



WORCESTER REGIONAL RETIREMENT SYSTEM

**ACTUARIAL VALUATION
as of
January 1, 2024**

KMS Actuarial, LLC
52 Hunt Road
Kingston, NH 03848

October, 2024



October 23, 2024

Worcester Regional Retirement Board
Midstate Office Park
23 Midstate Drive, Suite 106
Auburn, MA 01501

Dear Board Members:

We are pleased to present the enclosed report providing the results of our actuarial valuation of the Worcester Regional Retirement System as of January 1, 2024. 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, 2024. 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 Worcester Regional 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 7.125%, 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 System and to reasonable expectations, and 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 Worcester Regional 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 Worcester Regional 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 Worcester Regional 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

Background

We have completed the Actuarial Valuation of the Worcester Regional Retirement System as of January 1, 2024. 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 Worcester Regional Retirement Board. Information for the prior valuation completed as of January 1, 2022 was obtained from the valuation report prepared by KMS Actuaries, LLC.

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, 2023, the assets as of December 31, 2023 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

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.

The required disclosures and notes under GASB Statement Number 67 and 68 for the fiscal year ending December 31, 2023 are provided in a separate report.

SECTION 1 - EXECUTIVE SUMMARY

Assets

This valuation is based upon asset information reported to the Public Employee Retirement Administration Commission (PERAC) by the Worcester Regional Retirement Board. The market value of assets decreased from \$1,083,598,832 as of December 31, 2021 to \$1,073,750,546 as of December 31, 2023. During the plan years ended 2022 and 2023, the market value rates of return were -11.00% and 11.77%, respectively.

The actuarial value of assets increased from \$966,692,771 as of January 1, 2022 to \$1,116,901,886 as of January 1, 2024. During the plan years ended 2022 and 2023, the rates of return on the actuarial value of assets were 6.61% and 7.41%, respectively.

Changes Since the Last Valuation

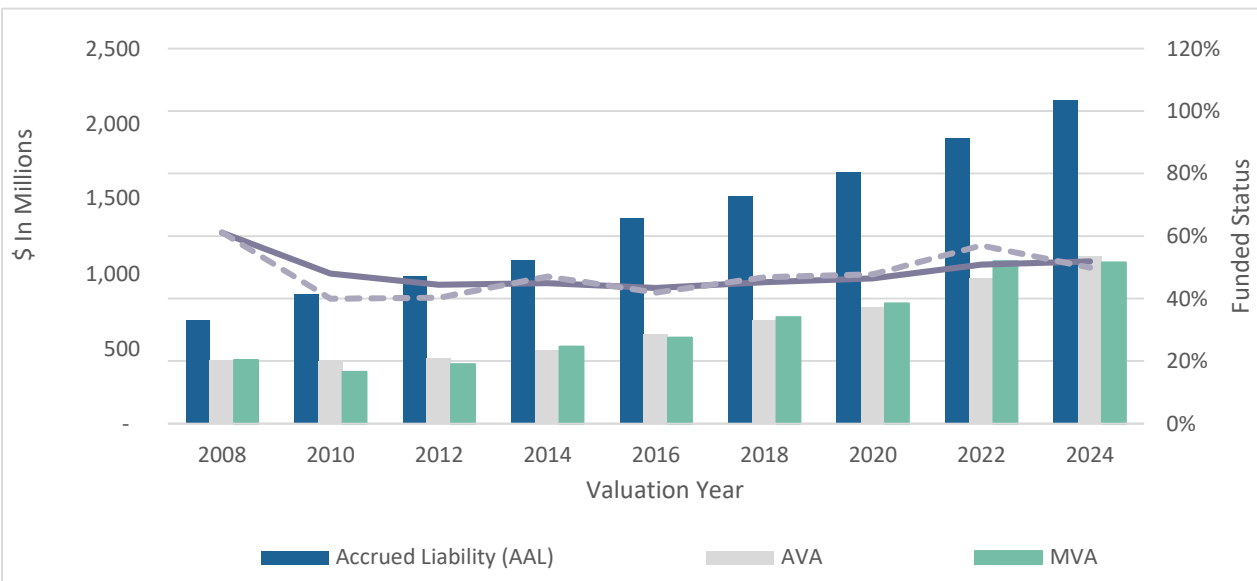
During the two years since the last valuation, the total unfunded actuarial accrued liability of the System was expected to decrease from \$933,878,451 as of January 1, 2022 to \$909,797,876 as of January 1, 2024, for a total decrease of \$24,080,575. The actual unfunded actuarial accrued liability, before any assumption or plan changes, was \$1,003,163,542, resulting in an actuarial loss of \$93,365,666. The actuarial loss was primarily due to an asset loss of approximately \$5,054,000 and a demographic experience loss of approximately \$88,312,000. The details of the gain and loss analysis are provided in Section 2, Actuarial Experience.

Change in Funded Status

The System's funded status, which is the Actuarial Value of Assets divided by the Actuarial Liabilities, increased from 50.9% as of January 1, 2022 to 51.9% as of January 1, 2024.

Historical Trends

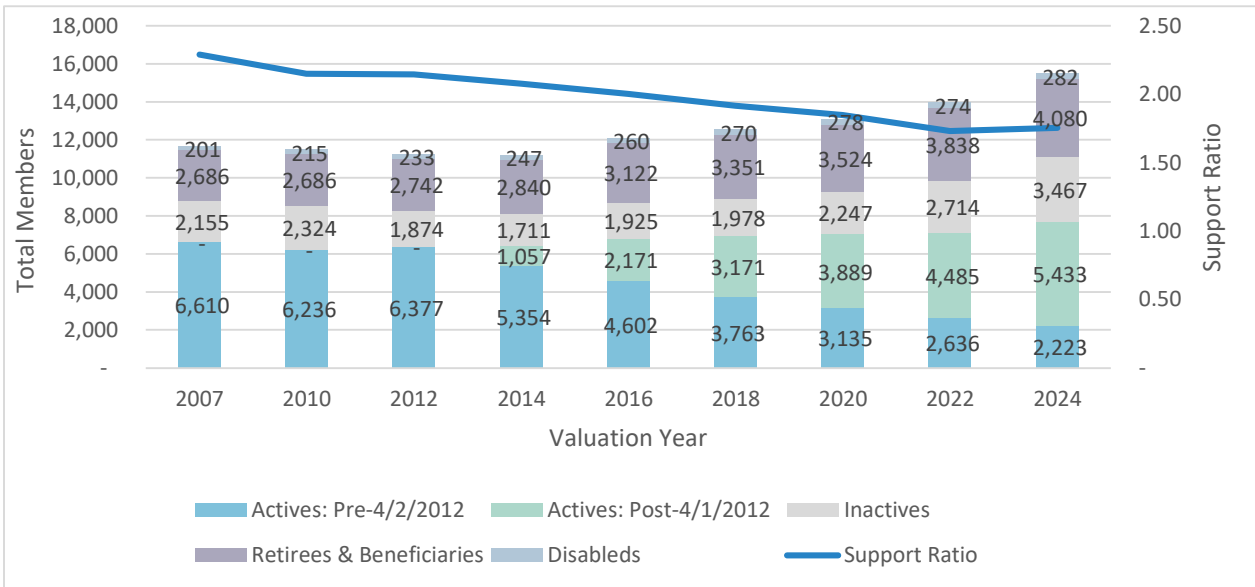
Below are the accrued liabilities, asset values (actuarial and market) and funded status for each of the last 9 valuations. The purple solid line reflects the funded status on an actuarial value of assets (AVA) basis and the purple dotted line reflects the funded status on a market value (MVA) basis. 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 valuations. The blue line reflects the support ratio, which is the number of active members divided by the number of retirees.



Appropriations

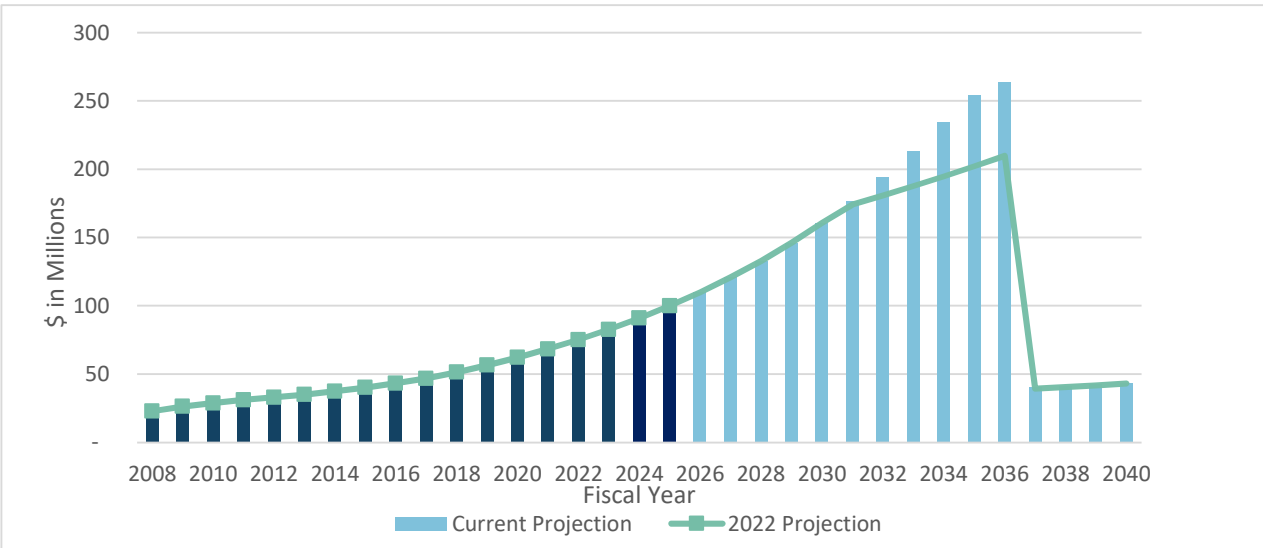
The funding appropriation for each year is computed as the sum of the normal cost, net 3(8)(c) transfers and an amortization payment to pay off the Unfunded Actuarial Liability, adjusted for semi-annual payments of the appropriation made July 1 and January 1. The appropriation calculated as of the January 1, 2024 valuation is \$132,363,269, and is made up of a normal cost payment of \$25,734,662, net 3(8)(c) transfers of \$4,274,238, and an amortization payment of \$102,354,369. The amortization method is an increasing amortization of the unfunded actuarial accrued liability at 4% over 12 years and is expected to fully pay the unfunded actuarial accrued liability by the year 2036. The development of the appropriation as of January 1, 2024 is presented in Section 3, Annual Appropriations.

For fiscal year 2025, we show the actual appropriation developed under the previous funding schedule and reported on the PERAC "Required Fiscal Year 2025 Appropriation" letter dated December 4, 2023 of \$100,027,007. For fiscal year 2026, we developed an annual appropriation of \$109,979,694, which is made up of a normal cost of \$31,973,587, including net 3(8)(c) transfers of \$4,500,000, and payment toward the unfunded actuarial accrued liability of \$78,006,107. The unfunded actuarial accrued liability is expected to be fully paid by 2036. The Board adopted a schedule that limits the annual increase in appropriation to 9.95% for each year. 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 (blue bars) annual appropriations compared to the projected amounts shown in the prior valuation and funding schedule (green line).



Plan Provisions

All Plan provisions used in this valuation are the same as those used in the prior valuation and are summarized in Section 5, Summary of Plan Provisions.

Actuarial Assumptions and Methods

Some Actuarial Assumptions and Methods used in this valuation have changed since the last valuation, including decreasing the investment return rate from 7.25% to 7.125%, increasing the administrative expense assumption from \$1,400,000 to \$1,600,000, and updating the mortality improvement rates. Changing these assumptions resulted in a net increase in the unfunded actuarial accrued liability of \$32,758,542 and an increase in the employer normal cost of \$1,636,491. The Actuarial Assumptions and Methods utilized in this valuation are detailed in Section 6, Actuarial Assumptions and Methods.

Census Data

As of January 1, 2024, there are 7,656 active members who may be eligible for benefits in the future, 4,080 retirees and beneficiaries, 3,467 inactives and 282 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.

5% Local COLA Option

On November 16, 2022, Governor Baker signed Chapter 269 of the Acts of 2022 into law. This act provides the local retirement systems with the option to increase the Cost of Living Adjustment ("COLA") for Fiscal Year 2023 to up to 5 percent on the base amount specified pursuant to G.L. c. 32, § 103. The approval of the increase must occur prior to July 1, 2023 and will take effect as of July 1, 2022.

The required approval of two-thirds of the municipal member units (cities and towns) was reached on June 30, 2023, therefore the increased benefits are included in the measurement of the Actuarial Accrued Liability reported by the Plan at January 1, 2024. The impact of the additional COLA was an increase of \$9,091,264.

SECTION 1 - EXECUTIVE SUMMARY

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

Valuation Date	January 1, 2024	January 1, 2022	% Change
Census Data			
Active Members	7,656	7,121	7.5%
Valuation Salary	\$405,263,249	\$352,756,822	14.9%
Average Salary	\$52,934	\$49,538	6.9%
Retired Members and Beneficiaries	4,080	3,838	6.3%
Total Annual Retirement Allowance	\$104,574,050	\$91,096,821	14.8%
Average Annual Retirement Allowance	\$25,631	\$23,735	8.0%
Disabled Members	282	274	2.9%
Total Annual Retirement Allowance	\$10,754,734	\$10,059,176	6.9%
Average Annual Retirement Allowance	\$38,137	\$36,712	3.9%
Inactive Members	3,467	2,714	27.7%
Annuity Savings Fund	\$32,749,680	\$26,264,607	24.7%
Funded Status			
Actuarial Accrued Liability (AAL)	\$2,152,823,970	\$1,900,571,222	13.3%
Market Value of Assets (MVA)	\$1,073,750,546	\$1,083,598,832	(0.9%)
Unfunded Accrued Liability on MVA	\$1,079,073,424	\$816,972,390	32.1%
Funded Status on MVA	49.9%	57.0%	(12.5%)
Actuarial Value of Assets (AVA)	\$1,116,901,886	\$966,692,771	15.5%
Unfunded Accrued Liability on AVA	\$1,035,922,084	\$933,878,451	10.9%
Funded Status on AVA	51.9%	50.9%	2.0%
Appropriations			
Fiscal Year 2024	N/A	\$90,974,996	N/A
Fiscal Year 2025	\$100,027,007	\$100,027,007	0.0%
Fiscal Year 2026	\$109,979,694	\$109,979,694	0.0%
Fiscal Year 2027	\$120,922,676	\$120,922,676	0.0%

SECTION 2 - PRINCIPAL VALUATION RESULTS

Market Value of Assets

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

Calendar Year	2023	2022	2021
Trust Fund Composition at Year-End			
Cash	\$5,369,043	\$3,508,459	\$3,913,792
Short-Term Investments	0	0	0
Fixed Income Securities	0	0	0
Equities	0	0	0
Pooled Short Term Funds	0	0	0
Pooled Domestic Equity Funds	0	0	0
Pooled International Equity Funds	0	0	0
Pooled Global Equity Funds	0	0	0
Pooled Domestic Fixed Income Funds	0	0	0
Pooled International Fixed Income Funds	0	0	0
Pooled Global Fixed Income Funds	0	0	0
Pooled Alternative Investments	14,835	22,545	47,220
Pooled Real Estate Funds	0	0	0
Pooled Domestic Balanced Funds	0	0	0
Pooled International Balanced Funds	0	0	0
Hedge Funds	0	0	0
PRIT Cash	0	0	0
PRIT Fund	1,070,777,537	962,232,325	1,082,662,154
Interest Due & Accrued	0	0	0
Prepaid Expenses	0	0	0
Accounts Receivable	6,585,326	7,108,318	6,944,235
Land	0	0	0
Buildings	0	0	0
Accumulated Depreciation - Buildings	0	0	0
Accounts Payable	(8,996,195)	(9,776,571)	(9,968,569)
Total Market Value of Assets	\$1,073,750,546	\$963,095,076	\$1,083,598,832

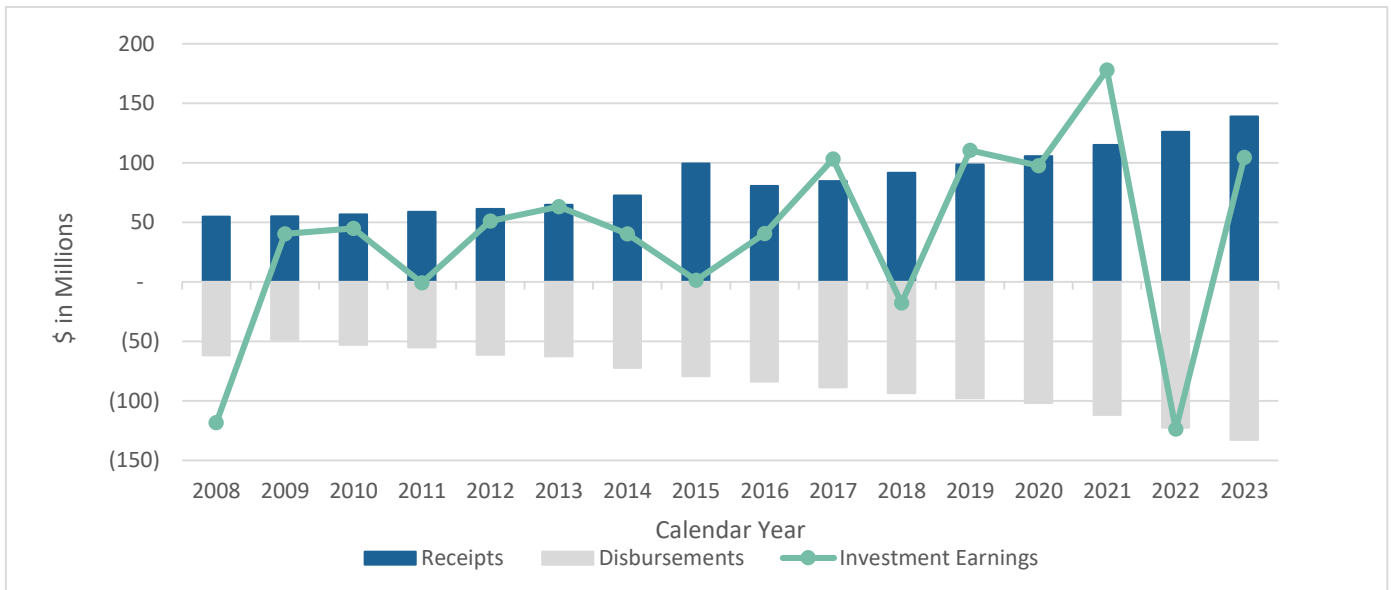
SECTION 2 - PRINCIPAL VALUATION RESULTS

Market Value of Assets

Calendar Year	2023	2022	2021
Funds			
Annuity Savings Fund	\$341,736,581	\$327,469,314	\$318,149,271
Annuity Reserve Fund	94,636,780	93,418,367	88,669,173
Special Military Service Fund	167,769	150,948	158,080
Pension Fund	8,024,926	12,735,261	17,203,477
Expense Fund	0	0	0
Pension Reserve Fund	629,184,490	529,321,186	659,418,831
Total Market Value of Assets	\$1,073,750,546	\$963,095,076	\$1,083,598,832
Asset Activity			
Market Value as of Beginning of Year	\$963,095,076	\$1,083,598,832	\$902,375,878
Contributions and Receipts	138,917,402	125,939,964	115,046,086
Benefit Payments and Expenses	(132,886,625)	(122,581,433)	(111,791,773)
Investment Return	104,624,693	(123,862,287)	177,968,641
Total Market Value of Assets	\$1,073,750,546	\$963,095,076	\$1,083,598,832

Rate of Return	11.77%	-11.00%	20.38%
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Below are the receipts and disbursements during the last 16 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 5-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, 2024	January 1, 2023	January 1, 2022	
1. Expected Market Value of Assets				
a. Market Value of Assets as of prior January 1	\$963,095,076	\$1,083,598,832	\$902,375,878	
b. Prior Year Contributions and Receipts	138,917,402	125,939,964	115,046,086	
c. Prior Year Benefit Payments and Expenses	(132,886,625)	(122,581,433)	(111,791,773)	
d. Expected Investment Return Rate	7.25%	7.25%	7.65%	
e. Expected Investment Return	70,061,227	78,692,808	69,166,605	
f. Expected Market Value of Assets	\$1,039,187,080	\$1,165,650,171	\$974,796,796	
2. Prior Year Gain/(Loss)				
a. Market Value of Assets as of January 1	\$1,073,750,546	\$963,095,076	\$1,083,598,832	
b. Expected Market Value of Assets	1,039,187,080	1,165,650,171	974,796,796	
c. Prior Year Gain /(Loss)	\$34,563,466	(\$202,555,095)	\$108,802,036	
3. Phase-In of Asset Gains and Losses				
		Unrecognized	Unrecognized	Unrecognized
Calendar Year	Gain / (Loss)	Gain / (Loss)	Gain / (Loss)	Gain / (Loss)
a. 2023	\$34,563,466	\$27,650,773	\$0	\$0
b. 2022	(202,555,095)	(121,533,057)	(162,044,076)	0
c. 2021	108,802,036	43,520,814	65,281,222	87,041,629
d. 2020	36,050,648	7,210,130	14,420,259	21,630,389
e. 2019	56,943,979	0	11,388,796	22,777,592
f. 2018	(72,717,745)	0	0	(14,543,549)
g. Total Deferred Gains/(Losses)		(\$43,151,340)	(\$70,953,799)	\$116,906,061

SECTION 2 - PRINCIPAL VALUATION RESULTS

Actuarial Value of Assets

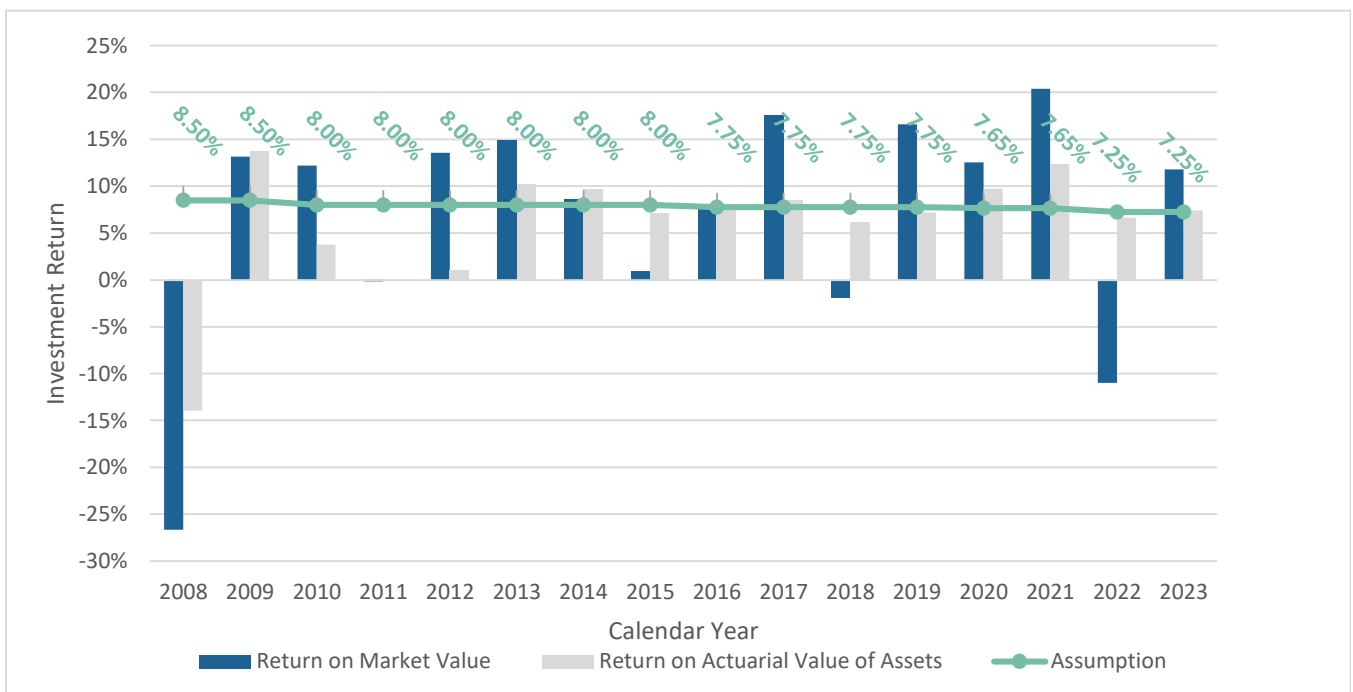
Valuation Date January 1, 2024 January 1, 2023 January 1, 2022

4. Actuarial Value of Assets

a. Market Value of Assets	\$1,073,750,546	\$963,095,076	\$1,083,598,832
b. Deferred Gains/(Losses)	(43,151,340)	(70,953,799)	116,906,061
c. Market Value of Assets Less Deferred Gains/(Losses)	\$1,116,901,886	\$1,034,048,875	\$966,692,771
d. 80% of Market Value of Assets	859,000,437	770,476,061	866,879,066
e. 120% of Market Value of Assets	1,288,500,655	1,155,714,091	1,300,318,598
f. Actuarial Value of Assets, c., but not less than d. and not greater than e.	\$1,116,901,886	\$1,034,048,875	\$966,692,771
g. Ratio of Actuarial Value of Assets to Market Value of Assets	104.0%	107.4%	89.2%

5. Rate of Return on Actuarial Value of Assets for Prior Calendar Year	7.41%	6.61%	12.36%
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Below are the investment returns during the last 16 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, 2024	January 1, 2022
Actives	\$1,507,107,754	\$1,324,385,808
Retired Members and Beneficiaries	1,081,574,808	922,337,478
Disabled Members	127,854,620	118,243,456
Inactive Members	32,749,680	26,264,607
Total Present Value of Future Benefits	\$2,749,286,862	\$2,391,231,349

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, 2024	January 1, 2022
Actives	\$910,644,862	\$833,725,681
Retired Members and Beneficiaries	1,081,574,808	922,337,478
Disabled Members	127,854,620	118,243,456
Inactive Members	32,749,680	26,264,607
Total Actuarial Accrued Liability	\$2,152,823,970	\$1,900,571,222

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, 2024	January 1, 2022
Unfunded Actuarial Accrued Liability		
a. Actuarial Accrued Liability	\$2,152,823,970	\$1,900,571,222
b. Actuarial Value of Assets	1,116,901,886	966,692,771
c. Unfunded Actuarial Accrued Liability (a. - b.)	\$1,035,922,084	\$933,878,451
d. Funded Status (b. divided by a.)	51.9%	50.9%

SECTION 2 - PRINCIPAL VALUATION RESULTS

Actuarial Liabilities

The **Normal Cost** is the portion of the Actuarial Present Value of Future Benefits which is allocated to a valuation year. Only active employees who have not reached Normal Retirement Age incur a Normal Cost. Below is the Normal Cost from the current valuation and the prior valuation:

Valuation Date	January 1, 2024	January 1, 2022
Total Normal Cost	\$63,787,070	\$54,862,658
As of Percentage of Salary	15.7%	15.6%
Employee Normal Cost	\$39,572,137	\$34,217,858
As of Percentage of Salary	9.8%	9.7%
Administrative Expenses	\$1,519,729	\$1,328,607
As a Percentage of Salary	0.4%	0.4%
Net Employer Normal Cost	\$25,734,662	\$21,973,407
As a Percentage of Salary	6.4%	6.2%

SECTION 2 - PRINCIPAL VALUATION RESULTS

Actuarial Experience

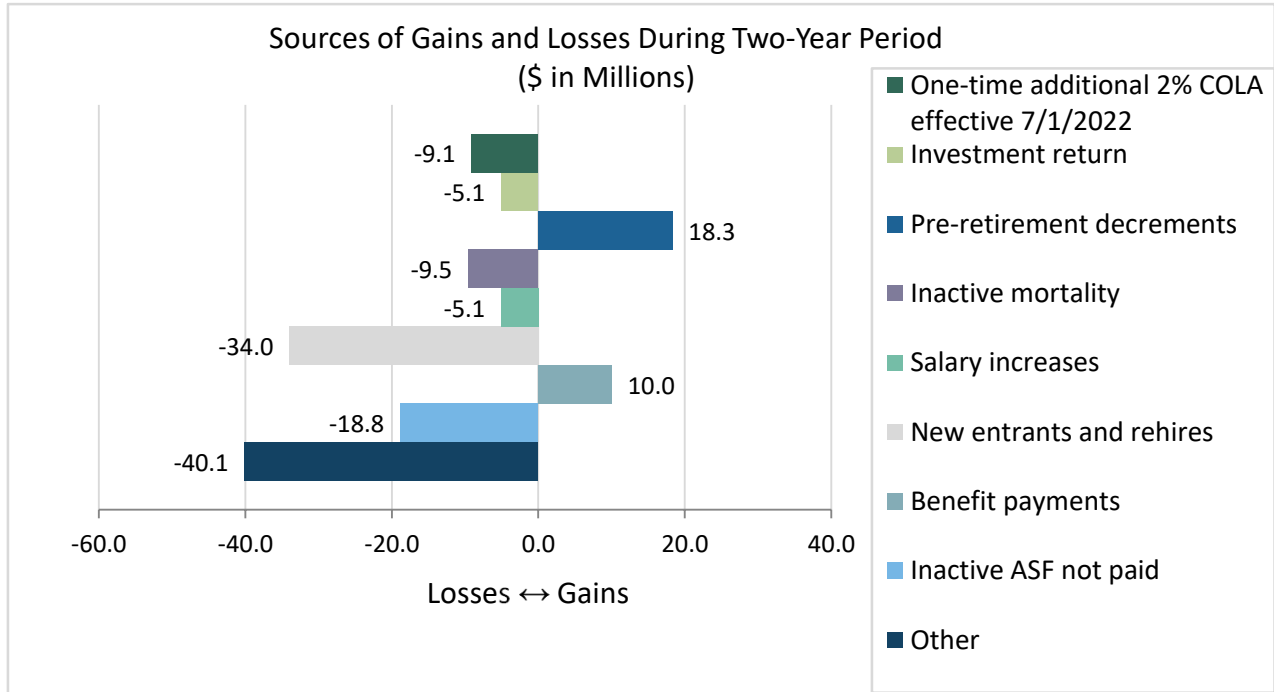
In performing the actuarial valuation, various assumptions are made regarding mortality, retirement, disability and withdrawal rates as well as salary increases and investment returns. A comparison of the results of the current valuation and the prior valuation is made to determine how closely actual 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 \$24,080,575. Below is the development of the Actuarial Loss for the current 2-year period:

Calendar Year Ending	December 31, 2023	December 31, 2022
Expected Unfunded Actuarial Accrued Liability		
1. Unfunded Actuarial Accrued Liability, beginning of year	\$929,539,108	\$933,878,451
2. Normal cost, beginning of year	53,370,617	54,862,658
3. Total contributions	138,917,402	125,939,964
4. Interest (full year on 1. and 2., monthly-weighted on 3.)	65,805,553	66,737,963
5. Expected Unfunded Actuarial Accrued Liability	\$909,797,876	\$929,539,108
6. Unfunded Actuarial Accrued Liability (before changes)	1,003,163,542	
7. (Gain)/Loss (6. - 5.)	\$93,365,666	
Asset Gain/(Loss)		
1. Actuarial Value of Assets, Beginning of Year	\$1,034,048,875	\$966,692,771
2. Contributions and Receipts	138,917,402	125,939,964
3. Benefit Payments and Expenses	(132,886,625)	(122,581,433)
4. Assumed Rate of Return (prior valuation)	7.25%	7.25%
5. Expected Return	75,205,377	70,217,118
6. Actuarial Value of Assets, End of Year	\$1,116,901,886	\$1,034,048,875
7. Actual Return	76,822,234	63,997,573
8. Actual Rate of Return	7.41%	6.61%
9. Asset Gain/(Loss) (7. - 5.)	1,616,857	(6,219,545)
10. Total Asset Gain/(Loss), 2-Year Period	(\$5,053,605)	

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 \$5,053,605, and the total demographic loss during the period was \$88,312,061, which totals to an overall loss of \$93,365,666.



Unfunded Actuarial Accrued Liability

1. Changes due to:	
a. Asset Loss	\$5,053,605
b. Demographic Experience Loss	88,312,061
c. Total Loss Prior to Changes	93,365,666
e. Assumption and Method Changes	
Mortality Improvement Scale	4,666,429
Investment Return Rate	28,092,113
Total	32,758,542
f. Total Increase (including changes)	126,124,208
2. Unfunded Actuarial Accrued Liability, End of Year	\$1,035,922,084

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 semi-annual payments made July 1 and January 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, 2024	January 1, 2022
1. Early Retirement Incentive Plan (2002)		
Fully Funded Year	2028	2028
Investment Return Rate	7.125%	7.25%
Balance as of Valuation Date	\$6,667,068	\$8,928,051
Amortization Amount	\$1,729,297	\$1,586,283
Increasing Rate	4.50%	4.50%
Remaining Payment Period from Valuation Date	4	6
2. Early Retirement Incentive Plan (2003)		
Fully Funded Year	2028	2028
Investment Return Rate	7.125%	7.25%
Balance as of Valuation Date	\$1,307,157	\$1,750,451
Amortization Amount	\$339,049	\$311,010
Increasing Rate	4.50%	4.50%
Remaining Payment Period from Valuation Date	4	6
3. Unfunded Actuarial Accrued Liability		
Fully Funded Year	2036	2036
Investment Return Rate	7.125%	7.25%
Balance as of Valuation Date	\$1,027,947,859	\$923,199,949
Amortization Amount	\$100,286,023	\$79,927,717
Increasing Rate	4.00%	4.00%
Remaining Payment Period from Valuation Date	12	14

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

Annual Appropriations

4.	Total Amortization Payments	\$102,354,369	\$81,825,010
5.	Normal Cost	\$25,734,662	\$21,973,407
6.	Net 3(8)(c) Transfers	\$4,274,238	\$4,270,523
7.	Total Appropriation as of January 1	\$132,363,269	\$108,068,940
8.	Adjusted for Semi-Annual Payments as of July 1 and January 1	\$139,354,605	\$113,876,047

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 UAL	Amortization Payment of ERI 2002	Amortization Payment of ERI 2003	Total Employer Cost	Increase over Prior Year	Unfunded Actuarial Accrued Liability
2025	\$31,593,949	\$66,255,464	\$1,820,637	\$356,957	\$100,027,007		\$1,035,922,084
2026	31,973,587	75,730,520	1,902,567	373,020	109,979,694	9.95%	1,040,100,483
2027	31,495,798	87,048,890	1,988,182	389,806	120,922,676	9.95%	1,034,835,957
2028	32,272,465	98,197,019	2,077,649	407,348	132,954,481	9.95%	1,017,575,633
2029	33,131,849	113,051,604	-	-	146,183,453	9.95%	987,633,338
2030	33,956,866	126,771,841	-	-	160,728,707	9.95%	942,971,525
2031	34,772,103	141,949,106	-	-	176,721,209	9.95%	881,167,135
2032	35,659,181	158,645,789	-	-	194,304,970	9.95%	799,516,220
2033	36,562,365	177,075,951	-	-	213,638,316	9.95%	695,058,703
2034	37,551,682	197,343,645	-	-	234,895,327	9.95%	564,405,786
2035	38,441,454	215,721,925	-	-	254,163,379	8.20%	403,821,348
2036	39,366,898	224,350,801	-	-	263,717,699	3.76%	213,095,258
2037	40,395,469	-	-	-	40,395,469	-84.68%	-
2038	41,371,297	-	-	-	41,371,297	2.42%	-
2039	42,464,643	-	-	-	42,464,643	2.64%	-
2040	43,543,234	-	-	-	43,543,234	2.54%	-
2041	44,701,184	-	-	-	44,701,184	2.66%	-
2042	45,891,674	-	-	-	45,891,674	2.66%	-
2043	47,143,613	-	-	-	47,143,613	2.73%	-
2044	48,426,780	-	-	-	48,426,780	2.72%	-
2045	49,802,158	-	-	-	49,802,158	2.84%	-
2046	51,338,950	-	-	-	51,338,950	3.09%	-
2047	52,792,398	-	-	-	52,792,398	2.83%	-
2048	54,359,396	-	-	-	54,359,396	2.97%	-
2049	56,046,605	-	-	-	56,046,605	3.10%	-
2050	57,610,231	-	-	-	57,610,231	2.79%	-
2051	59,392,296	-	-	-	59,392,296	3.09%	-
2052	61,148,855	-	-	-	61,148,855	2.96%	-
2053	63,000,861	-	-	-	63,000,861	3.03%	-
2054	65,134,354	-	-	-	65,134,354	3.39%	-

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
2024	\$1,073,750,546	\$159,048,400	\$39,572,137	\$95,008,714	\$79,955,338	\$1,129,238,335
2025	1,129,238,335	132,764,735	41,334,016	104,462,080	85,722,314	1,227,992,010
2026	1,227,992,010	139,394,073	42,744,506	116,090,837	93,431,709	1,340,864,989
2027	1,340,864,989	146,075,547	44,269,477	126,284,235	102,050,979	1,467,394,133
2028	1,467,394,133	152,905,937	45,789,418	138,849,516	111,806,143	1,610,933,273
2029	1,610,933,273	159,812,055	47,417,928	152,665,043	122,867,161	1,774,071,350
2030	1,774,071,350	166,475,047	49,134,123	167,855,214	135,438,178	1,960,023,818
2031	1,960,023,818	173,026,642	50,863,023	184,556,808	149,747,613	2,172,164,620
2032	2,172,164,620	179,230,354	52,660,199	202,920,211	166,059,662	2,414,574,338
2033	2,414,574,338	185,331,204	54,461,851	223,110,771	184,662,845	2,691,478,601
2034	2,691,478,601	191,277,877	56,447,147	241,412,157	205,608,195	3,003,668,223
2035	3,003,668,223	199,885,381	58,490,550	250,487,143	228,311,695	3,341,072,230
2036	3,341,072,230	208,880,223	60,530,979	38,368,853	237,036,538	3,468,128,377
2037	3,468,128,377	218,279,833	62,719,570	39,295,724	245,948,499	3,597,812,337
2038	3,597,812,337	228,102,425	64,897,791	40,334,218	255,038,582	3,729,980,503
2039	3,729,980,503	238,367,034	67,194,571	41,358,696	264,296,053	3,864,462,789
2040	3,864,462,789	249,093,551	69,523,913	42,458,553	273,708,270	4,001,059,974
2041	4,001,059,974	260,302,761	71,933,797	43,589,317	283,260,485	4,139,540,812
2042	4,139,540,812	272,016,385	74,400,386	44,778,447	292,935,642	4,279,638,902
2043	4,279,638,902	284,257,122	76,956,125	45,997,238	302,714,151	4,421,049,294
2044	4,421,049,294	297,048,692	79,546,951	47,303,614	312,573,642	4,563,424,809
2045	4,563,424,809	310,415,883	82,111,120	48,763,306	322,488,708	4,706,372,060
2046	4,706,372,060	324,384,598	84,885,226	50,143,836	332,430,612	4,849,447,136
2047	4,849,447,136	338,981,905	87,686,506	51,632,218	342,366,985	4,992,150,940
2048	4,992,150,940	354,236,091	90,513,019	53,234,781	352,261,486	5,133,924,135
2049	5,133,924,135	370,176,715	93,600,860	54,719,961	362,073,446	5,274,141,687
2050	5,274,141,687	386,834,667	96,629,844	56,412,621	371,757,470	5,412,106,955
2051	5,412,106,955	404,242,227	99,836,509	58,081,054	381,263,023	5,547,045,314
2052	5,547,045,314	422,433,127	103,110,955	59,840,146	390,533,966	5,678,097,254
2053	5,678,097,254	441,442,618	106,281,626	61,866,603	399,508,065	5,804,310,930

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

Forecast Notes

Exhibit 3.1:

- ◆ The Total Normal Cost is assumed to increase 3.25% per year and the Employee Normal Cost is assumed to increase at a rate that reflects a total payroll increase of 3.25% per year and incorporates new entrants sufficient to maintain constant active membership.
- ◆ The Unfunded Actuarial Accrued Liability ("UAL") is computed as of January 1 of each year assuming no future gains or losses.
- ◆ The Amortization Payment of UAL is an increasing payment at 4% paid over 12 years through 2036.
- ◆ The Amortization Payment of the Early Retirement Incentive Plan (2002) is an increasing payment at 4.5% paid over 4 year(s) through 2028.
- ◆ The Amortization Payment of the Early Retirement Incentive Plan (2003) is an increasing payment at 4.5% paid over 4 year(s) through 2028.
- ◆ Net 3(8)(c) transfers are a level dollar amount based on the net transfers expected to be paid by the Worcester Regional Retirement Board during the current year offset by the amount received during the same period. For this valuation, we assumed net 3(8)(c) transfers of \$4,500,000 for FY2026, and \$3,200,000 thereafter.
- ◆ Total Employer Cost is the sum of the Employer Normal Cost, including administrative expenses and net 3(8)(c) transfers, and the Amortization of the UAL, all computed as of January 1 of each year and adjusted for semi-annual payments made on July 1 and January 1.
- ◆ For fiscal year 2025, we show the actual appropriation developed under the previous funding schedule of \$100,027,007. For fiscal years 2026 and later, the Board has selected a funding schedule that fully amortizes the unfunded actuarial accrued liability by 2036, with annual employer costs limited to increases of 9.95% over the prior year.
- ◆ The funding schedule adopted by the Board results in amortization payments for every year after fiscal year 2026 up to and including the full funded date that are greater than the interest computed on the outstanding UAL from the prior year. The amortization payment for FY2025 results in an increase in the unfunded liability in FY2026. This amortization method fully amortizes the UAL within a reasonable time period and reduces the UAL by a reasonable amount within a sufficiently short period.

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

Forecast Notes

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

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 Worcester Regional 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:

- (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.*

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 Worcester Regional Retirement System. The effective date for GASB 68 is for employers' fiscal years beginning after June 15, 2014. The GASB report, submitted under separate cover and prepared as of December 31, 2023 (the measurement date), presents information to assist the Worcester Regional Retirement Board in providing the required information under GASB 68 to participating employers.

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, 2024.

Normal Cost - Employees	\$39,572,137	9.8% of payroll
Normal Cost - Employers	\$25,734,662	6.4% of payroll
Actuarial Liability - Active Members	\$910,644,862	42% of total AAL
Actuarial Liability - Retired and Inactive Members	1,242,179,108	58% of total AAL
Total Actuarial Liability (AAL)	<u>\$2,152,823,970</u>	
System Assets	\$1,116,901,886	
Unfunded Actuarial Accrued Liability	\$1,035,922,084	
Funded Status	51.9%	

Principal actuarial assumptions used in the valuation:

Investment Return	7.125%
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 Worcester Regional 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 resulting from 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:

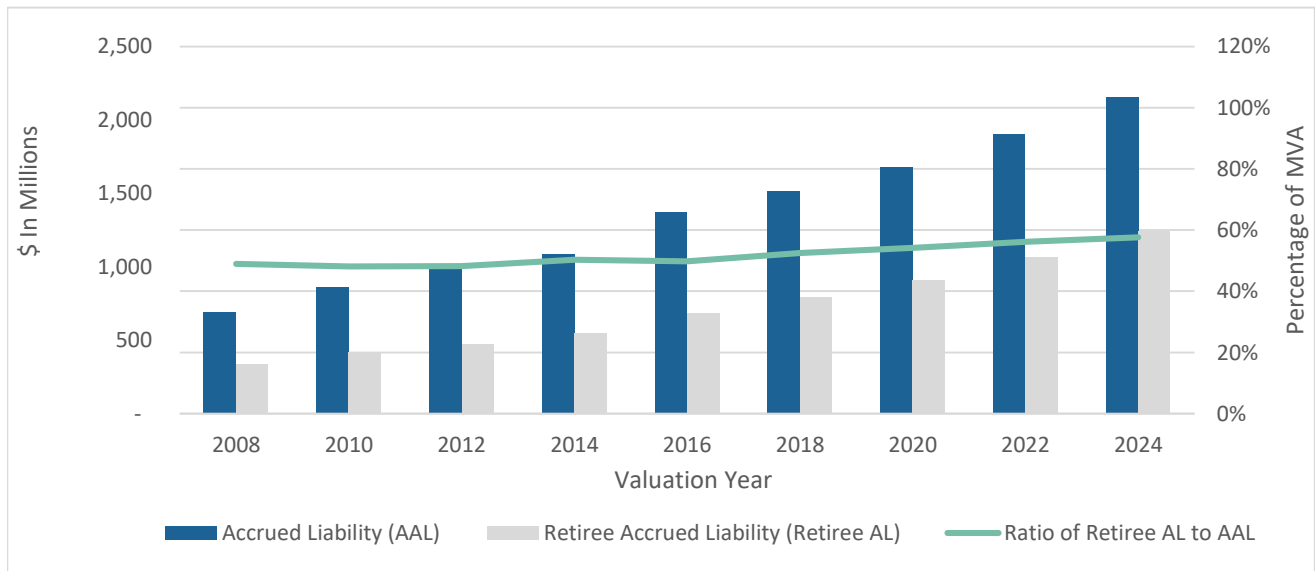
- ◆ **Scenario Test** - a process for assessing the impact of one possible event, or several simultaneous or sequentially occurring possible events, on a plan's financial condition.
- ◆ **Sensitivity Test** - a process for assessing the impact of a change in an actuarial assumption on an actuarial measurement.
- ◆ **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

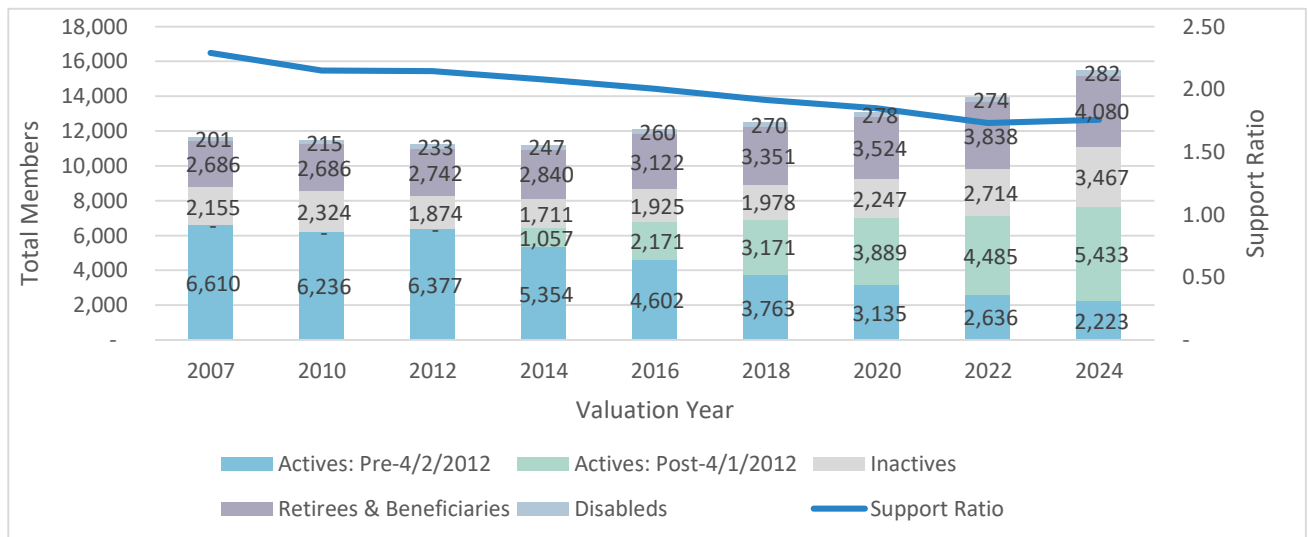
4.3 - Risk Measures

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 Worcester Regional Retirement System and other retirement systems in the United States these ratios have been steadily increasing 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

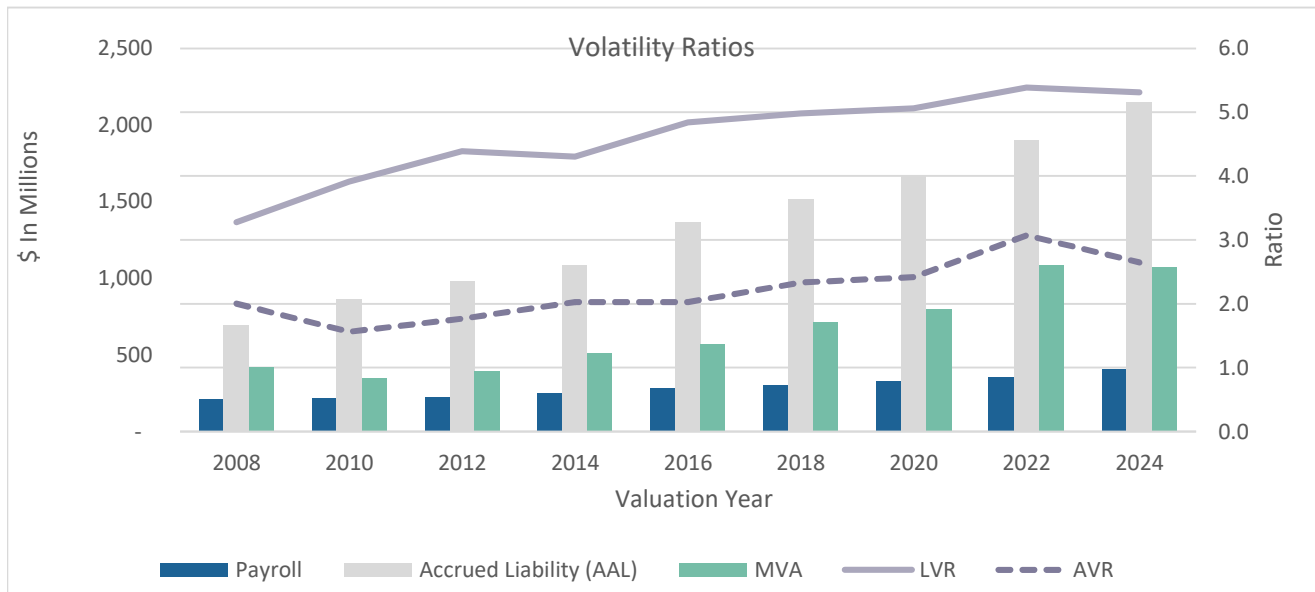
Volatility indices are measures of the relative sensitivity of employer contributions to changes in assets or liabilities. Below we present two such indices - the Asset Volatility Ratio (AVR) and the Liability Volatility Ratio (LVR):

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. Due to the investment return assumption, systems with a higher LVR experience more volatile employer contributions (as a percentage of payroll). 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.

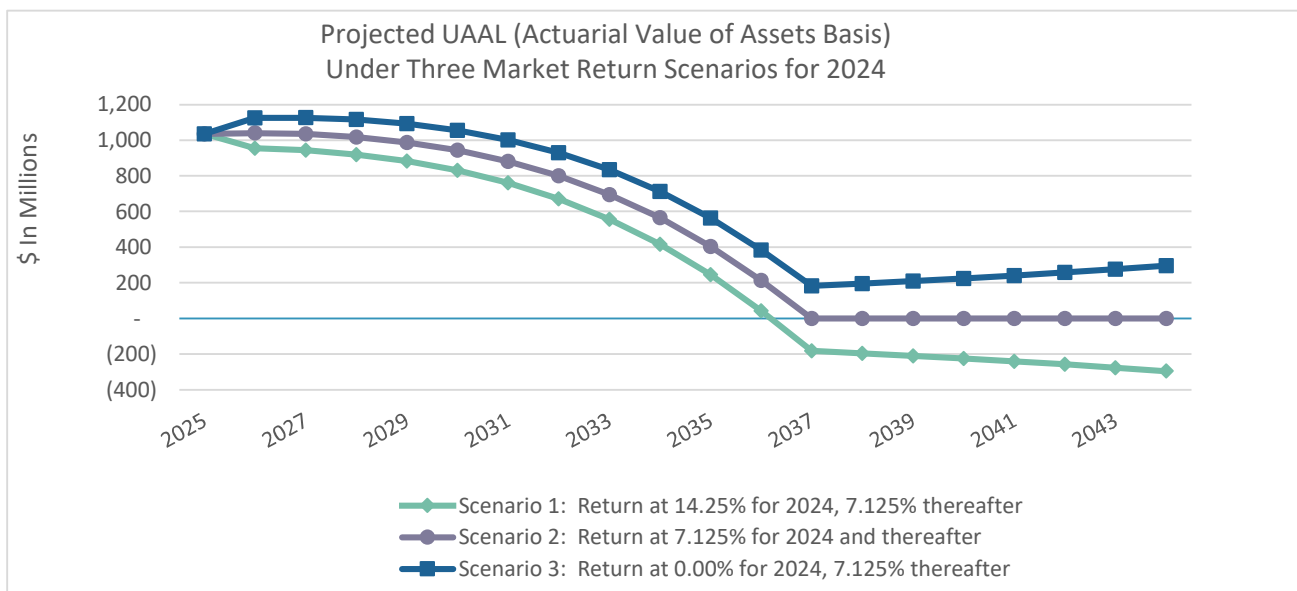


SECTION 4 - DISCLOSURES

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 7.125%, as well as what the Actuarial Accrued Liability and Funded Status would be if it were calculated using an investment return rate 1-percentage point lower (6.125%) or 1-percentage point higher (8.125%) than the assumed investment return rate:

	1% Decrease (6.125%)	Current Investment Return Rate (7.125%)	1% Increase (8.125%)
Actuarial Accrued Liability	\$2,400,460,917	\$2,152,823,970	\$1,943,612,012
% Change	12%		-10%
Actuarial Value of Assets	\$1,116,901,886	\$1,116,901,886	\$1,116,901,886
Unfunded Actuarial Accrued Liability	1,283,559,031	1,035,922,084	826,710,126
% Change	24%	N/A	-20%
Funded Status	46.5%	51.9%	57.5%

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 4.76%:

LDROM	\$2,817,043,399
Actuarial Value of Assets	\$1,116,901,886
Funded Status	39.65%

The LDROM investment return rate is based on the FTSE Pension Liability Index published as of December 31, 2023. 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

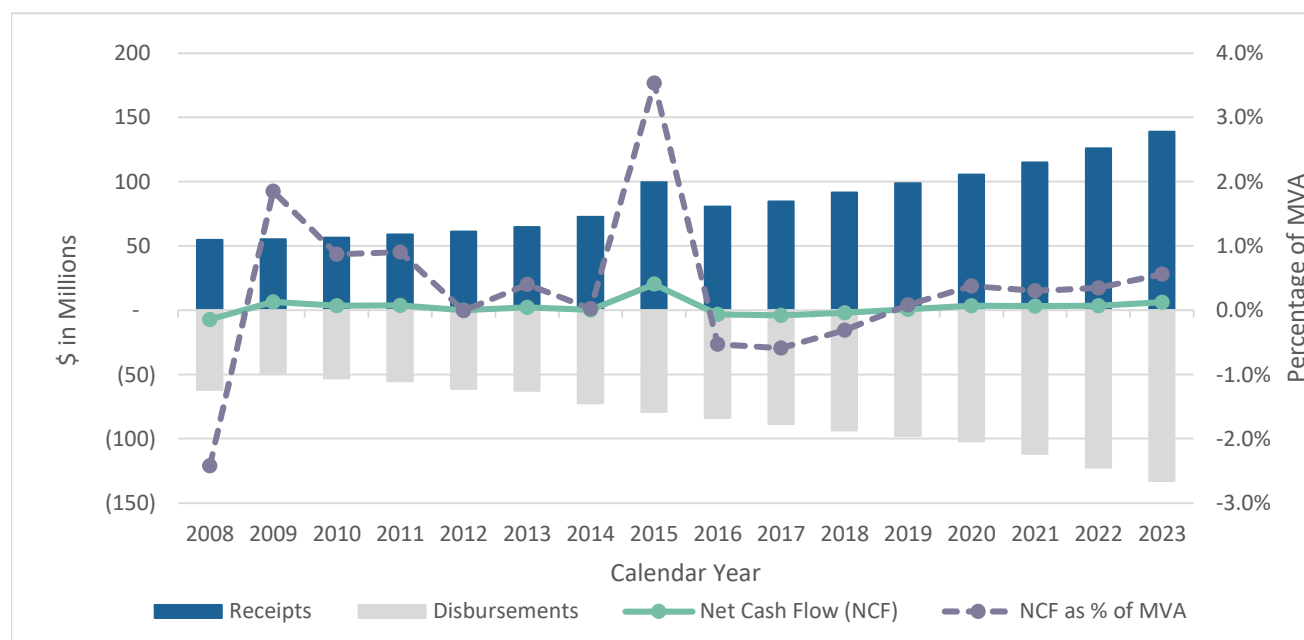
Duration

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 Worcester Regional Retirement System is 11, 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 2008 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, 2023, the NCF was positive \$6.0 million, which represents 0.6% of the Market Value of Assets. The NCF falls within the range of -2.4% to 3.5% of total assets over the 16-year period.



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 2024, 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	<ul style="list-style-type: none"> ♦ 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	<ul style="list-style-type: none"> ♦ 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	<ul style="list-style-type: none"> ♦ 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 \$1,092.60 per year for each child until age 18 (or age 22 if a full-time student).
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.

SECTION 5 - SUMMARY OF PLAN PROVISIONS

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 \$1,092.60 per year for each child until age 18 (or age 22 if a full-time student).
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 \$16,000. 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: <ul style="list-style-type: none">◆ 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, 2024
Investment Return Rate	<p>7.125% per year. Previously, 7.25% per year.</p> <p>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.</p>
Low-Default Risk Obligation Measure (LDRM) Investment Return Rate	<p>4.76% per year.</p> <p>The LDRM investment return rate is based on the FTSE Pension Liability Index published as of December 31, 2023. 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.</p>
Annuity Savings Fund Interest Rate	2.00% per year
Amortization Method	<p><i>Unfunded Actuarial Accrued Liability (UAL):</i></p> <p>Increasing dollar amount at 4% to reduce the Unfunded Actuarial Accrued Liability to zero on or before June 30, 2036.</p> <p><i>Early Retirement Incentive Program (ERI) for 2002:</i></p> <p>Increasing dollar amount at 4.5% to reduce the Unfunded Actuarial Accrued Liability attributable to the 2002 ERI to zero on or before June 30, 2028.</p> <p><i>Early Retirement Incentive Programs (ERI) for 2003:</i></p> <p>Increasing dollar amount at 4.5% to reduce the Unfunded Actuarial Accrued Liability attributable to the 2003 ERI to zero on or before June 30, 2028.</p>
Output Smoothing Method	Total appropriation increases are limited to 9.95% 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 \$480 per year.

Inflation

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

Payroll Growth

3.25% per year, based on historical data, current and recent market expectations and professional judgment.

Mortality Rates

RP-2014 Blue Collar Mortality Table with full generational mortality improvement using Scale MP-2021. For disabled members, RP-2014 Blue Collar Mortality Table set forward one year with full generational mortality improvement using Scale MP-2021.

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-2021 in 2023. 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.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

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

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) 80% of gains and losses of the prior year,
- b) 60% of gains and losses of the second prior year,
- c) 40% of gains and losses of the third prior year, and
- d) 20% of gains and losses of the fourth prior year.

Investment gains and losses are determined by the excess or deficiency of the expected return over the actual return on the market value. The actuarial valuation of assets is further constrained to be not less than 80% or more than 120% of market value.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

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 Worcester Regional 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 \$4,500,000 for FY2026 and \$3,200,000 per year thereafter.
Administrative Expenses	<p>For Fiscal Year 2026, the administrative expenses were assumed to be \$1,600,000 and are anticipated to increase 3.25% per year. Previously, \$1,400,000.</p> <p>The administrative expense assumption is based on information relating to the System's administrative expenses provided by the Retirement Board.</p>
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, 2024

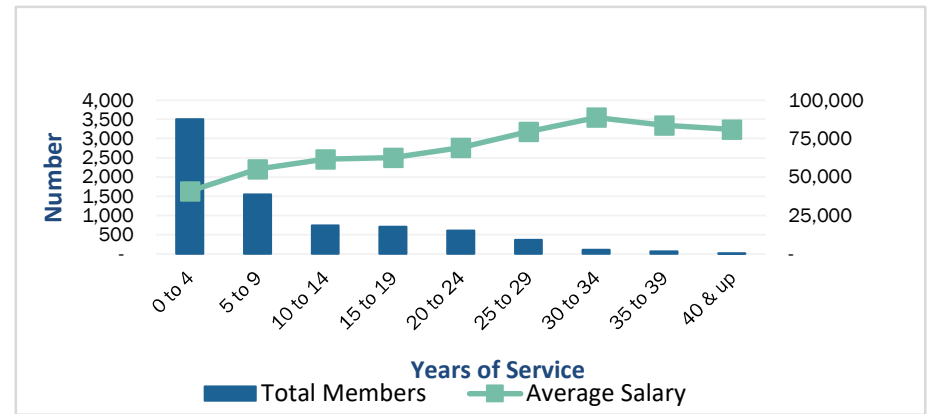
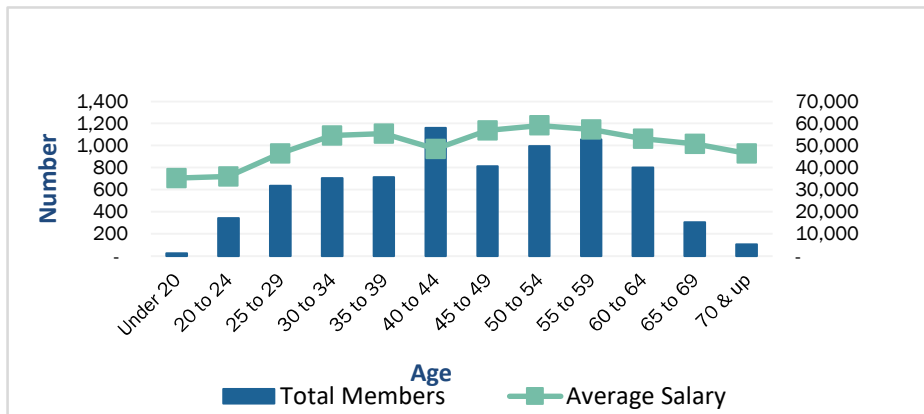
Census data as of December 31, 2023 was provided to us by the Retirement Board. We performed edits on the data to ensure that it is reasonable and complete and made certain assumptions regarding any missing or invalid data so that results are not materially affected. Presented on the following pages 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, 2024	January 1, 2022	% Change
Census Data			
Active Members	7,656	7,121	7.5%
Average Age	46.2	47.0	(1.7%)
Average Service	9.0	9.6	(6.3%)
Valuation Salary	\$405,263,249	\$352,756,822	14.9%
Average Salary	\$52,934	\$49,538	6.9%
Retired Members and Beneficiaries	4,080	3,838	6.3%
Average Age	73.0	73.0	0.0%
Total Annual Retirement Allowance	\$104,574,050	\$91,096,821	14.8%
Average Annual Retirement Allowance	\$25,631	\$23,735	8.0%
State Reimbursed COLAs	\$142,784	\$196,576	(27.4%)
Total System-Funded Retirement Allowance	\$104,431,266	\$90,900,245	14.9%
Disabled Members	282	274	2.9%
Average Age	65.2	64.2	1.6%
Total Annual Retirement Allowance	\$10,754,734	\$10,059,176	6.9%
Average Annual Retirement Allowance	\$38,137	\$36,712	3.9%
State Reimbursed COLAs	\$44,446	\$47,740	(6.9%)
Total System-Funded Retirement Allowance	\$10,710,288	\$10,011,436	7.0%
Inactive Members	3,467	2,714	27.7%
Annuity Savings Fund	\$32,749,680	\$26,264,607	24.7%

SECTION 7 - PLAN MEMBER INFORMATION

Exhibit 7.2 - Active Members by Age and Years of Service as of January 1, 2024

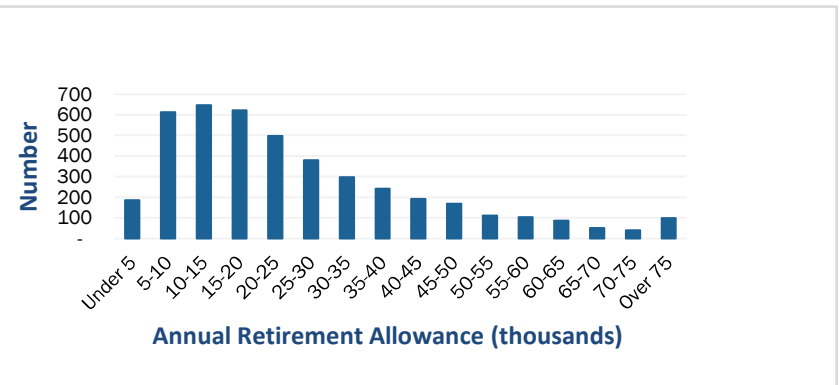
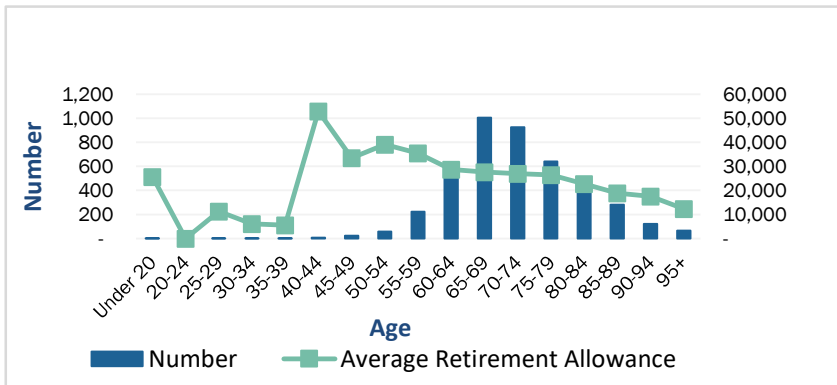
Attained Age	Years of Service									Total	Total Salary	Average Salary
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up			
Under 20	25	-	-	-	-	-	-	-	-	25	883,277	35,331
20 to 24	339	5	-	-	-	-	-	-	-	344	12,388,198	36,012
25 to 29	537	98	2	-	-	-	-	-	-	637	29,574,586	46,428
30 to 34	396	255	52	2	-	-	-	-	-	705	38,491,330	54,598
35 to 39	389	170	103	49	2	-	-	-	-	713	39,454,351	55,336
40 to 44	764	181	65	100	48	2	-	-	-	1,160	56,170,191	48,423
45 to 49	327	206	84	72	78	42	2	-	-	811	46,151,158	56,906
50 to 54	284	240	130	106	120	94	18	3	-	995	58,807,052	59,103
55 to 59	239	201	142	173	123	98	47	32	-	1,055	60,469,276	57,317
60 to 64	133	132	108	144	150	82	25	20	6	800	42,457,245	53,072
65 to 69	48	48	38	49	67	35	11	5	4	305	15,489,833	50,786
70 & up	21	14	13	13	16	12	7	7	3	106	4,926,751	46,479
Total	3,502	1,550	737	708	604	365	110	67	13	7,656	405,263,249	52,934
Average Salary	40,818	55,164	61,576	62,549	69,136	79,390	88,757	83,533	80,870			
Average Age:							46.2	Average Service:		9.0		



SECTION 7 - PLAN MEMBER INFORMATION

Exhibit 7.3 - Annual Retirement Allowances as of January 1, 2024

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	0	0	0	0	0	0	1	25,620	25,620
20-24	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	1	11,274	11,274
30-34	0	0	0	0	0	0	1	6,103	6,103
35-39	0	0	0	0	0	0	2	11,164	5,582
40-44	0	0	0	6	342,165	57,028	1	28,444	28,444
45-49	3	93,275	31,092	15	624,268	41,618	6	84,916	14,153
50-54	18	714,856	39,714	27	1,258,766	46,621	13	292,430	22,495
55-59	159	5,920,120	37,233	42	1,587,187	37,790	21	359,013	17,096
60-64	463	13,179,582	28,466	48	1,825,566	38,033	32	579,411	18,107
65-69	907	24,872,917	27,423	51	1,974,871	38,723	47	871,251	18,537
70-74	818	22,059,087	26,967	46	1,617,868	35,171	61	1,246,185	20,429
75-79	568	15,188,230	26,740	24	863,035	35,960	48	863,389	17,987
80-84	403	9,278,537	23,024	16	479,747	29,984	46	825,446	17,944
85-89	230	4,522,028	19,661	4	112,760	28,190	46	650,891	14,150
90-94	101	1,866,412	18,479	2	46,285	23,143	19	227,971	11,998
95+	49	660,999	13,490	1	22,216	22,216	16	134,499	8,406
Total	3,719	98,356,043	26,447	282	10,754,734	38,137	361	6,218,007	17,224
Average Age	72.9			65.2			74.4		



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.

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

SECTION 8 - GLOSSARY OF TERMS

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.

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 - MEMBER UNIT FY2026 APPROPRIATION

Unit	Unit Name	Normal Cost	UAL	2002 ERI	2003 ERI	2010 ERI	FY2026 Appropriation	FY2025 Appropriation	Increase over FY 2025	Payment on 7/1/2025
010	Ashburnham	442,098	1,050,238	41,038	-	-	1,533,374	1,370,828	11.86%	1,507,439
020	Ashburnham-Westminster Regional	367,630	768,641	-	-	-	1,136,271	1,092,266	4.03%	1,117,052
025	Athol	643,282	1,978,295	-	-	-	2,621,577	2,408,138	8.86%	2,577,236
026	Athol Housing Authority	21,561	51,534	-	-	-	73,095	68,021	7.46%	71,859
027	Athol-Royalston Regional School District	278,094	707,790	-	-	-	985,884	927,272	6.32%	969,209
030	Auburn	1,666,100	3,932,149	226,048	35,072	-	5,859,369	5,244,531	11.72%	5,760,265
040	Auburn Housing Authority	25,268	69,716	-	-	-	94,984	94,842	0.15%	93,377
050	Auburn Water District	16,727	153,434	6,727	-	-	176,888	158,767	11.41%	173,896
060	Barre	255,914	438,861	7,402	2,961	-	705,138	594,647	18.58%	693,211
070	Barre Housing Authority	2,167	33,419	-	-	-	35,586	34,332	3.65%	34,984
080	Berlin	244,124	589,252	-	-	-	833,376	749,197	11.24%	819,280
090	Berlin-Boylston Regional	240,386	282,861	-	-	-	523,247	445,585	17.43%	514,397
100	Blackstone	442,429	903,502	-	-	-	1,345,931	1,339,574	0.47%	1,323,166
105	Blackstone Housing Authority	7,057	19,727	-	-	-	26,784	19,236	39.24%	26,331
110	Blackstone-Millville Regional	212,671	583,929	-	-	-	796,600	804,713	-1.01%	783,126
120	Bolton	282,302	707,326	22,203	-	-	1,011,831	895,259	13.02%	994,717
130	Boylston	419,288	691,640	16,820	-	-	1,127,748	983,080	14.72%	1,108,673
135	Boylston Water District	5,366	17,992	-	-	-	23,358	21,618	8.05%	22,963
140	Brookfield	213,683	349,716	11,213	-	-	574,612	485,026	18.47%	564,893
150	Charlton	797,240	1,783,862	57,411	-	-	2,638,513	2,443,976	7.96%	2,593,886
160	Cherry Valley-Rochdale Water	5,084	80,087	-	-	-	85,171	82,841	2.81%	83,730
170	Douglas	621,322	1,184,195	16,144	15,485	-	1,837,146	1,750,869	4.93%	1,806,073
180	Dudley	465,764	1,089,285	171,555	10,249	-	1,736,853	1,495,163	16.16%	1,707,476
190	Dudley Housing Authority	3,749	24,225	-	-	-	27,974	26,950	3.80%	27,501
200	Dudley-Charlton Regional	473,967	1,204,626	52,698	23,002	-	1,754,293	1,654,379	6.04%	1,724,621
210	East Brookfield	162,696	213,133	-	-	-	375,829	283,732	32.46%	369,472
220	Grafton	1,082,002	2,395,786	51,801	22,318	-	3,551,907	3,171,345	12.00%	3,491,831
230	Grafton Housing Authority	1,621	67,256	-	-	-	68,877	71,278	-3.37%	67,712
240	Hardwick	124,496	224,958	17,046	-	-	366,500	303,256	20.85%	360,301
250	Harvard	572,335	1,217,342	-	-	-	1,789,677	1,549,464	15.50%	1,759,407
260	Hillcrest Water District	-	-	-	-	-	-	14,568	-100.00%	-

SECTION 9 - MEMBER UNIT FY2026 APPROPRIATION

Unit	Unit Name	Normal Cost	UAL	2002 ERI	2003 ERI	2010 ERI	FY2026 Appropriation	FY2025 Appropriation	Increase over FY 2025	Payment on 7/1/2025
270	Holden	939,491	2,868,362	84,993	-	-	3,892,846	3,628,401	7.29%	3,827,003
280	Holden Housing Authority	4,637	27,712	-	-	-	32,349	28,297	14.32%	31,802
290	Hopedale	603,341	1,158,062	-	-	-	1,761,403	1,555,543	13.23%	1,731,611
300	Hopedale Housing Authority	-	2,331	-	-	-	2,331	2,461	-5.28%	2,292
310	Hubbardston	184,288	285,659	13,455	5,693	-	489,095	448,601	9.03%	480,823
320	Lancaster	274,975	770,637	-	-	-	1,045,612	987,769	5.86%	1,027,927
325	Lancaster Housing Authority	7,364	14,060	-	-	-	21,424	20,084	6.67%	21,062
327	Lancaster Sewer	3,564	1,091	-	-	-	4,655	3,709	25.51%	4,576
330	Leicester	607,652	1,670,047	67,499	2,734	-	2,347,932	2,042,363	14.96%	2,308,219
340	Leicester Housing Authority	24,997	58,064	-	-	-	83,061	78,896	5.28%	81,656
350	Leicester Water District	20,022	90,502	-	-	-	110,524	72,572	52.30%	108,655
360	Lunenburg	738,808	1,694,928	-	-	-	2,433,736	2,165,030	12.41%	2,392,572
370	Lunenburg Housing Authority	1,834	7,937	-	-	-	9,771	6,930	41.00%	9,606
380	Lunenburg Water District	7,297	90,366	-	-	-	97,663	97,901	-0.24%	96,011
390	Mendon	337,840	801,912	10,764	28,921	-	1,179,437	1,147,688	2.77%	1,159,488
400	Mendon-Upton Regional	356,579	914,373	8,971	10,017	-	1,289,940	1,247,137	3.43%	1,268,122
410	Millbury	773,220	2,258,470	183,215	-	-	3,214,905	2,873,092	11.90%	3,160,529
420	Millbury Housing Authority	18,937	104,899	-	8,201	-	132,037	134,821	-2.06%	129,804
430	Millville	140,489	122,430	-	-	-	262,919	232,344	13.16%	258,472
440	Narragansett Regional	249,530	557,296	31,620	-	-	838,446	740,453	13.23%	824,265
450	Nashoba Regional	562,002	1,203,936	-	-	-	1,765,938	1,655,663	6.66%	1,736,069
455	Nashoba Valley Dispatch	16,296	60,656	-	-	-	76,952	87,753	-12.31%	75,650
460	New Braintree	19,472	59,561	-	-	-	79,033	77,434	2.06%	77,696
470	Northboro	924,186	2,598,954	-	-	-	3,523,140	3,295,622	6.90%	3,463,550
480	Northboro Housing Authority	30,147	112,531	-	-	-	142,678	111,714	27.72%	140,265
490	Northboro-Southboro Regional	225,381	539,775	-	-	-	765,156	740,227	3.37%	752,214
500	North Brookfield	237,487	628,867	-	18,446	-	884,800	893,662	-0.99%	869,835
510	North Brookfield Housing Authority	5,626	24,954	-	-	-	30,580	30,895	-1.02%	30,063
530	Oakham	54,878	69,672	-	-	-	124,550	100,464	23.97%	122,443
540	Oxford	1,028,480	2,391,217	175,142	19,812	-	3,614,651	3,298,495	9.58%	3,553,513
550	Oxford Housing Authority	14,046	100,682	-	-	-	114,728	113,068	1.47%	112,788

SECTION 9 - MEMBER UNIT FY2026 APPROPRIATION

Unit	Unit Name	Normal Cost	UAL	2002 ERI	2003 ERI	2010 ERI	FY2026 Appropriation	FY2025 Appropriation	Increase over FY 2025	Payment on 7/1/2025
555	Oxford-Rochdale Sewer District	-	7,047	-	-	-	7,047	22,685	-68.94%	6,928
560	Paxton	504,897	824,374	-	-	-	1,329,271	1,205,972	10.22%	1,306,788
570	Petersham	57,459	208,654	-	2,961	-	269,074	236,849	13.61%	264,523
580	Phillipston	70,660	145,020	-	-	-	215,680	184,042	17.19%	212,032
590	Princeton	228,298	527,324	10,764	-	-	766,386	676,696	13.25%	753,423
600	Quabbin Regional	428,705	1,240,976	68,172	10,017	-	1,747,870	1,621,677	7.78%	1,718,307
610	Quaboag Regional	196,511	414,009	39,467	-	-	649,987	595,460	9.16%	638,993
620	Royalston	640	71,187	-	-	-	71,827	80,976	-11.30%	70,612
630	Rutland	531,101	775,150	8,076	-	-	1,314,327	1,169,090	12.42%	1,292,097
640	Southboro	1,021,026	2,354,303	-	-	-	3,375,329	3,169,304	6.50%	3,318,239
650	Southboro Housing	6,087	9,382	14,127	-	-	29,596	34,186	-13.43%	29,095
660	Spencer	399,757	1,126,526	-	-	-	1,526,283	1,498,138	1.88%	1,500,468
670	Spencer-East Brookfield Regional	271,189	635,667	30,498	5,235	-	942,589	874,395	7.80%	926,646
680	Spencer Housing Authority	12,596	73,133	-	-	-	85,729	85,216	0.60%	84,279
690	Sterling	553,952	1,305,823	-	17,989	-	1,877,764	1,611,016	16.56%	1,846,004
700	Sterling Housing Authority	6,041	10,665	-	-	-	16,706	14,173	17.87%	16,423
710	Sturbridge	964,165	1,590,953	-	81,984	-	2,637,102	2,261,082	16.63%	2,592,498
720	Sutton	612,058	1,636,623	-	-	-	2,248,681	2,087,327	7.73%	2,210,647
730	Tantasqua Regional	390,523	829,313	-	-	-	1,219,836	1,124,908	8.44%	1,199,204
740	Templeton	427,550	1,024,576	27,584	-	-	1,479,710	1,263,749	17.09%	1,454,682
750	Templeton Housing Authority	4,915	12,145	27,356	-	-	44,416	60,756	-26.89%	43,665
760	Upton	448,959	930,826	-	-	-	1,379,785	1,128,897	22.22%	1,356,448
770	Uxbridge	1,117,603	2,367,115	95,083	-	-	3,579,801	3,074,827	16.42%	3,519,253
780	Uxbridge Housing Authority	20,299	72,619	-	-	-	92,918	90,051	3.18%	91,346
790	Wachusett Regional	1,020,447	2,301,629	72,882	-	-	3,394,958	3,058,393	11.00%	3,337,536
800	Warren	257,676	400,492	67,724	-	-	725,892	611,786	18.65%	713,614
810	Warren Water District	10,981	24,568	-	-	-	35,549	31,028	14.57%	34,948
820	Westboro	1,958,697	5,609,733	-	45,546	-	7,613,976	7,005,716	8.68%	7,485,197
825	Westboro Housing Authority	14,443	41,661	6,501	-	-	62,605	57,651	8.59%	61,546
830	West Boylston	638,393	1,470,159	77,146	-	-	2,185,698	1,991,770	9.74%	2,148,729
835	West Boylston Housing Authority	3,717	13,754	-	-	-	17,471	23,400	-25.34%	17,175

SECTION 9 - MEMBER UNIT FY2026 APPROPRIATION

Unit	Unit Name	Normal Cost	UAL	2002 ERI	2003 ERI	2010 ERI	FY2026 Appropriation	FY2025 Appropriation	Increase over FY 2025	Payment on 7/1/2025
840	West Boylston Water District	13,572	107,083	-	-	-	120,655	109,715	9.97%	118,614
850	West Brookfield	184,583	313,170	-	-	-	497,753	441,453	12.75%	489,334
860	Westminster	422,567	1,216,740	-	6,377	-	1,645,684	1,489,905	10.46%	1,617,849
870	Winchendon	627,999	1,785,177	77,368	-	-	2,490,544	2,347,447	6.10%	2,448,419
880	Winchendon Housing Authority	36,232	148,224	6,054	-	-	190,510	183,429	3.86%	187,288
Total		31,973,587	75,730,520	1,902,567	373,020	-	109,979,694	100,027,007	9.95%	108,119,514