
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ -
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ -
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ -
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ (32,508)
◆ 2024	\$ 9,006,358	\$ (34,534)
◆ 2025	\$ 12,207,439	\$ (34,581)
◆ 2026	\$ 19,471,998	\$ (34,644)
◆ 2027	\$ 2,386,337	\$ (20,087)
◆ Thereafter	\$ 190,912	\$ (16,920)

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Belchertown Water District
◆ Current Proportionate Share		0.255204%
◆ Prior Proportionate Share		0.245085%
Beginning Net Pension Liability	\$ 129,754,027	\$ 318,008
Ending Net Pension Liability	\$ 200,058,212	\$ 510,557
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 10,266
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	73,178
◆ Changes of Assumptions	17,078,365	43,585
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	130,456
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 257,485
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 7,533
◆ Changes of Assumptions	1,163,109	2,968
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	56,516
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 67,017
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 63,795
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	4,261
Total Employer Pension Expense	\$ 24,997,617	\$ 68,056
Covered Payroll:	\$ 96,766,143	\$ 248,254
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 510,557
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 690,889
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 352,315
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 13,389
◆ 2024	\$ 9,006,358	\$ 41,560
◆ 2025	\$ 12,207,439	\$ 49,666
◆ 2026	\$ 19,471,998	\$ 58,444
◆ 2027	\$ 2,386,337	\$ 23,164
◆ Thereafter	\$ 190,912	\$ 4,245

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Chesterfield
◆ Current Proportionate Share		0.372992%
◆ Prior Proportionate Share		0.372534%
Beginning Net Pension Liability	\$ 129,754,027	\$ 483,378
Ending Net Pension Liability	\$ 200,058,212	\$ 746,201
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 15,004
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	106,954
◆ Changes of Assumptions	17,078,365	63,701
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	30,247
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 215,906
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 11,009
◆ Changes of Assumptions	1,163,109	4,338
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	30,305
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 45,652
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 93,239
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	3,033
Total Employer Pension Expense	\$ 24,997,617	\$ 96,272
Covered Payroll:	\$ 96,766,143	\$ 330,166
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 746,201
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 1,009,765
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 514,924
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 10,362
◆ 2024	\$ 9,006,358	\$ 30,082
◆ 2025	\$ 12,207,439	\$ 46,317
◆ 2026	\$ 19,471,998	\$ 75,661
◆ 2027	\$ 2,386,337	\$ 7,210
◆ Thereafter	\$ 190,912	\$ 622

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Chesterfield-Goshen Regional School District
◆ Current Proportionate Share		0.382809%
◆ Prior Proportionate Share		0.333317%
Beginning Net Pension Liability	\$ 129,754,027	\$ 432,492
Ending Net Pension Liability	\$ 200,058,212	\$ 765,842
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 15,398
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	109,769
◆ Changes of Assumptions	17,078,365	65,378
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	104,658
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 295,203
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 11,299
◆ Changes of Assumptions	1,163,109	4,452
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	87,218
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 102,969
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 95,693
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	11,713
Total Employer Pension Expense	\$ 24,997,617	\$ 107,406
Covered Payroll:	\$ 96,766,143	\$ 371,152
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 765,842
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 1,036,343
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 528,478
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 18,098
◆ 2024	\$ 9,006,358	\$ 34,031
◆ 2025	\$ 12,207,439	\$ 50,583
◆ 2026	\$ 19,471,998	\$ 70,970
◆ 2027	\$ 2,386,337	\$ 6,822
◆ Thereafter	\$ 190,912	\$ 11,730

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Cummington
◆ Current Proportionate Share		0.289567%
◆ Prior Proportionate Share		0.254890%
Beginning Net Pension Liability	\$ 129,754,027	\$ 330,730
Ending Net Pension Liability	\$ 200,058,212	\$ 579,303
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 11,648
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	83,032
◆ Changes of Assumptions	17,078,365	49,453
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	131,584
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 275,717
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 8,547
◆ Changes of Assumptions	1,163,109	3,368
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	56,800
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 68,715
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 72,385
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	21,582
Total Employer Pension Expense	\$ 24,997,617	\$ 93,967
Covered Payroll:	\$ 96,766,143	\$ 266,797
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 579,303
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 783,917
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 399,755
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 28,603
◆ 2024	\$ 9,006,358	\$ 45,071
◆ 2025	\$ 12,207,439	\$ 43,200
◆ 2026	\$ 19,471,998	\$ 59,282
◆ 2027	\$ 2,386,337	\$ 21,201
◆ Thereafter	\$ 190,912	\$ 9,645

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Foothills Health District
◆ Current Proportionate Share		0.169746%
◆ Prior Proportionate Share		0.058822%
Beginning Net Pension Liability	\$ 129,754,027	\$ 76,324
Ending Net Pension Liability	\$ 200,058,212	\$ 339,592
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 6,828
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	48,674
◆ Changes of Assumptions	17,078,365	28,990
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	154,566
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 239,058
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 5,010
◆ Changes of Assumptions	1,163,109	1,974
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	-
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 6,984
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 42,433
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	27,812
Total Employer Pension Expense	\$ 24,997,617	\$ 70,245
Covered Payroll:	\$ 96,766,143	\$ 198,627
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 339,592
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 459,538
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 234,339
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 31,317
◆ 2024	\$ 9,006,358	\$ 40,402
◆ 2025	\$ 12,207,439	\$ 45,816
◆ 2026	\$ 19,471,998	\$ 58,120
◆ 2027	\$ 2,386,337	\$ 29,088
◆ Thereafter	\$ 190,912	\$ 27,331

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Gateway Regional School District
◆ Current Proportionate Share		2.306668%
◆ Prior Proportionate Share		2.225378%
Beginning Net Pension Liability	\$ 129,754,027	\$ 2,887,517
Ending Net Pension Liability	\$ 200,058,212	\$ 4,614,678
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 92,786
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	661,425
◆ Changes of Assumptions	17,078,365	393,941
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	111,414
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 1,259,566
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 68,084
◆ Changes of Assumptions	1,163,109	26,829
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	389,821
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 484,734
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 576,612
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(119,917)
Total Employer Pension Expense	\$ 24,997,617	\$ 456,695
Covered Payroll:	\$ 96,766,143	\$ 2,435,790
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 4,614,678
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 6,244,617
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 3,184,411
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ (55,988)
◆ 2024	\$ 9,006,358	\$ 132,199
◆ 2025	\$ 12,207,439	\$ 218,440
◆ 2026	\$ 19,471,998	\$ 404,206
◆ 2027	\$ 2,386,337	\$ 52,971
◆ Thereafter	\$ 190,912	\$ 23,004

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Goshen
◆ Current Proportionate Share		0.166866%
◆ Prior Proportionate Share		0.225480%
Beginning Net Pension Liability	\$ 129,754,027	\$ 292,570
Ending Net Pension Liability	\$ 200,058,212	\$ 333,829
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 6,712
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	47,848
◆ Changes of Assumptions	17,078,365	28,498
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	15,835
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 98,893
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 4,925
◆ Changes of Assumptions	1,163,109	1,941
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	178,285
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 185,151
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 41,712
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(35,249)
Total Employer Pension Expense	\$ 24,997,617	\$ 6,463
Covered Payroll:	\$ 96,766,143	\$ 200,105
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 333,829
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 451,739
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 230,362
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ (29,964)
◆ 2024	\$ 9,006,358	\$ (15,898)
◆ 2025	\$ 12,207,439	\$ (17,296)
◆ 2026	\$ 19,471,998	\$ 1,939
◆ 2027	\$ 2,386,337	\$ (11,098)
◆ Thereafter	\$ 190,912	\$ (13,941)

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Granby
◆ Current Proportionate Share		4.745504%
◆ Prior Proportionate Share		4.654669%
Beginning Net Pension Liability	\$ 129,754,027	\$ 6,039,620
Ending Net Pension Liability	\$ 200,058,212	\$ 9,493,770
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 190,888
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	1,360,749
◆ Changes of Assumptions	17,078,365	810,454
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	652,324
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 3,014,415
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 140,069
◆ Changes of Assumptions	1,163,109	55,195
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	101,074
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 296,338
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 1,186,263
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	90,331
Total Employer Pension Expense	\$ 24,997,617	\$ 1,276,594
Covered Payroll:	\$ 96,766,143	\$ 4,606,215
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 9,493,770
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 12,847,040
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 6,551,283
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 212,910
◆ 2024	\$ 9,006,358	\$ 554,811
◆ 2025	\$ 12,207,439	\$ 688,541
◆ 2026	\$ 19,471,998	\$ 1,052,450
◆ 2027	\$ 2,386,337	\$ 175,585
◆ Thereafter	\$ 190,912	\$ 33,780

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Granby Housing Authority
◆ Current Proportionate Share		0.079882%
◆ Prior Proportionate Share		0.078427%
Beginning Net Pension Liability	\$ 129,754,027	\$ 101,762
Ending Net Pension Liability	\$ 200,058,212	\$ 159,810
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 3,213
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	22,906
◆ Changes of Assumptions	17,078,365	13,642
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	2,322
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 42,083
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 2,358
◆ Changes of Assumptions	1,163,109	929
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	62,501
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 65,788
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 19,969
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(13,094)
Total Employer Pension Expense	\$ 24,997,617	\$ 6,875
Covered Payroll:	\$ 96,766,143	\$ 75,897
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 159,810
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 216,256
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 110,279
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ (11,131)
◆ 2024	\$ 9,006,358	\$ (5,681)
◆ 2025	\$ 12,207,439	\$ (3,166)
◆ 2026	\$ 19,471,998	\$ 4,997
◆ 2027	\$ 2,386,337	\$ (8,379)
◆ Thereafter	\$ 190,912	\$ (345)

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Hadley
◆ Current Proportionate Share		5.744417%
◆ Prior Proportionate Share		5.712544%
Beginning Net Pension Liability	\$ 129,754,027	\$ 7,412,256
Ending Net Pension Liability	\$ 200,058,212	\$ 11,492,177
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 231,069
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	1,647,183
◆ Changes of Assumptions	17,078,365	981,052
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	1,012,475
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 3,871,779
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 169,554
◆ Changes of Assumptions	1,163,109	66,814
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	33,864
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 270,232
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 1,435,967
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	281,580
Total Employer Pension Expense	\$ 24,997,617	\$ 1,717,547
Covered Payroll:	\$ 96,766,143	\$ 5,456,089
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 11,492,177
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 15,551,300
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 7,930,306
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 405,883
◆ 2024	\$ 9,006,358	\$ 738,990
◆ 2025	\$ 12,207,439	\$ 937,819
◆ 2026	\$ 19,471,998	\$ 1,269,724
◆ 2027	\$ 2,386,337	\$ 224,549
◆ Thereafter	\$ 190,912	\$ 24,582

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Hadley Housing Authority
◆ Current Proportionate Share		0.000000%
◆ Prior Proportionate Share		0.000000%
Beginning Net Pension Liability	\$ 129,754,027	\$ -
Ending Net Pension Liability	\$ 200,058,212	\$ -
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	-
◆ Changes of Assumptions	17,078,365	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	172
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 172
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ -
◆ Changes of Assumptions	1,163,109	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	54,206
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 54,206
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ -
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(10,673)
Total Employer Pension Expense	\$ 24,997,617	\$ (10,673)
Covered Payroll:	\$ 96,766,143	\$ -
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ -
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ -
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ -
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ (10,658)
◆ 2024	\$ 9,006,358	\$ (10,606)
◆ 2025	\$ 12,207,439	\$ (10,621)
◆ 2026	\$ 19,471,998	\$ (10,638)
◆ 2027	\$ 2,386,337	\$ (10,657)
◆ Thereafter	\$ 190,912	\$ (854)

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Hampshire County Regional Housing Authority
◆ Current Proportionate Share		0.000000%
◆ Prior Proportionate Share		0.039890%
Beginning Net Pension Liability	\$ 129,754,027	\$ 51,759
Ending Net Pension Liability	\$ 200,058,212	\$ -
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	-
◆ Changes of Assumptions	17,078,365	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	11,893
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 11,893
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ -
◆ Changes of Assumptions	1,163,109	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	59,660
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 59,660
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ -
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(6,065)
Total Employer Pension Expense	\$ 24,997,617	\$ (6,065)
Covered Payroll:	\$ 96,766,143	\$ -
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ -
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ -
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ -
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ (6,637)
◆ 2024	\$ 9,006,358	\$ (8,207)
◆ 2025	\$ 12,207,439	\$ (6,006)
◆ 2026	\$ 19,471,998	\$ (8,438)
◆ 2027	\$ 2,386,337	\$ (8,787)
◆ Thereafter	\$ 190,912	\$ (9,692)

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Hampshire Regional School District
◆ Current Proportionate Share		2.214253%
◆ Prior Proportionate Share		2.111603%
Beginning Net Pension Liability	\$ 129,754,027	\$ 2,739,890
Ending Net Pension Liability	\$ 200,058,212	\$ 4,429,796
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 89,068
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	634,926
◆ Changes of Assumptions	17,078,365	378,158
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	259,415
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 1,361,567
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 65,356
◆ Changes of Assumptions	1,163,109	25,754
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	208,301
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 299,411
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 553,511
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(14,694)
Total Employer Pension Expense	\$ 24,997,617	\$ 538,817
Covered Payroll:	\$ 96,766,143	\$ 1,845,482
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 4,429,796
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 5,994,433
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 3,056,830
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 39,532
◆ 2024	\$ 9,006,358	\$ 194,579
◆ 2025	\$ 12,207,439	\$ 282,143
◆ 2026	\$ 19,471,998	\$ 430,058
◆ 2027	\$ 2,386,337	\$ 85,479
◆ Thereafter	\$ 190,912	\$ 30,365

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Hatfield
◆ Current Proportionate Share		2.532426%
◆ Prior Proportionate Share		2.421445%
Beginning Net Pension Liability	\$ 129,754,027	\$ 3,141,923
Ending Net Pension Liability	\$ 200,058,212	\$ 5,066,326
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 101,867
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	726,160
◆ Changes of Assumptions	17,078,365	432,497
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	359,166
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 1,619,690
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 74,748
◆ Changes of Assumptions	1,163,109	29,455
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	277,088
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 381,291
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 633,046
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	32,035
Total Employer Pension Expense	\$ 24,997,617	\$ 665,081
Covered Payroll:	\$ 96,766,143	\$ 2,504,175
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 5,066,326
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 6,855,790
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 3,496,075
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 81,401
◆ 2024	\$ 9,006,358	\$ 206,413
◆ 2025	\$ 12,207,439	\$ 288,804
◆ 2026	\$ 19,471,998	\$ 544,157
◆ 2027	\$ 2,386,337	\$ 86,103
◆ Thereafter	\$ 190,912	\$ 31,521

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Hatfield Housing Authority
◆ Current Proportionate Share		0.029446%
◆ Prior Proportionate Share		0.029409%
Beginning Net Pension Liability	\$ 129,754,027	\$ 38,160
Ending Net Pension Liability	\$ 200,058,212	\$ 58,909
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 1,184
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	8,444
◆ Changes of Assumptions	17,078,365	5,029
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	269
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 14,926
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 869
◆ Changes of Assumptions	1,163,109	342
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	34,204
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 35,415
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 7,361
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(8,308)
Total Employer Pension Expense	\$ 24,997,617	\$ (947)
Covered Payroll:	\$ 96,766,143	\$ 25,823
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 58,909
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 79,717
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 40,651
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ (7,580)
◆ 2024	\$ 9,006,358	\$ (5,556)
◆ 2025	\$ 12,207,439	\$ (4,633)
◆ 2026	\$ 19,471,998	\$ (2,521)
◆ 2027	\$ 2,386,337	\$ (268)
◆ Thereafter	\$ 190,912	\$ 69

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Huntington
◆ Current Proportionate Share		0.539192%
◆ Prior Proportionate Share		0.478690%
Beginning Net Pension Liability	\$ 129,754,027	\$ 621,119
Ending Net Pension Liability	\$ 200,058,212	\$ 1,078,698
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 21,689
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	154,611
◆ Changes of Assumptions	17,078,365	92,085
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	141,379
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 409,764
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 15,915
◆ Changes of Assumptions	1,163,109	6,271
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	113,694
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 135,880
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 134,785
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(6,106)
Total Employer Pension Expense	\$ 24,997,617	\$ 128,679
Covered Payroll:	\$ 96,766,143	\$ 452,102
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 1,078,698
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 1,459,702
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 744,368
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 6,439
◆ 2024	\$ 9,006,358	\$ 45,976
◆ 2025	\$ 12,207,439	\$ 83,335
◆ 2026	\$ 19,471,998	\$ 109,990
◆ 2027	\$ 2,386,337	\$ 13,458
◆ Thereafter	\$ 190,912	\$ 14,686

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Middlefield
◆ Current Proportionate Share		0.215944%
◆ Prior Proportionate Share		0.205872%
Beginning Net Pension Liability	\$ 129,754,027	\$ 267,127
Ending Net Pension Liability	\$ 200,058,212	\$ 432,013
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 8,686
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	61,921
◆ Changes of Assumptions	17,078,365	36,880
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	41,949
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 149,436
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 6,374
◆ Changes of Assumptions	1,163,109	2,512
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	24,224
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 33,110
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 53,981
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	2,196
Total Employer Pension Expense	\$ 24,997,617	\$ 56,177
Covered Payroll:	\$ 96,766,143	\$ 209,723
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 432,013
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 584,603
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 298,116
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 7,451
◆ 2024	\$ 9,006,358	\$ 21,410
◆ 2025	\$ 12,207,439	\$ 26,038
◆ 2026	\$ 19,471,998	\$ 46,466
◆ 2027	\$ 2,386,337	\$ 11,737
◆ Thereafter	\$ 190,912	\$ 3,224

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Pelham
◆ Current Proportionate Share		0.961931%
◆ Prior Proportionate Share		0.901915%
Beginning Net Pension Liability	\$ 129,754,027	\$ 1,170,271
Ending Net Pension Liability	\$ 200,058,212	\$ 1,924,422
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 38,694
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	275,829
◆ Changes of Assumptions	17,078,365	164,282
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	186,596
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 665,401
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 28,393
◆ Changes of Assumptions	1,163,109	11,188
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	63,037
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 102,618
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 240,460
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(1,314)
Total Employer Pension Expense	\$ 24,997,617	\$ 239,146
Covered Payroll:	\$ 96,766,143	\$ 938,622
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 1,924,422
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 2,604,142
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 1,327,969
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 22,694
◆ 2024	\$ 9,006,358	\$ 96,801
◆ 2025	\$ 12,207,439	\$ 153,844
◆ 2026	\$ 19,471,998	\$ 220,928
◆ 2027	\$ 2,386,337	\$ 50,966
◆ Thereafter	\$ 190,912	\$ 17,550

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Plainfield
◆ Current Proportionate Share		0.333731%
◆ Prior Proportionate Share		0.284295%
Beginning Net Pension Liability	\$ 129,754,027	\$ 368,885
Ending Net Pension Liability	\$ 200,058,212	\$ 667,657
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 13,424
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	95,696
◆ Changes of Assumptions	17,078,365	56,996
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	96,308
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 262,424
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 9,850
◆ Changes of Assumptions	1,163,109	3,882
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	42,820
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 56,552
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 83,425
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	2,727
Total Employer Pension Expense	\$ 24,997,617	\$ 86,152
Covered Payroll:	\$ 96,766,143	\$ 328,402
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 667,657
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 903,479
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 460,724
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 10,847
◆ 2024	\$ 9,006,358	\$ 33,323
◆ 2025	\$ 12,207,439	\$ 43,900
◆ 2026	\$ 19,471,998	\$ 80,095
◆ 2027	\$ 2,386,337	\$ 24,592
◆ Thereafter	\$ 190,912	\$ 13,115

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Quabbin Health District
◆ Current Proportionate Share		0.315990%
◆ Prior Proportionate Share		0.266990%
Beginning Net Pension Liability	\$ 129,754,027	\$ 346,431
Ending Net Pension Liability	\$ 200,058,212	\$ 632,165
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 12,711
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	90,609
◆ Changes of Assumptions	17,078,365	53,966
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	90,044
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 247,330
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 9,327
◆ Changes of Assumptions	1,163,109	3,675
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	14,526
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 27,528
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 78,990
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	17,792
Total Employer Pension Expense	\$ 24,997,617	\$ 96,782
Covered Payroll:	\$ 96,766,143	\$ 299,644
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 632,165
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 855,450
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 436,232
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 24,873
◆ 2024	\$ 9,006,358	\$ 43,354
◆ 2025	\$ 12,207,439	\$ 51,437
◆ 2026	\$ 19,471,998	\$ 69,762
◆ 2027	\$ 2,386,337	\$ 17,871
◆ Thereafter	\$ 190,912	\$ 12,505

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Southampton
◆ Current Proportionate Share		3.239265%
◆ Prior Proportionate Share		3.424514%
Beginning Net Pension Liability	\$ 129,754,027	\$ 4,443,445
Ending Net Pension Liability	\$ 200,058,212	\$ 6,480,416
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 130,299
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	928,843
◆ Changes of Assumptions	17,078,365	553,214
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	222,394
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 1,834,750
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 95,611
◆ Changes of Assumptions	1,163,109	37,676
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	253,899
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 387,186
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 809,739
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	41,618
Total Employer Pension Expense	\$ 24,997,617	\$ 851,357
Covered Payroll:	\$ 96,766,143	\$ 3,126,089
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 6,480,416
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 8,769,347
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 4,471,884
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 117,359
◆ 2024	\$ 9,006,358	\$ 315,869
◆ 2025	\$ 12,207,439	\$ 388,213
◆ 2026	\$ 19,471,998	\$ 613,312
◆ 2027	\$ 2,386,337	\$ 50,606
◆ Thereafter	\$ 190,912	\$ (37,795)

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	South Hadley
◆ Current Proportionate Share		13.308821%
◆ Prior Proportionate Share		13.438442%
Beginning Net Pension Liability	\$ 129,754,027	\$ 17,436,920
Ending Net Pension Liability	\$ 200,058,212	\$ 26,625,389
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 535,347
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	3,816,238
◆ Changes of Assumptions	17,078,365	2,272,929
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	738,521
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 7,363,035
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 392,826
◆ Changes of Assumptions	1,163,109	154,796
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	499,830
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 1,047,452
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 3,326,888
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(94,634)
Total Employer Pension Expense	\$ 24,997,617	\$ 3,232,254
Covered Payroll:	\$ 96,766,143	\$ 13,085,418
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 26,625,389
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 36,029,675
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 18,373,149
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 259,468
◆ 2024	\$ 9,006,358	\$ 1,293,072
◆ 2025	\$ 12,207,439	\$ 1,803,157
◆ 2026	\$ 19,471,998	\$ 2,641,243
◆ 2027	\$ 2,386,337	\$ 322,368
◆ Thereafter	\$ 190,912	\$ (3,725)

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	South Hadley Housing Authority
◆ Current Proportionate Share		0.249625%
◆ Prior Proportionate Share		0.245085%
Beginning Net Pension Liability	\$ 129,754,027	\$ 318,008
Ending Net Pension Liability	\$ 200,058,212	\$ 499,395
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 10,041
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	71,579
◆ Changes of Assumptions	17,078,365	42,632
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	8,677
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 132,929
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 7,368
◆ Changes of Assumptions	1,163,109	2,903
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	11,244
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 21,515
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 62,400
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	1,124
Total Employer Pension Expense	\$ 24,997,617	\$ 63,524
Covered Payroll:	\$ 96,766,143	\$ 240,099
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 499,395
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 675,785
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 344,613
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 6,618
◆ 2024	\$ 9,006,358	\$ 21,245
◆ 2025	\$ 12,207,439	\$ 29,149
◆ 2026	\$ 19,471,998	\$ 47,167
◆ 2027	\$ 2,386,337	\$ 5,737
◆ Thereafter	\$ 190,912	\$ 1,498

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	South Hadley- Easthampton Veteran's District
◆ Current Proportionate Share		0.068710%
◆ Prior Proportionate Share		0.058822%
Beginning Net Pension Liability	\$ 129,754,027	\$ 76,324
Ending Net Pension Liability	\$ 200,058,212	\$ 137,460
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 2,764
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	19,702
◆ Changes of Assumptions	17,078,365	11,735
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	13,870
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 48,071
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 2,028
◆ Changes of Assumptions	1,163,109	799
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	8,561
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 11,388
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 17,176
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(521)
Total Employer Pension Expense	\$ 24,997,617	\$ 16,655
Covered Payroll:	\$ 96,766,143	\$ 65,000
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 137,460
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 186,011
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 94,856
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 1,152
◆ 2024	\$ 9,006,358	\$ 5,785
◆ 2025	\$ 12,207,439	\$ 7,962
◆ 2026	\$ 19,471,998	\$ 15,340
◆ 2027	\$ 2,386,337	\$ 3,901
◆ Thereafter	\$ 190,912	\$ 2,543

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	South Hadley Fire District No.1
◆ Current Proportionate Share		2.591321%
◆ Prior Proportionate Share		2.421445%
Beginning Net Pension Liability	\$ 129,754,027	\$ 3,141,923
Ending Net Pension Liability	\$ 200,058,212	\$ 5,184,151
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 104,236
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	743,048
◆ Changes of Assumptions	17,078,365	442,555
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	306,589
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 1,596,428
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 76,486
◆ Changes of Assumptions	1,163,109	30,140
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	147,813
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 254,439
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 647,769
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(20,634)
Total Employer Pension Expense	\$ 24,997,617	\$ 627,135
Covered Payroll:	\$ 96,766,143	\$ 2,551,554
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 5,184,151
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 7,015,232
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 3,577,382
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 49,503
◆ 2024	\$ 9,006,358	\$ 253,008
◆ 2025	\$ 12,207,439	\$ 343,959
◆ 2026	\$ 19,471,998	\$ 535,917
◆ 2027	\$ 2,386,337	\$ 112,135
◆ Thereafter	\$ 190,912	\$ 47,467

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	South Hadley Fire District No.2
◆ Current Proportionate Share		0.991374%
◆ Prior Proportionate Share		0.990146%
Beginning Net Pension Liability	\$ 129,754,027	\$ 1,284,754
Ending Net Pension Liability	\$ 200,058,212	\$ 1,983,324
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 39,878
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	284,271
◆ Changes of Assumptions	17,078,365	169,310
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	60,141
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 553,600
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 29,262
◆ Changes of Assumptions	1,163,109	11,531
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	185,187
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 225,980
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 247,820
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(49,367)
Total Employer Pension Expense	\$ 24,997,617	\$ 198,453
Covered Payroll:	\$ 96,766,143	\$ 932,412
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 1,983,324
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 2,683,849
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 1,368,615
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ (25,738)
◆ 2024	\$ 9,006,358	\$ 48,562
◆ 2025	\$ 12,207,439	\$ 115,325
◆ 2026	\$ 19,471,998	\$ 184,458
◆ 2027	\$ 2,386,337	\$ 4,494
◆ Thereafter	\$ 190,912	\$ 519

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Ware
◆ Current Proportionate Share		8.330993%
◆ Prior Proportionate Share		8.254026%
Beginning Net Pension Liability	\$ 129,754,027	\$ 10,709,931
Ending Net Pension Liability	\$ 200,058,212	\$ 16,666,836
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 335,114
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	2,388,871
◆ Changes of Assumptions	17,078,365	1,422,797
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	663,722
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 4,810,504
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 245,900
◆ Changes of Assumptions	1,163,109	96,899
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	747,171
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 1,089,970
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 2,082,550
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(29,147)
Total Employer Pension Expense	\$ 24,997,617	\$ 2,053,403
Covered Payroll:	\$ 96,766,143	\$ 8,246,550
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 16,666,836
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 22,553,687
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 11,501,138
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 167,830
◆ 2024	\$ 9,006,358	\$ 712,121
◆ 2025	\$ 12,207,439	\$ 994,290
◆ 2026	\$ 19,471,998	\$ 1,674,438
◆ 2027	\$ 2,386,337	\$ 144,240
◆ Thereafter	\$ 190,912	\$ 27,615

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Ware Housing Authority
◆ Current Proportionate Share		0.276233%
◆ Prior Proportionate Share		0.266944%
Beginning Net Pension Liability	\$ 129,754,027	\$ 346,370
Ending Net Pension Liability	\$ 200,058,212	\$ 552,627
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 11,111
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	79,209
◆ Changes of Assumptions	17,078,365	47,176
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	37,573
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 175,069
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 8,153
◆ Changes of Assumptions	1,163,109	3,213
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	1,658
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 13,024
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 69,052
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	10,375
Total Employer Pension Expense	\$ 24,997,617	\$ 79,427
Covered Payroll:	\$ 96,766,143	\$ 252,673
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 552,627
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 747,819
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 381,347
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 16,283
◆ 2024	\$ 9,006,358	\$ 31,882
◆ 2025	\$ 12,207,439	\$ 40,848
◆ 2026	\$ 19,471,998	\$ 61,079
◆ 2027	\$ 2,386,337	\$ 9,174
◆ Thereafter	\$ 190,912	\$ 2,779

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Westhampton
◆ Current Proportionate Share		0.853957%
◆ Prior Proportionate Share		0.803879%
Beginning Net Pension Liability	\$ 129,754,027	\$ 1,043,066
Ending Net Pension Liability	\$ 200,058,212	\$ 1,708,412
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 34,350
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	244,868
◆ Changes of Assumptions	17,078,365	145,842
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	84,127
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 509,187
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 25,206
◆ Changes of Assumptions	1,163,109	9,932
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	89,764
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 124,902
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 213,469
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	3,629
Total Employer Pension Expense	\$ 24,997,617	\$ 217,098
Covered Payroll:	\$ 96,766,143	\$ 762,273
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 1,708,412
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 2,311,835
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 1,178,909
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 21,500
◆ 2024	\$ 9,006,358	\$ 67,474
◆ 2025	\$ 12,207,439	\$ 92,295
◆ 2026	\$ 19,471,998	\$ 166,019
◆ 2027	\$ 2,386,337	\$ 23,787
◆ Thereafter	\$ 190,912	\$ 13,210

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Williamsburg
◆ Current Proportionate Share		1.141097%
◆ Prior Proportionate Share		1.052386%
Beginning Net Pension Liability	\$ 129,754,027	\$ 1,365,513
Ending Net Pension Liability	\$ 200,058,212	\$ 2,282,859
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 45,901
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	327,204
◆ Changes of Assumptions	17,078,365	194,881
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	152,190
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 720,176
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 33,681
◆ Changes of Assumptions	1,163,109	13,272
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	216,925
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 263,878
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 285,247
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	2,361
Total Employer Pension Expense	\$ 24,997,617	\$ 287,608
Covered Payroll:	\$ 96,766,143	\$ 1,165,899
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 2,282,859
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 3,089,182
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 1,575,313
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 24,648
◆ 2024	\$ 9,006,358	\$ 79,752
◆ 2025	\$ 12,207,439	\$ 111,667
◆ 2026	\$ 19,471,998	\$ 206,396
◆ 2027	\$ 2,386,337	\$ 12,817
◆ Thereafter	\$ 190,912	\$ 21,018

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2022	Hampshire County Retirement System	Worthington
◆ Current Proportionate Share		0.795141%
◆ Prior Proportionate Share		0.805460%
Beginning Net Pension Liability	\$ 129,754,027	\$ 1,045,116
Ending Net Pension Liability	\$ 200,058,212	\$ 1,590,745
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 4,022,494	\$ 31,985
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	28,674,499	228,003
◆ Changes of Assumptions	17,078,365	135,797
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	352,769
Total Deferred Outflows of Resources	\$ 57,701,530	\$ 748,554
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,951,624	\$ 23,470
◆ Changes of Assumptions	1,163,109	9,248
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	7,926,172	34,625
Total Deferred Inflows of Resources	\$ 12,040,905	\$ 67,343
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 24,997,617	\$ 198,766
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	94,135
Total Employer Pension Expense	\$ 24,997,617	\$ 292,901
Covered Payroll:	\$ 96,766,143	\$ 905,424
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 6.9%	\$ 200,058,212	\$ 1,590,745
◆ 1% decrease in the discount rate: 5.9%	\$ 270,720,268	\$ 2,152,608
◆ 1% increase in the discount rate: 7.9%	\$ 138,052,420	\$ 1,097,712
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2023	\$ 2,397,581	\$ 108,313
◆ 2024	\$ 9,006,358	\$ 144,887
◆ 2025	\$ 12,207,439	\$ 179,380
◆ 2026	\$ 19,471,998	\$ 215,627
◆ 2027	\$ 2,386,337	\$ 33,151
◆ Thereafter	\$ 190,912	\$ (147)

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 3.72%, based on the December 2022 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%.