



HAVERHILL RETIREMENT SYSTEM

**ACTUARIAL VALUATION
as of
January 1, 2026**

KMS Actuarial, LLC
52 Hunt Road
Kingston, NH 03848

August, 2026



August 12, 2026

Haverhill Retirement Board
4 Summer Street
Room 303
Haverhill, MA 01830

Dear Board Members:

We are pleased to present the enclosed report providing the results of our actuarial valuation of the Haverhill Retirement System as of January 1, 2026. Our valuation was performed in accordance with the provisions contained in Chapter 32 of the Massachusetts General Laws, "M.G.L.", as of January 1, 2026. Disclosures under GASB Statement No. 67, Financial Reporting for Pension Plans (GASB 67) and GASB Statement No. 68, Accounting and Financial Reporting for Pensions (GASB 68) are provided in a separate report.

The principal results of our valuation are summarized in Section 2. The Summary of Plan Provisions and Actuarial Assumptions and Methods are shown in Sections 5 and 6, respectively. Section 7 summarizes the demographic profile of active members, retired plan members and beneficiaries and disabled plan members. Asset information and actuarial liabilities are presented in Section 2. The development of the required appropriations pursuant to Chapter 32 of the M.G.L. is shown in Section 3, including a 30-year forecast of the required appropriations and projected cash flows. Section 4 includes a summary of valuation information for PERAC as well as information relating to the primary risks to the System and an assessment of those risks.

This valuation is based upon member data provided by the Haverhill Retirement Board and asset information reported to the Public Employee Retirement Administration Commission (PERAC) by the Retirement Board. Although we did not audit the data used in the valuation, 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 7%, net of investment expense, compounded annually.

This report was prepared in accordance with generally accepted actuarial principles and practices and applicable Actuarial Standards of Practice issued by the Actuarial Standards Board. The actuarial assumptions used in the determination of costs are reasonably related to the experience of the System and to reasonable expectations, and they represent our best estimate of anticipated long-term experience under the System.

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

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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. The potential range of future measurements was not assessed as it was outside the scope of the project.

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 Haverhill Retirement Board and may only be provided to other parties in its entirety unless expressly authorized by KMS Actuaries. Further, it is intended to provide information to comply with the stated purpose of the report. It may not be appropriate for other purposes.

KMS Actuaries is completely independent of the Haverhill 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 Haverhill Retirement System, other than as consulting actuary for this assignment, that would impair our independence.

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

Respectfully submitted,



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SECTION 1 - EXECUTIVE SUMMARY

At a Glance

The principal results of the January 1, 2026 actuarial valuation are summarized below.

- ◆ Funded Ratio increased from 69.4% to 73.7%
- ◆ UAAL decreased from \$132.5 million to \$119.8 million
- ◆ Current funding schedule projects full funding by 2032

The valuation also reflects changes to the mortality improvement scale, administrative expense and annual payroll growth assumptions.

Background

We have completed the Actuarial Valuation of the Haverhill Retirement System as of January 1, 2026. This valuation is based upon census data provided by the Retirement Board and asset information reported to the Public Employee Retirement Administration Commission (PERAC) by the Haverhill Retirement Board. Information for the prior valuation completed as of January 1, 2024 was obtained from the valuation report prepared by KMS Actuaries.

Primary Purpose

This report was prepared for the Retirement Board for the purposes described below:

- ◆ Measure and disclose the financial condition of the System as of the valuation date,
- ◆ Indicate trends, both historical and prospective, in the financial progress of the System,
- ◆ Identify, assess and disclose material risks of the System and
- ◆ Develop System appropriations.

Massachusetts General Laws

The valuation was prepared in accordance with Chapter 32 of the Massachusetts General Laws ("M.G.L."). The results are based on the active, inactive and retired members and beneficiaries as of December 31, 2025, the assets as of December 31, 2025 and assumptions regarding investment returns, salary increases, mortality, turnover, disability and retirement.

The valuation does not take into consideration:

- ◆ Changes in the law after the valuation date,
- ◆ Transfers between retirement systems pursuant to Section 3(8)(c) of Chapter 32,
- ◆ State-mandated benefits and
- ◆ Cost-of-living increases granted to members in pay status between 1982 and 1997.

GASB Statement Numbers 67 and 68

The required disclosures and notes under GASB Statement Number 67 and 68 for the fiscal year ending December 31, 2025 are provided in a separate report.

SECTION 1 - EXECUTIVE SUMMARY

Assets

This valuation is based upon asset information reported to PERAC by the Haverhill Retirement Board. The market value of assets increased from \$288,611,905 as of December 31, 2023 to \$349,258,839 as of December 31, 2025. During the plan years ended 2024 and 2025, the market value rates of return were 8.40% and 11.24%, respectively.

The actuarial value of assets increased from \$299,876,129 as of January 1, 2024 to \$335,548,710 as of January 1, 2026. During the plan years ended 2024 and 2025, the rates of return on the actuarial value of assets were 6.39% and 4.80%, respectively.

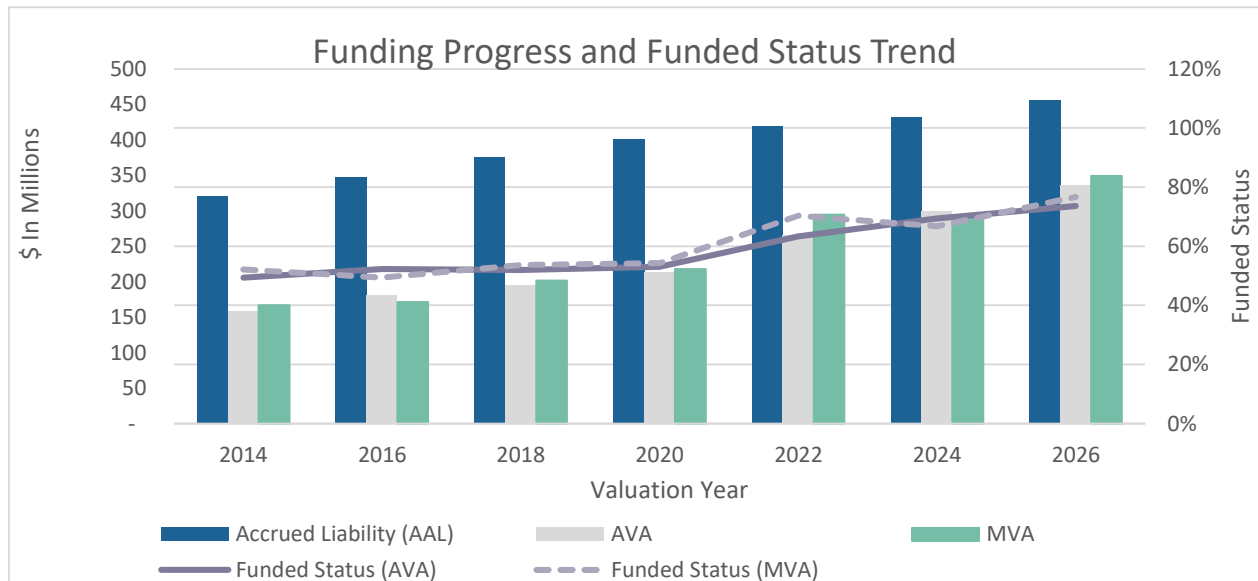
The actuarial value of assets is currently 96.07% of market value, indicating minimal smoothing distortion.

Changes Since the Last Valuation

During the two years since the last valuation, the total unfunded actuarial accrued liability of the System was expected to decrease from \$132.5 million as of January 1, 2024 to \$100.5 million as of January 1, 2026, for a total decrease of \$32.0 million. The actual unfunded actuarial accrued liability, before any assumption or plan changes, was \$124.0 million, resulting in an actuarial loss of \$23.6 million. The actuarial loss was primarily due to a demographic experience loss of approximately \$14.6 million and an asset loss of approximately \$9.0 million. The details of the gain and loss analysis are provided in Section 2, Actuarial Experience.

Historical Trends

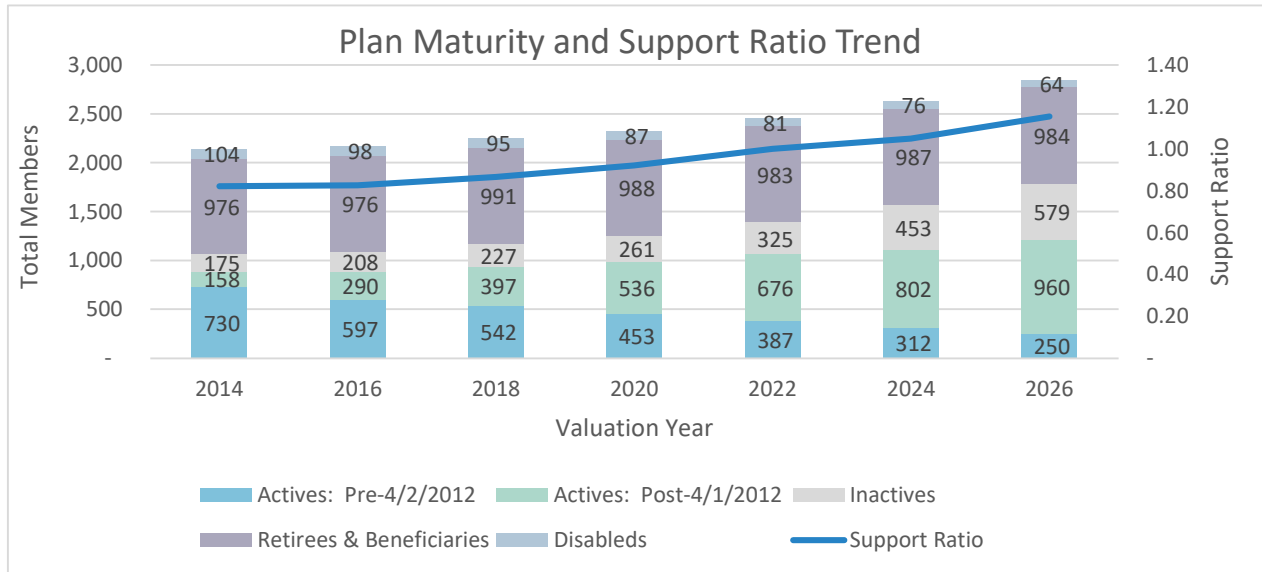
Below are the accrued liabilities, asset values (actuarial and market) and funded status for each of the last 7 valuations. The purple solid line reflects the funded status on an actuarial value of assets (AVA) basis and the purple dotted line reflects the funded status on a market value (MVA) basis. Blue bars indicate actuarial accrued liabilities, grey bars indicate actuarial value of assets and green bars indicate market value of assets.



SECTION 1 - EXECUTIVE SUMMARY

Historical Trends (continued)

Below are the membership counts for each of the last 7 valuations. The blue line reflects the support ratio, which indicates how many active members are contributing to the System for each retiree receiving benefits.



Appropriations

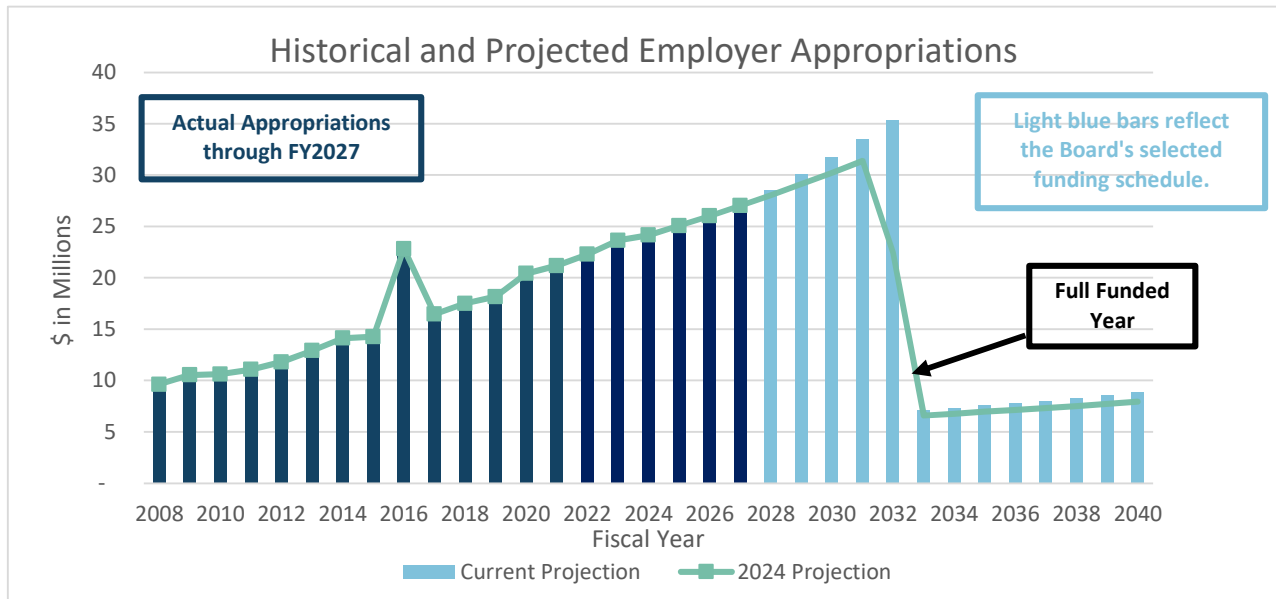
The funding appropriation for each year is computed as the sum of the normal cost, net 3(8)(c) transfers and an amortization payment to pay off the Unfunded Actuarial Liability, adjusted for annual payments of the appropriation made July 1. The appropriation calculated as of the January 1, 2026 valuation is \$27,329,805, and is made up of a normal cost payment of \$5,318,725, net 3(8)(c) transfers of \$604,210, and an amortization payment of \$21,406,870. The amortization method is an increasing amortization of the unfunded actuarial accrued liability at 4% over 6 years and is expected to fully pay the unfunded actuarial accrued liability by the year 2032. The development of the appropriation as of January 1, 2026 is presented in Section 3, Annual Appropriations.

For fiscal year 2027, we show the actual appropriation developed under the previous funding schedule and reported on the PERAC "Required Fiscal Year 2027 Appropriation" letter dated November 18, 2025 of \$27,022,383. For fiscal year 2028, we developed an annual appropriation of \$28,516,722, which is made up of a normal cost of \$5,520,118, net 3(8)(c) transfers of \$625,000 and payment toward the unfunded actuarial accrued liability of \$22,371,604. The unfunded actuarial accrued liability is expected to be fully paid by 2032. The Board selected a funding schedule with increases in the annual appropriation limited to 5.53% that fully funds the UAAL by 2032. The current funding schedule is shown in Section 3, Exhibit 3.1.

SECTION 1 - EXECUTIVE SUMMARY

Appropriations (continued)

The chart below shows the historical (navy bars) and projected (light blue bars) annual appropriations compared to the projected amounts shown in the prior valuation and funding schedule (green line).



Plan Provisions

All Plan provisions remained the same from the prior valuation. The Plan provisions used in this valuation are summarized in Section 5, Summary of Plan Provisions.

Actuarial Assumptions and Methods

The mortality improvement scale was updated, the administrative expense assumption increased from \$600,000 to \$650,000, and the payroll growth assumption increased from 3.5% to 4% in this valuation. All other assumptions are the same as those used in the prior valuation.

The Actuarial Assumptions and Methods utilized in this valuation are detailed in Section 6, Actuarial Assumptions and Methods.

Census Data

As of January 1, 2026, there are 1,210 active members who may be eligible for benefits in the future, 984 retirees and beneficiaries, 579 inactives and 64 disabled retirees. Summaries of the active, retired and disabled employees are included in Section 7, Plan Member Information. We have examined the data for reasonableness and consistency in accordance with ASOP 23.

SECTION 1 - EXECUTIVE SUMMARY

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

Valuation Date	January 1, 2026	January 1, 2024	% Change
Census Data			
Active Members	1,210	1,114	8.6%
Valuation Salary	\$71,081,290	\$59,417,121	19.6%
Average Salary	\$58,745	\$53,337	10.1%
Retired Members and Beneficiaries	984	987	(0.3%)
Total Annual Retirement Allowance	\$27,483,899	\$26,155,789	5.1%
Average Annual Retirement Allowance	\$27,931	\$26,500	5.4%
Disabled Members	64	76	(15.8%)
Total Annual Retirement Allowance	\$2,736,190	\$2,961,314	(7.6%)
Average Annual Retirement Allowance	\$42,753	\$38,965	9.7%
Inactive Members	579	453	27.8%
Annuity Savings Fund	\$6,136,361	\$4,975,898	23.3%
Funded Status			
Actuarial Accrued Liability (AAL)	\$455,316,595	\$432,342,135	5.3%
Market Value of Assets (MVA)	\$349,258,839	\$288,611,905	21.0%
Unfunded Accrued Liability on MVA	\$106,057,756	\$143,730,230	(26.2%)
Funded Status on MVA	76.7%	66.8%	14.8%
Actuarial Value of Assets (AVA)	\$335,548,710	\$299,876,129	11.9%
Unfunded Accrued Liability on AVA	\$119,767,885	\$132,466,006	(9.6%)
Funded Status on AVA	73.7%	69.4%	6.2%
Appropriations			
Fiscal Year 2026	N/A	\$26,032,044	N/A
Fiscal Year 2027	\$27,022,383	\$27,022,383	0.0%
Fiscal Year 2028	\$28,516,722	\$28,051,429	1.7%
Fiscal Year 2029	\$30,093,697	\$29,120,696	3.3%

SECTION 2 - PRINCIPAL VALUATION RESULTS

Market Value of Assets

Asset information is reported annually to the Public Employee Retirement Administration Commission by the Haverhill Retirement Board. The Market Value of Assets for the three most recent calendar years are as follows:

Calendar Year	2025	2024	2023
Trust Fund Composition at Year-End			
Cash	\$2,544,686	\$1,733,309	\$7,233,578
Short-Term Investments	0	0	0
Fixed Income Securities	0	0	0
Equities	43,932,932	40,633,631	34,664,778
Pooled Short Term Funds	0	0	0
Pooled Domestic Equity Funds	3,053,444	2,610,335	0
Pooled International Equity Funds	30,862,257	23,467,472	19,606,792
Pooled Global Equity Funds	0	0	0
Pooled Domestic Fixed Income Funds	33,214,809	31,360,724	25,915,733
Pooled International Fixed Income Funds	0	0	0
Pooled Global Fixed Income Funds	0	0	0
Pooled Alternative Investments	23,238,254	23,068,532	22,611,844
Pooled Real Estate Funds	24,894,108	24,805,414	24,337,000
Pooled Domestic Balanced Funds	0	0	0
Pooled International Balanced Funds	0	0	0
Hedge Funds	27,966,323	25,698,725	22,163,724
PRIT Cash	3,083	5,404	5,163
PRIT Fund	159,662,489	139,874,528	132,048,666
Interest Due & Accrued	5,161	2,111	15,497
Prepaid Expenses	0	0	0
Accounts Receivable	43	255	185,119
Land	0	0	0
Buildings	0	0	0
Accumulated Depreciation - Buildings	0	0	0
Accounts Payable	(118,750)	(130,944)	(175,989)
Total Market Value of Assets	\$349,258,839	\$313,129,496	\$288,611,905

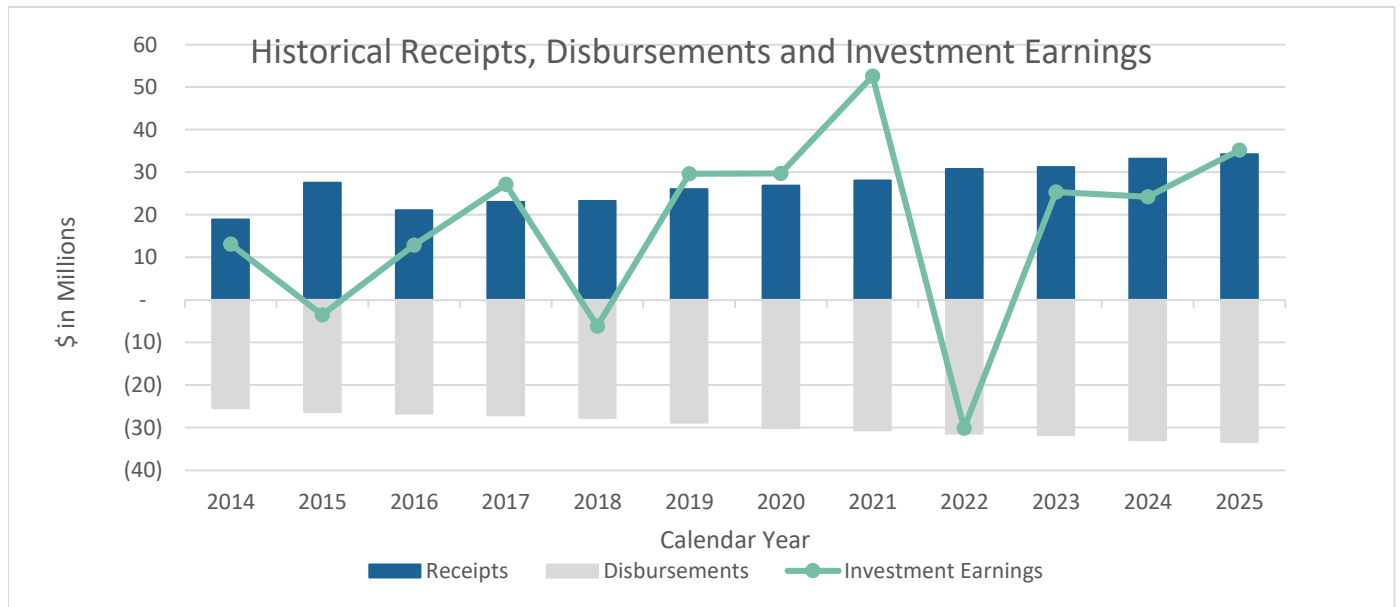
SECTION 2 - PRINCIPAL VALUATION RESULTS

Market Value of Assets

Calendar Year	2025	2024	2023
Funds			
Annuity Savings Fund	\$54,319,664	\$52,130,420	\$50,188,274
Annuity Reserve Fund	8,157,366	9,579,164	10,735,962
Special Military Service Fund	11,170	12,127	12,811
Pension Fund	11,104,621	10,033,342	9,585,172
Expense Fund	0	0	0
Pension Reserve Fund	275,666,018	241,374,443	218,089,686
Total Market Value of Assets	\$349,258,839	\$313,129,496	\$288,611,905
Asset Activity			
Market Value as of Beginning of Year	\$313,129,496	\$288,611,905	\$263,781,516
Contributions and Receipts	34,261,936	33,206,188	31,268,255
Benefit Payments and Expenses	(33,366,507)	(32,936,324)	(31,802,950)
Investment Return	35,233,914	24,247,727	25,365,084
Total Market Value of Assets	\$349,258,839	\$313,129,496	\$288,611,905

Rate of Return (Net of Fees)	11.24%	8.40%	9.63%
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Below are the receipts and disbursements during the last 12 years. The green line reflects investment earnings, which vacillate as investment markets fluctuate. Blue bars indicate contributions, from employees and employers, and grey bars show benefit payments and administrative expenses.



SECTION 2 - PRINCIPAL VALUATION RESULTS

Actuarial Value of Assets

The Actuarial Value of Assets is the market value of assets as of the valuation date adjusted to phase in investment gains and losses over a 4-year period, further constrained to be within 20% of the market value of assets. Investment gains and losses are the excess or deficiency of the expected returns over the actual returns.

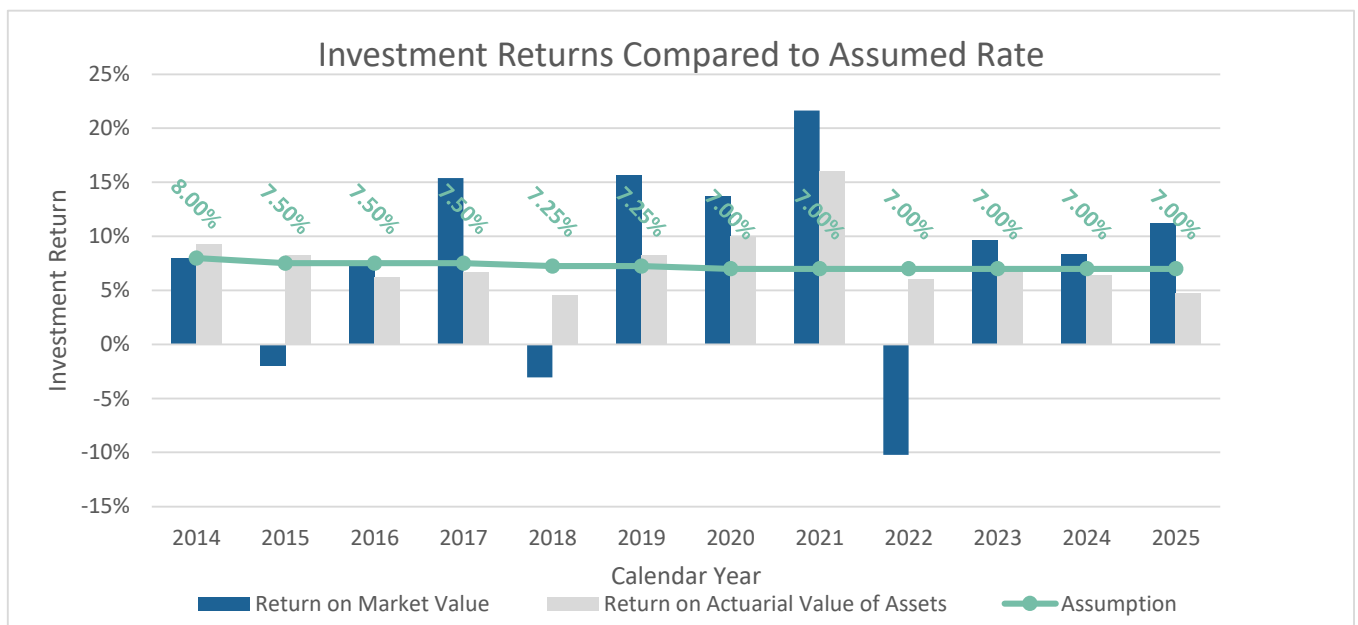
Valuation Date	January 1, 2026	January 1, 2025	January 1, 2024	
1. Expected Market Value of Assets				
a. Market Value of Assets as of prior January 1	\$313,129,496	\$288,611,905	\$263,781,516	
b. Prior Year Contributions and Receipts	34,261,936	33,206,188	31,268,255	
c. Prior Year Benefit Payments and Expenses	(33,366,507)	(32,936,324)	(31,802,950)	
d. Expected Investment Return Rate	7.00%	7.00%	7.00%	
e. Expected Investment Return	21,950,405	20,212,279	18,445,992	
f. Expected Market Value of Assets	\$335,975,330	\$309,094,048	\$281,692,813	
2. Prior Year Gain/(Loss)				
a. Market Value of Assets as of January 1	\$349,258,839	\$313,129,496	\$288,611,905	
b. Expected Market Value of Assets	335,975,330	309,094,048	281,692,813	
c. Prior Year Gain /(Loss)	\$13,283,509	\$4,035,448	\$6,919,092	
3. Phase-In of Asset Gains and Losses				
Calendar Year	Gain / (Loss)	Unrecognized Gain / (Loss)	Unrecognized Gain / (Loss)	Unrecognized Gain / (Loss)
a. 2025	\$13,283,509	\$9,962,632	\$0	\$0
b. 2024	4,035,448	2,017,724	3,026,586	0
c. 2023	6,919,092	1,729,773	3,459,546	5,189,319
d. 2022	(50,701,599)	0	(12,675,400)	(25,350,800)
e. 2021	35,589,026	0	0	8,897,257
f. Total Deferred Gains/(Losses)	\$13,710,129	(\$6,189,268)	(\$11,264,224)	

SECTION 2 - PRINCIPAL VALUATION RESULTS

Actuarial Value of Assets

Valuation Date	January 1, 2026	January 1, 2025	January 1, 2024
4. Actuarial Value of Assets			
a. Market Value of Assets	\$349,258,839	\$313,129,496	\$288,611,905
b. Deferred Gains/(Losses)	13,710,129	(6,189,268)	(11,264,224)
c. Market Value of Assets Less Deferred Gains/(Losses)	\$335,548,710	\$319,318,764	\$299,876,129
d. 80% of Market Value of Assets	279,407,071	250,503,597	230,889,524
e. 120% of Market Value of Assets	419,110,607	375,755,395	346,334,286
f. Actuarial Value of Assets, c., but not less than d. and not greater than e.	\$335,548,710	\$319,318,764	\$299,876,129
g. Ratio of Actuarial Value of Assets to Market Value of Assets	96.1%	102.0%	103.9%
5. Rate of Return on Actuarial Value of Assets for Prior Calendar Year	4.80%	6.39%	7.15%

Below are the investment returns during the last 12 years. The green line reflects the investment return actuarial assumption. Blue bars indicate investment return rates on market value of assets, and grey bars show investment return rates on actuarial value of assets.



SECTION 2 - PRINCIPAL VALUATION RESULTS

Actuarial Liabilities

The **Actuarial Present Value of Future Benefits** is the present value of the cost to finance all benefits payable in the future, discounted to reflect the probability of payment and the time value of money. Below is the Actuarial Present Value of Future Benefits from the current valuation and the prior valuation:

Valuation Date	January 1, 2026	January 1, 2024
Actives	\$270,056,945	\$232,592,832
Retired Members and Beneficiaries	267,122,469	257,799,457
Disabled Members	29,317,865	31,072,253
Inactive Members	6,136,361	4,975,898
Total Present Value of Future Benefits	\$572,633,640	\$526,440,440

The **Actuarial Accrued Liability** is the portion of the Actuarial Present Value of Future Benefits which is allocated to all periods prior to a valuation year and therefore is not provided for by future Normal Costs. Below is the Actuarial Accrued Liability from the current valuation and the prior valuation:

Valuation Date	January 1, 2026	January 1, 2024
Actives	\$152,739,900	\$138,494,527
Retired Members and Beneficiaries	267,122,469	257,799,457
Disabled Members	29,317,865	31,072,253
Inactive Members	6,136,361	4,975,898
Total Actuarial Accrued Liability	\$455,316,595	\$432,342,135

The **Unfunded Actuarial Accrued Liability** is the difference between the Actuarial Accrued Liability and the Actuarial Value of Assets as of the valuation date. The **Funded Status** is the Actuarial Value of Assets divided by the Actuarial Accrued Liability and is a point-in-time measurement of the amount of assets set aside to cover actuarial accrued liabilities. Below is the Unfunded Actuarial Accrued Liability and Funded Status from the current valuation and the prior valuation:

Valuation Date	January 1, 2026	January 1, 2024
Unfunded Actuarial Accrued Liability		
a. Actuarial Accrued Liability	\$455,316,595	\$432,342,135
b. Actuarial Value of Assets	335,548,710	299,876,129
c. Unfunded Actuarial Accrued Liability (a. - b.)	\$119,767,885	\$132,466,006
d. Funded Status (b. divided by a.)	73.7%	69.4%

SECTION 2 - PRINCIPAL VALUATION RESULTS

Actuarial Liabilities

The **Normal Cost** is the portion of the Actuarial Present Value of Future Benefits that is allocated to a valuation year. Only active employees who have not reached the age at which 100% probability of retirement is assumed incur a Normal Cost. Below is the Normal Cost from the current valuation and the prior valuation:

Valuation Date	<u>January 1, 2026</u>	<u>January 1, 2024</u>
Total Normal Cost	\$11,371,492	\$9,689,594
As a Percentage of Salary	16.0%	16.3%
Employee Normal Cost	\$6,702,767	\$5,543,867
As a Percentage of Salary	9.4%	9.3%
Administrative Expenses	\$650,000	\$580,042
As a Percentage of Salary	0.9%	1.0%
Net Employer Normal Cost	\$5,318,725	\$4,725,769
As a Percentage of Salary	7.5%	8.0%

SECTION 2 - PRINCIPAL VALUATION RESULTS

Actuarial Experience

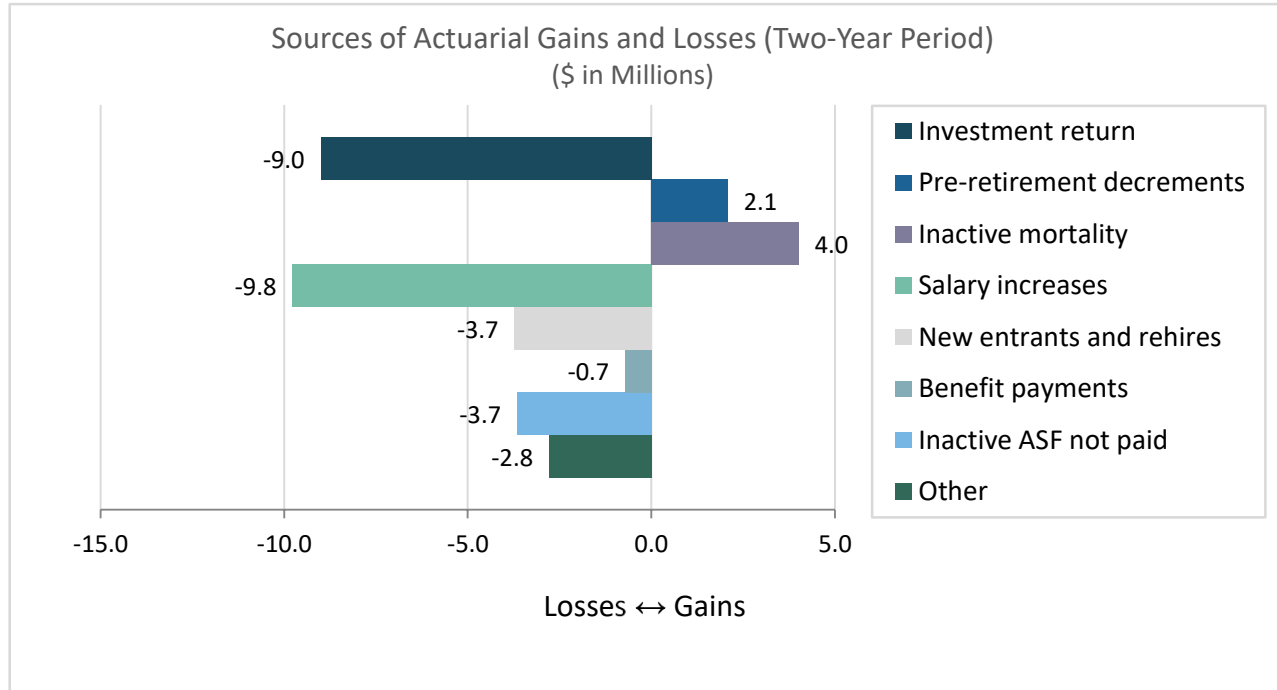
In performing the actuarial valuation, various assumptions are made regarding mortality, retirement, disability and withdrawal rates as well as salary increases and investment returns. A comparison of the results of the current valuation and the prior valuation is made to determine how closely actual experience relates to expected. During the two years since the last valuation, the total unfunded actuarial accrued liability of the System was expected to decrease by \$32,018,559. Below is the development of the Actuarial Loss for the current 2-year period:

Calendar Year Ending	December 31, 2025	December 31, 2024
Expected Unfunded Actuarial Accrued Liability		
1. Unfunded Actuarial Accrued Liability, Beginning of Year	\$117,738,087	\$132,466,006
2. Normal Cost, Beginning of Year	9,279,250	9,689,594
3. Total Contributions	34,261,936	33,206,188
4. Interest (full year on 1. and 2., one-half year on 3.)	7,692,046	8,788,675
5. Expected Unfunded Actuarial Accrued Liability	\$100,447,447	\$117,738,087
6. Unfunded Actuarial Accrued Liability (before changes)	124,024,371	
7. (Gain)/Loss (6. - 5.)	\$23,576,924	
Asset Gain/(Loss)		
1. Actuarial Value of Assets, Beginning of Year	\$319,318,764	\$299,876,129
2. Contributions and Receipts	34,261,936	33,206,188
3. Benefit Payments and Expenses	(33,366,507)	(32,936,324)
4. Assumed Rate of Return (prior valuation)	7.00%	7.00%
5. Expected Return	22,383,653	21,000,774
6. Actuarial Value of Assets, End of Year	\$335,548,710	\$319,318,764
7. Actual Return	15,334,517	19,172,771
8. Actual Rate of Return	4.80%	6.39%
9. Asset Gain/(Loss) (7. - 5.)	(7,049,136)	(1,828,003)
10. Total Asset Gain/(Loss), 2-Year Period	(\$9,005,100)	

SECTION 2 - PRINCIPAL VALUATION RESULTS

Actuarial Experience

Below are the various sources of gains and losses over the 2-year period. The asset loss during the period was \$9,005,100, and the total demographic loss during the period was \$14,571,824, which totals to an overall loss of \$23,576,924.



Unfunded Actuarial Accrued Liability

1. Changes due to:	
a. Asset Loss	\$9,005,100
b. Demographic Experience Loss	14,571,824
c. Total Loss Prior to Changes	23,576,924
d. Assumption Change - Mortality Improvement Scale	(4,256,486)
e. Total Increase (including changes)	19,320,438
2. Unfunded Actuarial Accrued Liability, End of Year	
	\$119,767,885

SECTION 3 - CHAPTER 32 OF M.G.L. APPROPRIATIONS

Annual Appropriations

The Annual Appropriation is determined in accordance with the requirements set forth in Sections 22D and 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. Below are the details of the annual appropriations for the current and prior valuations, adjusted for annual payments made July 1. The appropriations shown are based on the results of the valuation and do not account for any adjustments made to appropriations in the selected funding schedule.

Valuation Date	January 1, 2026	January 1, 2024
1. Early Retirement Incentive Plan (2002)		
Fully Funded Year	2032	2032
Investment Return Rate	7.00%	7.00%
Balance as of Valuation Date	\$3,036,993	\$3,642,294
Amortization Amount	\$542,821	\$501,869
Increasing Rate	4.00%	4.00%
Remaining Payment Period from Valuation Date	6	8
2. Early Retirement Incentive Plan (2003)		
Fully Funded Year	2032	2032
Investment Return Rate	7.00%	7.00%
Balance as of Valuation Date	\$2,267,388	\$2,719,299
Amortization Amount	\$405,265	\$374,690
Increasing Rate	4.00%	4.00%
Remaining Payment Period from Valuation Date	6	8
3. Unfunded Actuarial Accrued Liability		
Fully Funded Year	2032	2032
Investment Return Rate	7.00%	7.00%
Balance as of Valuation Date	\$114,463,504	\$126,104,413
Amortization Amount	\$20,458,784	\$17,375,819
Increasing Rate	4.00%	4.00%
Remaining Payment Period from Valuation Date	6	8
4. Total Amortization Payments	\$21,406,870	\$18,252,378
5. Normal Cost	\$5,318,725	\$4,725,769
6. Net 3(8)(c) Transfers	\$604,210	\$604,210
7. Total Appropriation as of January 1	\$27,329,805	\$23,582,357
8. Adjusted for Annual Payments as of July 1	\$28,270,170	\$24,393,780

SECTION 3 - CHAPTER 32 OF M.G.L. APPROPRIATIONS

Exhibit 3.1 - 30-Year Forecast of Annual Appropriations

Fiscal Year Ending	Employer Normal Cost	Amortization Payment of UAAL	Amortization Payment of ERI 2002	Amortization Payment of ERI 2003	Net 3(8)(c) Transfers	Total Employer Cost	Increase over Prior Year	Unfunded Actuarial Accrued Liability
2027	\$5,501,732	\$19,914,944	\$561,498	\$419,209	\$625,000	\$27,022,383		\$119,767,885
2028	5,520,118	21,351,668	583,959	435,977	625,000	28,516,722	5.53%	106,537,007
2029	5,708,419	22,699,546	607,316	453,416	625,000	30,093,697	5.53%	90,853,230
2030	5,898,679	24,131,036	631,610	471,554	625,000	31,757,879	5.53%	72,635,133
2031	6,082,414	25,659,387	656,873	490,415	625,000	33,514,089	5.53%	51,617,133
2032	6,289,013	27,254,378	683,148	510,031	625,000	35,361,570	5.51%	27,501,292
2033	6,489,898	-	-	-	625,000	7,114,898	-79.88%	-
2034	6,717,506	-	-	-	625,000	7,342,506	3.20%	-
2035	6,959,666	-	-	-	625,000	7,584,666	3.30%	-
2036	7,174,912	-	-	-	625,000	7,799,912	2.84%	-
2037	7,405,829	-	-	-	625,000	8,030,829	2.96%	-
2038	7,660,632	-	-	-	625,000	8,285,632	3.17%	-
2039	7,914,164	-	-	-	625,000	8,539,164	3.06%	-
2040	8,194,571	-	-	-	625,000	8,819,571	3.28%	-
2041	8,488,187	-	-	-	625,000	9,113,187	3.33%	-
2042	8,790,886	-	-	-	625,000	9,415,886	3.32%	-
2043	9,088,850	-	-	-	625,000	9,713,850	3.16%	-
2044	9,423,187	-	-	-	625,000	10,048,187	3.44%	-
2045	9,783,495	-	-	-	625,000	10,408,495	3.59%	-
2046	10,146,600	-	-	-	625,000	10,771,600	3.49%	-
2047	10,500,551	-	-	-	625,000	11,125,551	3.29%	-
2048	10,898,370	-	-	-	625,000	11,523,370	3.58%	-
2049	11,309,296	-	-	-	625,000	11,934,296	3.57%	-
2050	11,740,718	-	-	-	625,000	12,365,718	3.61%	-
2051	12,212,610	-	-	-	625,000	12,837,610	3.82%	-
2052	12,663,739	-	-	-	625,000	13,288,739	3.51%	-
2053	13,162,058	-	-	-	625,000	13,787,058	3.75%	-
2054	13,666,092	-	-	-	625,000	14,291,092	3.66%	-
2055	14,229,035	-	-	-	625,000	14,854,035	3.94%	-
2056	14,783,039	-	-	-	625,000	15,408,039	3.73%	-

SECTION 3 - CHAPTER 32 OF M.G.L. APPROPRIATIONS

Exhibit 3.2 - 30-Year Forecast of Cash Flow

Calendar Year	Market Value of Assets, BOY	Benefit Payments	Employee Contributions	Employer Contributions	Investment Return	Market Value of Assets, EOY
2026	\$349,258,839	\$38,553,572	\$6,702,767	\$26,123,524	\$25,396,584	\$368,928,142
2027	368,928,142	33,149,893	7,165,852	27,568,156	27,096,104	397,608,361
2028	397,608,361	33,912,529	7,483,909	29,092,675	29,206,008	429,478,424
2029	429,478,424	34,588,279	7,820,076	30,701,499	31,549,410	464,961,130
2030	464,961,130	35,191,226	8,183,354	32,399,293	34,156,371	504,508,922
2031	504,508,922	35,886,339	8,546,166	34,185,320	37,050,807	548,404,876
2032	548,404,876	36,423,939	8,937,002	6,878,231	38,220,570	566,016,740
2033	566,016,740	36,946,922	9,325,406	7,098,268	39,477,687	584,971,179
2034	584,971,179	37,465,847	9,724,080	7,332,373	40,830,630	605,392,415
2035	605,392,415	37,870,529	10,174,084	7,540,459	42,292,019	627,528,448
2036	627,528,448	38,187,445	10,635,261	7,763,695	43,878,358	651,618,317
2037	651,618,317	39,905,880	11,100,723	8,010,023	45,554,329	676,377,512
2038	676,377,512	41,701,645	11,595,886	8,255,121	47,276,439	701,803,313
2039	701,803,313	43,578,219	12,094,678	8,526,201	49,044,456	727,890,429
2040	727,890,429	45,539,239	12,611,496	8,810,050	50,857,965	754,630,701
2041	754,630,701	47,588,505	13,151,558	9,102,681	52,716,348	782,012,783
2042	782,012,783	49,729,988	13,729,507	9,390,733	54,618,762	810,021,797
2043	810,021,797	51,967,837	14,306,932	9,713,949	56,564,113	838,638,954
2044	838,638,954	54,306,390	14,895,277	10,062,271	58,551,031	867,841,143
2045	867,841,143	56,750,178	15,518,384	10,413,298	60,577,842	897,600,489
2046	897,600,489	59,303,936	16,189,306	10,755,475	62,642,531	927,883,865
2047	927,883,865	61,972,613	16,858,342	11,140,062	64,742,717	958,652,373
2048	958,652,373	64,761,381	17,556,853	11,537,319	66,875,610	989,860,774
2049	989,860,774	67,675,643	18,279,379	11,954,391	69,037,971	1,021,456,872
2050	1,021,456,872	70,721,047	19,008,366	12,410,586	71,226,071	1,053,380,848
2051	1,053,380,848	73,903,494	19,804,833	12,846,709	73,435,645	1,085,564,541
2052	1,085,564,541	77,229,151	20,604,983	13,328,452	75,661,838	1,117,930,663
2053	1,117,930,663	80,704,463	21,450,884	13,815,720	77,899,152	1,150,391,956
2054	1,150,391,956	84,336,164	22,293,163	14,359,937	80,141,388	1,182,850,280
2055	1,182,850,280	88,131,291	23,199,543	14,895,513	82,381,578	1,215,195,623

SECTION 3 - CHAPTER 32 OF M.G.L. APPROPRIATIONS

Forecast Notes

Exhibit 3.1:

- ◆ The Total Normal Cost is assumed to increase 4% per year, and the Employee Normal Cost is assumed to increase at a rate that reflects a total payroll increase of 4% per year and incorporates new entrants sufficient to maintain constant active membership.
- ◆ The Unfunded Actuarial Accrued Liability ("UAAL") is computed as of January 1 of each year assuming no future gains or losses.
- ◆ The Amortization Payment of UAAL is an increasing payment at 4% paid over 6 years through 2032.
- ◆ The Amortization Payment of the Early Retirement Incentive Plan (2002) is an increasing payment at 4% paid over 6 years through 2032.
- ◆ The Amortization Payment of the Early Retirement Incentive Plan (2003) is an increasing payment at 4% paid over 6 years through 2032.
- ◆ Net 3(8)(c) transfers are a level dollar amount based on the net transfers expected to be paid by the Haverhill Retirement Board during the current year offset by the amount received during the same period.
- ◆ Total Employer Cost is the sum of the Employer Normal Cost, net 3(8)(c) transfers and the Amortization of the UAAL, all computed as of January 1 of each year and adjusted for annual payments made on July 1.
- ◆ For fiscal year 2027, we show the actual appropriation developed under the previous funding schedule of \$27,022,383. For fiscal years 2028 and later, the Board has selected a funding schedule that fully amortizes the unfunded actuarial accrued liability by 2032.
- ◆ The funding schedule adopted by the Board results in amortization payments for every year up to and including the full funded date that are greater than the interest computed on the outstanding UAAL from the prior year. This amortization method fully amortizes the UAAL within a reasonable time period and reduces the UAAL by a reasonable amount within a sufficiently short period.

Exhibit 3.2:

- ◆ Expected benefit payments include payments expected to be made to retired members, beneficiaries, disabled members and active members expected to retire. In addition, expected benefit payments include distribution of the annuity savings fund attributed to inactive members.
- ◆ Benefit payments exclude cost-of-living increases granted to members in pay status between 1982 and 1997. In addition, benefit payments are as expected for the first ten years of the forecast then increase by the greater of 4.5% per year thereafter or the expected future payments for the current population projected by our computer model.
- ◆ Calendar year cash flow entries are developed as of each January 1.

SECTION 4 - DISCLOSURES

4.1 - GASB 67 and GASB 68 Disclosures

Governmental Accounting Standards Board ("GASB") Statement No. 67, Financial Reporting for Pension Plans, establishes financial reporting requirements for pension plans, including the Haverhill Retirement System. GASB 67 requires pension plans to report information regarding fiduciary net position, changes in fiduciary net position, and other disclosures relating to the plan's financial condition, funding, and investments.

GASB Statement No. 68, Accounting and Financial Reporting for Pensions, establishes accounting and financial reporting requirements for participating employers. GASB 68 requires employers to recognize pension liabilities, deferred inflows and outflows of resources, and pension expense in their financial statements.

Under GASB 67 and GASB 68, projected benefit payments are discounted to present value using a single discount rate that reflects:

- (1) the long-term expected rate of return on pension plan investments *to the extent that projected plan assets are sufficient to make projected benefit payments*; and
- (2) a tax-exempt, high-quality municipal bond rate *to the extent that projected plan assets are not sufficient to make projected benefit payments*.

The GASB report, prepared under separate cover as of December 31, 2025 (the measurement date), provides information required for financial reporting purposes under GASB 67 and GASB 68.

SECTION 4 - DISCLOSURES

4.2 - PERAC Disclosure Information

The most recent actuarial valuation of the System was prepared by KMS Actuaries, LLC as of January 1, 2026.

Normal Cost - Employees	\$6,702,767	9.4% of payroll
Normal Cost - Employers	\$5,318,725	7.5% of payroll
Actuarial Liability - Active Members	\$152,739,900	34% of total AAL
Actuarial Liability - Retired and Inactive Members	302,576,695	66% of total AAL
Total Actuarial Liability (AAL)	<u>\$455,316,595</u>	
System Assets	\$335,548,710	
Unfunded Actuarial Accrued Liability	\$119,767,885	
Funded Status	73.7%	

Principal actuarial assumptions used in the valuation:

Investment Return	7.00%
Rate of Salary Increase	Based on service, 6% graded down to 4.25% for Group 1 Based on service, 7% graded down to 4.75% for Group 4

SECTION 4 - DISCLOSURES

4.3 - Risk Measures

The Haverhill Retirement System is subject to certain risks that could affect the plan's future financial condition. Here we identify the primary risks to the System, provide some background information about those risks, and provide an assessment of those risks in accordance with Actuarial Standards of Practice (ASOP) 51.

Risk is the potential of actual future measurements deviating from expected future measurements due to actual future experience deviating from actuarially assumed experience. Examples of potential risks that may be reasonably anticipated to significantly affect the future financial condition of the plan include the following:

- ◆ **Investment Risk** - the potential that investment returns will be different than expected.
- ◆ **Asset/Liability Mismatch Risk** - the potential that changes in asset values are not matched by changes in the value of liabilities.
- ◆ **Interest Rate Risk** - the potential that interest rates will be different than expected.
- ◆ **Longevity and Other Demographic Risks** - the potential that mortality or other demographic experience will be different than expected.
- ◆ **Contribution Risk** - the potential of actual future contributions deviating from expected future contributions. For example, that actual contributions are not made in accordance with the plan's funding policy, that other anticipated payments to the plan are not made, or that material changes occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base.
- ◆ **Benefit Change Risk** - the potential for the provisions of the System to be changed such that the benefits and liabilities are changed materially.
- ◆ **Assumption Change Risk** - the potential for the environment to change such that future valuation assumptions are adjusted to be different than the current assumptions.

We have provided several risk measures in this section that we believe are most significant for the plan. However, we believe that a more rigorous assessment of risk would be beneficial to the Board to understand the risks identified above, such as:

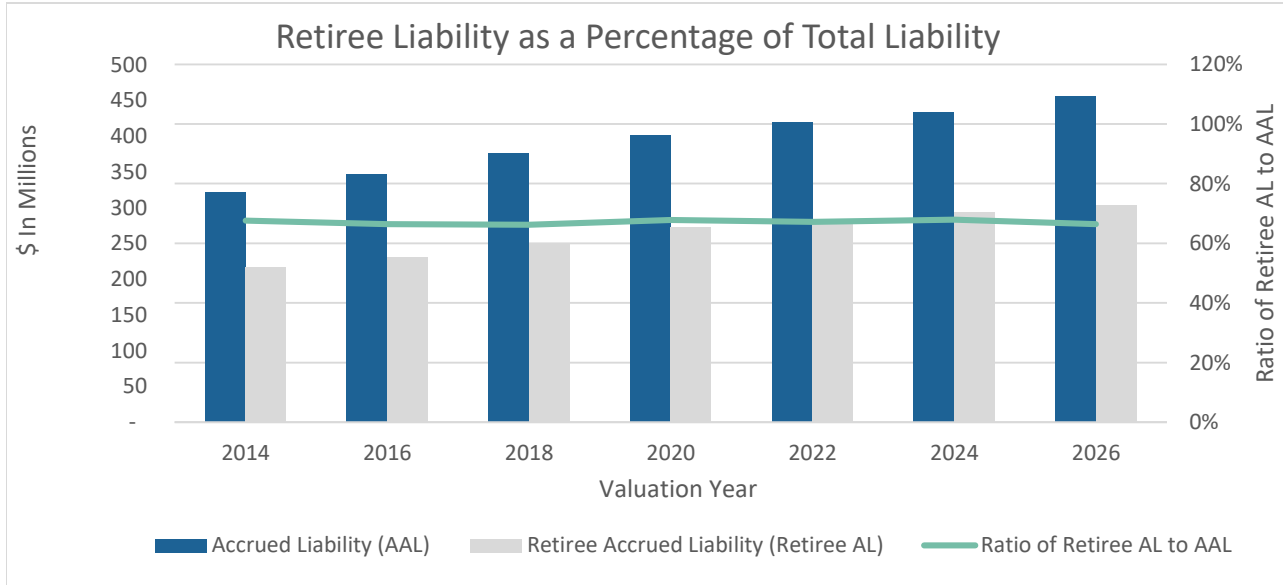
- ◆ **Scenario Test** - a process for assessing the impact of one possible event, or several simultaneous or sequentially occurring possible events, on a plan's financial condition.
- ◆ **Sensitivity Test** - a process for assessing the impact of a change in an actuarial assumption on an actuarial measurement.
- ◆ **Stochastic Modeling** - a process for generating numerous potential outcomes by allowing for random variations in one or more inputs over time for the purpose of assessing the distribution of those outcomes.
- ◆ **Stress Test** - a process for assessing the impact of adverse changes in one or relatively few factors affecting a plan's financial condition.

SECTION 4 - DISCLOSURES

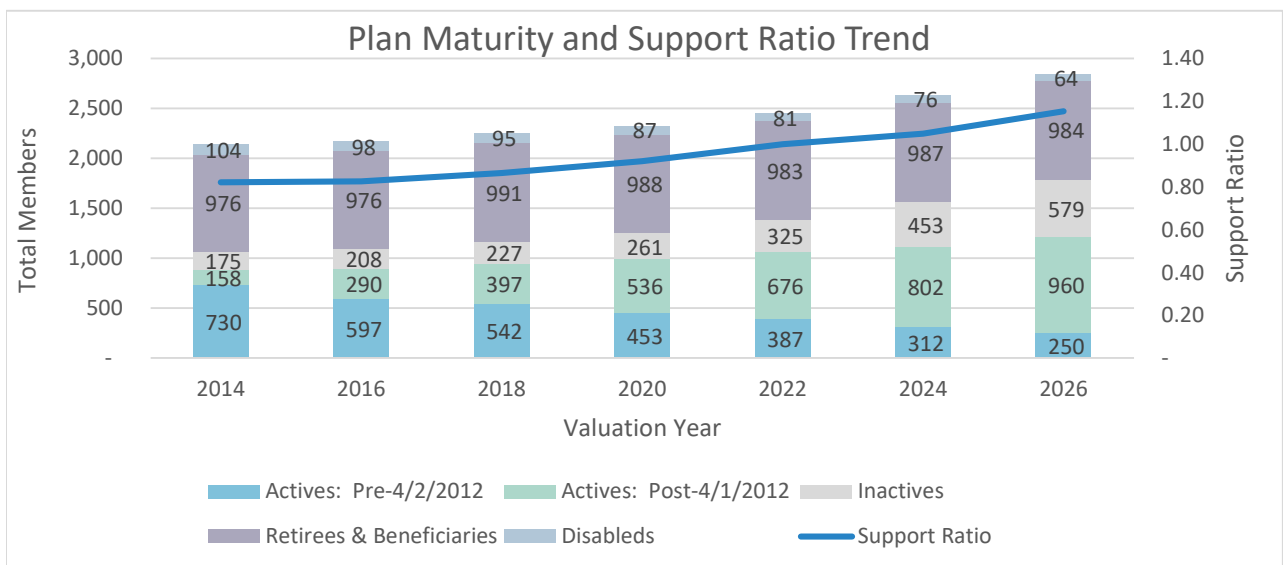
4.3 - Risk Measures

Maturity Measures

As retirement systems mature they become much more sensitive to risks. This is because a higher proportion of the actuarial liability is attributable to participants who are no longer active. Plan maturity measures are helpful in understanding the risks associated with a plan. One such maturity measure is the ratio of the system's retiree liability to its total liability. A retirement system in its infancy will have a very low ratio of retiree liability to total liability. As the system matures, the ratio starts increasing. A mature plan will often have a ratio above 60%. For the Haverhill Retirement System, this ratio has remained steady in recent years.



Another maturity measure is the ratio of actives to retirees, or support ratio. A retirement system in its infancy will have a very high ratio of active to retired members. As the system matures, and members retire, the support ratio starts declining. A mature system will often have a support ratio near or below one.



SECTION 4 - DISCLOSURES

4.3 - Risk Measures

Volatility Indices

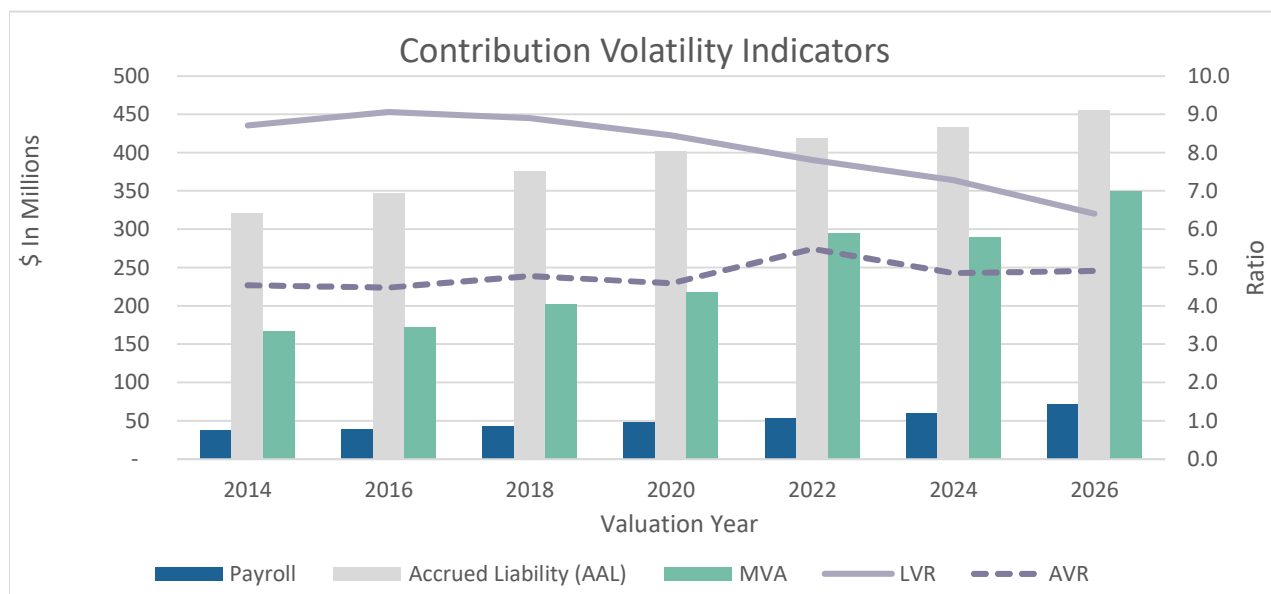
Volatility indices are measures of the relative sensitivity of employer contributions to changes in assets or liabilities. Below we present two such indices - the Asset Volatility Ratio (AVR) and the Liability Volatility Ratio (LVR):

Asset Volatility Ratio (AVR)

The Asset Volatility Ratio (AVR) is the ratio of the Market Value of Assets (MVA) to Payroll. Systems with a higher AVR experience more volatile employer contributions (as a percentage of payroll) due to investment return. This ratio indicates a measure of the system's current contribution volatility. The AVR increases over time but generally tends to stabilize as the system matures.

Liability Volatility Ratio (LVR)

The Liability Volatility Ratio (LVR) is the ratio of the Actuarial Accrued Liability (AAL) to Payroll. Systems with a higher LVR experience more volatile employer contributions (as a percentage of payroll) due to the investment return assumption and changes in liability. This ratio indicates a longer-term potential for contribution volatility. The AVR, described above, will tend to move close to the LVR as the system matures.



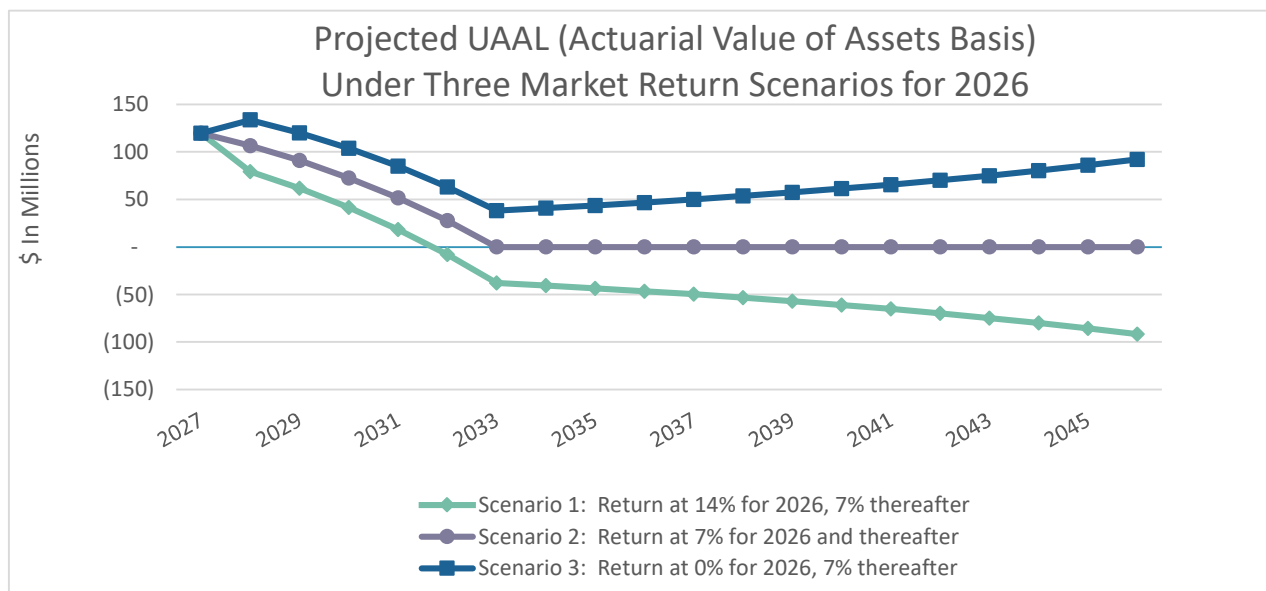
As these ratios increase, employer contributions become more sensitive to changes in investment experience.

SECTION 4 - DISCLOSURES

4.3 - Risk Measures

Market Return Scenarios

Below we illustrate the projected effect on funding levels of a single year of investment return above or below the assumed investment return. Scenario 1 assumes a one-year return of 2 times the assumed return and the expected return thereafter, Scenario 2 assumes assets earn the expected return every year and Scenario 3 assumes a one-year return of 0% and the expected return thereafter.



Sensitivity Analysis

The following presents the Actuarial Accrued Liability and Funded Status calculated using the investment return rate of 7%, as well as what the Actuarial Accrued Liability and Funded Status would be if they were calculated using an investment return rate 1-percentage point lower (6%) or 1-percentage point higher (8%) than the assumed investment return rate:

	1% Decrease (6.0%)	Current Investment Return Rate (7.0%)	1% Increase (8.0%)
Actuarial Accrued Liability	\$503,871,921	\$455,316,595	\$414,190,840
% Change	11%		-9%
Actuarial Value of Assets	\$335,548,710	\$335,548,710	\$335,548,710
Unfunded Actuarial Accrued Liability	168,323,211	119,767,885	78,642,130
% Change	41%	N/A	-34%
Funded Status	66.6%	73.7%	81.0%

SECTION 4 - DISCLOSURES

4.3 - Risk Measures

Low-Default Risk Obligation Measure (LDROM)

The retirement plan invests in a diversified portfolio of stocks, bonds, real estate, and other assets with the objective of maximizing investment returns at a reasonable level of risk. The potential for investment returns to be different than expected is a key risk for the plan. Reducing the plan's investment risk by investing solely in bonds, however, would also likely reduce the plan's investment returns thereby increasing the amount of contributions needed over the long term. The Low-Default Risk Obligation Measure (LDROM) represents what the funding liability would be if the plan invested its assets solely in a portfolio of high-quality bonds whose cash flows approximately match future benefit payments. Consequently, the difference between the plan's Actuarial Accrued Liability and the LDROM can be thought of as representing the expected taxpayer savings from investing in the plan's diversified portfolio compared to investing only in high-quality bonds.

The following presents the LDROM and Funded Status calculated using the LDROM investment return rate of 5.32%:

LDROM	\$542,009,917
Actuarial Value of Assets	\$335,548,710
Funded Status	61.91%

The LDROM investment return rate is based on the FTSE Pension Liability Index published as of December 31, 2025. The index represents the single discount rate that would produce the same present value as calculated by discounting a standardized set of liabilities using the Pension Discount Curve, which is a set of yields on hypothetical AA zero coupon bonds whose maturities range from 6 months up to 30 years.

The actuarial valuation reports the funded status and develops appropriations based on the expected return of the plan's investment portfolio. If instead, the plan switched to investing exclusively in high quality bonds, the LDROM illustrates that reported funded status would be lower (which also implies that the Actuarially Determined Contributions would be higher), perhaps significantly. Unnecessarily high appropriation requirements in the near term may not be affordable and could imperil plan sustainability and benefit security.

SECTION 4 - DISCLOSURES

4.3 - Risk Measures

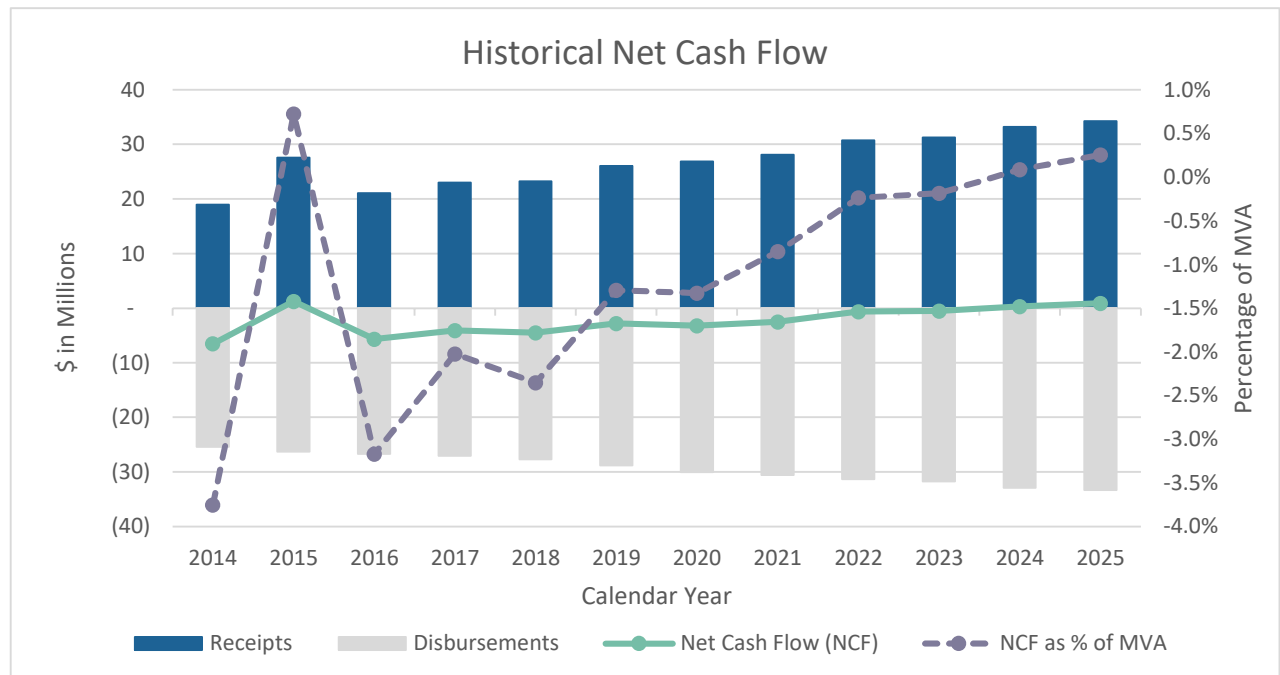
Duration

Duration is another measure that is used to describe how the present value of a cash flow series changes when small changes are made to the underlying interest rates. The duration of the Haverhill Retirement System is 10%, and this represents an approximate percentage change in the Actuarial Accrued Liability for each 1% change to the investment return rate.

Net Cash Flow (NCF)

Net cash flow (NCF) during a year is the difference between contributions, both employer and employee, paid into the System and benefit payments and expenses paid from the System. If the level of benefit payments plus expenses is greater than contributions, then the System has negative NCF. Mature plans generally have a negative NCF as the number of retirees grows. When a System has negative NCF, then additional cash from existing assets are needed to pay the pension benefits.

Historical NCF since 2014 is shown in the next graph. Blue bars indicate contributions, from employees and employers, and grey bars show benefit payments and administrative expenses. The NCF is represented by the green line. The dashed purple line (which corresponds to the right-hand axis) provides the NCF as a percentage of the Market Value of Assets. As of December 31, 2025, the NCF was positive \$0.9 million, which represents 0.3% of the Market Value of Assets. The NCF falls within the range of -3.8% to 0.7% of total assets over the 12-year period.



SECTION 4 - DISCLOSURES

4.3 - Risk Measures

Overall Risk Assessment

Based on the current funded status, funding schedule, and maturity measures presented above, the System continues to face moderate contribution and investment risk associated with its remaining unfunded actuarial accrued liability and reliance on long-term investment performance. However, the Board's funding schedule is projected to fully amortize the unfunded actuarial accrued liability by 2032, providing a clear path toward full funding. In addition, the actuarial value of assets remains close to market value, indicating minimal asset smoothing distortion. While future investment and demographic experience will continue to influence funding progress, the System's current funding policy and continued improvement in funded status provide a solid foundation for achieving the Board's long-term funding objectives.

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Administration	There are 104 contributory retirement systems for public employees in Massachusetts. Each system is governed by a retirement board and all boards, although operating independently, are governed by Chapter 32 of the Massachusetts General Laws and other applicable statutes. This law in general provides uniform benefits, uniform contribution requirements and a uniform accounting and funds structure for all systems.	
Participation	Participation is mandatory for all full-time employees. Eligibility with respect to part-time, provisional, temporary, seasonal or intermittent employment is governed by regulations promulgated by the local retirement board, and approved by PERAC. Membership is optional for certain elected officials.	
Membership Groups	There are four membership groups in the Retirement System:	
	Group 1	General employees, including clerical, administrative, technical and all other employees not otherwise classified.
	Group 2	Certain specified hazardous duty positions.
	Group 3	State police officers and inspectors.
	Group 4	Local police officers, firefighters and other specified hazardous positions.
	For members in more than one group, participation will be proportional.	
Member Contributions	Member contributions vary depending on the most recent date of membership:	
	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.
Rate of Interest	Interest on regular deductions made after January 1, 1984 is a rate established by PERAC in consultation with the Commissioner of Banks. The rate is obtained from the average rates paid on individual savings accounts by a representative sample of at least ten financial institutions.	

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Retirement Age

The mandatory retirement age for some Group 2 and Group 4 members is age 65. Most Group 2 and Group 4 members may remain in service after reaching age 65. Group 4 members who are employed in certain public safety positions are required to retire at age 65. There is no mandatory retirement age for members in Group 1.

Salary

Gross regular compensation. This does not include bonuses, overtime, severance pay, unused sick leave credit or other similar compensation. For employees who became members after January 1, 2011, regular compensation is limited to 64% of the federal limit found in 26 U.S.C. §401(a)(17). For 2026, the limit is 64% of \$345,000, or \$220,800.

Average Salary

Membership before April 2, 2012 ♦ Average annual rate of regular compensation received during the three consecutive years that produce the highest average, or, if greater, during the last three years (whether or not consecutive) preceding retirement.

Membership on or after April 2, 2012 ♦ Average annual rate of regular compensation received during the five consecutive years that produce the highest average, or, if greater, during the last five years (whether or not consecutive) preceding retirement.

Creditable Service

The period during which a member contributes to the retirement system plus certain periods of military service and “purchased” service.

Benefit Rate

The benefit rate varies with the member's retirement age, Group, membership date and years of creditable service at retirement. Each year a member retires prior to the age at which the 2.5% maximum benefit rate applies, a reduction is applied to each year of age under the maximum age. The maximum age and reduction for each Group and membership date is as follows:

	Group 1	Group 2	Group 4
2.5% for Membership before April 2, 2012:			
Maximum age:	65	60	55
Reduction:	0.1%	0.1%	0.1%
2.5% for Membership on or after April 2, 2012 (less than 30 years of service):			
Maximum age:	67	62	57
Reduction:	0.15%	0.15%	0.15%
2.5% for Membership on or after April 2, 2012 (30+ years of service):			
Maximum age:	67	62	57
Reduction:	0.125%	0.125%	0.125%

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Superannuation Retirement

Eligibility if membership before April 2, 2012	♦ completion of 20 years of Creditable Service, or ♦ attainment of age 55 if hired prior to 1978, or ♦ attainment of age 55 with 10 years of Creditable Service, if hired after 1978.
Eligibility if membership on or after April 2, 2012	♦ attainment of age 60 with 10 years of Creditable Service if classified in Group 1 ♦ attainment of age 55 with 10 years of Creditable Service if classified in Group 2 ♦ attainment of age 55 if classified in Group 4
Benefit Amount	Product of the member's Benefit Rate, Average Salary and Creditable Service.
Maximum Benefit	80% of the member's Average Salary.
Veteran's Benefit	Additional benefit of \$15 per year of Creditable Service, up to a maximum of \$300.

Deferred Vested

Eligibility	♦ completion of ten or more years of Creditable Service. ♦ elected officials hired prior to 1978, completion of six years of Creditable Service.
Benefit Amount	Accrued benefit payable commencing at age 55, or the completion of 20 years of Creditable Service, or may be deferred until later at the participant's option.

Withdrawal of Contributions

- Contributions may be withdrawn upon termination of employment.
- ♦ Members hired on or after January 1, 1984 who terminate with less than ten years of Creditable Service receive contributions plus interest on the Annuity Savings Account at an annual rate of 3%.
 - ♦ All other withdrawals receive contributions plus 100% of the regular interest that has accrued to the Annuity Savings Account.

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Ordinary Disability Retirement	Eligibility	Non-job related disability after completion of ten years of Creditable Service.
	Benefit Amount for Group 1 membership before April 2, 2012 or Group 2 or Group 4	Superannuation benefit determined if the member is age 55, up to a maximum of 80% of Average Salary over three years. If the member is a veteran, 50% of final rate of salary (final year) plus an annuity based on the accumulated member contributions plus credited interest, up to a maximum of 80% of Average Salary over five years.
	Benefit Amount for Group 1 membership on or after April 2, 2012	Superannuation benefit determined if the member is age 60, up to a maximum of 80% of Average Salary over three years. If the member is a veteran, 50% of final rate of salary (final year) plus an annuity based on the accumulated member contributions plus credited interest, up to a maximum of 80% of Average Salary over five years.
Accidental Disability Retirement	Eligibility	Disabled as a result of an accident in the performance of duties. There is no minimum age or service requirement.
	Benefit Amount	72% of Salary plus an annuity based on accumulated member contributions plus credited interest.
	Maximum Benefit	100% of Salary if hired before January 1, 1988, otherwise 75% of Salary.
	Veteran's Benefit	Additional allowance of \$15 per year of Creditable Service, up to a maximum of \$300.
	Supplemental Dependent Allowance	Additional allowance of \$1,159.08 per year for each child until age 18 (or age 22 if a full-time student).
Violent Act Injury Disability	Eligibility	Permanently and physically disabled firefighters, emergency medical technicians, licensed health care professionals and certain police officers resulting in life-threatening bodily injuries sustained from a violent attack involving an individual carrying a dangerous weapon. These dangerous weapons include, but are not limited to, a firearm, knife, automobile or explosive device.

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Violent Act Injury Disability (continued)	Benefit Amount	100% of compensation that would be paid to the member if they continued in service and ultimately retired. This benefit includes all forms of compensation paid to the member on the date of injury that are classified as pensionable earnings.
	Maximum Benefit	Reduced to 80% of the average annual rate of compensation paid to the member in the previous 12 months upon reaching the mandatory retirement age for their job title, if applicable.
	Surviving Spouse Allowance	Upon the death of the member, the spouse will receive 75% of the benefit for their lifetime.
	Supplemental Dependent Allowance	If both the member and the spouse predecease their children, any children under the age of 18 (or 22 if full time students) will receive 75% of the amount of the pension payable to the member at the time of their death. This benefit will be split equally between all eligible children. Once a child is no longer eligible for this benefit, the amount received by the other eligible children will not change.
Non-Occupational Death	Eligibility	For members with at least two years of creditable service who die while in active service, but not due to occupational injury.
	Benefit Amount	Benefit as if Option C had been elected. Minimum benefit of \$250 per month for surviving spouse, \$120 per month for first child and \$90 per month for each additional child.
Accidental Death	Eligibility	For members who die as a result of an occupational injury.
	Benefit Amount	72% of Salary plus an annuity based on accumulated member contributions plus credited interest.
	Maximum Benefit	100% of Salary if hired before January 1, 1988, otherwise 75% of Salary.
	Veteran's Benefit	Additional allowance of \$15 per year of creditable service, up to a maximum of \$300.
	Supplemental Dependent Allowance	Additional allowance of \$1,159.08 per year for each child until age 18 (or age 22 if a full-time student).

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Cost-of-Living Adjustment (COLA)

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a Cost-of-Living Adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees and beneficiaries who have been receiving benefit payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is \$13,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the Commonwealth of Massachusetts and are not the liability of the Retirement System.

Optional Forms of Payment

A member may elect to receive his or her retirement allowance, payable in monthly installments, in one of three forms of payment:

- ◆ Option A – Total annual allowance commencing at retirement and terminating at member's death.
- ◆ Option B – A reduced annual allowance commencing at retirement with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member.
- ◆ Option C – A reduced annual allowance commencing at retirement with 66⅔% of benefit continued to designated beneficiary upon death of member. For members who retired on or after January 12, 1988, if the beneficiary pre-deceases the retiree, the benefit payable increases based on the factor used to determine the Option C benefit at retirement. For members who retired prior to January 12, 1988, if the System has accepted Section 288 of Chapter 194 of the Acts of 1998 and the beneficiary pre-deceases the retiree, the benefit payable increases based on the factor used to determine the Option C benefit at retirement.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Valuation Date	January 1, 2026
Investment Return Rate	7.00% per year. The investment return assumption is a long-term assumption based on capital market expectations by asset class, historical returns and professional judgment. We considered analysis prepared by PRIM's investment advisor using a building block approach and using the target asset allocation, expected returns by asset class and risk analysis to determine a long-term expected average annual rate of return.
Low-Default Risk Obligation Measure (LDRM) Investment Return Rate	5.32% per year. The LDRM investment return rate is based on the FTSE Pension Liability Index published as of December 31, 2025. The index represents the single discount rate that would produce the same present value as calculated by discounting a standardized set of liabilities using the Pension Discount Curve, which is a set of yields on hypothetical AA zero coupon bonds whose maturities range from 6 months up to 30 years.
Annuity Savings Fund Interest Rate	2.00% per year
Amortization Method	<i>Unfunded Actuarial Accrued Liability (UAAL):</i> Increasing dollar amount at 4% to reduce the Unfunded Actuarial Accrued Liability to zero on or before June 30, 2032. <i>Early Retirement Incentive Program (ERI) for 2002:</i> Increasing dollar amount at 4% to reduce the Unfunded Actuarial Accrued Liability attributable to the 2002 ERI to zero on or before June 30, 2032. <i>Early Retirement Incentive Programs (ERI) for 2003:</i> Increasing dollar amount at 4% to reduce the Unfunded Actuarial Accrued Liability attributable to the 2003 ERI to zero on or before June 30, 2032.
Output Smoothing Method	Total appropriation increases are limited to 5.53% per year.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Salary Scale

The assumed annual rates for salary increases including longevity are illustrated by the following rates:

Years of Service	Groups 1 and 2	Group 4
0	6.00%	7.00%
1	5.50%	6.50%
2	5.50%	6.00%
3	5.25%	5.75%
4	5.25%	5.25%
5	4.75%	5.25%
6	4.75%	4.75%
7	4.50%	4.75%
8	4.50%	4.75%
9+	4.25%	4.75%

The salary scale assumption is a long-term estimate derived from historical data, current and recent market expectations and professional judgment.

Cost-of-Living Allowance

Cost-of-Living Allowances (COLA) are assumed to be 3% of the pension amount, capped at \$390 per year.

Inflation

2.5% per year, based on current economic data, analyses from economists and other experts, and professional judgment.

Payroll Growth

4% per year, based on historical data, current and recent market expectations and professional judgment. Previously, 3.5% per year.

Mortality Rates

RP-2014 Blue Collar Mortality Table with full generational mortality improvement using Scale MP-2020. For disabled members, RP-2014 Blue Collar Mortality Table set forward one year with full generational mortality improvement using Scale MP-2020. Previously, full generational mortality improvement using Scale MP-2018.

General Employees: 55% of deaths are job-related.

Police and Fire : 90% of deaths are job-related.

PERAC completed a local system retiree mortality study in 2019 and selected the RP-2014 Blue Collar Mortality Table with full generational mortality improvement using Scale MP-2018 and subsequently updated the mortality improvement scale to MP-2020 in 2022. The underlying tables with generational mortality improvement selected reasonably reflect the mortality experience of the System as of the valuation date based on historical and current demographic data as well as professional judgement.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Turnover Rates

Illustrative turnover rates are shown below:

Creditable Service	Groups 1 and 2	Group 4
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

Disability Rates

Illustrative disability rates are shown below:

Attained Age	Groups 1 and 2	Group 4
20	0.0001	0.0010
30	0.0003	0.0030
40	0.0010	0.0030
50	0.0019	0.0125
60	0.0028	0.0085

General Employees: 55% of disabilities are accidental and 45% are ordinary.

Police and Fire: 90% of disabilities are accidental and 10% are ordinary.

Retirement Rates

Illustrative retirement rates are shown below:

Attained Age	Groups 1 and 2		Group 4
	Male	Female	Male & Female
50	0.0100	0.0150	0.0200
51	0.0100	0.0150	0.0200
52	0.0100	0.0200	0.0200
53	0.0100	0.0250	0.0500
54	0.0200	0.0250	0.0750
55	0.0200	0.0550	0.1500
56	0.0250	0.0650	0.1000
57	0.0250	0.0650	0.1000
58	0.0500	0.0650	0.1000
59	0.0650	0.0650	0.1500
60	0.1200	0.0500	0.2000
61	0.2000	0.1300	0.2000
62	0.3000	0.1500	0.2500
63	0.2500	0.1250	0.2500
64	0.2200	0.1800	0.3000
65	0.4000	0.1500	1.0000
66	0.2500	0.2000	1.0000
67	0.2500	0.2000	1.0000
68	0.3000	0.2500	1.0000
69	0.3000	0.2000	1.0000
70	1.0000	1.0000	1.0000

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

The turnover, disability and retirement rates are based on PERAC's most recent experience analysis of local retirement systems which reviewed age, gender and job group. The assumptions reflect this analysis as well as professional judgment.

Actuarial Cost Method

Individual Entry Age Normal.

Actuarial Asset Method

The Actuarial Value of Assets is the market value of assets as of the valuation date reduced by the sum of:

- a) 75% of gains and losses of the prior year,
- b) 50% of gains and losses of the second prior year, and
- c) 25% of gains and losses of the third 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 80% or more than 120% of market value.

Census Data

Census data as of the valuation date were submitted by the Retirement Board.

Asset Data

Asset information is reported annually to the Public Employee Retirement Administration Commission by the Haverhill Retirement Board.

Dependents

80% of all members will be survived by a spouse. Age assumption for spouses is that males are assumed to be three years older than females.

Net Section 3(8)(c) Transfers

Reimbursements paid to and received from other retirement systems for that portion of a retiree's pension that is based on service earned in another retirement system. Net 3(8)(c) transfers are assumed to be \$625,000 per year.

Administrative Expenses

For calendar year 2026, the administrative expenses were assumed to be \$650,000 and are anticipated to increase 4% per year. Previously, \$600,000 increasing at 3.5% per year.

The administrative expense assumption is based on information relating to the System's administrative expenses provided by the Retirement Board.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Use of ProVal®

KMS Actuaries has used ProVal® to develop the liabilities, normal costs and projected benefit payments in this report. We have a lease agreement with WinTech, the developer of ProVal®, and have relied on their system to perform these calculations. The actuaries signing this report and the KMS staff members who were involved in preparing it have a clear understanding of ProVal® and have used it only for its intended purpose. We have reviewed the output produced by ProVal® for reasonableness and we are not aware of any material inconsistencies, limitations or known weaknesses that would affect this report.

SECTION 7 - PLAN MEMBER INFORMATION

Exhibit 7.1 - Summary of Census Data as of January 1, 2026

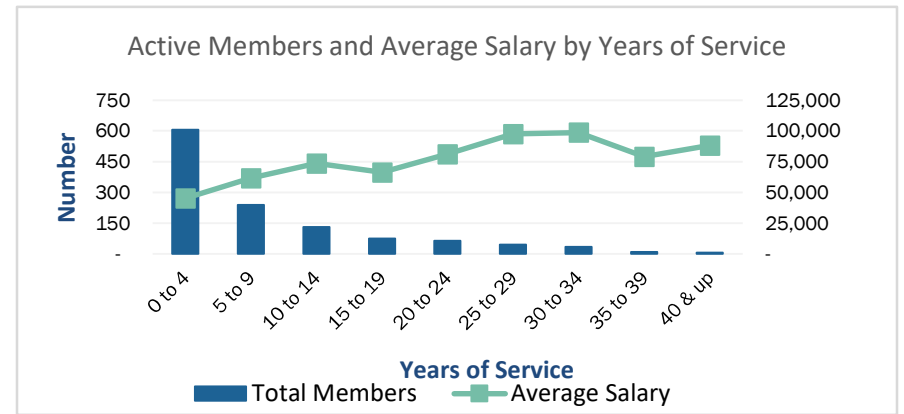
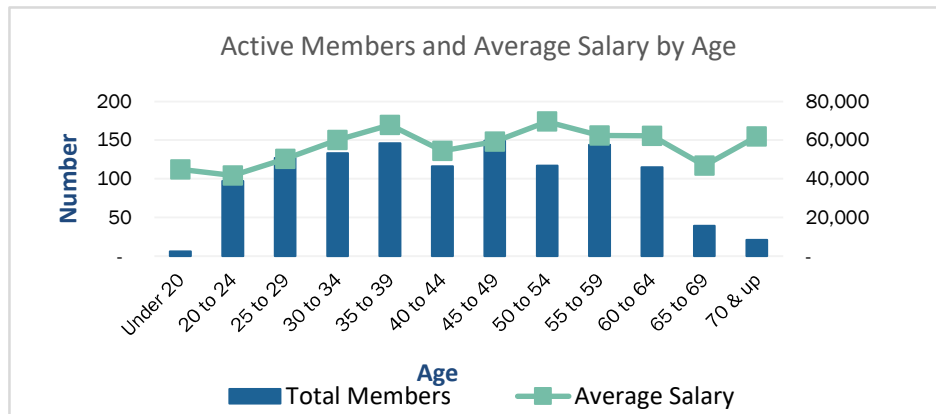
Census data as of December 31, 2025 was provided to us by the Retirement Board. We performed edits on the data to ensure that it is reasonable and complete and made certain assumptions regarding any missing or invalid data so that results are not materially affected. Presented on the following pages are summaries of the demographic profile of active members (Exhibit 7.2) and retired plan members and beneficiaries and disabled plan members (Exhibit 7.3). Below, we present a comparison of the census data from the current and prior valuations:

Valuation Date	January 1, 2026	January 1, 2024	% Change
Census Data			
Active Members	1,210	1,114	8.6%
Average Age	44.2	45.5	(2.9%)
Average Service	8.4	9.2	(8.4%)
Valuation Salary	\$71,081,290	\$59,417,121	19.6%
Average Salary	\$58,745	\$53,337	10.1%
Retired Members and Beneficiaries	984	987	(0.3%)
Average Age	74.4	74.0	0.5%
Total Annual Retirement Allowance	\$27,483,899	\$26,155,789	5.1%
Average Annual Retirement Allowance	\$27,931	\$26,500	5.4%
State Reimbursed COLAs	\$28,972	\$34,081	(15.0%)
Total System-Funded Retirement Allowance	\$27,454,927	\$26,121,708	5.1%
Disabled Members	64	76	(15.8%)
Average Age	69.6	70.4	(1.2%)
Total Annual Retirement Allowance	\$2,736,190	\$2,961,314	(7.6%)
Average Annual Retirement Allowance	\$42,753	\$38,965	9.7%
State Reimbursed COLAs	\$9,810	\$22,543	(56.5%)
Total System-Funded Retirement Allowance	\$2,726,380	\$2,938,771	(7.2%)
Inactive Members	579	453	27.8%
Annuity Savings Fund	\$6,136,361	\$4,975,898	23.3%

SECTION 7 - PLAN MEMBER INFORMATION

Exhibit 7.2 - Active Members by Age and Years of Service as of January 1, 2026

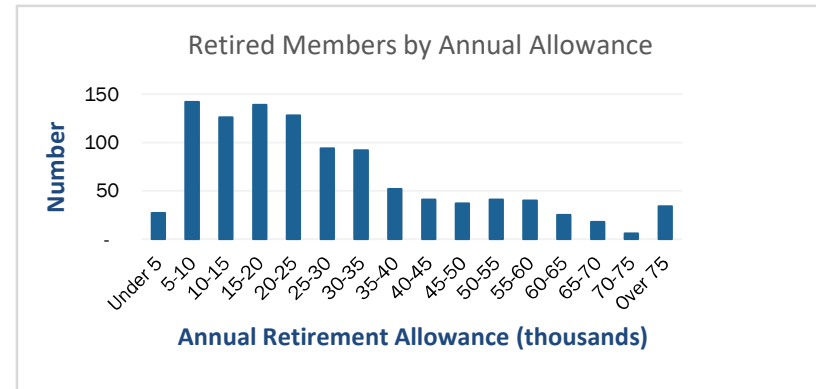
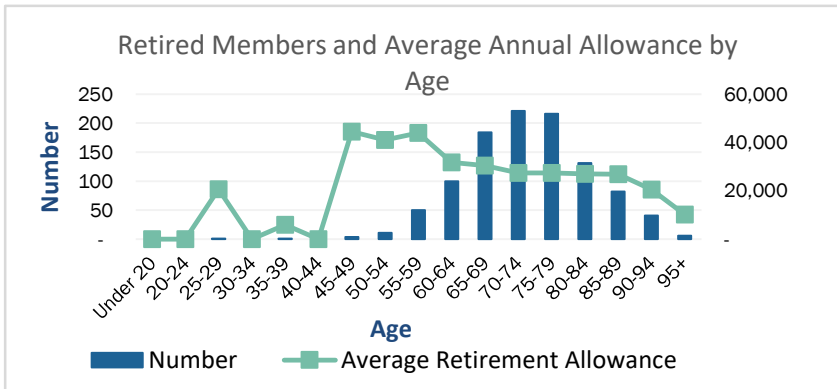
Attained Age	Years of Service									Total	Total Salary	Average Salary
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up			
Under 20	6	-	-	-	-	-	-	-	-	6	268,763	44,794
20 to 24	97	-	-	-	-	-	-	-	-	97	4,039,199	41,641
25 to 29	108	19	-	-	-	-	-	-	-	127	6,381,074	50,245
30 to 34	85	42	6	-	-	-	-	-	-	133	7,973,370	59,950
35 to 39	66	40	34	5	1	-	-	-	-	146	9,904,605	67,840
40 to 44	68	31	7	5	5	-	-	-	-	116	6,307,558	54,375
45 to 49	69	30	15	14	13	8	-	-	-	149	8,817,463	59,178
50 to 54	29	22	21	9	15	16	4	1	-	117	8,140,895	69,580
55 to 59	38	25	22	16	11	12	15	5	-	144	8,966,871	62,270
60 to 64	26	15	17	19	16	6	14	2	-	115	7,155,200	62,219
65 to 69	10	10	8	5	1	2	2	1	-	39	1,826,568	46,835
70 & up	4	4	1	2	2	1	-	1	6	21	1,299,724	61,892
Total	606	238	131	75	64	45	35	10	6	1,210	71,081,290	58,745
Average Salary	45,283	61,642	73,598	66,334	81,112	97,436	98,780	79,140	88,036			
Average Age:							44.2	Average Service:		8.4		



SECTION 7 - PLAN MEMBER INFORMATION

Exhibit 7.3 - Annual Retirement Allowances as of January 1, 2026

Attained Age	Service Retirements			Disability Retirements			Beneficiaries		
	Number	Annual Retirement Allowance	Average Retirement Allowance	Number	Annual Retirement Allowance	Average Retirement Allowance	Number	Annual Retirement Allowance	Average Retirement Allowance
Under 20	-	-	-	-	-	-	-	-	-
20-24	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	1	20,677	20,677
30-34	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	1	5,904	5,904
40-44	-	-	-	-	-	-	-	-	-
45-49	1	38,737	38,737	2	132,797	66,399	1	6,325	6,325
50-54	4	279,700	69,925	3	123,766	41,255	4	47,358	11,840
55-59	32	1,421,338	44,417	11	548,927	49,902	7	227,827	32,547
60-64	86	2,654,583	30,867	8	404,247	50,531	6	112,729	18,788
65-69	169	5,071,049	30,006	6	231,502	38,584	9	295,940	32,882
70-74	196	5,328,677	27,187	13	550,429	42,341	12	177,310	14,776
75-79	190	5,222,233	27,485	9	301,151	33,461	17	390,029	22,943
80-84	105	2,788,310	26,555	9	325,495	36,166	17	414,792	24,400
85-89	72	1,928,039	26,778	2	70,822	35,411	8	198,462	24,808
90-94	32	684,219	21,382	1	47,054	47,054	8	108,487	13,561
95+	2	18,959	9,480	-	-	-	4	42,215	10,554
Total	889	25,435,844	28,612	64	2,736,190	42,753	95	2,048,055	21,558
Average Age	74.3			69.6			75.2		



SECTION 8 - GLOSSARY OF TERMS

Actuarial Accrued Liability – That portion of the Actuarial Present Value of pension plan benefits which is not provided by future Normal Costs or employee contributions. It is the portion of the Actuarial Present Value attributable to service rendered as of the Valuation Date.

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 all past and future pension plan benefits to the current year (Normal Cost) and the past (Actuarial Accrued Liability).

Actuarial Gain or Loss (or 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 – 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.

Actuarial Standard of Practice – Standards set by the Actuarial Standards Board for appropriate actuarial practice in the United States. These Standards describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

Actuarial Valuation – The measurement of relevant pension obligations and, when applicable, the determination of periodic costs or actuarially determined contributions.

Amortization Payment – That portion of the pension plan appropriation which represents payments made to pay interest on and the reduction of the Unfunded Accrued Liability.

Annual Statement – The statement submitted by the local retirement board to PERAC each year that describes the asset holdings and Fund balances as of December 31 and the transactions during the calendar year that affected the financial condition of the retirement system.

Annuity Reserve Fund – The fund into which total accumulated Member Contributions, including interest, is transferred at the time a member retires, and from which annuity payments are made.

Annuity Savings Fund – The fund in which Member Contributions plus interest credited are held for active members and for former members who have not withdrawn their contributions and are not yet receiving a benefit (inactive members).

Assets – The total value of the investments held by the Plan trust that are for the payment of promised benefits. Employer appropriations and Member Contributions, as well as investment earnings, are added to the Plan trust. Benefit payments and other disbursements are withdrawn from the Plan trust. For valuation purposes, assets are usually measured at market value.

SECTION 8 - GLOSSARY OF TERMS

Cost of Benefits – The estimated payment from the pension system for benefits for the fiscal year.

Expense Fund – The fund into which the appropriation for administrative expenses is paid and from which all such expenses are paid.

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

Funding Schedule – The schedule based upon the most recently approved actuarial valuation which sets forth the amount which would be appropriated to the pension system in accordance with Section 22D and Section 22F of M.G.L. Chapter 32.

GASB – Governmental Accounting Standards Board.

LDROM – Low-Default Risk Obligation Measure. A measure that represents what the funding liability would be if the plan invested its assets solely in a portfolio of high-quality bonds whose cash flows approximately match future benefit payments.

Normal Cost – Total Normal Cost is that portion of the Actuarial Present Value of pension plan benefits which is expected to accrue in the current fiscal year. The Employee Normal Cost is the amount of the expected Member Contributions for the current fiscal year. The Employer Normal Cost is the difference between the Total Normal Cost and the Employee Normal Cost.

Output Smoothing Method – A method to reduce volatility of the results of a contribution allocation procedure. Output smoothing methods include 1) phasing in the impact of assumption changes on contributions, 2) blending a prior valuation with a subsequent valuation to determine contributions, or 3) placing a corridor around changes in the dollar amount, contribution rate, or percentage change in contributions from year to year.

Pension Fund – The fund into which appropriation amounts as determined by PERAC are paid and from which pension benefits are paid.

Pension Reserve Fund – The fund which shall be credited with all amounts set aside by a system for the purpose of establishing a reserve to meet future pension liabilities. These amounts would include excess interest earnings.

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.

Special Fund for Military Service Credit – The fund which is credited with amounts paid by the retirement board equal to the amount which would have been contributed by a member during a military leave of absence as if the member had remained in active service of the retirement board. In the event of retirement or a non-job related death, such amount is transferred to the Annuity Reserve Fund. In the event of termination prior to retirement or death, such amount shall be transferred to the Pension Fund.

Total Pension Liability – The portion of the Actuarial Present Value attributable to past service in accordance with the Entry Age cost method as stipulated by GASB Statement Number 67 (GASB 67).

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

SECTION 9 - VALUATION RESULTS BY GROUP

Group	City of Haverhill	Housing Authority	Police & Fire	School	Waste Water	Water	Whittier Tech	Hale Hospital	Total
Summary of Member Data as of January 1, 2026									
Active Members	159	19	257	680	19	27	49	0	1,210
Average Age	46.4	54.2	39.8	44.4	42.9	44.6	52.3	0.0	44.2
Average Service	9.3	9.1	11.9	6.3	11.5	14.7	12.1	0.0	8.4
Salary	10,387,467	1,554,597	24,280,409	28,216,442	1,737,382	2,175,997	2,728,996	0	71,081,290
Average Salary	65,330	81,821	94,476	41,495	91,441	80,592	55,694	0	58,745
Retired Members and Beneficiaries	180	11	174	299	27	25	47	221	984
Annual Pensions	5,077,005	375,809	9,295,498	5,034,442	1,184,716	922,391	983,797	4,610,240	27,483,899
Average Age	75.7	76.2	72.4	73.8	74.0	70.6	75.3	75.7	74.4
Disabled Members	4	0	37	9	0	3	4	7	64
Annual Pensions	129,919	0	1,939,249	285,083	0	102,956	97,793	181,189	2,736,190
Average Age	73.6	0.0	68.7	66.2	0.0	68.9	69.6	76.3	69.6
Inactive Members	70	4	27	440	3	10	20	5	579
Annuity Savings Fund	883,511	115,771	840,156	3,270,912	100,050	252,788	503,795	169,379	6,136,361
Normal Cost as of January 1, 2026									
1.1 Total Normal Cost	1,441,139	226,552	4,911,035	3,968,804	200,660	234,252	389,050	0	11,371,492
1.2 Employee Normal Cost	973,640	148,603	2,366,015	2,595,224	169,888	194,163	255,234	0	6,702,767
1.3 Administrative Expenses	82,376	12,950	280,717	226,859	11,470	13,390	22,238	0	650,000
1.4 Net Employer Normal Cost = 1.1 - 1.2 + 1.3	549,875	90,899	2,825,737	1,600,439	42,242	53,479	156,054	0	5,318,725
Actuarial Accrued Liability as of January 1, 2026									
2.1 Active Employees	20,401,881	2,815,019	72,370,415	39,351,403	4,240,496	5,963,807	7,596,879	0	152,739,900
2.2 Retired Members and Survivors	47,842,851	3,578,061	92,440,147	51,637,466	11,355,626	9,101,967	9,380,368	41,785,983	267,122,469
2.3 Disabled Members	1,281,840	0	20,773,507	3,313,140	0	1,084,000	1,140,409	1,724,969	29,317,865
2.4 Inactive Members	883,511	115,771	840,155	3,270,912	100,050	252,788	503,795	169,379	6,136,361
2.5 Total = 2.1 + 2.2 + 2.3 + 2.4	70,410,083	6,508,851	186,424,224	97,572,921	15,696,172	16,402,562	18,621,451	43,680,331	455,316,595
Actuarial Value of Plan Assets as of January 1, 2026									
3.1 Actuarial Value of Assets	51,889,197	4,796,743	137,386,620	71,907,038	11,567,402	12,087,981	13,723,207	32,190,522	335,548,710

SECTION 9 - VALUATION RESULTS BY GROUP

Group	City of Haverhill	Housing Authority	Police & Fire	School	Waste Water	Water	Whittier Tech	Hale Hospital	Total
Unfunded Actuarial Accrued Liability (UAAL) as of January 1, 2026									
4.1 UAL = 2.5 - 3.1	18,520,886	1,712,108	49,037,604	25,665,883	4,128,770	4,314,581	4,898,244	11,489,809	119,767,885
4.2 UAL ERI 2002	1,579,474	36,547	604,572	481,280	136,857	170,527	27,736	0	3,036,993
4.3 UAL ERI 2003	543,058	0	751,316	451,840	370,476	136,484	14,214	0	2,267,388
4.4 UAL non-ERI	16,398,354	1,675,561	47,681,716	24,732,763	3,621,437	4,007,570	4,856,294	11,489,809	114,463,504
FY2027 Appropriation									
5.1 Employer Normal Cost, July 1	568,796	94,026	2,922,965	1,655,507	43,695	55,319	161,424	0	5,501,732
5.2 Amortization Payment of ERI 2002	292,023	6,757	111,777	88,982	25,303	31,528	5,128	0	561,498
5.3 Amortization Payment of ERI 2003	100,404	0	138,908	83,539	68,496	25,234	2,628	0	419,209
5.4 Amortization Payment of UAL*	3,055,596	289,914	7,676,939	4,181,306	682,765	699,489	916,367	2,412,568	19,914,944
5.5 Net 3(8)(c) Transfers	107,688	7,772	232,353	110,016	24,502	21,206	22,369	99,094	625,000
5.6 Total = 5.1 + 5.2 + 5.3 + 5.4 + 5.5	4,124,507	398,469	11,082,942	6,119,350	844,761	832,776	1,107,916	2,511,662	27,022,383
FY2028 Appropriation									
6.1 Employer Normal Cost, July 1	570,697	94,340	2,932,734	1,661,039	43,841	55,504	161,963	0	5,520,118
6.2 Amortization Payment of ERI 2002	303,705	7,027	116,249	92,541	26,315	32,789	5,333	0	583,959
6.3 Amortization Payment of ERI 2003	104,420	0	144,464	86,881	71,236	26,243	2,733	0	435,977
6.4 Amortization Payment of UAL**	3,013,162	312,917	9,034,180	4,641,085	663,633	747,056	889,744	2,049,891	21,351,668
6.5 Net 3(8)(c) Transfers	107,688	7,772	232,353	110,016	24,502	21,206	22,369	99,094	625,000
6.6 Total = 6.1 + 6.2 + 6.3 + 6.4 + 6.5	4,099,672	422,056	12,459,980	6,591,562	829,527	882,798	1,082,142	2,148,985	28,516,722
Increase over prior year	-0.60%	5.92%	12.42%	7.72%	-1.80%	6.01%	-2.33%	-14.44%	5.53%
FY2029 Appropriation									
7.1 Employer Normal Cost, July 1	590,164	97,558	3,032,775	1,717,701	45,336	57,397	167,488	0	5,708,419
7.2 Amortization Payment of ERI 2002	315,852	7,308	120,898	96,243	27,368	34,101	5,546	0	607,316
7.3 Amortization Payment of ERI 2003	108,597	0	150,243	90,356	74,085	27,293	2,842	0	453,416
7.4 Amortization Payment of UAL	3,203,375	332,671	9,604,485	4,934,065	705,527	794,216	945,911	2,179,296	22,699,546
7.5 Net 3(8)(c) Transfers	107,688	7,772	232,353	110,016	24,502	21,206	22,369	99,094	625,000
7.6 Total = 7.1 + 7.2 + 7.3 + 7.4 + 7.5	4,325,676	445,309	13,140,754	6,948,381	876,818	934,213	1,144,156	2,278,390	30,093,697
Increase over prior year	5.51%	5.51%	5.46%	5.41%	5.70%	5.82%	5.73%	6.02%	5.53%

SECTION 9 - VALUATION RESULTS BY GROUP

Notes:

1. FY2028 and FY2029 Appropriation is based on Funding Schedule A-2 voted by the Board at their July 14, 2026 meeting.
2. 2027 Employer Normal Cost (5.1) is the Employer Normal Cost as of January 1, 2026 (1.4), adjusted for payment timing.
- *3. Amortization Payment of UAL (5.4) equals fiscal year 2027 budgeted appropriation (5.6) developed in the January 1, 2024 actuarial valuation less Employer Normal Cost (5.1), amortization payment to ERI (5.2 and 5.3) and Net 3(8)(c) transfers (5.5).
- **4. Amortization Payment of UAL (6.4) is the total Amortization Payment of UAL (6.4) allocated to each department in the proportion that the UAL (4.1) less 2027 Amortization Payment of UAL (5.4) bears to the total UAL (4.1) less total Amortization Payment of UAL (6.4).