MASSACHUSETTS TEACHERS' (MTRS)
RETIREMENT SYSTEM

ACTUARIAL VALUATION REPORT

JANUARY 1, 2026



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1. INTRODUCTION & CERTIFICATION

This report presents the results of the actuarial valuation of the Massachusetts Teachers' Retirement System (MTRS). The valuation was performed as of January 1, 2026, pursuant to Chapter 32 of the General Laws of the Commonwealth of Massachusetts and based on the plan provisions at that time. The actuarial assumptions used to calculate the accrued liability and the normal cost primarily reflect our most recent Experience Study Analysis report which we issued in 2014 and our most recent analysis of retiree mortality during 2020. The actuarial assumptions used in this valuation are the same as those used in the January 1, 2025 actuarial valuation.

This valuation was based on member data as of December 31, 2025, which was supplied by the Retirement Board. We performed a number of tests on the data and made specific assumptions and determinations for a number of data items. We provide more detail on these issues in Section 6. Asset information as of December 31, 2025 was provided by the Pension Reserves Investment Management Board. Both the membership data and financial information were reviewed for reasonableness but not audited by us.

This report was prepared by PERAC for the exclusive use of the Massachusetts Teachers' Retirement Board, its staff and its auditors. The report was performed to determine the funded status of the System and the contribution requirements to ensure that System assets along with the contributions are sufficient to provide the prescribed benefits. Use of this report by other parties may not be appropriate and may result in mistaken conclusions because of the failure to understand applicable assumptions, methods or the inapplicability of the report for purposes other than those intended. PERAC should be asked to review any statement to be made based on the results presented in this report. PERAC will accept no responsibility for any such statement made without its prior review.

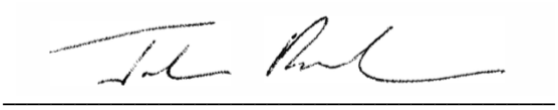
Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of natural operation of the methodology used for these measurements such as additional contribution requirements based on the plan's funded status; and changes in plan provisions or applicable law. As part of this valuation, we have not performed an analysis of the potential range of future measurements.

1. INTRODUCTION & CERTIFICATION

We, the undersigned actuaries, meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report. In our opinion, the actuarial assumptions used in this report are reasonable, are related to plan experience and expectations, and represent our best estimate of anticipated experience. We believe this report represents an accurate appraisal of the actuarial status of the MTRS performed in accordance with generally accepted actuarial principles and practices relating to pension plans.

Respectfully submitted,

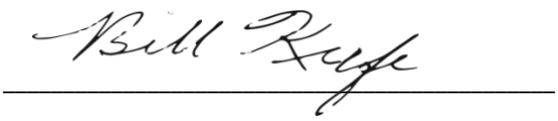
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2. EXECUTIVE SUMMARY

A | PRINCIPAL VALUATION RESULTS

The provisions of Chapter 32, Section 22C mandate the establishment of a funding schedule for the Commonwealth of Massachusetts' pension obligation. The MTRS reflects one component of the Commonwealth schedule. The other components are the State Retirement System, liabilities for Boston teachers, and State reimbursements to local systems to reflect COLAs granted from 1982 through 1996 (determined on an actuarial basis). Beginning in FY18, Chapter 5 of the Acts of 2017 required that several additional items be included in the development of the Commonwealth funding schedule but shown separately. These items include the administrative expenses of the Public Employee Retirement Administration Commission (PERAC), the employer contribution to the Optional Retirement Plan (ORP) under Section 40 of Chapter 15A, and a modification to the COLA reimbursement to local systems described above to reflect actual reimbursements. Beginning in FY24, Chapter 126 of the Acts of 2022 required the inclusion of the administrative expenses for the Department of Higher Education's deferred compensation plan (403(b) plan). The schedule, as mandated by law, calls for payment of the Normal Cost plus an amortization payment on the Unfunded Actuarial Liability (UAL).

The Commonwealth's current funding schedule was filed in January 2026 and was based on the results of the January 1, 2025 Commonwealth Actuarial Valuation. The FY27 appropriation under the schedule is $5.131 billion. The total appropriation under the schedule increases 4.0% each year until FY38 with the final amortization payment in FY39. The amortization of the 2015 Early Retirement Incentive (ERI) would be completed in FY27. As part of Chapter 77 of the Acts of 2023, there was a transfer of $100 million to the Commonwealth Pension Liability Fund. It was our understanding that this amount was to retire the liability associated with the 2015 ERI. As a result of the additional payment, the current schedule does not include a separate amortization for the 2015 ERI.

The MTRS's share of the FY27 Commonwealth appropriation is $2.884 billion.

Principal Results of January 1, 2026 Actuarial Valuation (in thousands)

Description	Amount (in thousands)
Total Normal Cost	$1,346,475
Expected Employee Contributions	$978,263
Net Employer Normal Cost	$368,212
Total Expenses and Transfers	$64,280
Net Normal Cost Plus Expenses and Transfers	$432,492
Total Actuarial Accrued Liability	$69,053,100
Actuarial Value of Assets	$45,050,426
Unfunded Actuarial Liability	$24,002,674
Funded Ratio	65.2%

B | COMPARISON WITH PRIOR VALUATION AND EXPERIENCE ANALYSIS

*Comparison of Current Valuation and January 1, 2025 Valuation**

Item	1/1/26	1/1/25	Increase/ (Decrease)	% Increase/ (Decrease)
Total Normal Cost	$1,346,475	$1,299,770	$46,705	3.6%
Expected Employee Contributions	$978,263	$933,100	$45,163	4.8%
Net Normal Cost	$368,212	$366,670	$1,542	0.4%
Expenses	$58,080	$51,850	$6,230	12.0%
3(8)(c) Amounts Transferred to Other Systems	$6,200	$6,000	$200	3.3%
Total Expenses and Transfers	$64,280	$57,850	$6,430	11.1%
Net Normal Cost Plus Expenses and Transfers	$432,492	$424,520	$7,972	1.9%
Total Actuarial Liability	$69,053,100	$66,149,090	$2,904,010	4.4%
Assets	$45,050,426	$41,896,825	$3,153,601	7.5%
Unfunded Actuarial Liability	$24,002,674	$24,252,265	($249,591)	(1.0%)
Funded Ratio	65.2%	63.3%	1.9%	

*Dollars in thousands.

Demographics – Current and January 1, 2025 Figures

Demographic	1/1/26	1/1/25	Increase/ (Decrease)	% Increase/ (Decrease)
Number of Active Employees	100,666	101,122	(456)	(0.5%)
Total Salary	$9,462,734,459	$9,037,950,477	$424,783,982	4.7%
Average Salary	$94,001	$89,377	$4,624	5.2%
Average Age	44.3	44.1	0.2	0.5%
Average Service	13.9	13.6	0.3	2.2%
Number of Retirees/Survivors	72,002	71,006	996	1.4%
Total Benefits	$3,648,764,613	$3,546,152,264	$102,612,349	2.9%
Average Benefits	$50,676	$49,942	$734	1.5%
Average Age	75.3	74.9	0.4	0.5%

Total Expenses and Transfers In our 2017 valuation, we began showing the expense and transfer items separately from the normal cost. Expenses (including PERAC's administrative expenses) reflect the expenses from the most recent Annual Statement and include a portion of investment-related expenses. In addition, $6.2 million is included for amounts transferred to other systems under Section 3(8)(c) for members with MTRS service who retired from another system. Section 3(8)(c) receipts from other systems are transferred to the State's general account. By including the Section 3(8)(c) disbursements with normal cost, the net Section 3(8)(c) cash flow is zero for funding purposes.

Gain/Loss: The development of the actuarial gain/(loss) is shown on page 13. During 2025, there was an overall actuarial loss of $103 million. There was a non-investment-related loss (loss on actuarial accrued liability) of $609 million. This loss is quite small and reflects that the assumptions are reasonable. There was a gain of $505 million on the actuarial value of assets (AVA). The return on assets for 2025 was approximately 8.2% on an AVA basis, compared to 13.2% on a market value basis.

There were approximately 95,000 active members as of January 1, 2025 who remained in active status as of January 1, 2026. Pay for these members increased approximately 6.8% over the one year, which is more than assumed and generated a loss. Gains and losses from all other sources, including data corrections, resulted in a small overall loss.

We value system assets using a smoothing technique which spreads gains and losses over short periods (5 years) and employs a "corridor" so that the actuarial value is within 10% of the market value of assets (MVA). The calculated AVA as of January 1, 2026 is 96.0% of the market value.

The UAL decreased from $ 24.25 billion as of January 1, 2025 to $24.00 billion as of January 1, 2026.

Actuarial Assumptions

Investment Return

The January 1, 2026 valuation reflects a 7.0% investment return assumption (the same as the January 1, 2025 assumption). The investment return assumption decreased several times from 2012-2021. The Commission has maintained this assumption since 2021.

Early this year, NEPC, The Pension Reserves Investment Trust's investment consultant, provided figures for 10-year (short-term) and 30-year (long-term) expected return projections using a building block approach, the target allocation and expected long-term returns by asset class. The expected long-term (30-year) annual return in this study is 7.8%. This figure is 20 basis points (bps) less than the corresponding figure from the 2025 study.

The 7.8% average expected long-term return does not mean that the expected return each year will be 7.8%. In fact, over the shorter term (10 years), the average expected return is 6.3% (60 bps lower than last year). Greater expected returns in later years determined NEPC's long-term projection. The NEPC projected returns are one measure we review to determine the Commonwealth's recommended investment return assumption.

Comparison of Recent Expected Annual Return Projections and Historical PRIT Returns

Return Horizon	2020	2021	2022	2023	2024	2025	2026
10-year expected return*	6.2%	5.8%	5.7%	7.0%	6.6%	6.9%	6.3%
30-year expected return	7.3%	6.8%	6.9%	7.7%	7.7%	8.0%	7.8%

Actual Returns as of December 31, 2025

Time Periods	Actual Returns
2025	13.1%
5 years (2021-2025)	8.2%
10 years (2016-2025)	9.3%
20 years (2006-2025)	7.6%
41 years (1985-2025)	9.5%

Note: Historically, PRIT reported its returns gross of expenses. Beginning with the 2024 return, PRIM reported the annual return net of expenses. PERAC calculated the gross return to be 13.1% for 2025 compared to the PRIM reported return of 12.6%.

Besides the NEPC analysis, we review the capital market assumptions (CMAs) of other investment consultants for comparison. We estimate the short-term and long-term expected returns using these capital market assumptions and PRIT's asset allocation. The expected returns using these CMAs are generally consistent with that of NEPC.

In addition, we also review the Horizon Actuarial Services Survey of Capital Market Assumptions. The latest survey compares the assumptions of 41 different investment consultants including NEPC. The Horizon study used in our analysis was published in August 2025. Since it reflects 2025 capital market assumptions, there is a one-year lag between the results of the most recent Horizon survey and the current NEPC study. The Horizon long-term (20 years) expected return based on its hypothetical portfolio is 7.0% (7.0% in the prior study) and is consistent with the level expectation we saw with NEPC a year ago. We also estimated the short-term and long-term results using the Horizon average expected returns by asset class and PRIT's asset allocation. This result is consistent with NEPC.

The National Association of State Retirement Administrators (NASRA) periodically publishes a survey of investment return assumptions used by over 100 large public plans. The most recent survey available at the time of our analysis was published in June 2025. In this survey, the average investment return assumption was 6.91%, a slight increase from the 6.90% figure published in July 2024. Although the NASRA survey does not consider different asset allocations between the plans, it demonstrates the continuing reduction, and again, perhaps a bottoming of this assumption.

We will continue to monitor this assumption in each future valuation.

Mortality

Based on our analysis in early 2015 of retiree mortality during 2012, 2013, and 2014, we adopted a fully generational assumption in the 2015 valuation. Based on our 2017 analysis of retiree mortality during 2015 and 2016, we further adjusted the mortality assumption by adopting the RP-2014 white collar table as of January 1, 2017. We performed additional analysis in 2020 and adopted the most recently released Society of Actuaries public plan mortality tables (SOA Pub-2010 Teachers (headcount weighted) tables) and updated the mortality improvement scale to the more current MP-2020. In the 2024 valuation, we maintained the base mortality table but we updated the mortality improvement scale to MP-2021. We maintained the base table and the mortality improvement scale in this valuation.

Data Assumptions

We have detailed a number of the assumptions we made for missing or questionable data for active members of the MTRS in Section 6.

Chapter 176 Provisions

Chapter 176 of the Acts of 2011, *An Act Providing for Pension Reform and Benefit Modernization,* made many changes to the Chapter 32 pension law. There are several changes that will have the most impact on decreasing plan liabilities over the longer term. These include an increase in the normal retirement age by two years (for example, from age 65 to age 67 for Group 1 members), an increase in the age (early retirement) reduction factor for ages below the maximum age (from a 4.0% to a 6.0% annual reduction), and an increase in the period for determining a member's average annual compensation (from 3 years to 5 years). These changes are effective only for members hired after April 1, 2012.

As of January 1, 2026, there were approximately 54,900 members hired after April 1, 2012. The normal cost is approximately $136 million lower and the actuarial liability is approximately $1.49 billion lower for these members under the new provisions compared to the figures under the prior provisions.

COVID-19 Pandemic

The assumptions in this report do not reflect any potential impacts of the COVID-19 pandemic on the System. In the short-term, the pandemic likely had a material effect on the mortality experience, and to a lesser extent, the retirement and withdrawal experience in ways not anticipated by the assumptions on which the projections are based.

C | FUNDING PROGRESS

The UAL and funded ratio are measures of the plan's funded status. These measures reflect the plan's position as of January 1, 2026. We believe these measures alone are not appropriate for assessing the sufficiency of assets to cover the estimated cost of settling the MTRS's benefit obligations or assessing the need for or the amount of future contributions. However, we believe these measures, in conjunction with maintaining the appropriations required under the Commonwealth funding schedule, are appropriate for assessing the amount of future contributions.

The nature of actuarial funding is that assets gradually catch up to the actuarial liability. When pension funding was adopted in 1987, the initial amortization period was established as 40 years. Based on the amortization basis of the schedules adopted, the UAL was expected to increase for a period of time. However, due to actual investment returns significantly exceeding the expected return in the 1990s, the UAL actually decreased until January 1, 2000.

It is important to note that plan assets have grown faster than plan liabilities. As of January 1, 1990, the actuarial liability was $9.7 billion and assets were $3.8 billion. As of January 1, 2026, the actuarial liability is $69.1 billion and the actuarial value of assets is $45.1 billion. The actuarial liability has grown 7.1 times over this period ($69.1B / $9.7B). But assets have grown 11.9 times over this same period ($45.1B / $3.8B). For this reason, we believe the funded ratio represents a better measure of the Commonwealth's funding progress.

3. SUMMARY OF VALUATION RESULTS

Summary of Valuation Results

Description	Valuation Results*
A: Number of Members on Current Valuation Date	
Active Members	100,666
Inactive Members	N/A
Retired Members and Survivors	72,002
Total	172,668
B: Total Regular Compensation of Active Members	$9,462,734
C. Present Value of Future Benefits	
Active Members	$45,817,479
Retirees, Survivors, and Inactive Members	$36,192,851
Total Present Value of Future Benefits	$82,010,330
D. Normal Cost	
Total Normal Cost	$1,346,475
Expected Employee Contributions	$978,263
Net Employer Normal Cost	$368,212
Total Expenses and Transfers	$64,280
Net Normal Cost Plus Expenses and Transfers	$432,492
E. Actuarial Liability	
Active Members	$32,860,249
Total Inactive Members [a]	$1,275,000
Retirees and Survivors	$34,917,851
Total Actuarial Liability	$69,053,100
F. Actuarial Value of Assets	$45,050,426
G. Unfunded Actuarial Liability: E – F	$24,002,674
H. Funded Ratio: F/E	65.2%

*Dollars in thousands

[a] Estimated and includes both vested terminated and non-vested terminated members.

4. PLAN ASSETS

A | SUMMARY OF ASSETS

Summary of Assets: Pension Reserves Investment Trust (MTRS)

Value of Assets	Value*
Market Value of Assets	$46,940,366
Actuarial Value of Assets	$45,050,426

*Dollars in thousands unless otherwise specified

The actuarial value of assets (AVA) is determined so that 20% of the investment gain or loss in a given year is recognized annually for the ensuing five years. Therefore, these investment gains and losses are fully recognized after five years. In addition to this treatment of gains and losses, we use a "corridor" approach so that the AVA can never be too far from the market value of assets. Under our approach for the Commonwealth, the AVA cannot be less than 90% nor greater than 110% of the market value. As of January 1, 2026, the calculated AVA is 96.0% of the MVA.

B | DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

Development of Actuarial Value of Assets (in Thousands)

Description	January 1, 2026
A | Expected Market Value Development	
1. Market Value of Assets as of prior January 1	41,735,717
2. Prior Year Contributions and Receipts *	1,127,976
3. Prior Year Benefit Payments and Expenses*	1,402,769
4. Expected Investment Return Rate	7.0%
5. Expected Investment Return: [(4) x ((1) + (1/2)x(2 – 3)]	2,911,882
6. Expected Market Value of Assets: (1) + (2) – (3) + (5)	44,372,806
B | Prior Year Gain/(Loss)	
1. Market Value of Assets as of January 1	46,940,366
2. Expected Market Value of Assets: (A6)	44,372,806
3. Prior Year Gain/(Loss): (1) – (2)	2,567,560
C | Development of Actuarial Value of Assets	
1. Market Value of Assets as of January 1	46,940,366
2a. Asset Gain/(Loss) in Prior Year	2,567,560
2b. Asset Gain/(Loss) in 2nd Prior Year	1,013,280
2c. Asset Gain/(Loss) in 3rd Prior Year	1,605,793
2d. Asset Gain/(Loss) in 4th Prior Year	(7,071,965)
3. Unrecognized Gain/(Loss) .8 x [2a] + .6 x [2b] + .4 x [2c] +.2 x [2d]	1,889,940
4. Actuarial Value of Assets as of January 1: [1] - [3]	45,050,426
5. Actuarial Value of Assets / Market Value of Assets	96.0%
6. Adjusted Actuarial Value of Assets: (4) but not less than 90% nor greater than 110% of market value	45,050,426

* Reflects actual cash flow of PRIT fund

5. DEVELOPMENT OF THE ACTUARIAL GAIN OR LOSS

A | GAIN/(LOSS) ON ACTUARIAL LIABILITY

Gain/(Loss) on Actuarial Liability (in millions)

Line Item	Value
1. Actuarial Liability 1/1/25	$66,149
2. Total Normal Cost 1/1/25	$1,300
3. Interest on (1) and (2)	$4,721
4. Benefits paid during 2025 [a]	$3,600
5. Interest on (4) assuming mid-year payment	$126
6. Expected Actuarial Liability 1/1/26: (1) + (2) + (3) - (4) - (5)	$68,444
7. Actuarial Liability 1/1/26	$69,053
8. Total Gain/(Loss): (6) - (7)	($609)

B | GAIN/(LOSS) ON PLAN ASSETS

Gain/(Loss) on Plan Assets (in millions)

Line Item	Value
1. Actuarial Value of Assets (AVA) 1/1/25	$41,897
2. Interest on (1)	$2,933
3. Net Receipts 2025 [b]	$1,128
4. Net Disbursements 2025 [b]	$1,403
5. Net Cash Flow 2025: (3) -(4)	($275)
6. Interest on (5) assuming mid-year payment	($10)
7. Expected AVA 1/1/26: (1) + (2) + (5) + (6)	$44,545
8. AVA 1/1/26	$45,050
9. Total Gain/(Loss) on Assets: (8) - (7)	$505

C | TOTAL GAIN/(LOSS)

Total Gain/(Loss) (in millions)

Line Item	Total Gain/(Loss)
1. Actuarial liability Gain/(Loss) (A8)	($609)
2. Asset Gain/(Loss) (B9)	$505
3. Total Gain/(Loss): (1) + (2)	($103)

[a] Estimated

[b] From Annual Statement

6. INFORMATION ON SYSTEM MEMBERSHIP

A | ACTIVE MEMBERS

A critical element of an actuarial valuation is accurate and up-to-date membership information. As part of this valuation, PERAC analyzed the member data provided by the MTRS. We made several assumptions about missing, questionable, or unavailable data.

Until the January 1, 2006 actuarial valuation, we had estimated the total creditable service for each member for the actuarial valuation. The estimate was based on either the employment date (date of hire as a teacher) or the adjusted employment date and was set equal to the greater of the two calculated service amounts. We used this methodology, which we believed was conservative, because we had no way to assess additional costs for members who buy back service near retirement. Since 2006, we increased the plan liabilities to reflect this additional cost associated with members who buy back service near retirement.

For members with a date of birth and/or date of hire that seemed questionable, we assumed (based on credited service or date of birth) the member was hired at age 30 (or at a younger age, if the member was under 30).

Based on our experience with prior years' data, buyback issues, and questions to MTRS regarding specific members, we made several adjustments. Members whose pay was less than $5,000 were assumed to be inactive. For members with pay between $5,000 and $20,000, we used an estimated pay of $50,000. For members with submitted pay over $150,000, we compared this year's figure to the pay used in the prior valuation. We adjusted this year's figure based on the amount contributed if we believed it was overstated.

Determining valuation pay for members with reported pay less than $20,000 is difficult. Although we make the assumptions outlined above, we know there will always be a significant number of members that fall into this category for a variety of reasons including leaves of absence and part-time employment. We believe our overall assumption is reasonable but know some members that we have deemed inactive are active members. To reflect this uncertainty, we made an additional increase to the calculated plan liabilities consistent with last year.

We increased the normal cost by 2.0% and the active actuarial liability by 1.0% to reflect the service buyback and various data issues.

Pay for all members hired in 2025 was annualized.

Because we could not determine the number of vested terminations, we estimated a combined inactive (terminated vested plus terminated with an ASF balance) liability. This is the same methodology we have used in prior valuations.

A critical element of an actuarial valuation is accurate and up-to-date membership information. PERAC conducted an extensive review of member data submitted for this valuation.

Member Summary

Active Demographic	Amount
Number of Members	100,666
Average Age	44.3
Average Service	13.9
Average Salary	$94,001
Average Annuity Savings Fund Balance	$103,736

Age by Service Distribution of Active Members

Present Age	0–4 Years of Service	5–9 Years of Service	10–14 Years of Service	15-19 Years of Service	20–24 Years of Service	25–29 Years of Service	30+ Years of Service	Total
0-24	2,405							2,405
25-29	7,500	1,619	2					9,121
30-34	4,257	6,339	1,531	1	4			12,132
35-39	2,679	3,656	6,012	1,214	5			13,566
40-44	2,271	2,048	3,357	5,626	1,719	15		15,036
45-49	1,828	1,601	1,866	2,837	5,514	1,404	13	15,063
50-54	1,227	1,130	1,379	1,530	2,795	4,821	987	13,869
55-59	811	776	1,133	1,406	1,842	2,923	3,072	11,963
60-64	377	383	563	884	1,144	1,203	1,123	5,677
65+	161	128	180	290	389	370	316	1,834
TOTAL	**23,516**	**17,680**	**16,023**	**13,788**	**13,412**	**10,736**	**5,511**	**100,666**

Salary by Age Distribution of Active Members

Present Age	Number of Members	Total Salary	Average Salary
0-24	2,405	$139,584,494	$58,039
25-29	9,121	$604,644,366	$66,291
30-34	12,132	$956,164,700	$78,813
35-39	13,566	$1,227,527,567	$90,486
40-44	15,036	$1,479,063,686	$98,368
45-49	15,063	$1,548,197,688	$102,781
50-54	13,869	$1,458,708,767	$105,178
55-59	11,963	$1,268,266,749	$106,016
60-64	5,677	$591,794,635	$104,244
65+	1,834	$188,781,808	$102,934
TOTAL	**100,666**	**$9,462,734,459**	**$94,001**

B | RETIREES AND SURVIVORS

Average Demographics

Retiree Demographic	Superannuation	Ordinary Disability	Accidental Disability	Survivors	Total
Number of Members	67,228	349	261	4,164	72,002
Average Age	75.2	68.4	73.9	77.7	75.3
Average Annual Benefit	$52,263	$26,215	$50,891	$27,086	$50,676

Benefit by Payment and Retirement Type

Benefit Allocation	Superannuation	Ordinary Disability	Accidental Disability	Survivors	Total
Total Annuity	$758,168,620	$2,029,126	$1,312,855	$17,734,801	$779,245,402
Pension	$2,755,377,857	$7,119,948	$11,969,672	$95,051,734	$2,869,519,211
TOTAL	**$3,513,546,477**	**$9,149,074**	**$13,282,527**	**$112,786,535**	**$3,648,764,613**

Benefit by Age Distribution

Present Age	Number of Retirees	Total Benefits	Average Benefits
Less than 40	22	$295,099	$13,414
40-44	38	$639,937	$16,840
45-49	94	$1,725,225	$18,353
50-54	278	$7,123,069	$25,623
55-59	1,602	$74,082,982	$46,244
60-64	5,588	$304,763,528	$54,539
65-69	10,239	$548,040,623	$53,525
70-74	15,980	$852,116,187	$53,324
75-79	19,608	$1,031,409,275	$52,601
80-84	10,971	$529,842,371	$48,295
85-89	4,805	$202,380,516	$42,119
90+	2,777	$96,345,801	$34,694
TOTALS	**72,002**	**$3,648,764,613**	**$50,676**

7. VALUATION COST METHODS

A | ACTUARIAL COST METHOD

The Actuarial Cost Method which was used to determine pension liabilities in this valuation is known as the *Entry Age Normal Cost Method***.** Under this method the *Normal Cost* for each active member on the valuation date is determined as the level percent of salary, which, if paid annually from the date the employee first became a member of the retirement system, would fully fund by retirement, death, disability or termination, the projected benefits which the member is expected to receive. The *Actuarial Liability* for each member is determined as the present value as of the valuation date of all projected benefits which the member is expected to receive, minus the present value of future annual Normal Cost payments expected to be made to the fund. Since only active members have a Normal Cost, the Actuarial Liability for inactive members, retirees and survivors is simply equal to the present value of all projected benefits. The sum of Normal Cost and Actuarial Liability for each member is equal to the Normal Cost and Actuarial Liability for the Plan. The *Unfunded Actuarial Liability* is the Actuarial Liability less current assets.

The Normal Cost for a member will remain a level percent of salary for each year of membership except for changes in provisions of the Plan or the actuarial assumptions employed in projection of benefits and present value determinations. The Normal Cost for the entire system will also change due to the addition of new members or the retirement, death or termination of members. The Actuarial Liability for a member will increase each year to reflect the additional accrual of Normal Cost. It will also change if the Plan provisions or actuarial assumptions are changed.

Differences each year between the actual experience of the Plan and the experience projected by the actuarial assumptions are reflected by adjustments to the Unfunded Actuarial Liability. An experience difference which increases the Unfunded Actuarial Liability is called an *Actuarial Loss* and one which decreases the Unfunded Actuarial Liability is called an *Actuarial Gain*.

B | ASSET VALUATION METHOD

The actuarial value of assets is determined in accordance with the deferred recognition method under which 20% of the gains or losses occurring in the prior year are recognized, 40% of those occurring 2 years ago are recognized, etc., so that 100% of gains or losses occurring 5 years ago are recognized. The actuarial value of assets will be adjusted, if necessary, in order to remain between 90% and 110% of market value.

C | LOW-DEFAULT-RISK OBLIGATION MEASURE (LDROM)

The Low-Default-Risk Obligation Measure (LDROM) was determined using the *Entry Age Normal Cost Method* (the same method used to determine the plan's actuarial liabilities). The LDROM was calculated using the same assumptions as used to determine the plan's actuarial liabilities except the LDROM was calculated using a 5.32% discount rate.

For more information on the LDROM, see our discussion in Section 8 of this report.

8. ACTUARIAL DISCLOSURES

A | RISK

Risk is defined as the potential for differences in future plan measurements resulting from actual future experience deviating from actual assumed experience. The plan is subject to a number of risks that could affect the plan's future financial condition. Examples of risk 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 liabilities;
- **Interest rate risk** – the potential that interest rates will be different than expected;
- **Longevity and demographic risk** – the potential that mortality or other demographic experience will be different than expected;
- **Contribution risk** – the potential that employer contributions to the plan will not be made or will not be made at the assumed level.

In this section, we provide a brief analysis of several risk measures that we believe are most significant for the plan. A more detailed risk assessment that includes further scenario testing (assessing the impact of one or several events on the plan's financial condition, for example projecting plan investment returns), stress testing (assessing the impact of an adverse change in one or several factors), sensitivity testing (assessing the impact of a change in an actuarial assumption), or stochastic modeling (generating numerous possible outcomes by allowing for random variations in input items to assess the distribution of the outcomes) may provide a better understanding than the analysis in this section.

Unfunded Actuarial Liability and Funded Ratio

The plan's unfunded actuarial liability (UAL) and the funded ratio for the past 10 valuations are shown below. The UAL is the Actuarial Liability less the Actuarial Value of Assets. The funded ratio is the Actuarial Value of Assets divided by the Actuarial Liability. The retirement system is said to be fully funded when the UAL is zero, or said another way, when the funded ratio is 100%. Actuarial valuations have been performed every year over this period (except in 2020) and the valuation results are determined as of January 1.

Unfunded Actuarial Liability (UAL) and Funded Ratio

	2016	2017	2018	2019	2021	2022	2023	2024	2025	2026
UAL (in billions)	$22.0	$23.6	$24.6	$26.0	$27.7	$24.7	$25.7	$25.3	$24.3	$24.0
Funded Ratio	52.8%	52.1%	52.4%	51.7%	53.0%	59.0%	58.7%	60.7%	63.3%	65.2%

Investment Return Assumption and Funding Schedule

- Investment Return Assumption: 7.0%
- Amortization of UAL Basis: 4.0% total appropriation increase to FY38, with a final amortization payment in FY39

The investment return assumption of 7.0% is consistent with our 2026 recommended assumption. Currently, over 75% of Chapter 32 systems use an assumption of 7.0% or lower.

It is important to note that our emphasis since 2013 has been for systems to establish funding schedules that complete the amortization of the UAL no later than FY35. This allows systems some flexibility in the event of another market downturn. In 2011, the Commonwealth adopted a schedule that extended the amortization of the UAL to FY40 due to the 2008 investment loss. In 2014, the schedule reduced the amortization period to FY36. The 2017 and 2020 schedules maintained the FY36 date by increasing the level of future appropriations. The 2023 schedule maintained the FY36 payoff date. In 2026, the schedule extended the amortization period to FY39 by lowering the annual increase to 4.0% each year through FY38 with a final amortization payment in FY39.

A related priority to fully funding the System by FY35 is limiting the amount and period of "negative amortization". Negative amortization occurs while the UAL increases in the funding schedule. The reason it occurs is that the amortization payment for a given year is not large enough to pay the interest on the UAL. Negative amortization often occurs in amortization schedules with annual increasing payments. Negative amortization is acceptable as long as it is only for a limited period of time. We believe the goal for all systems should be to eliminate negative amortization as soon as possible. The current schedule has no negative amortization.

Several Massachusetts systems have adopted schedules that increase the total appropriation by a set percentage for a period of time (or the entire length of the schedule). The Commonwealth schedule reflects this methodology. The level of annual increase is 4.0%, so we believe this level of annual increase is sustainable. The Commonwealth has consistently met its appropriations since the 2011 schedule was adopted.

Maturity and Volatility Measures

There are several plan maturity and volatility ratios that can provide significant insight into the level of a plan's risk. To illustrate, we are providing two such measures. In both cases, we show the 10-year history of the ratio. In addition, we comment on how the results compare with other local systems. We believe that these measures are more useful when compared to historical averages and the results of other plans. See our notes earlier in this section regarding the assumption changes over this period which significantly affect these results.

Retiree Actuarial Liability / Total Actuarial Liability

This ratio measures the percentage of actuarial liability due to the plan's retirees. Higher ratios and/or an increase in this ratio indicate a system that is more mature or becoming more mature. As this ratio increases, it generally indicates the retired population is increasing faster than the active member population and there is a greater likelihood of negative cash flow (benefit payments exceeding employer and employee contributions). Retirees in pay status are more expensive than younger members. As a plan matures, it becomes more sensitive to investment volatility and the plan will have more difficulty recovering from losses even with increases in employer contributions.

Ratio of Retiree Actuarial Liability to Total Actuarial Liability

2016	2017	2018	2019	2021	2022	2023	2024	2025	2026
0.58	0.58	0.58	0.57	0.55	0.55	0.54	0.53	0.52	0.51

The ratios for this system show a slow, steady decrease, indicating the plan has become more mature. Public sector plans often have aging populations generating an increase in this ratio. We have found this to be generally true for the systems for which PERAC is the actuary. In 2016, this ratio ranged from .35 to .64. In recent valuations this range has increased to .50 to .67. Many local systems have seen an increase in this ratio over the past 10-15 years as the number of retirees, and specifically the retiree liability has increased as a percentage of the total. A number of systems have had fairly consistent ratios and a few have had decreasing ratios. Such systems have already reached and or maintained a more mature level.

Actuarial Liability / Pay

This measure reflects how a change in actuarial liability (and therefore UAL) may impact the adequacy of contributions. As this ratio increases, plan contributions (using a traditional amortization schedule) increase as a percentage of pay. Furthermore, like the Retiree Liability ratio noted above, higher ratios exacerbate the impact of investment losses on plan contributions.

Ratio of Actuarial Liability to Pay

2016	2017	2018	2019	2021	2022	2023	2024	2025	2026
7.3	7.5	7.6	7.6	7.7	7.8	7.4	7.4	7.3	7.3

This system shows mostly increasing rates until 2022 with slightly lower rates since. For comparison with other PERAC systems, in 2016, this ratio ranged from 5.2 to 8.0. For more recent valuations this range has increased. The ratios currently range from 4.9 to 8.5. This ratio has increased for most local systems indicating increasing levels of risk.

Impact of Investment Returns on Unfunded Liability and Funded Ratio (Market Value Basis)

We have prepared a simple 5-year projection illustrating the potential impact of actual investment returns on funding levels. For this estimate, we used the market value of assets and did not attempt to develop an actuarial value of assets. In projecting the actuarial liability, we assumed the January 1, 2026 actuarial assumptions are exactly realized over the next 5 years and that there are no changes in assumptions over this period.

We first projected the market value of assets assuming the actual return for each of the next 5 years is 7.0% (the assumption used in the valuation). For comparison, we have also shown the results if the return were 3.0% each year. The 3.0% assumption is not intended to be a worst-case basis, but only to reflect the impact of a lower short-term return than the current plan assumption. As discussed earlier in the Executive Summary, projected returns are lower over the next 10 years than over the next 30 years.

5-Year Projection of UAL and Funded Ratio for 7% and 3% Market Value Returns

Expected Return	2026	2027	2028	2029	2030	2031
UAL (in billions)						
7.00%	$22.1	$21.6	$21.1	$20.4	$19.7	$18.9
3.00%	$22.1	$23.5	$25.0	$26.6	$28.3	$30.1
Funded Ratio						
7.00%	68.0%	69.8%	71.6%	73.5%	75.3%	77.2%
3.00%	68.0%	67.2%	66.3%	65.5%	64.6%	63.6%

For this comparison, we assumed that for the 3.0% projections, the appropriation for the next 5 years would remain as in the current funding schedule (and the same as that if the actual returns were 7.0% per year). If returns were actually 3.0% per year, the funding schedule would need to be increased before FY31.

Cash Flow

Cash flow reflects receipts (primarily employee and employer contributions) less disbursements (primarily benefit payments and expenses). We use the information provided in the Annual Statement but subtract any investment income credit or excess investment income entries from the total receipts. Then we measure the ratio of receipts to disbursements. A ratio greater than 1.0 means receipts are greater than disbursements (positive cash flow). Likewise, a ratio less than 1.0 means receipts are less than disbursements (negative cash flow).

Most Massachusetts public systems have negative cash flow. This is not a significant issue for long-term funding but presents potential issues for short-term funding. All else being equal, over the short term, a negative cash flow produces a yearly funded ratio lower than it would have been if there were positive cash flow. This is because a portion of the investment earnings are being used to pay the net benefits and expenses. Therefore, less of the investment earnings are included in the end of the year value of the plan assets resulting in a lower MVA and a lower funded ratio. This may dampen funded ratio expectations somewhat when reviewing 5-year projections. This plan has a ratio of 0.93, 1.00 and 1.02 using the 2023, 2024 and 2025 Annual Statements respectively.

B | LOW-DEFAULT-RISK OBLIGATION MEASURE (LDROM)

For plan years after February 15, 2023, Actuarial Standard of Practice Number 4 (ASOP 4) requires the disclosure of a new liability measure. This measure is known as the Low-Default-Risk Obligation Measure (LDROM). The LDROM is calculated using a different discount rate than the discount rate used for funding purposes. The discount rate used for the LDROM is based on the short duration Financial Times Stock Exchange (FTSE) Pension Liability Index published as of December 31, 2025. The LDROM discount rate will typically be vastly lower than the discount rate based on the plan's actual investment portfolio. As a result, the LDROM will be significantly greater than the plan's funding liability. For the LDROM calculation, we used a discount rate of 5.32%.

The LDROM is not intended to be a measure of the plan's funding nor is it intended to be a measure of the plan's health. Most importantly, the LDROM is not the "true measure" of the plan's liabilities.

Low-Default Rate Obligation Measure

Liability Measure	Liability (in thousands)
LDROM Liability as of January 1, 2026	$83,896,826
Funding Actuarial Accrued Liability as of January 1, 2026	$69,053,100

The LDROM helps understand the cost of investing in an all-bond portfolio and significantly lowering expected long-term investment returns. The funded status and Actuarially Determined Contributions are determined using the expected return on assets which reflects the actual investment portfolio. Benefit security for members of the plan relies on a combination of the assets in the plan, the investment returns generated on those assets and the promise of future contributions from the plan sponsors.

Since the assets are not invested in an all-bond portfolio, the LDROM does not indicate the funding status or progress, nor provide information on necessary plan contributions or the security of plan participants. 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.

C | REASONABLE ACTUARIALLY DETERMINED CONTRIBUTION (ADC)

For plan years after February 15, 2023, Actuarial Standard of Practice Number 4 (ASOP 4) also requires the disclosure of a reasonable Actuarially Determined Contribution (ADC). This reasonable ADC, if different from the Commonwealth's scheduled ADC, is not intended to be the Commonwealth's true funding measure. We believe that the Commonwealth's current schedule meets the requirements of a reasonable amortization method under ASOP 4. As such, the Commonwealth's reasonable ADC for FY27 is equal to the scheduled FY27 payment of $5.131 billion.

The MTRS's share of the FY27 Commonwealth appropriation is $2.884 billion.

D | ACTUARIAL MODELS

The software used in our actuarial valuations measures the present value of the plan's actuarial liabilities from which we develop funding schedules that determine annual appropriations for each system. The software was created and is maintained by a national vendor of actuarial software. We have used this software for over 25 years. We periodically review the results of the software by analyzing detailed individual test lives and have compared our results to those of other actuaries using the same data set. The valuation output is prepared before a final review by the actuary.

In addition, we used a simple projection model prepared in a spreadsheet, to perform a rough analysis of the impact of investment returns on the unfunded actuarial liability and funded ratio for the next five years. The work is tailored to each valuation and reviewed by the actuary.

9. ACTUARIAL ASSUMPTIONS

Investment Return/Discount Rate

- 7.0% per year net of investment expenses *(same as the prior assumption)*
- The investment return assumption is a long-term assumption and is 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 which included expected returns by asset class, risk analysis, and the determination of a 30-year expected target rate of return.

Discount Rate (for LDROM only)

- 5.32% (based on short duration FTSE Pension Liability Index published as of December 31, 2025)

Inflation

- 2.5% per year

Interest Rate Credited to the Annuity Savings Fund

- 3.5% per year

Assumed Rate of Cost-of-Living Increases (COLA)

- 3.0% per year (on the first $13,000 of an allowance)

Mortality

- Pre-retirement mortality reflects SOA Pub-2010 Teachers (headcount) Employees table projected generationally with MP-2021 (gender distinct). *(Same as the prior assumption.)*
- Post-retirement mortality reflects SOA Pub-2010 Teachers (headcount) Healthy Retirees table projected generationally with MP-2021 (gender distinct). *(Same as the prior assumption)*
- For disabled members, the mortality reflects SOA Pub-2010 Teachers (headcount) Healthy Retirees table projected generationally with MP-2021 (gender distinct). *(Same as the prior assumption)*
- It is assumed that 75% of pre-retirement deaths are job-related. For members retired under an Accidental Disability, 40% of deaths are assumed to be from the same cause as the disability.
- The mortality assumptions reflect our recent experience analysis published in 2014 (based on the years 2006-2011), updated to reflect actual experience from 2012 to 2020 for post-retirement mortality and professional judgment. This assumption reflects observed current mortality as well as expected mortality improvement.

Salary Increase

Salary Increase by Years of Service

Service	Teachers
0	7.50%
1	7.10%
2	7.00%
3	6.90%
4	6.80%
5	6.70%
6	6.60%
7	6.50%
8	6.30%
9	6.10%
10	5.90%
11	5.70%
12	5.20%
13	4.70%
14	4.35%
15-16	4.20%
17-19	4.10%
20+	4.00%

The salary increase assumption reflects both prior experience (2014 study) and professional judgment.

Retirement

Retirement: Males

Age	Not In Retirement Plus: < 20	Not In Retirement Plus: 20+	Age	Retirement Plus: < 20	Retirement Plus: 20-30	Retirement Plus: 30+
47	0.000	0.000	47	0.00	0.000	0.00
48	0.000	0.000	48	0.00	0.000	0.00
49	0.000	0.000	49	0.00	0.000	0.00
50	0.000	0.020	50	0.00	0.010	0.02
51	0.000	0.020	51	0.00	0.010	0.02
52	0.000	0.020	52	0.00	0.010	0.02
53	0.000	0.020	53	0.00	0.015	0.02
54	0.000	0.030	54	0.00	0.025	0.02
55	0.035	0.030	55	0.05	0.030	0.06
56	0.035	0.035	56	0.05	0.060	0.20
57	0.050	0.040	57	0.05	0.100	0.40
58	0.055	0.050	58	0.05	0.150	0.50
59	0.060	0.060	59	0.10	0.200	0.50
60	0.075	0.150	60	0.10	0.250	0.40
61	0.120	0.250	61	0.20	0.300	0.40
62	0.140	0.300	62	0.20	0.350	0.35
63	0.140	0.300	63	0.25	0.400	0.35
64	0.140	0.300	64	0.25	0.400	0.35
65	0.300	0.300	65	0.25	0.400	0.35
66	0.300	0.250	66	0.30	0.300	0.40
67	0.300	0.250	67	0.30	0.300	0.40
68	0.300	0.250	68	0.30	0.300	0.40
69	0.300	0.250	69	0.30	0.300	0.40
70+	1.000	1.000	70+	1.00	1.000	1.00

Retirement: Females

Age	Not In Retirement Plus: < 20	Not In Retirement Plus: 20+	Age	Retirement Plus: < 20	Retirement Plus: 20-30	Retirement Plus: 30+
47	0.000	0.000	47	0.00	0.00	0.000
48	0.000	0.000	48	0.00	0.00	0.000
49	0.000	0.000	49	0.00	0.00	0.000
50	0.000	0.010	50	0.00	0.01	0.015
51	0.000	0.010	51	0.00	0.01	0.015
52	0.000	0.015	52	0.00	0.01	0.015
53	0.000	0.020	53	0.00	0.01	0.015
54	0.000	0.020	54	0.00	0.01	0.020
55	0.035	0.040	55	0.03	0.03	0.050
56	0.035	0.040	56	0.03	0.05	0.150
57	0.035	0.040	57	0.04	0.08	0.350
58	0.050	0.060	58	0.08	0.10	0.350
59	0.065	0.080	59	0.08	0.15	0.350
60	0.085	0.150	60	0.10	0.20	0.350
61	0.100	0.200	61	0.12	0.25	0.350
62	0.120	0.200	62	0.12	0.30	0.350
63	0.120	0.250	63	0.15	0.30	0.350
64	0.200	0.300	64	0.20	0.30	0.350
65	0.300	0.400	65	0.25	0.40	0.350
66	0.300	0.300	66	0.25	0.30	0.350
67	0.300	0.300	67	0.30	0.30	0.300
68	0.300	0.300	68	0.30	0.30	0.300
69	0.300	0.300	69	0.30	0.30	0.300
70+	1.000	1.000	70+	1.00	1.00	1.000

Retirement rates are based on our most recent experience analysis (2014) which reviewed age, service, gender, and job group. The assumption reflects this analysis and professional judgment.

Disability

Based on an analysis of past experience. Sample annual rates are shown below.

Disability Rate by Age

Age	Disability Rate
20	0.00004
30	0.00006
40	0.00010
50	0.00050
60	0.00070

It is also assumed that 35% of disabilities will be job-related for Teachers.

Disability rates are based on our most recent experience analysis (2014) which reviewed age, gender and job group. The assumption reflects this analysis as well as professional judgment.

Withdrawal

Based on an analysis of past experience. In addition to being age and service based, Teacher rates are also gender based. Final rates reflect this analysis as well as professional judgment. Sample annual rates are shown below.

Withdrawal Rates by Gender, Age and Years of Service

Age	Male (0 Yrs Service)	Female (0 Yrs Service)	Male (5 Yrs Service)	Female (5 Yrs Service)	Male (10+ Yrs Service)	Female (10+ Yrs Service)
20	0.130	0.100	0.055	0.070	0.015	0.050
30	0.150	0.150	0.054	0.088	0.015	0.045
40	0.133	0.105	0.052	0.050	0.017	0.022
50	0.162	0.098	0.070	0.050	0.023	0.020

Members Hired on or After April 2, 2012

Chapter 176 of the Acts of 2011 changed the retirement eligibility for the different job groups. For example, Group 1 eligibility changed from 55 years old with 10 years of service to 60 years old with 10 years of service (Chapter 176 removed the provision that allowed retirement at any age with 20 years of service). Our software system is programmed such that at any given age, a member is assumed to either retire or terminate, but not both. Therefore, we adjusted the retirement and termination rates for members impacted by Chapter 176. For example, for Group 1 members, we removed retirement rates for ages 50-59. Termination rates remain in effect for those years. We will monitor these assumptions going forward.

Loading

We increased the total normal cost by 2% and the actuarial accrued liability of active members by 1% to account for buybacks at retirement and various data issues including the status of members with reported pay of less than $20,000.

10. SUMMARY OF PLAN PROVISIONS

Administration

The Massachusetts Teachers' Retirement System is governed by a seven-member retirement board and Chapter 32 of the Massachusetts General Laws. This law establishes benefits, contribution requirements and an accounting and funds structure for the system.

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 retirement board and approved by PERAC. Membership is optional for certain elected officials.

There are 4 classes of membership under Chapter 32. Members of the Massachusetts Teachers' Retirement System are classified in Group 1.

Group 1

General employees, including clerical, administrative, technical and all other employees not otherwise classified.

Member Contributions

Member contributions vary depending on the most recent date of membership:

Member Contributions by Date

Dates	Contribution Rate
Prior to 1975	5% of regular compensation
1975-1983	7% of regular compensation
1984 to 6/30/96	8% of regular compensation
7/1/96 to present	9% of regular compensation
7/1/01 to present	11% of regular compensation (for members hired after 7/1/01 and those accepting the provisions of Chapter 114 of the Acts of 2000).
1979 to present	an additional 2% of regular compensation in excess of $30,000, except members subject to Chapter 114 of the Acts of 2000.

In addition, members who join the system on or after April 2, 2012 will have their withholding rate reduced to 8 % after achieving 30 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 10 financial institutions.

Retirement Age

There is no mandatory retirement age for employees in Group 1.

Superannuation Retirement

A person who became a member before April 2, 2012 is eligible for a superannuation retirement allowance (service retirement) upon meeting the following conditions:

- completion of 20 years of service, or
- attainment of age 55 if hired prior to 1978, or
- attainment of age 55 with 10 years of service, if hired after 1977

A person who became a member on or after April 2, 2012 is eligible for a superannuation retirement allowance (service retirement) upon meeting the following conditions:

- attainment of age 60 with 10 years of service

Amount of Superannuation Benefit

A member's annual allowance is determined by multiplying a benefit rate related to the member's age at retirement by his or her years of creditable service and then multiplying that product by final average salary. A member who is subject to the provisions of Chapter 114 of the acts of 2000, and who completes at least 30 years of creditable service will receive an additional 2% of his average salary for each full year of service above 24 (23 for members hired on or after 4/2/12). The amount determined by the benefit formula cannot exceed 80% of the member's highest three-year (or five-year as discussed below) average salary. For veterans as defined in G.L. c. 32, s. 1, there is an additional benefit of $15 per year for each year of creditable service, up to a maximum of $300.

- Salary is defined as gross regular compensation. For employees who become members after January 1, 2011, regular compensation is limited to 64% of the federal limit found in 26 U.S.C. 401(a)(17). In addition, regular compensation for members who retire after April 2, 2012 will be limited to prohibit "spiking" of a member's salary to increase the retirement benefit.
- For persons who became members prior to April 2, 2012, average salary is the 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.
- For persons who became members on or after April 2, 2012, average salary is the 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.
- The benefit rate varies with the member's retirement age. For persons who became members prior to April 2, 2012 the highest rate of 2.5% applies to Group 1 employees who retire at or after age 65. A 0.1% reduction is applied for each year of age under 65.

- For persons who became members on or after April 2, 2012 and retire with less than 30 years of creditable service, the highest rate of 2.5% applies to members who retire at or after age 67. A 0.15% reduction is applied for each year of age under 67.
- For persons who became members on or after April 2, 2012 and retire with 30 or more years of creditable service, the highest rate of 2.5% applies to members who retire at or after age 67. A 0.125% reduction is applied for each year of age under 67.

Deferred Vested Benefit

A participant who has attained the requisite years of creditable service can elect to defer his or her retirement until a later date. Certain public safety employees cannot defer beyond age 65. All participants must begin to receive a retirement allowance or withdraw their accumulated deductions no later than April 15 of the calendar year following the year they reach age 73.

Withdrawal of Contributions

Member contributions may be withdrawn upon termination of employment. The interest rate for employees who first become members on or after January 1, 1984 who voluntarily withdraw their contributions with less than 10 years of service will be 3%. Interest payable on all other withdrawals will be set at regular interest.

Disability Retirement

The Massachusetts Retirement Plan provides 2 types of disability retirement benefits: Ordinary Disability and Accidental Disability.

Ordinary Disability

Eligibility: Non-veterans who become totally and permanently disabled by reason of a non-job-related condition with at least 10 years of creditable service.

Veterans with ten years of creditable service who become totally and permanently disabled by reason of a non-job-related condition.

Retirement Allowance: For persons who became members prior to April 2, 2012, the benefit is equal to the accrued superannuation retirement benefit as if the member was age 55. If the member is a veteran, the benefit is 50% of the member's final rate of salary during the preceding 12 months, plus an annuity based upon accumulated member contributions plus credited interest. If the member is over age 55, he or she will receive not less than the superannuation allowance to which he or she is entitled.

For persons who became members on or after April 2, 2012, the benefit is equal to the accrued superannuation retirement benefit as if the member was age 60. If the member is a veteran, the benefit is 50% of the member's final rate of salary during the preceding 12 months, plus an annuity based upon accumulated member contributions plus credited interest. If the member is over age 60, he or she will receive not less than the superannuation allowance to which he or she would have been entitled had they retired for superannuation.

Accidental Disability

Eligibility: Applies to members who become permanently and totally unable to perform the essential duties of the position as a result of a personal injury sustained or hazard undergone while in the performance of duties. There are no minimum age or service requirements.

Retirement Allowance: 72% of salary plus an annuity based on accumulated member contributions, with interest. This amount is not to exceed 100% of pay. For those who became members-in-service after January 1, 1988 or who have not been members-in-service continually since that date, the amount is limited to 75% of pay. There is an additional pension of $1,159.08 per year per child who is under 18 at the time of the member's retirement, with no age limitation if the child is mentally or physically incapacitated from earning. The additional pension may continue up to age 22 for any child who is a full-time student at an accredited educational institution. Veterans, as defined in G.L. c. 32, s. 1, receive an additional benefit of $15 per year for each year of creditable service, up to a maximum of $300.

Accidental Death

Eligibility: Applies to members who die as a result of a work-related injury or if the member was retired for accidental disability and the death was the natural and proximate result of the injury or hazard undergone on account of which such member was retired.

Allowance: An immediate payment to a named beneficiary equal to the accumulated deductions at the time of death, plus a pension equal to 72% of current salary and payable to the surviving spouse, dependent children or the dependent parent, plus a supplement of $1,159.08 per year, per child, payable to the spouse or legal guardian until all dependent children reach age 18 or 22 if a full time student, unless mentally or physically incapacitated.

Death After Accidental Disability Retirement

Effective November 7, 1996, Accidental Disability retirees were allowed to select Option C at retirement and provide a benefit for an eligible survivor. For Accidental Disability retirees prior to November 7, 1996, who could not select Option C, if the member's death is from a cause unrelated to the condition for which the member received accidental disability benefits, a surviving spouse will receive an annual allowance of $12,000.

Death in Active Service *(Option D)*

Allowance: An immediate allowance equal to that which would have been payable had the member retired and selected Option C on the day before his or her death. For a person who became a member prior to April 2, 2012 whose death occurred prior to the member's superannuation retirement age, the age 55 benefit rate is used. If the member died after age 55, the actual age is used. For a member who became a member on or after April 2, 2012 whose death occurred prior to the member's superannuation retirement age, the age 60 benefit rate is used. If the member died after age 60, the actual age is used. The minimum annual allowance payable to the surviving spouse of a member-in-service who dies with at least two years of creditable service is $6,000, provided that the member and the spouse were married for at least one year and living together on the member's date of death.

The surviving spouse of such a member in service receives an additional allowance equal to the sum of $1,440 per year for the first child and $1,080 per year for each additional child until all dependent children reach age 18 or 22 if a full-time student, unless mentally or physically incapacitated.

Cost of Living

A cost-of-living adjustment (COLA) is determined based on the increase in the Consumer Price Index (CPI) used for indexing Social Security benefits but cannot exceed 3.0% of the first $13,000 of a retiree's benefit.

Methods of Payment

A member may elect to receive his or her retirement allowance in one of 3 forms of payment.

- **Option A:** Total annual allowance, payable in monthly installments, commencing at retirement and terminating at the member's death.
- **Option B:** A reduced annual allowance, payable in monthly installments, commencing at retirement and terminating at the death of the member, provided, however, that if the total amount of the annuity portion received by the member is less than the amount of his or her accumulated deductions, including interest, the difference or balance of his accumulated deductions will be paid in a lump sum to the retiree's beneficiary or beneficiaries of choice.
- **Option C:** A reduced annual allowance, payable in monthly installments, commencing at retirement. At the death of the retired employee, 2/3 of the allowance is payable to the member's designated beneficiary (who may be the spouse, or former spouse who is unmarried at the time of retirement for a member whose retirement becomes effective on or after February 2, 1992, child, parent, sister, or brother of the employee) for the life of the beneficiary. For members who retired on or after January 12, 1988, if the beneficiary pre-deceases the retiree, the benefit payable increases (or "pops up" to Option A) 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 "pops up" to Option A in the same fashion. The Option C became available to accidental disability retirees on November 7, 1996.

Allocation of Pension Costs

If a member's total creditable service was partly earned by employment in more than one retirement system, the cost of the "pension portion" is allocated between the different systems pro rata based on the member's service within each retirement system. If a member received regular compensation concurrently from two or more systems on or after January 1, 2010, and was not vested in both systems as of January 1, 2010, such a pro-ration will not be undertaken. This is because such a person will receive a separate retirement allowance from each system.

11. 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 amount and duration of pension benefits, such as: mortality, withdrawal, disablement and retirement; changes in compensation; 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 Normal Cost and the 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 two Actuarial Valuation dates.

Note: The effect on the Accrued Liability and/or the Normal Cost resulting from changes in the Actuarial Assumptions, the Actuarial Cost Method, or pension plan provisions would be described as such, not as an Actuarial Gain (Loss).

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.

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 to PERAC each year that describes the asset holdings and Fund balances as of June 30 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 deductions, including interest, is transferred at the time a member retires, and from which annuity payments are made.

Annuity Savings Fund

The fund in which employee 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).

11. GLOSSARY OF TERMS

Assets

The value of securities as described in Section 7.

Cost of Benefits

The estimated payment from the pension system for benefits for the fiscal year. This was the minimum amount payable during the first six years of some funding schedules.

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 22(6A), Section 22D or Section 22F of M.G.L. Chapter 32.

GASB

Governmental Accounting Standards Board

Normal Cost

Total Normal Cost is that portion of the Actuarial Present Value of pension plan benefits, which is to be paid in a single fiscal year. The Employee Normal Cost is the amount of the expected employee contributions for the fiscal year. The Employer Normal Cost is the difference between the Total Normal Cost and the Employee Normal Cost.

Pension Fund

The fund into which appropriation amounts as determined by PERAC are deposited 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 value on the valuation date of all of the future benefits that are expected to be paid to members of the System discounted with interest and the probability of benefit receipt.

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.

Unfunded Actuarial Accrued Liability

The excess of the Actuarial Accrued Liability over the Assets.



COMMONWEALTH OF MASSACHUSETTS
Public Employee Retirement Administration Commission

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