

**Pennsylvania Municipal
Retirement System
Actuarial Valuation as of
January 1, 2025**

Produced by Cheiron

June 2026

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LETTER OF TRANSMITTAL

June 11, 2026

Pennsylvania Municipal Retirement Board of the
Pennsylvania Municipal Retirement System
c/o Timothy A. Reese
Chief Executive Officer
1721 North Front Street
Harrisburg, Pennsylvania 17102-2315

Re: PMRS 2025 Actuarial Valuation Report

Dear Members of the Board:

At your request, we have conducted the annual actuarial valuation of the Pennsylvania Municipal Retirement System (PMRS; the System) as of January 1, 2025. The purpose of this report is to provide the aggregate valuation results of the participating employers for the System and analyze the System-wide asset and liability performance with projections. The report provides statistics on the employer contribution levels for all plans participating in the system as of the valuation date, incorporating the individual Governmental Accounting Statement Nos. 67 and 68 (GASB 67/68) results for each plan.

This report reflects the actuarial liabilities for the following pension plans:

- Municipal and authority employers' defined benefit plans (i.e., non-county defined benefit plans) – based on the January 1, 2025 measurement date.
- Cash balance plans – based on the member and municipal account balances as of December 31, 2024 as provided by PMRS, as well as the explicit liabilities associated with retirees for these plans.
- County plans – based on the January 1, 2024 measurement date and rolled-forward to December 31, 2024.

The liabilities in this actuarial report reflect the aggregated liabilities for all of the PMRS pension plans as of January 1, 2025 as provided in the individual December 31, 2024 GASB 67/68 reports.

This report was prepared for the Board for the purposes described herein and for use by the System auditor in completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to such other users.

This report analyzes system-wide asset and liability performance and projections. PMRS is an agent multiple-employer retirement system (as defined under Governmental Accounting Standards Board Statement Nos. 67 and 68) for participating municipalities and counties. Assets and liabilities are separately accounted for and reported to the Auditor General of the Commonwealth of Pennsylvania. We refer you to the Foreword and Board Summary which present the general approach used in the preparation of this report with a focus on key metrics of the System, historical trends, and stress testing of the System. The report also includes descriptions of the sources and reliability of the data and the actuarial assumptions upon which our findings are based. The Actuarial Standard of Practice No. 4 Measuring Pension Obligations and Determining Pension Plan Costs or Contributions Revised December 2021 and Effective February 15, 2023 (ASOP 4) requires the disclosure of a Low-Default-Risk Obligation Measure, or LDRM, and the Reasonable Actuarially Determined Contributions, or RADC, for pension funding actuarial valuations. For this valuation report, these determinations are only required for the non-county defined benefit plans that had a funding actuarial valuation completed as of January 1, 2025.

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice (ASOPs) set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

Sincerely,
Cheiron



Karen M. Zangara, FSA, MAAA, EA
Principal Consulting Actuary



Anthony Bucci, FCA, MAAA, EA
Consulting Actuary

cc: Richard Cardamone, CPA
Jonathan Chipko, Cheiron
Jack Erikson, Cheiron

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025

FOREWORD

Cheiron performed the actuarial valuation of the Pennsylvania Municipal Retirement System (System) as of January 1, 2025. The purpose of this report is to:

1. **Measure and disclose**, as of the valuation date, the financial condition of the System;
2. **Indicate trends** in the financial progress of the System;
3. **Provide specific information** and documentation required by the Governmental Accounting Standards Board (GASB).

An actuarial valuation establishes and analyzes System assets and liabilities on a consistent basis and traces the progress from one year to the next. It includes measurement of the System's investment performance as well as an analysis of actuarial liability gains and losses.

Section I presents a summary of our findings, disclosing important trends experienced by the System in recent years, and risks for consideration.

Section II contains details on various asset measures, together with pertinent performance measurements.

Section III shows similar information on System liabilities, measured for funding, accounting, and government reporting purposes.

Section IV shows the distribution of the individual defined benefit plan's cost components (such as normal cost and the amortization of the Unfunded Liability) as a percent of payroll as well as the total contribution as a percent of payroll.

Section V includes the required disclosures under GASB as well as additional information provided in the System's Annual Comprehensive Financial Report (ACFR) based on the Government Finance Officers Association (GFOA) guidance.

The appendices to this report contain a summary of the System's membership at the valuation date and the actuarial methods and assumptions used in the valuations. A separate addendum to this report will provide the LDROM and RADIC for the pension plans that had a funding valuation completed as of January 1, 2025 (i.e. the non-county defined benefit pension plans).

As this System is an agent multiple-employer retirement system in which each of the participating municipalities are entitled to define and submit to the Board the benefit provisions for their respective employees, the actual plan provisions are not included in this report. In preparing this valuation, we relied on the plan provisions defined and submitted to the State under the 2024 Act 293 filings including any subsequent county plan changes (if applicable) and 2025 Act 205 filings as provided by the System.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

FOREWORD

The rolled forward liabilities for county plans reflect material changes at the individual plan level (such as plan and assumption changes, if applicable) including new retirees since the last valuation, if applicable. These liabilities, along with the non-county defined benefit and cash balance plan liabilities, provide a reasonable estimate for the aggregate System’s obligations as of January 1, 2025. Further information on these techniques can be found in Appendix B under “Method to Roll Forward Liabilities.”

In preparing our report, we relied on information (some oral and some written) supplied by the System’s staff. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data by plan for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23 (Data Quality).

The actuarial assumptions reflect an expectation of the future experience of the System, as well as adopted formal procedures by the Board in the reviewing and setting of the interest rate assumption. The assumptions both individually and in aggregate represent the best estimate for the future experience of the System as of January 1, 2025. They reflect the experience study analysis completed in September 2020 as approved by the Board. This experience study analysis was completed in accordance with the Actuarial Standards of Practice No. 27 (Selection of Economic Assumptions for Measuring Pension Obligations) and No. 35 (Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations) in performing actuarial valuations of retirement systems. To the extent the laws of the Commonwealth of Pennsylvania and/or the administrative practices of the System differ from Actuarial Standards of Practice, we have identified such deviations within the Actuarial Assumptions and Methods Appendix of this report. This is the last valuation that will incorporate the results of the experience study completed September 2020. The January 1, 2026 actuarial valuation will incorporate the results of the experience study completed October 2025.

The results of this report are dependent on future experience conforming to these assumptions. Future valuation reports may differ significantly from the current results presented in this document due to such factors as: plan experience differing from that anticipated by the assumptions, changes in assumptions, and changes in plan provisions or applicable law.

This report and its contents have been prepared in accordance with generally accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION I — BOARD SUMMARY

The primary purpose of the actuarial valuation and this report is to disclose the following as of the valuation date:

- The overall financial condition of the Pennsylvania Municipal Retirement System,
- Biennial valuation of the non-county defined benefit plans participating in the System,
- Valuation of the cash balance plans participating in the System,
- Roll-forward of county defined benefit plans,
- Past trends and expected future trends in the System’s financial condition,
- Potential risks to the System and individual plans, and
- Information required by the Governmental Accounting Standards Board (GASB) and the System’s Financial Statements.

In this Section, we present the principal valuation results. This includes the basis upon which the January 1, 2025 valuation was completed and an examination of the current financial condition of the System. In addition, we present a review of the key historical trends followed by the System’s projected financial outlook.

Throughout our report, our discussion will address changes from January 1, 2023, the last time the non-county defined benefit plans were explicitly valued, to January 1, 2025. We also address the overall status of the System comparing results from January 1, 2024 to January 1, 2025.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION I — BOARD SUMMARY

Valuation Basis

The January 1, 2025 valuation results are based on the actuarial assumptions approved by the Board effective January 1, 2025, which includes the updated 5.50% interest rate assumption as adopted by the Board in November 2024. The January 1, 2024 results reflect a 5.25% interest rate assumption. The interest rate assumption change resulted in an overall decrease in the System's Actuarial Liability by \$83.3 million. Refer to Appendix B for a complete listing of the actuarial assumptions.

Below we identify key results of this valuation.

Transfer of Funds to the Retired Members' Reserve Account (Retiree Reserve): The Retiree Reserve exceeded the Retiree Liabilities as of December 31, 2024; therefore, there was no need to increase the Retiree Reserve.

Actuarial Value of Assets: The Actuarial Value of Assets (AVA) of \$3.291 billion equals the sum of the reserve information provided in the System's December 31, 2024 ACFR plus expenses in excess of the \$20 per plan member administrative charge as outlined in Pennsylvania Municipal Retirement Board Policy Statement ("Policy Statement") 05-2 (\$8.8 million). In addition, the December 31, 2024 excess interest distribution of \$50.6 million is also reflected in the reserves and AVA. The prior year AVA was \$3.137 billion. The Regular Interest Rate for 2024 was 5.25%, which represents the return on the reserves throughout the year.

Market Value of Assets: The Market Value of Assets (MVA) is \$3.519 billion as of December 31, 2024. The money-weighted rate of return net of investment expense for the past year was 9.22% as published in the ACFR. The investment return for the year is the primary reason the results associated with the MVA improved over the prior year's results. Comparatively, the prior year MVA was \$3.286 billion.

Excess Interest: As of December 31, 2023, the System's market value of assets (MVA) exceeded the reserves, which are used to define the actuarial value of assets (AVA). This created a surplus, as defined in the Policy Statement 05-2. Based on this policy, during 2024 the Board awarded \$50.6 million in Excess Interest to the member plans to offset unfunded liabilities or provide for the opportunity to improve benefits (based on applicable law and funded status). This excess interest distribution occurred as of December 31, 2024. The liabilities associated with the additional benefits offered under the excess interest distribution are reflected in the January 1, 2025 valuation.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION I — BOARD SUMMARY

Asset Surplus: As of December 31, 2024, the System’s MVA exceeded the AVA by \$227.5 million. This created a Trial Excess Interest as defined in Policy Statement 05-2. The Board has elected to not award Excess Interest to the System’s plans as of December 31, 2025.

Actuarial Liabilities: The January 1, 2025 Actuarial Liabilities (AL) increased by \$63.5 million, from \$3.174 billion as of January 1, 2024 to \$3.238 billion primarily due to additional accruals during the year with interest and the excess interest benefit improvements offset by the impact of increasing the Regular Interest Rate from 5.25% to 5.50%. The actuarial loss represents two years of experience, as the January 1, 2024 Actuarial Liability was primarily determined by rolling forward the January 1, 2023 valuation results. This loss is primarily due to salary increases that were higher than expected.

Unfunded Actuarial Liability (UAL)/Surplus Assets (SA): The System is made up of many different retirement plans. Some plans have UAL (AL exceeds the AVA), other plans have SA (AVA exceeds the AL). In aggregate, as of January 1, 2024, the System had a UAL of \$36.8 million. As of January 1, 2025, the System has a SA of \$53.5 million.

Funded Ratio using Actuarial Value of Assets (AVA): This is the ratio of the System’s AVA to AL. The AVA funded ratio as of January 1, 2024 was 98.8% and as of January 1, 2025 is 101.7%.

Funded Ratio using Market Value of Assets (MVA): This is the ratio of the System’s MVA to AL. The MVA funded ratio as of January 1, 2024 was 103.5% and increased to 108.7% as of January 1, 2025 primarily due to positive investment returns during the year.

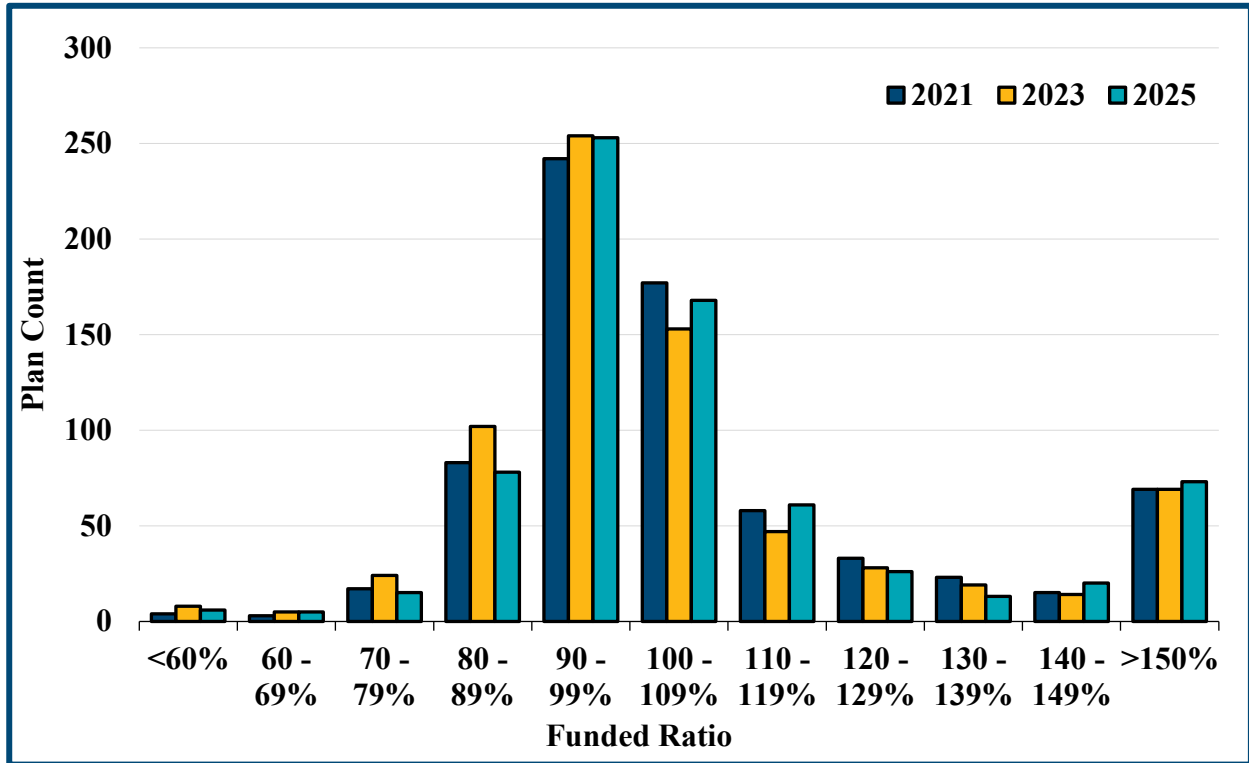
The numerical values provided above may not add up due to rounding. Please refer to the detailed sections in this report for more information.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION I — BOARD SUMMARY

Figure I-1 shows a distribution of each individual plan’s funded ratio using AVA for the defined benefit plans (both municipal and county) covered by the System in 2021, 2023, and 2025. Overall, funded ratio increased slightly in 2025.

**Figure I-1
Funded Ratio of Municipal and County Defined Benefit Plans**



**Table I-1
Distribution of Defined Benefit Plans by Funded Ratio**

Valuation Date	<60%	60 - 69%	70 - 79%	80 - 89%	90 - 99%	100 - 109%	110 - 119%	120 - 129%	130 - 139%	140 - 149%	>150%
2021	4	3	17	83	242	177	58	33	23	15	69
2023	8	5	24	102	254	153	47	28	19	14	69
2025	6	5	15	78	253	168	61	26	13	20	73

Under Act 205 as amended by Act 44, plans may be considered distressed if they are less than 90% funded. Plans that are at least 100% funded are in a surplus.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION I — BOARD SUMMARY

As of January 1, 2025 about 14% of the defined benefit plans were less than 90% funded, less than the 19% of plans as of January 1, 2023 and the 15% of plans as of January 1, 2021.

As of January 1, 2025 about 50% of the defined benefit plans were at least 100% funded, greater than 46% of plans as of January 1, 2023 and slightly less than 51% of plans as of January 1, 2021.

Overall, funded ratios for the individual defined benefit plans increased due to the excess interest award as well as the 2025 discount rate change. The actual liability impact varies by plan based on plan design and member data. The surplus plans can apply 10% of the excess assets (assets that exceed the liabilities) to reduce their Minimum Municipal Obligation (MMO). On this basis, it is common for the number of plans that have a funded ratio above 100% to decline as this surplus is used to offset contributions.

In addition to the historical funded ratio ranges, another important relationship to review is the Actuarial Value of Assets and Market Value of Assets. The Actuarial Value of Assets is substantially equal to the reserves being held for all benefits of the participating employers and reflects the crediting of the Regular Interest Rate and actual cash flows without regard to the actual investment return of the System.

The Market Value of Assets is the actual amount of money the system reported on the ACFR. The money-weighted returns net of investment expenses for the plan years ended 2023 and 2024 were 11.0% and 9.2%, respectively. Comparing the MVA to the AVA provides a representation of the actual System assets to the System reserve accounts, which are used to determine the AVA. As of January 1, 2024, the MVA was \$149 million greater than the AVA prior to the Board awarding Excess Interest, and as of January 1, 2025, the MVA exceeded the AVA by \$227.5 million.

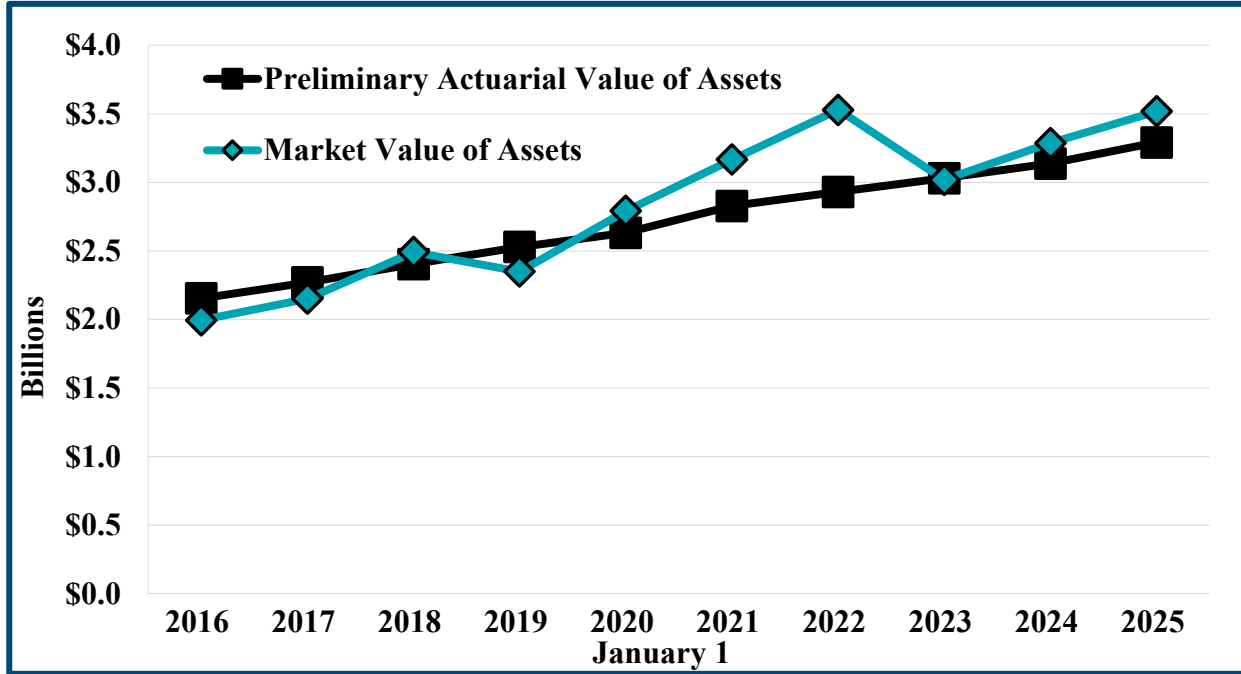
The following Figures show the historical relationship between the MVA (teal line in Figure I-2) and the AVA (black line in Figure I-2) along with the ratio of the MVA to the AVA (purple line in Figure I-3) demonstrating the underlying risk of the System as addressed later in this report. The MVA has essentially equaled or exceeded the AVA in seven Plan Years shown in the time period below.

When the ratio of the MVA to the AVA is less than 100%, any shortfall between the AVA and MVA must come from future investment earnings in excess of the Regular Interest Rate. When the MVA exceeds the AVA, there is a potential for excess interest distributions to be awarded by the Board.

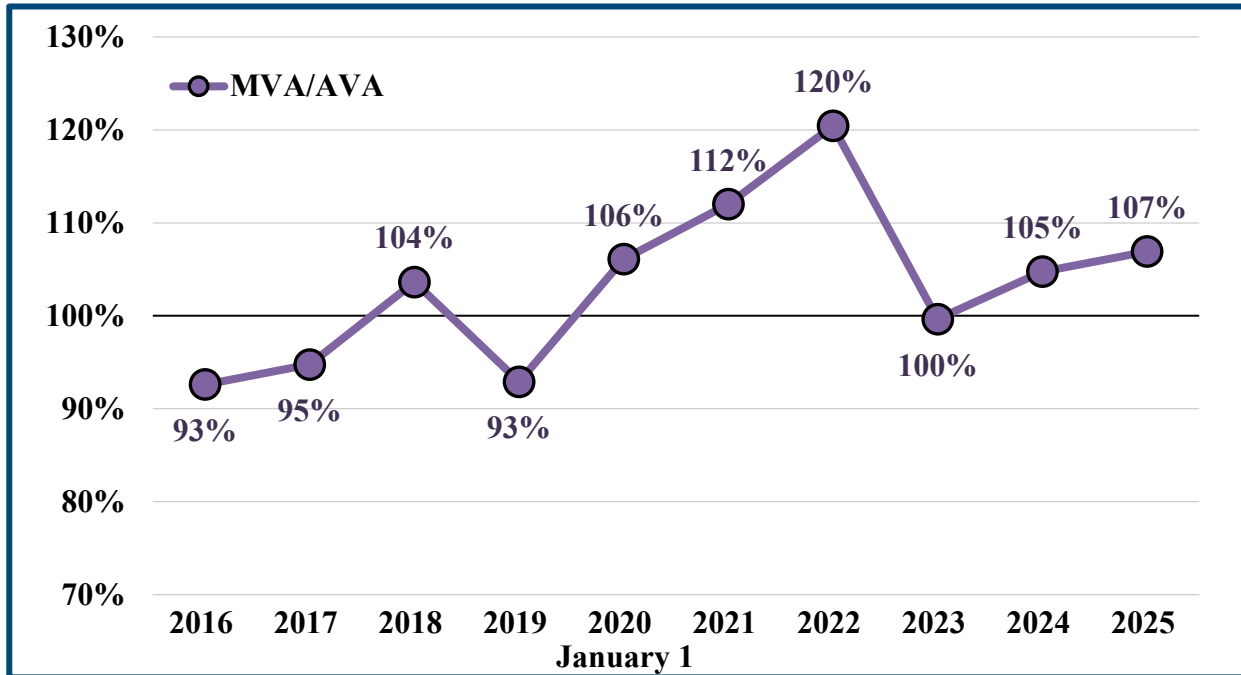
**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION I — BOARD SUMMARY

**Figure I-2
System Asset Values**



**Figure I-3
Ratio of Market Value of Assets to Actuarial Value of Assets**



**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION I — BOARD SUMMARY

Current Financial Condition

On the following pages, we summarize the key results of the January 1, 2025 valuation and how they compare to the results from the January 1, 2024 valuation. For the non-county plans, the data summaries provided below reflect that information used to determine the liabilities as of January 1, 2025. For the county plans, the data summaries reflect the information provided by PMRS, but this data was not used to determine the liabilities for these plans and therefore should be considered illustrative.

Table I-2 shows that the total System membership increased by 1.6% from 2024 to 2025. We complete an in-depth review of the data for plans that are having their explicit biennial valuation completed for the year. We complete a high-level review of the demographic data in “off” years for the plans that are not having an explicit actuarial valuation completed for the year. Based on this review, the active member counts reported for the Defined Benefit Plans decreased by 0.3% while the active cash balance plan membership increased by 1.3%.

**Table I-2
Membership Total**

	January 1, 2025	January 1, 2024	% Change
Defined Benefit Actives	8,158	8,185	-0.3%
Cash Balance Benefit Actives	1,858	1,835	1.3%
Terminated Vesteds	1,645	1,504	9.4%
Members Receiving Benefit Payments	6,924	6,719	3.1%
Inactive Nonvested Members with accounts	945	996	-5.1%
Beneficiaries	814	777	4.8%
Total System Members	20,344	20,016	1.6%
Annual Salaries	\$667,306,364	\$632,405,982	5.5%
Average Salary per Active Member	\$66,624	\$63,114	5.6%

Notes for Table I-2: Annual salaries are annualized salary paid during the prior plan year for Defined Benefit plan members and actual salary for active Cash Balance members.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION I — BOARD SUMMARY

Tables I-3a through I-3c summarize the demographic make-up of the defined benefit and cash balance plans in the System.

**Table I-3a
Number of Plans**

	January 1, 2025	January 1, 2024	% Change
Defined Benefit Plans	718	722	-0.55%
Cash Balance Plans	342	336	1.79%
Total	1,060	1,058	0.19%

**Table I-3b
Active Members Demographic Make-up**

	January 1, 2025	January 1, 2024	% Change
Defined Benefit Plans			
Count	8,158	8,185	-0.33%
Average Age	46.7	46.8	-0.30%
Average Service	10.3	10.5	-1.47%
Total Payroll	\$562,019,212	\$536,974,651	4.66%
Average Pay	\$68,892	\$65,605	5.01%
Cash Balance Plans			
Count	1,858	1,835	1.25%
Average Age	47.7	47.8	-0.17%
Average Service	8.6	8.8	-2.26%
Total Payroll	\$105,287,152	\$95,431,331	10.33%
Average Pay	\$56,667	\$52,006	8.96%
Total Active PMRS Members	10,016	10,020	-0.04%

Notes for Table I-3b: Payroll is annualized salary paid during the prior plan year for Defined Benefit plan members and actual salary for active Cash Balance members.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION I — BOARD SUMMARY

**Table I-3c
Inactive Members Demographic Make-up**

	January 1, 2025	January 1, 2024	% Change
Inactive Nonvested Members with account balances	945	996	-5.12%
Deferred Vested Members			
Defined Benefit Plans	1,188	1,094	8.59%
Cash Balance Plans	457	410	11.46%
Pensioners			
Count	6,924	6,719	3.05%
Average Age	71.4	71.2	0.29%
Average Monthly Benefit	\$1,613	\$1,564	3.10%
Number of New Awards	450	415	8.43%
Average New Monthly Benefit	\$1,921	\$1,623	18.36%
Number Who Received Legislated COLA in Prior Year	230	247	-6.88%
Survivor Beneficiaries			
Count	814	777	4.76%
Average Age	75.0	74.2	1.05%
Average Monthly Benefit	\$1,153	\$1,174	-1.80%
Total Inactive PMRS Members	10,328	9,996	3.32%

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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SECTION I — BOARD SUMMARY

Table I-4 presents a comparison between the January 1, 2024 and January 1, 2025 System assets, liabilities, Unfunded Actuarial Liability or surplus, and funded ratios. The January 1, 2025 Actuarial Value of Assets and Actuarial Liability reflect the \$50.6 million excess interest distribution as of December 31, 2024. The January 1, 2024 Actuarial Value of Assets and Actuarial Liability do not reflect the \$50.6 million excess interest distribution awarded by the Board during 2024.

**Table I-4
Total System Assets and Liabilities**
(Dollar amounts in thousands)

	January 1, 2025	January 1, 2024	% Change
Actuarial Liability	\$3,237,732	\$3,174,271	2.0%
Market Value of Assets (MVA)	\$3,518,757	\$3,286,422	7.1%
Unfunded Liability/(Surplus) using MVA	(\$281,025)	(\$112,151)	150.6%
Funded Ratio on MVA	108.7%	103.5%	5.15%
Actuarial Value of Assets (AVA)	\$3,291,258	\$3,137,462	4.9%
Unfunded Liability/(Surplus) using AVA	(\$53,526)	\$36,809	-245.4%
Funded Ratio on AVA	101.7%	98.8%	2.8%

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION I — BOARD SUMMARY

For plans with a full January 1, 2025 valuation, Tables I-5a and I-5b present aggregate results, split between plans in a surplus position (Table I-5a) and those in an underfunded position (Table I-5b), relative to the prior full valuation.

**Table I-5a
Defined Benefit Non-County (Municipal) Plans in a Surplus Position**

	January 1, 2025	January 1, 2023
1. Count	359	328
2. Actuarial Liability	\$840,211,826	\$591,103,818
3. Actuarial Value of Assets	954,978,837	690,940,594
4. (Surplus) [2. - 3.]	(\$114,767,011)	(\$99,836,776)

**Table I-5b
Defined Benefit Non-County (Municipal) Plans in an Underfunded Position**

	January 1, 2025	January 1, 2023
1. Count	355	391
2. Actuarial Liability	\$2,001,060,977	\$2,127,556,023
3. Actuarial Value of Assets	1,876,161,958	1,963,267,791
4. Unfunded Liability [2. - 3.]	\$124,899,019	\$164,288,232

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION I — BOARD SUMMARY

Historical Trends

Even though the attention given to the valuation reflects the most recently computed actuarial liability and funded ratio, it is important to remember that each valuation is merely a snapshot of the long-term progress of the System. It is equally important to judge a current year's valuation results relative to historical trends as well as trends expected into the future.

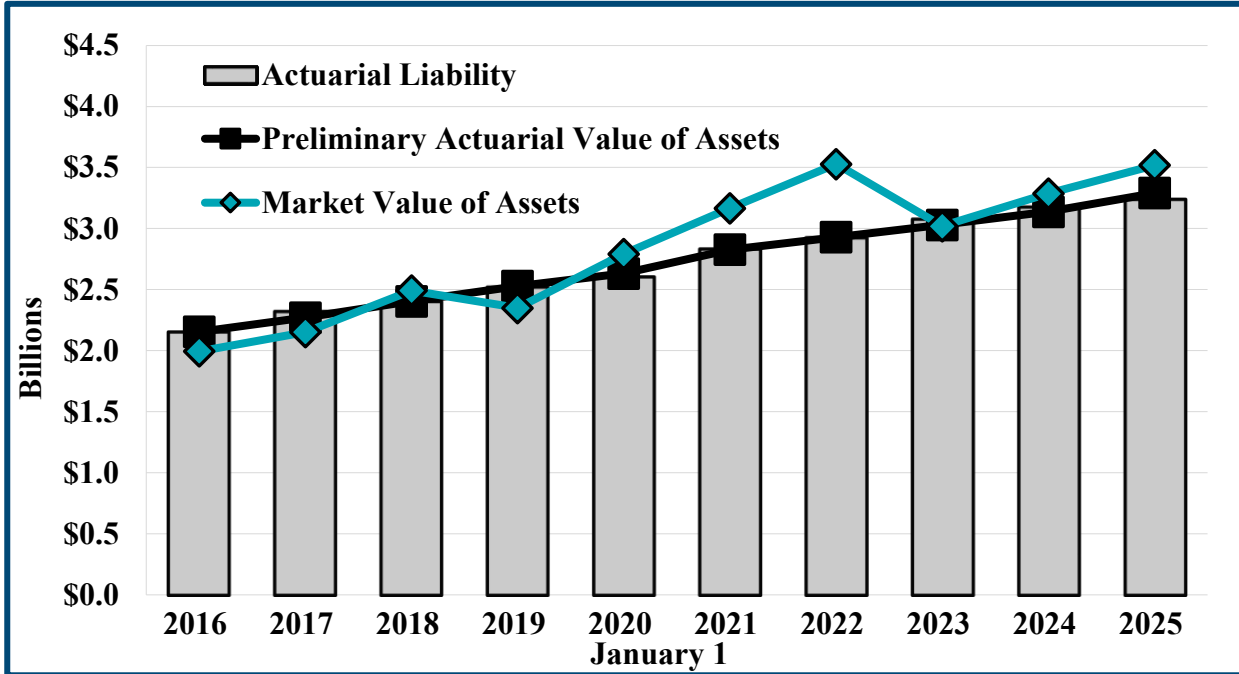
On the following pages, we present the historical trends for the total System's MVA and AVA (teal lines with diamonds and black lines with squares in Figure I-4) compared to the total System actuarial liabilities (gray bars). We have included the MVA funded ratio (MVA divided by AL) in Figure I-5 to illustrate the underlying System's risks addressed later in this report. Due to the volatility of the Market Value of Assets, this ratio ranges from 93% up to 121%. For 2025, this funded ratio is 109%.

The funded ratio on an Actuarial Value of Assets basis shows the recent progress of the System. For 2025, this funded ratio is 102%. The Actuarial Value of Assets is based on the reserve accounts for the System. Due to the growth of the reserves as outlined with Pennsylvania Municipal Retirement Law, the Actuarial Value of Assets is expected to grow more linearly. When undistributed earnings are transferred to the Retiree Reserve to fully fund the retiree liabilities or excess interest is distributed to member plans, there are additional increases in the AVA. Overall, there is little variability in the historical AVA funded ratio which ranges from 98% to 102%.

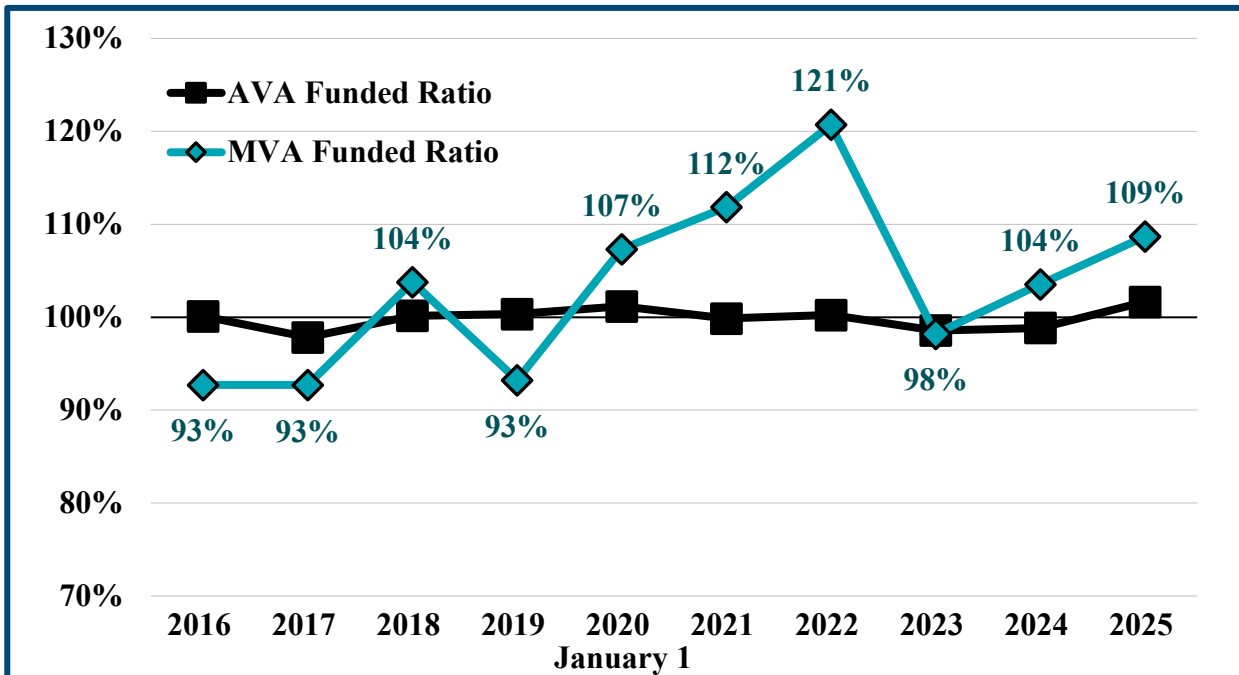
**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION I — BOARD SUMMARY

**Figure I-4
System Assets and Liabilities**



**Figure I-5
System Funded Ratios**



**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

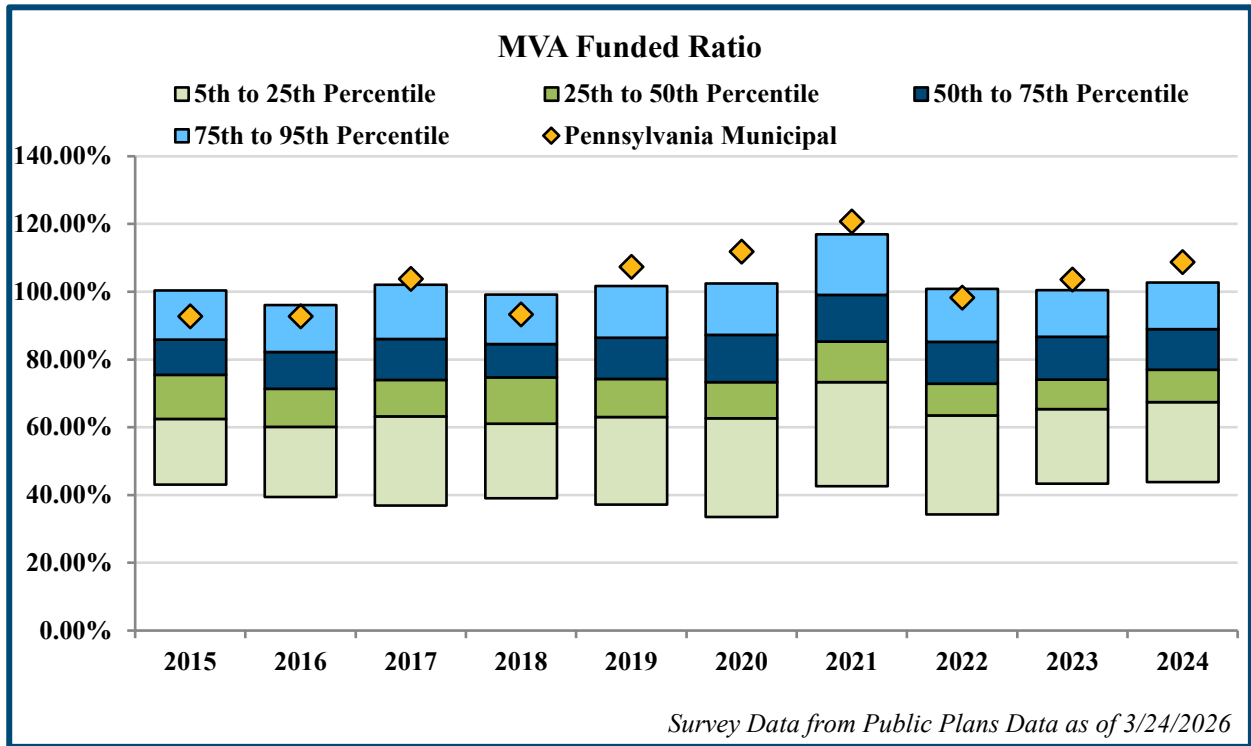
SECTION I — BOARD SUMMARY

Figure I-6 compares PMRS to the distribution of plans from the Public Plans Database, which is maintained by the Boston College’s Center for Retirement Research, the Center for State and Local Government Excellence, and the National Association of State Retirement Administrators. The number of plans in any given year ranges from 212 to 248.

The years in the bar charts on the following pages represent plans with fiscal years ending during the year. Therefore, the results of PMRS as of this valuation are aligned to 2024 (December 31, 2024). The gold diamonds represent PMRS and the bars represent the 5th to 95th percentile of the plans in the database.

The funded ratios on an MVA basis that are shown in teal diamonds in Figure I-5 are represented by the gold diamonds in Figure I-6. Relative to this universe of plans in the Public Plan Database, PMRS has always been in the top quartile.

**Figure I-6
MVA Funded Ratio Comparison with Public Plan Database**



**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

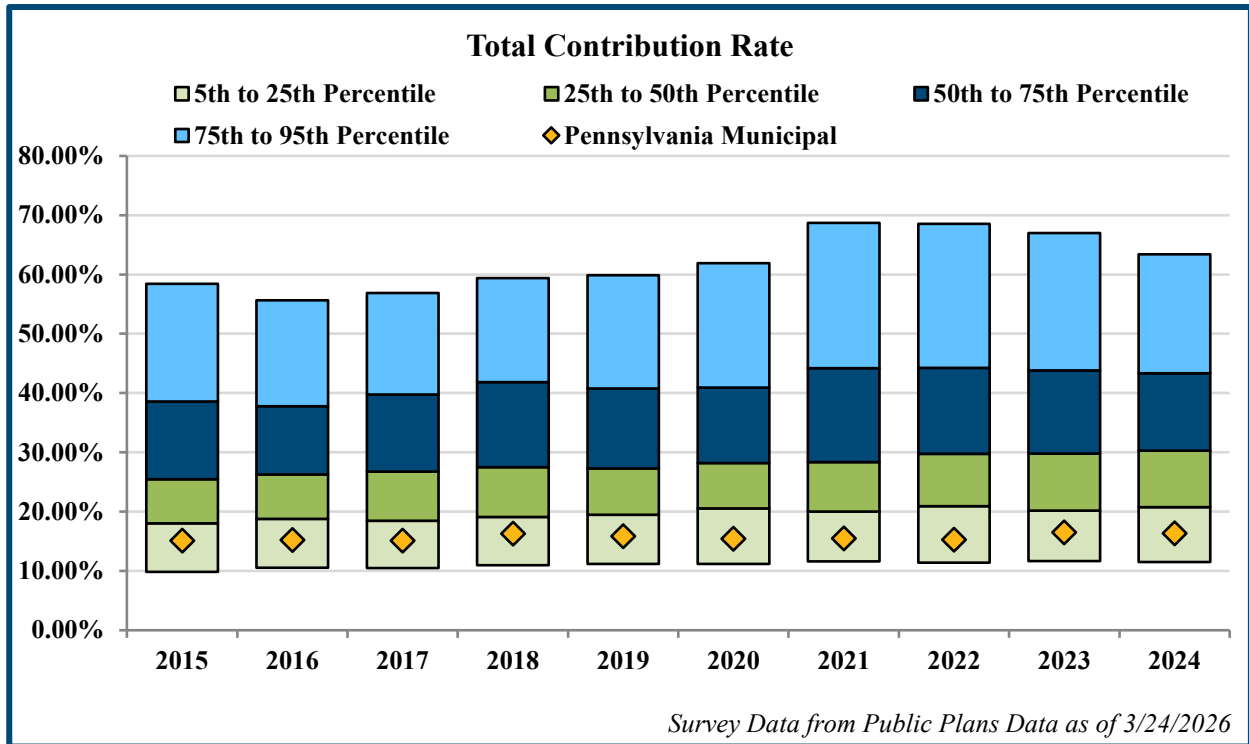
SECTION I — BOARD SUMMARY

The Total Contribution Rate of pension plans is generally the sum of the following divided by the active payroll:

1. **Normal cost**, the value of benefits accrued during the year for active members,
2. An **Amortization Payment** of the unfunded liability based on the funding method, and
3. **Annual Expenses** equal to \$20 per member to assist in maintenance of the plan.

The Total Contribution Rate for all plans in PMRS, shown by the gold diamonds in Figure I-7 below, is substantially driven by the normal cost. The majority of plans are fully funded with no required Amortization Payment. Although many PMRS plans are not fully funded, the System in aggregate remains in the lower quartile when compared to the distribution of contribution rates for the plans in the Public Plan Database.

**Figure I-7
Total Contribution Rate Comparison with Public Plan Database**

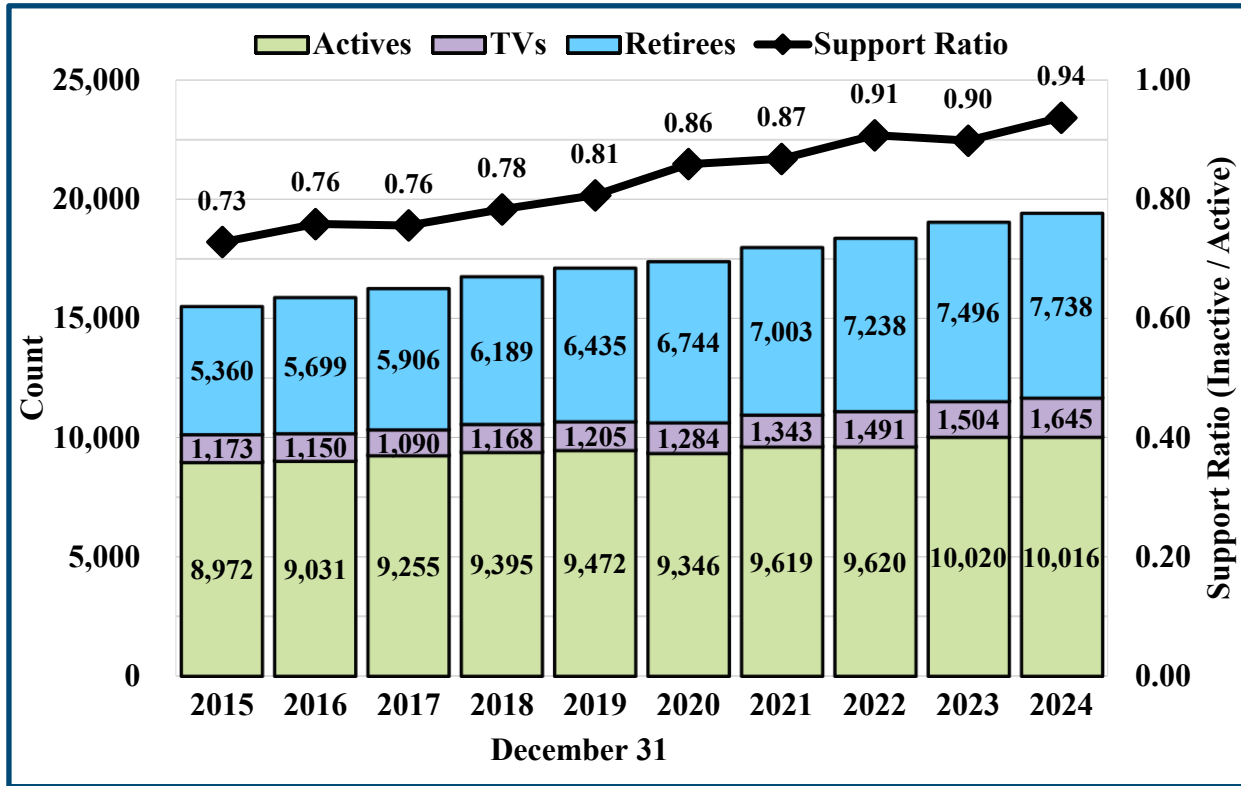


**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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Figure I-8 shows a comparison of the demographic makeup of the System over the last 10 years. The black line represents the support ratio and is oriented to the right-hand axis. The support ratio is the ratio of retirees and terminated vested members to active members at each date, which has been under 1 in all years.

**Figure I-8
System Member Counts and Support Ratio**



A retirement system has a life cycle, reaching maturity when there are more covered inactive members (retirees and terminated vested members) than those who are actively employed. When this occurs, the support ratio of inactive to active members is above 1.00. The System is maturing as indicated by the steadily increasing ratio of inactive to active members, currently about 0.94. A mature system is more sensitive to risk factors such as investment risk, such that investment recovery takes more time and can be difficult to achieve without additional actions such as increased contributions. Prolonged investment recovery is impacted by the net negative cash flows occurring when benefit payments and expenses exceed contributions. This measure is correlated with the support ratio. This is discussed in more detail in the risk section of this report.

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Projected Financial Trends

Our analysis of the Pennsylvania Municipal Retirement System’s projected financial trends is an important part of this valuation. In this section, we present our assessment of the implications of the January 1, 2025 valuation results on the future outlook in terms of benefit security (assets sufficient to cover liabilities) and the System’s expected funding progression. For purposes of this model, we have assumed that the contributions for individual plans are fixed at the amounts determined as of this valuation date.

In the charts that follow, we project the Retirement System’s resources and obligations. We assume that the contributions required under Act 205 are made each year. The projections in this section only consider what was known as of January 1, 2025 based on the assumptions listed in Appendix B of this report. The projections are provided under three different investment return assumption scenarios:

- Projection 1: Assuming 5.5% investment returns each and every year,
- Projection 2: Assuming a 7.00% (net of investment fees) for each and every year. Based on the current asset allocation for the System, the investment consultant has indicated that the long-term return on assets is expected to exceed 5.5%, and
- Projection 3: Assuming 20 years of varied returns equal to an overall average 7.00% investment return based on the returns provided in Table I-5.

In the graphs that follow, the grey bars represent the Actuarial Liability or AL. When the bar is light grey, no excess interest was projected to be awarded, whereas darker grey bars with white dots represent the years when excess interest is available from the prior year and assumed to be paid to the municipalities and members. The AL takes into account the value of all benefits earned through the valuation date. This is an open group projection which means when an active member is expected to change status, they are assumed to be replaced.

To meet these obligations, the System has resources which include the Market Value of Assets (MVA, teal line with diamond markers). The Actuarial Value of Assets (AVA, black line with square markers) reflects the System-wide reserves. At a plan level, if the AL is less than the AVA, then future contributions are increased.

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The percentages at the top of the graph are the MVA divided by the AVA. This shows any asset deficit (i.e., MVA below AVA) or surplus (i.e., MVA above AVA). For the System, given that the investment Regular Interest Rate is currently 5.5%, the key resource to cover any asset deficit or to create an asset surplus (i.e., MVA in excess of AVA) is through investment returns at a System level that exceed the 5.5% rate. In addition, the Board can change the Regular Interest Rate at future valuation dates. If the Board increases this rate, future contributions would decline due to decreased liabilities.

When available, excess interest may be distributed to pay down unfunded liabilities typically for plans less than 95% funded or provide benefit improvements typically for plans that are at least 95% funded. About 64% of the AL is associated with defined benefit plans that are at least 95% funded. We assumed 64% of excess interest distributions provide benefit improvements. This percentage is increased linearly to 100% over a 10-year period. The projections reflect the \$50.6 million excess interest distribution as of December 31, 2024. In any year that excess interest is projected to be distributed according to Policy Statement 05-2, the AL and AVA are increased in the graphs the following year (e.g. if there is a 2025 excess interest award, it is expected to be paid in 2026).

Over time, the Actuarial Value of Assets increases due to contributions (which reflect the PMRS assessment expense) and interest based on the Regular Interest Rate. These assets decrease due to benefit payments and the PMRS assessment expenses.

Likewise, the Market Value of Assets increases due to contributions (which reflect the PMRS assessment expense). However, these assets decrease due to benefit payments and the total expenses for the System. Furthermore, the Market Value of Assets may increase or decrease in a given year based on the return on assets for that year.

PROJECTION 1: 5.5% ANNUAL INVESTMENT RETURNS

In this scenario, no additional excess interest after 2025 is assumed to be distributed since AVA slightly exceeds the MVA in the current year. The MVA is assumed to increase at the same rate of return as the Regular Interest Rate (5.5%) every year. Because the MVA is reduced by the total administrative expenses while the AVA is only reduced by the PMRS assessment expense, the AVA will increase more than the MVA over the projection period. The total administrative expenses in excess of the PMRS assessment expense is about 25 basis points of the MVA.

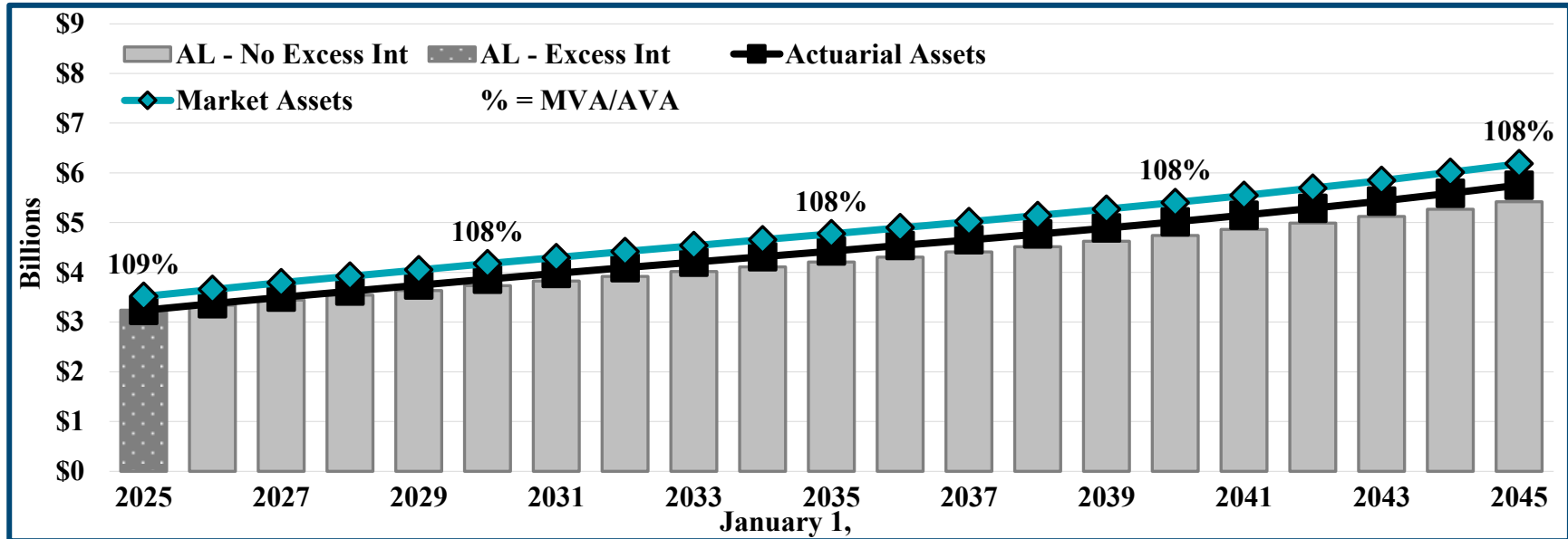
Over time, the System becomes overfunded on an AVA basis. Currently, some individual plans have AVA surpluses while others have AVA deficits. In aggregate, this results in contributions eventually eliminating the AVA deficits and improving the AVA funded status.

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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Figure I-9

Projection 1: 5.5% Annual Investment Returns



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PROJECTION 2: 7.00% ANNUAL INVESTMENT RETURNS

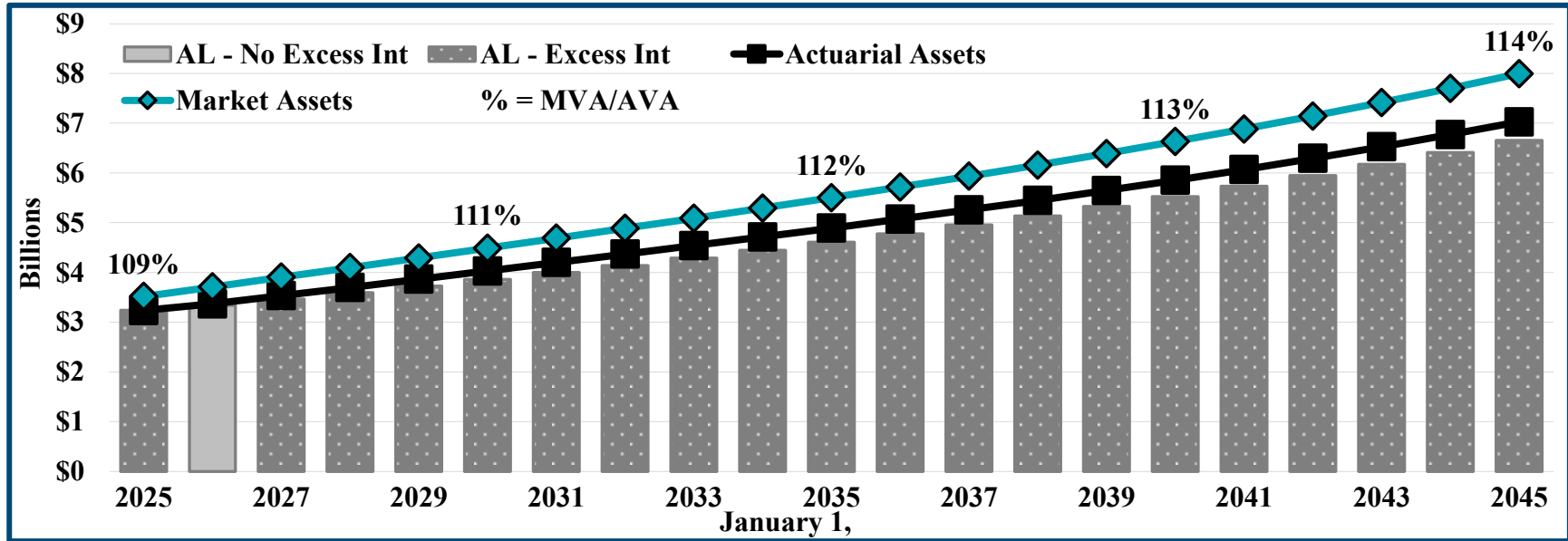
This scenario shows the projection if the assets grow at a rate of 7.00% throughout the projection period.

This scenario creates an asset surplus as the MVA outpaces the AVA over the 20-year projection because of the assumption that the annual investment return will be 150 basis points higher than the Regular Interest Rate (7.0% compared to 5.5%). This excess return more than covers the additional administrative fees reflected in the MVA. In addition, the projected AL and AVA increase more under this scenario because excess interest is assumed to be awarded annually (as shown by the darker grey bars with white dots), which increases the benefits offered for many individual pension plans.

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Figure I-10
 Projection 2: 7.00% Annual Investment Returns



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PROJECTION 3: 7.00% AVERAGE ANNUAL INVESTMENT RETURNS WITH VOLATILITY

In this scenario, the System's investment returns are assumed to vary over time to reflect asset volatility. Based on the random future return rates in Table I-5, which yield an average 7.00% rate of return over the projection period, the projected MVA funded ratio will fluctuate based on the Market Value of Assets.

Even with an average investment return that exceeds the Regular Interest Rate by 150 basis points, asset deficits (i.e., MVA below AVA) can occur due to the volatility of the assets.

The System's AVA continues to grow based on the Regular Interest Rate and with excess interest distributions. Therefore, the AVA remains above the liabilities. In general, this means that plan-level contributions do not increase, and the asset deficits are primarily eliminated through investment returns in excess of the Regular Interest Rate.

An exception may occur in some years when the AVA exceeds the System's MVA by more than 20%. At the municipal plan level under Act 205, the AVA must remain within a 20% corridor of each plan's MVA. In those instances, additional contributions may be required for certain individual plans.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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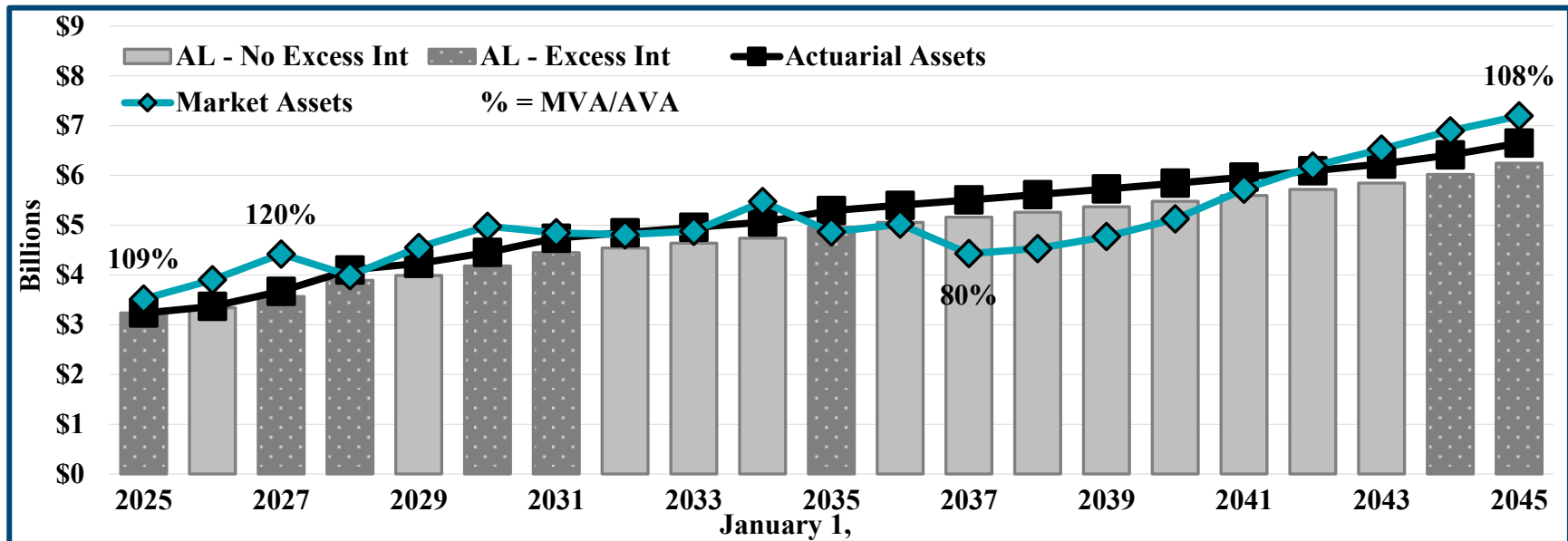
SECTION I — BOARD SUMMARY

**Table I-6
Projected Returns Equal to 7.00%**

Fiscal Year	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Return	12.50%	15.00%	-8.00%	17.00%	12.00%	0.00%	2.50%	5.00%	16.00%	-8.00%

Fiscal Year	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Return	7.25%	-8.00%	7.00%	10.00%	12.00%	16.00%	12.00%	9.00%	9.00%	7.50%

**Figure 1-11
Projection 3: 7.00% Average Annual Investment Returns with Volatility**



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Actuary’s Assessment of Risk

Actuarial valuations are based on a set of assumptions regarding future economic and demographic experience. These assumptions represent a reasonable estimate of long-term future experience, but actual future experience will undoubtedly be different. The purpose of this section of the actuarial report is to identify, in the actuaries’ professional judgment, the primary risks to the System, provide some background information about those risks, and provide an assessment of those risks in accordance with ASOP No. 51, Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions. According to the ASOP, the actuary should identify risks that, in the actuary’s professional judgment, may reasonably be anticipated to significantly affect the plan’s future financial condition.

The identification of risks for PMRS can be viewed in aggregate at a System level or at the individual plan level (Plan Risk). The individual plan level risks can vary greatly from plan to plan as we discuss in this Section. The fundamental risk to the System and therefore to the participating plans, is that the market value of assets could become insufficient to meet the benefit obligations of the individual plans. This may require increasing contributions placing pressure on municipal budgets. This section will attempt to address this fundamental risk by reviewing the Plan and System level risks for the following:

- Investment Risk,
- Longevity and Other Demographic Risks, and
- Withdrawal Risk.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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INVESTMENT RISK

Investment Risk represents the risk associated with asset volatility (particularly losses) and exists for nearly all pension plans. Because the Pennsylvania Municipal Retirement Law defines the Regular Interest used in the funding valuation, the risk associated with the investment return for PMRS is unique, as outlined below.

Plan Level Investment Risk

Participating plans within PMRS are not exposed to the same investment risk as typical pension plans. PMRS credits the municipal and member accounts at the Regular Interest Rate each year, regardless of the actual investment return on the market value of assets. Thus, the aggregation of the plans' reserve accounts represents the AVA and is used to determine the required plan contributions also known as the Minimum Municipal Obligation (MMO). If the System's MVA exceeds the combined plans' AVAs, then individual plans may receive a distribution of the surplus called Excess Interest. Therefore, plans participating in PMRS are not generally subject to the down-side risk of asset volatility, but they do have the opportunity to share in the up-side potential.

System Level Investment Risk

When the actual investment returns are less than the Regular Interest Rate (currently 5.5%), the MVA may drop below the system-wide reserve accounts. The System's asset allocation is selected such that the long-term return on assets is expected to exceed the Regular Interest Rate, which helps to mitigate this inherent System risk. This gap would be expected to be closed by the accumulation of returns in excess of the Regular Interest Rate in the future. For the January 1, 2025 valuation, the MVA exceeded the AVA because the long-term excess asset returns were greater than the Regular Interest Rate. Based on information provided by the investment consultant and reviewed by the Board, the current long-term expected return is above 7.00% (net of investment expenses).

If the actual investment returns are greater than the Regular Interest Rate and the system-wide reserve accounts are less than the Market Value of Assets, then there is a surplus as defined in Policy Statement 05-2. This surplus allows for a portion of the undistributed earnings to transfer to the Retired Member Reserve Account to ensure that the System level retiree liabilities are fully funded. This transfer occurred previously on January 1, 2021. Since then, the retiree liabilities were fully funded by the Retired Member Reserve Account, so no transfer is necessary.

The current funded status for the System results in the MVA exceeding the AVA by \$227.5 million. Per Policy Statement 05-2, the Board decided not to distribute excess interest as of January 1, 2025.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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The System level's sensitivity to investment risk can be explored in more detail by reviewing the Net Cash Flow and the Maturity Level.

Net Cash Flow: Net cash flow (NCF) during a year equals the contributions into the System (inflows) minus the benefit payments and expenses (outflows) coming out of the System. If the level of outflows exceeds the inflows, the system has negative NCF. Mature plans generally have a negative NCF as the number of retirees increase. Additional cash from investment returns and existing assets are then needed to pay the pension benefits if a system has negative NCF.

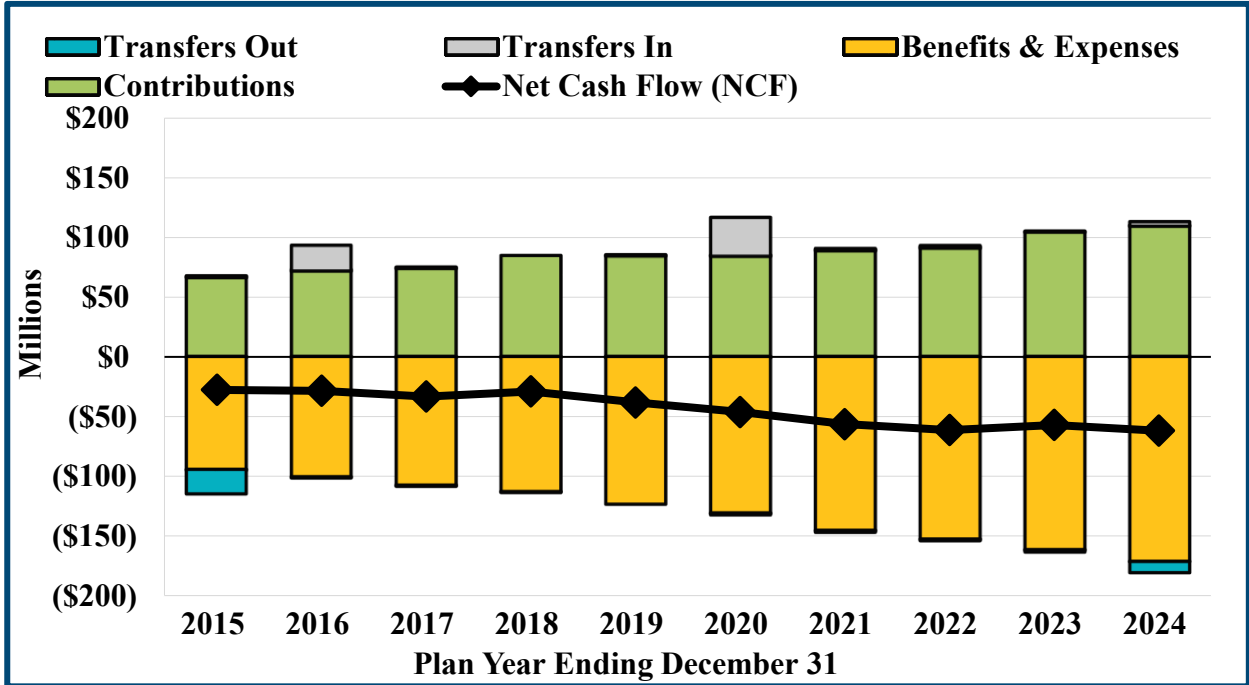
The System's NCF over the recent 10-year span is displayed in the next graph. The NCF is represented by the black line in Figure I-12. The black line in Figure I-13 provides the NCF as a percentage of the end of year MVA. As of December 31, 2024, the system had a \$62 million negative NCF, excluding transfers into and out of the System. This represents about -1.8% of the end of year MVA. The negative NCF has been between -1.2% to -2.0% of total assets over the last 10 years. This implies that in addition to contributions, current plan assets must be used to pay benefits. Another way to say this is that for the total value of assets to remain level or grow, the fund needs a minimum investment return at least equal to the negative NCF. Negative NCF can become less negative or even positive by decreasing the Regular Interest Rate (which results in an increase in contributions).

The volatility of the NCF is largely a function of contributions and benefit payments. Transfers into and out of the System can be found in Table II-2 for the past year. During 2020, a \$32 million transfer into PMRS for York Area Regional Police represents the largest transfer in recent history.

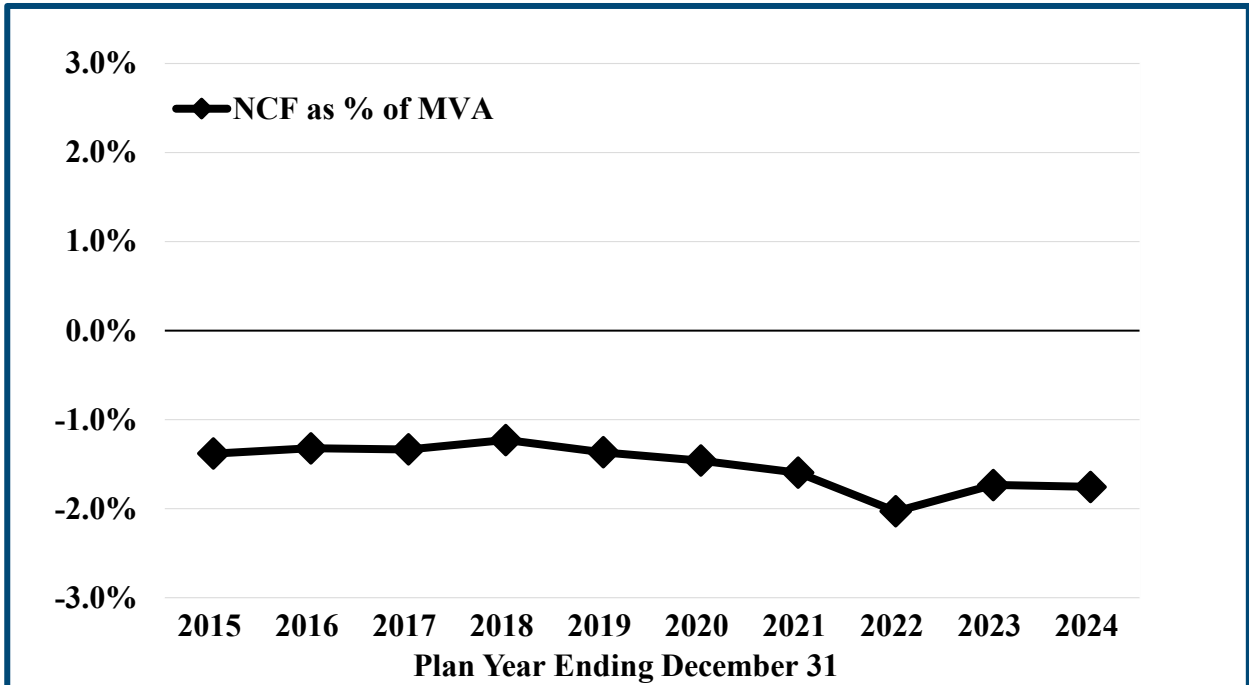
**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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SECTION I — BOARD SUMMARY

**Figure I-12
System Cash Flows**



**Figure I-13
System Net Cash as a Percentage of MVA**

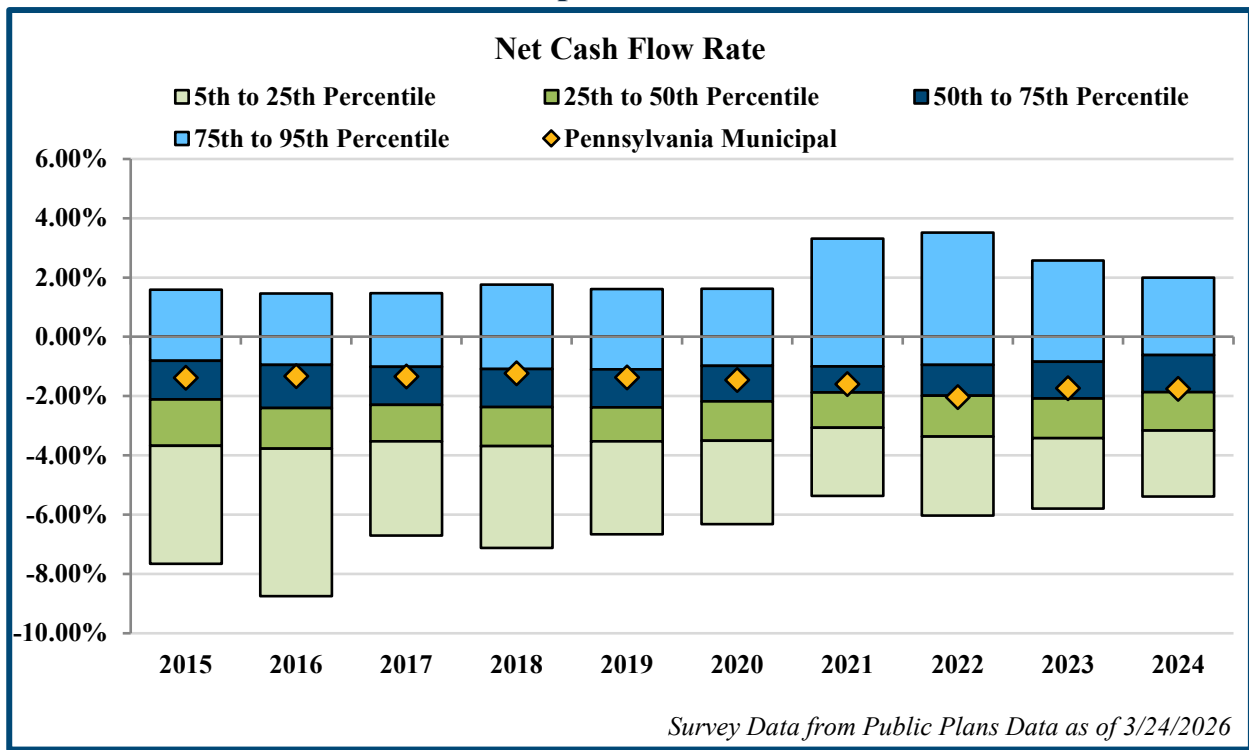


**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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The following chart shows the distribution from the 5th to 95th percentile of the NCF as a percent of MVA for the plans in the Public Plans Database. Similar to the prior charts related to the Public Plans Database and shown in this report, data is grouped by the year containing the fiscal year end. The gold diamonds represent PMRS. PMRS has been gradually decreasing relative to the universe of plans in the Public Plans Database despite a recent increase due to strong investment returns increasing the MVA. This reflects that the System is slowly maturing due to benefit payments increasing at a faster rate than contributions.

**Figure I-14
Net Cash Flow Rate Comparison with Public Plan Database**



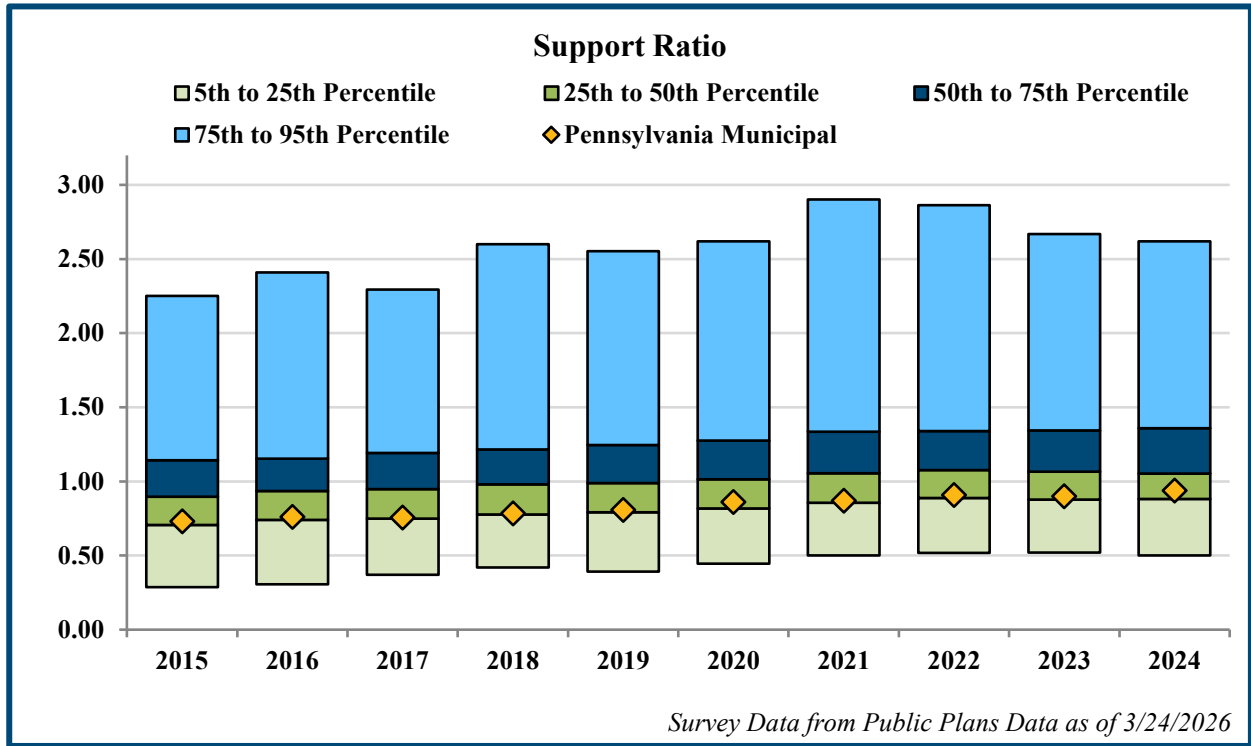
Maturity Level: Mature pension plans usually have more inactive members than active members. These plans tend to have negative NCF and are more sensitive to investment risks. Plan maturity can be measured in a variety of ways, but one simple measure of plan maturity is the ratio of the number of inactive members (those receiving benefits or entitled to a deferred benefit) to the number of active members. We refer to this as the support ratio. The revenue base supporting the plan is usually proportional to the number of active members. A relatively high number of inactive members compared to active members may indicate a larger plan relative to its revenue base.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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The chart below shows the distribution from the 5th to 95th percentile of support ratios for the plans in the Public Plans Database. The lower the support ratio, the lower the maturity and the lower the sensitivity of the plan to risk. The gold diamonds represent PMRS. This shows that while the System is maturing, it is doing so at a very similar rate to the universe of plans and remains near the bottom of the second quartile.

**Figure I-15
Support Ratio Comparison with Public Plan Database**



For additional review of the risk of the System associated with the investment returns, please refer to the prior section to review the deterministic projections.

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LONGEVITY AND OTHER DEMOGRAPHIC RISK

Longevity and Other Demographic Risk is the potential for retirees to live longer than expected or other demographic experience to differ from the assumptions. This has the potential to result in more benefits being paid than anticipated from the assets. This creates a financial risk that the plan will cost more than originally anticipated.

Plan Level Longevity and Other Demographic Risk

PMRS is designed to transfer the longevity risk from individual plans to the System when members retire. This is managed via a transfer of the present value of expected benefit payments from the member and municipal accounts to the Retiree Reserve. Once this transfer occurs, the individual plan no longer has risk associated with the retiree outliving their reserve as long as the plan remains in the System.

Plans in PMRS range in number of members from 1 to nearly 1,000. Actual demographic experience will vary from the assumptions. This reality is magnified in plans with fewer members, where the plan experience in one year can deviate materially from the assumptions. This deviation can cause volatility in the liabilities and the associated MMO. The demographic experience of the System is reviewed every 5 years to ensure that assumptions reflect the experience of the member plans of the System in aggregate.

System Level Longevity and Other Demographic Risk

All retirees are paid from the Retiree Reserve Account which is funded through transfers of member and municipal reserve accounts from the individual plans. In this way, mortality risk is pooled among all individual plans, reducing an individual plan's overall risk associated with mortality. Provided plans do not withdraw from PMRS, this retiree longevity risk stays within the System. Assumption changes that occur after the transfer to the Retiree Reserve Account that increase the retiree liabilities (such as mortality assumption changes or reductions in the discount rate) can create a gap between the Retiree Reserve Account and the System's retiree liabilities. If retirees live longer than originally expected, more benefit payments will be paid out of the Retiree Reserve Account than expected, further increasing this gap. If the retiree liabilities are not fully funded by the Retiree Reserve Account and there are surplus assets available under Policy Statement 05-2, then according to general counsel's interpretation of PMRL (Pennsylvania Municipal Retirement Law), there will be a transfer of undistributed excess earnings to the Retiree Reserve Account to ensure these liabilities are fully funded.

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WITHDRAWAL RISK

Withdrawal Risk is the risk that plans withdraw from the System.

Plan Level Withdrawal Risk

If an individual plan withdraws from the System, all future risks associated with longevity and market fluctuations will be passed onto the withdrawing plan. The assets that are distributed to the plan upon withdrawal are based on the System's Market Value of Assets at the time of the withdrawal application up to the plan's Actuarial Value of Assets.

System Level Withdrawal Risk

If a significant number of plans or plans representing a large percentage of assets withdraw from the System, this could increase the risk to the System due to smaller pools within which risks are diversified. Further, the depletion in assets may greatly change the System's exposure to investment risk, longevity risk, and expense management. There have been relatively few plans that have withdrawn from PMRS in the past 15 years. In fact, the number of pension plans in total has increased from 697 defined benefit plans and 203 cash balance plans as of January 1, 2010 to 718 defined benefit plans and 342 cash balance plans as of January 1, 2025. The active member count over that same time period has increased from 9,351 to 10,016 members while members receiving a benefit have increased from 3,909 to 7,738. When plans withdraw from PMRS, the Pennsylvania Municipal Retirement Law states that the assets distributed to the withdrawing plan cannot exceed the Plan's pro rata portion of the Market Value of Assets "as of the date of receipt of the application for permission to withdraw to prevent plans from leaving with higher reserve accounts." This protects the System and other participating plans from anti-selection risk when a participating employer requests a withdrawal.

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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SECTION II — ASSETS

The System’s assets play a key role in the financial operation and in Board decisions. The level of assets, the allocation of assets among asset classes, and the methodology used to measure assets can impact funded status, municipal and county contributions, and the ultimate security of members’ benefits.

In this section, we present detailed information on total System assets including:

- **Disclosure** of System assets at December 31, 2024 and December 31, 2023;
- Statement of the **changes** in market values during the year;
- Development of the **Actuarial Value of Assets**; and,
- Allocation of **excess interest**.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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SECTION II — ASSETS

Disclosure

The Market Value of Assets represents a “snapshot” or “cash-out” value, which provides the principal basis for measuring financial performance from one year to the next. Market values, however, can fluctuate widely with corresponding swings in the marketplace.

The actuarial values are a reflection of the market values and the aggregate reserves being credited to each participating employer. They are used for evaluating the System’s ongoing liability to meet its obligations to pay benefits when due.

Table II-1 summarizes the Market Value of Assets by asset class for the current and prior year as provided in the December 31, 2024 PMRS ACFR.

**Table II-1
Statement of Assets as Market Value**
(Dollar amounts in thousands)

Assets	December 31, 2024	December 31, 2023
Equity Investments	\$2,755,428	\$2,494,815
Accounts Receivable	5,854	8,497
Fixed Income Investments	278,441	273,148
Real Estate Investments	494,273	523,410
Fixed Assets	135	160
Accounts Payable	(6,269)	(4,876)
Net Pension Liability	(7,342)	(8,266)
Net OPEB Liability	(3,710)	(3,786)
Investment Purchases Payable	(895)	(544)
Net Deferred Outflow of Resources	2,842	3,864
Total Market Value of Assets	\$3,518,757	\$3,286,422

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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SECTION II — ASSETS

Table II-2 summarizes the transaction of the assets during the year leading up to our valuation.

**Table II-2
Changes in Market Value**
(Dollar amounts in thousands)

Description	Amount
Market Value of Assets – January 1, 2024	\$3,286,422
Additions	
Contributions	
Municipal Employers	\$77,256
Plan Members	31,691
Transfers from other plan administrators	3,926
Assessments	304
Total Contributions	\$113,177
Investment Income	
Net appreciation (depreciation) in fair value of investments	\$263,084
Interest	12,058
Dividends	20,306
Real Assets Income	14,248
Less Investment Expenses	(10,096)
Total Investment Income	\$299,600
Miscellaneous Income	\$1
Total Additions	\$412,778
Deductions	
Annuity Benefits	(\$161,724)
Transfers to other plan administrators	(9,451)
Administrative Expenses	(9,268)
Total Deductions	(\$180,443)
Market Value of Assets – January 1, 2025	\$3,518,757

The deductions of \$180 million (including transfers out of PMRS) exceed total contributions of \$113 million (including transfers into PMRS) for a net negative cash flow of \$67 million, which is approximately negative 1.9% of the end of year Market Value of Assets.

The money-weighted rate of return net of investment expenses as provided by PMRS was 9.22%.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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SECTION II — ASSETS

Funding of Retiree Reserve Account

All retirees are paid from the Retiree Reserve Account which is funded through transfers of Members' and Municipal Reserve Accounts from the individual plans as members retire. If the preliminary retiree liabilities are not fully funded by the Retiree Reserve Account and there are surplus assets available under Policy Statement 05-2, then according to general counsel's interpretation of PMRL, there will be a transfer of undistributed excess earnings to the Retiree Reserve Account to ensure these liabilities are fully funded. The following table compares the retiree liabilities to the Retiree Reserve Account as published in the December 31, 2024 ACFR plus the excess interest transfer as of December 31, 2024 and determines the amount of money, if any, that needs to be transferred from the Undistributed Earnings to the Retiree Reserve. If a transfer to the Retiree Reserve occurs, then the updated resulting Retiree Reserve (line item 6 below) is reflected retroactively in the following year's ACFR.

**Table II-3
Retired Member Reserve Account as of January 1, 2025**
(Dollar amounts in thousands)

Description	Amount
1. Retiree Liabilities as of January 1, 2025	\$1,621,830
2. December 31, 2024 Total In-Pay Reserve Accounts	
a. Retired Members' Reserve Account	\$1,663,013
b. DROP Participant Reserve Account	2,888
c. Total (a. + b.)	<u>\$1,665,901</u>
3. Preliminary Unfunded Retiree Actuarial Liabilities [(1. - 2c.), not less than \$0]	\$0
4. Undistributed Earnings as of December 31, 2024 [Not less than \$0]	\$236,352
5. Transfer amount to the Retiree Reserves [Lesser of 3. and 4.]	\$0
6. Retired Members' Reserve Account with transfer (2a. + 5.)	\$1,663,013
7. Undistributed Earnings after transfer (4. - 5.)	\$236,352

Notes for Table II-3: Retired Members' Reserve Account reflects the December 31, 2024 excess interest distribution of \$7,166,000 and the reserve published in the December 31, 2024 ACFR.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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SECTION II — ASSETS

Preliminary Actuarial Value of Assets

The Preliminary Actuarial Value of Assets is based on the individual municipal account balances maintained by PMRS, also referred to as reserves, plus one year of expected expenses not covered by the per participant component.

**Table II-4
System Reserve Accounts as of January 1, 2025**
(Dollar amounts in thousands)

Description	Prior to Reflecting December 31, 2024 Excess Interest Distribution	December 31, 2024 Excess Interest Distribution	After Reflecting December 31, 2024 Excess Interest Distribution
Members' Reserve Account	\$549,941	\$7,325	\$557,266
Municipal Accounts	1,022,216	36,081	1,058,297
Disability Reserve Account	942	0	942
DROP Participant Reserve Account	2,888	0	2,888
Retired Members' Reserve Account	1,655,846	7,166	1,663,012
Total System Reserve Accounts	\$3,231,833	\$50,572	\$3,282,405

Notes for Table II-4: Reserve accounts prior to reflecting December 31, 2024 excess interest distribution as published in the December 31, 2024 ACFR.

**Table II-5
Preliminary Actuarial Value of Assets as of January 1, 2025**
(Dollar amounts in thousands)

Description	Amount
1. Total System Reserve Accounts	\$3,282,405
2. Total Expenses	9,268
3. Municipal Expenses of \$20 per Plan Member	415
4. Expenses not covered by Municipalities (2. – 3.)	\$8,853
5. Preliminary Actuarial Value of Assets (1. + 4.)	\$3,291,258

Notes for Table II-5: Total Reserve Accounts reflect December 31, 2024 excess interest distribution.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION II — ASSETS

Available Excess Interest

Each year, the System’s funded status is evaluated in accordance with Policy Statement 05-2 to determine if cumulative investment monies earned above the regular interest rate are available for the Board to consider awarding to plans. This “excess interest” award is derived as a portion of “new surplus” created during the year. “Surplus” refers to the excess of Market Value of Assets over the Actuarial Value of Assets. Once the Preliminary Actuarial Value of Assets has been determined, a formula is used to determine the new surplus. Depending on the relative size of surplus to market value “margin,” between 10% and 90% of new surplus will be designated as “excess interest”, which the Board may decide to distribute. For the year ended December 31, 2024, the excess interest available for possible distribution was \$62 million.

**Table II-6
Determination of Available Excess Interest**
(Dollar amounts in thousands)

Description	Amount
1. Assets as of January 1, 2025	
a. Market Value	\$3,518,757
b. Preliminary Actuarial Value	3,291,258
c. Available Surplus (a. - b.)	\$227,499
d. Ratio of Available Surplus to MVA (c. / a.)	6.47%
2. Assets as of January 1, 2024	
a. Market value	\$3,286,422
b. Actuarial Value	3,188,034
c. Available Surplus (a. - b.)	\$98,388
3. New surplus [Lesser of (1c. - 2c.) and 1c.]	\$129,111
4. Ratio of New Surplus to MVA (3. / 1a.)	3.67%
5. Percentage of New Surplus Available to be Credited as Excess Interest [(10% + 800% x 1d.) / (100% + 800% x 4.)]	47.7160%
6. Maximum Excess Interest Award Available [(3. x 5.), not less than zero]	\$61,607

Notes for Table II-6: Actuarial Value of Assets as of January 1, 2024 includes \$50.6 million excess interest award to maintain the integrity of the “Available Surplus” calculation.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION II — ASSETS

Final Actuarial Value of Assets

The Final Actuarial Value of Assets is based on the Preliminary Actuarial Value of Assets plus any Excess Interest that was awarded by the Board during the year. As allowed by Policy Statement 05-2, the Board decided not to make this excess interest distribution as of January 1, 2025. Therefore, the Final Actuarial Value of Assets equals the Preliminary Actuarial Value of Assets.

Table II-7
Final Actuarial Value of Assets as of January 1, 2025
(Dollar amounts in thousands)

Description	Amount
1. Preliminary Actuarial Value of Assets	\$3,291,258
2. Maximum Excess Interest Award available	\$61,607
3. Excess Interest Awarded	\$0
4. Final Actuarial Value of Assets (1. + 3.)	\$3,291,258

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025

SECTION III — LIABILITIES

Changes in Liabilities

The Actuarial Liabilities shown in the following table change with each valuation based on the experience of the Plan. As liabilities for the plans are valued every other year, gains/losses shown below reflect a two-year period. The liability may change for any of several reasons, including:

- New hires since the last full valuation,
- Benefits accrued (normal cost) since the last valuation,
- Plan amendments (benefit changes) including excess interest benefit improvements,
- Interest on Actuarial Liability,
- Benefits paid (benefit payments) to retirees and beneficiaries,
- Members leaving employment and dying at rates different than expected (gains/losses), and other sources of gains and losses,
- Members transferring to other Plans within the System,
- Plans transferring into and out of the System,
- Changes in actuarial assumptions, and
- Changes in actuarial methods.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION III — LIABILITIES

The following table shows the sources of the Actuarial Liability changes since the last valuation based on the GASB results determined for the individual plans and updated liabilities for the cash balance plans. The (Gains)/Losses reflect two years of experience, as the January 1, 2024 Actuarial Liability was primarily determined by rolling forward the January 1, 2023 valuation results. The total benefit payments below represent the sum of those reported in the individual plans' GASB reports.

**Table III-1
Actuarial Liability Reconciliation**

Description	Amount
Actuarial Liability as of January 1, 2024	\$3,174,270,675
Actuarial Liability as of January 1, 2025	\$3,237,731,452
Liability Increase/(Decrease)	\$63,460,777
Changes due to	
Normal Cost	\$92,260,271
Interest	166,312,945
Benefit Changes	15,874,723
Assumption Changes	(83,310,161)
(Gains)/Losses	40,682,018
Benefit Payments	(160,801,876)
Net Transfers	(7,557,143)
Total	\$63,460,777

Funded Status

Tables III-2 and III-3 present a comparison between the January 1, 2024 and January 1, 2025 System assets, liabilities, and Unfunded Actuarial Liability or Surplus for the non-county defined benefit plans, county defined benefit plans, and the cash balance plans. The January 1, 2025 Actuarial Value of Assets and Actuarial Liability reflect the \$50.6 million excess interest distribution as of December 31, 2024. The January 1, 2024 Actuarial Value of Assets (Preliminary Actuarial Value of Assets in Table III-3) and Actuarial Liability do not reflect the \$50.6 million excess interest distribution awarded by the Board during 2024. The liabilities associated with this excess interest were not reflected until January 1, 2025. Therefore, the Unfunded Liability using AVA and Funded Ratio using AVA do not reflect this excess interest award as of January 1, 2024.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION III — LIABILITIES

**Table III-2
Assets and Liabilities by Plan Type**
(Dollar amounts in thousands)

	January 1, 2025	January 1, 2024	% Change
Defined Benefit Non-County Plans			
Actuarial Liability			
Actives	\$1,214,631	\$1,225,608	-0.9%
Terminated Vesteds	146,713	138,306	6.1%
In Pay Status	1,479,929	1,436,014	3.1%
Total Actuarial Liability	\$2,841,273	\$2,799,928	1.5%
Actuarial Value of Assets	\$2,831,141	\$2,744,167	3.2%
Unfunded Actuarial Liability/(Surplus)	\$10,132	\$55,761	-81.83%
Defined Benefit County Plans			
Actuarial Liability			
Actives	\$83,792	\$80,412	4.2%
Terminated Vesteds	19,430	18,855	3.0%
In Pay Status	67,661	66,561	1.7%
Total Actuarial Liability	\$170,883	\$165,828	3.0%
Actuarial Value of Assets	\$175,023	\$167,358	4.6%
Unfunded Actuarial Liability/(Surplus)	(\$4,140)	(\$1,530)	170.59%
Cash Balance Plans			
Actuarial Liability			
Actives	\$122,011	\$112,850	8.1%
Terminated Vesteds	29,325	29,366	-0.1%
In Pay Status	74,240	66,299	12.0%
Total Actuarial Liability	\$225,576	\$208,515	8.2%
Actuarial Value of Assets	\$229,045	\$211,700	8.2%
Unfunded Actuarial Liability/(Surplus)	(\$3,469)	(\$3,185)	8.9%

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025

SECTION III — LIABILITIES

Table III-3
Total System Assets and Liabilities
(Dollar amounts in thousands)

	January 1, 2025	January 1, 2024	% Change
Actuarial Liability			
Actives	\$1,420,434	\$1,418,870	0.1%
Terminated Vesteds	195,468	186,527	4.8%
In Pay Status	1,621,830	1,568,874	3.4%
Total Actuarial Liability	\$3,237,732	\$3,174,271	2.0%
Market Value of Assets (MVA)	\$3,518,757	\$3,286,422	7.1%
Unfunded Liability/(Surplus) using MVA	(\$281,025)	(\$112,151)	150.6%
Funded Ratio on MVA	108.7%	103.5%	5.15%
Actuarial Value of Assets			
Aggregate of Plans' Actuarial Value of Assets	\$3,235,209	\$3,123,225	3.6%
Expenses in Excess of \$20 per Plan Member Fee	8,853	8,768	1.0%
Actuarial Value of Asset Adjustment	47,196	5,469	763.0%
Preliminary Actuarial Value of Assets	\$3,291,258	\$3,137,462	4.9%
Unfunded Liability/(Surplus) using Preliminary AVA	(\$53,526)	\$36,809	-245.4%
Funded Ratio on Preliminary AVA	101.7%	98.8%	2.8%
Actuarial Value of Assets Reflecting Excess Interest			
Preliminary Actuarial Value of Assets	\$3,291,258	\$3,137,462	
Excess Interest Distribution	0	50,572	
Actuarial Value of Assets (AVA)	\$3,291,258	\$3,188,034	3.2%

Notes for Table III-3:

1. Actuarial Value of Asset Adjustment reflects the net difference between the retiree reserve and the retiree liabilities as well as differences from plans entering and exiting the System as of plan year end and the disability reserve, which is not included in the AVA at plan level.
2. The adjustment increased at January 1, 2025 due to the assumption change increasing the regular interest rate from 5.25% to 5.50%, which reduced the retiree liabilities by \$34.4 million.
3. Preliminary Actuarial Value of Assets is based on member, municipal, retiree, disability and DROP reserve accounts as approved by the Board.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION III — LIABILITIES

Low-Default-Risk Obligation Measure

The Actuarial Standard of Practice No. 4 (ASOP 4) requires the disclosure of a Low-Default-Risk Obligation Measure, or LDROM. This measure requires the selection of discount rates derived from low-default-risk fixed income securities whose cash flows are reasonably consistent with expected benefit payments. For purposes of the 2025 valuation, the FTSE Pension Liability Index as of December 31, 2024 is 5.54%, which is just 4 basis points higher than the Regular Interest Rate of 5.50%. This index is based on high quality corporate bond yields. Because the Regular Interest Rate is essentially equivalent to the FTSE Pension Liability Index, the LDROM liability as of December 31, 2024 is equal to the Actuarial Liability, as reported for each funding valuation on the 2025 Act 205 forms.

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025

SECTION IV — CONTRIBUTIONS

In the process of evaluating the financial condition of any pension plan, the actuary analyzes the assets and liabilities to determine the contributions needed based upon the funding policy established for the plan. Typically, the actuarial process will use a funding technique that will result in a pattern of contributions that are both stable and predictable.

For each of the plans covered by the System, the funding cost method as stipulated by law to be applied in the determination of the liability is the **Entry Age Normal Actuarial Cost Method**. This method is also relevant for accounting standards, as it is the cost method required under GASB 67/68. Incorporating this cost method results in four components used to determine the total contribution: the **normal cost**, the amortization of **initial unfunded actuarial liability**, any subsequent amortizations of **increases/decreases in the unfunded actuarial liability/or adjustment for surplus**, and **expenses** applied at the rate of \$20 per member.

The statutory funding method requires that increases/decreases resulting from experience gains or losses by each plan are amortized over the lesser of 20 years or the future working life of the active members in the plan. Increases/decreases from assumption changes by the System are amortized over the lesser of 15 years or the future working life of the active members. Changes in liabilities as a result of changes in benefits by plan are amortized over 20 years if state mandated, otherwise over 10 years for active employees and 1 year for inactive employees. There are exceptions to some of these rules for plans in differing levels of “distress” as defined by Act 205.

In years where there are benefit improvements related to excess interest distributions, the impacted plans receive funds through their excess interest distribution to fully fund the excess interest benefit improvement. Therefore, there is no impact on the unfunded liabilities as a result of the excess interest benefit improvements.

For plans with a surplus, the contribution rate is the normal cost offset by 10% of the surplus. This report provides an analysis of the aggregate assets and liabilities but not the aggregation of the Minimum Municipal Obligations (MMO) required for each participating municipality covered by the 2025 Act 205 forms for 2027 and 2028 MMO contributions and 2024 Act 293 forms for 2026 and 2027 employer contributions. The combination of underfunded and surplus plans would not necessarily be informative in reviewing the overall funded status of the System.

On the following pages, we describe the cost components and graphically provide the distribution of costs among the participating non-county plans comparing this valuation to the last biennial valuation.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION IV — CONTRIBUTIONS

The normal cost rate (i.e., normal cost as a percentage of payroll) is determined in the following steps. For a typical new entrant, an individual normal cost rate is determined by taking the present value of future normal costs as of entry age into the plan divided by that member's present value of expected future salary during their working lifetime. The total normal cost rate is reduced by the member contribution rate to produce the net employer normal cost rate. If a plan provides for a Separate Member Annuity through required member contributions, this contribution rate is then added to the total normal cost rate to determine the final total normal cost rate.

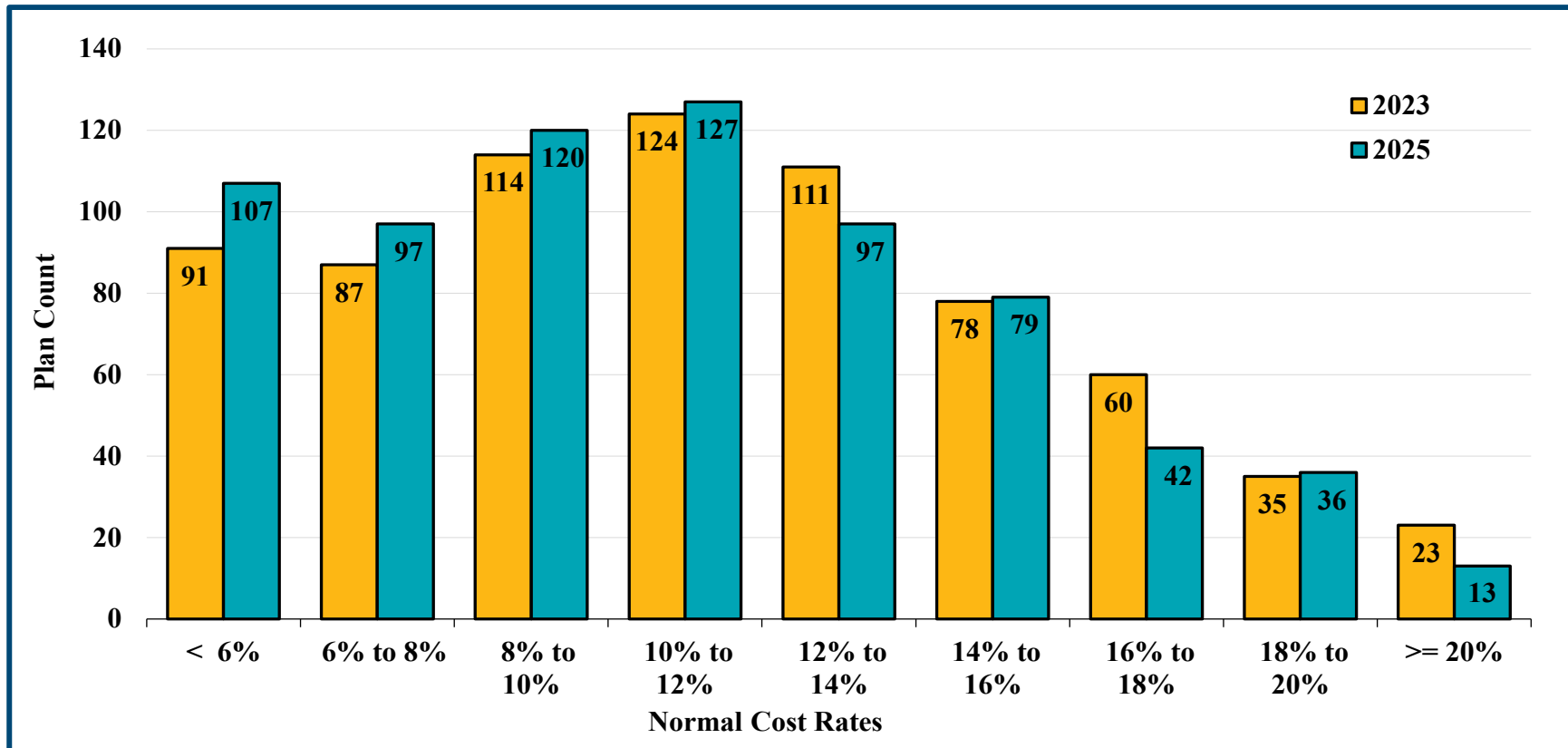
To comply with ASOP 4, additional consideration has been given to Reasonable Actuarially Determined Contributions, or RADC, for plans with funding valuations as of January 1, 2025. This can be found in the supplied addendum to this report.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION IV — CONTRIBUTIONS

Figure IV-1 below is a summary of the normal cost rates, which is the normal cost as a percentage of payroll, determined for the non-county defined benefit plans as of January 1, 2023 and January 1, 2025. The decrease in Normal Cost Rates over the two-year period is primarily due to the change in the discount rate from 5.25% to 5.50%.

**Figure IV-1
Distribution of Normal Cost Rates as a Percentage of Payroll
Defined Benefit Plans**

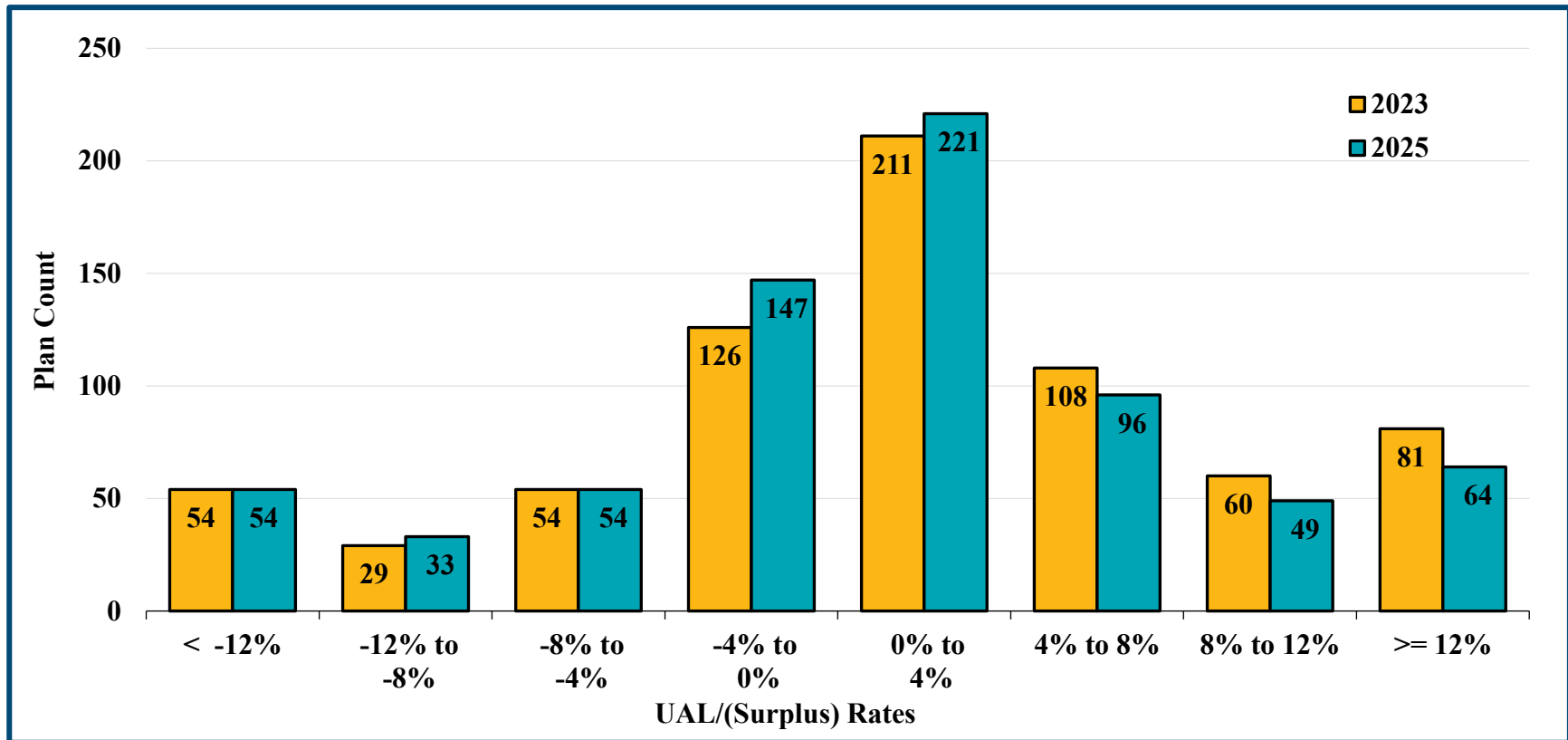


**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION IV — CONTRIBUTIONS

Figure IV-2 below is a summary of the unfunded actuarial liability/(surplus) amortization costs defined as a percentage of covered payroll of each plan’s active members, determined for the non-county defined benefit plans as of January 1, 2023 and January 1, 2025. The reduction in unfunded liability over the two-year period is primarily due to the change in the discount rate from 5.25% to 5.50%.

**Figure IV-2
Amortization of Unfunded Actuarial Liability/(Surplus) as a Percentage of Payroll
Defined Benefit Plans**

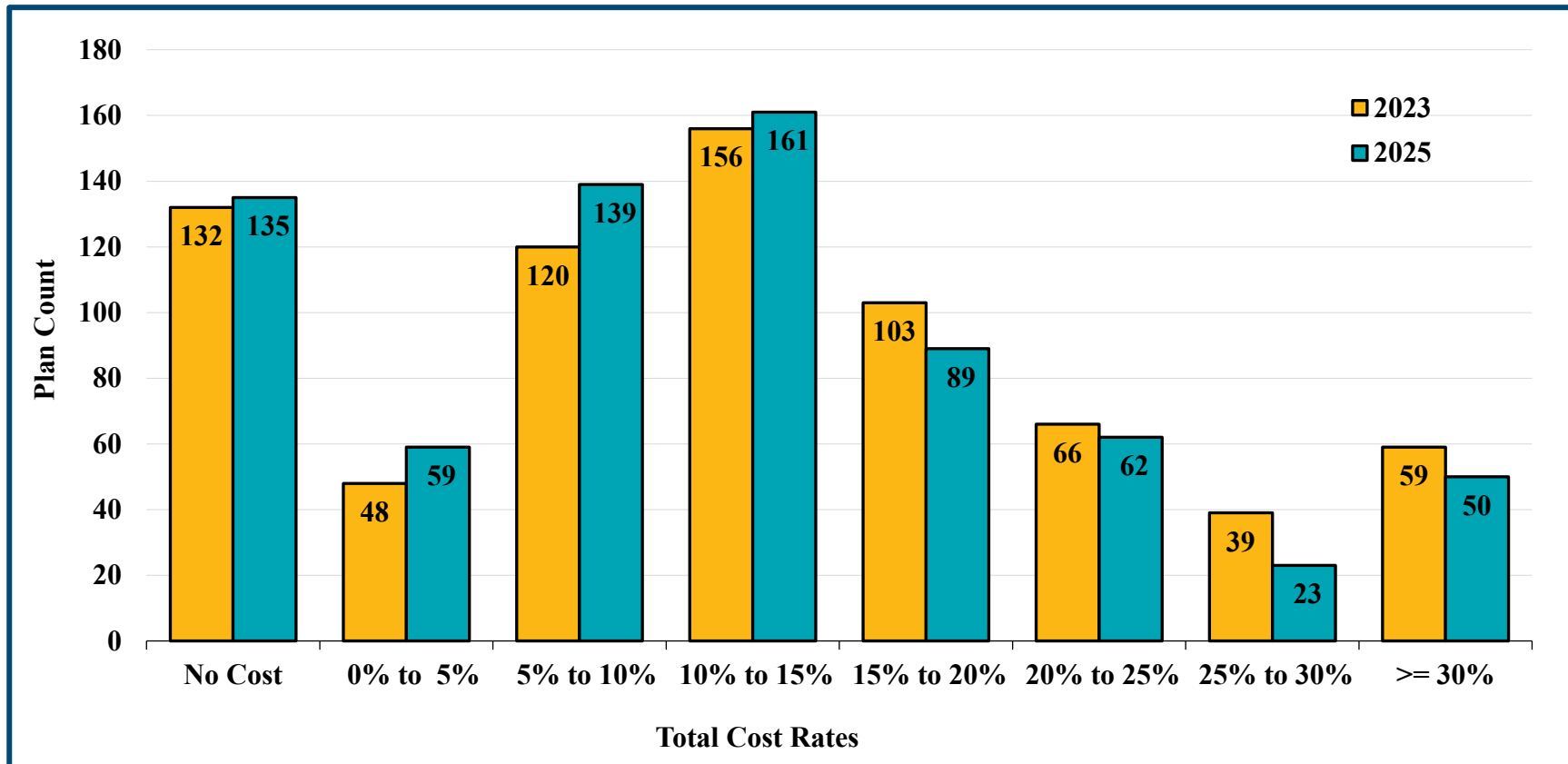


**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION IV — CONTRIBUTIONS

Figure IV-3 below is a summary of the total costs as a percentage of covered payroll, representing the sum of the normal cost and amortization of unfunded liability/(surplus offset) determined for the non-county defined benefit plans as of January 1, 2023 and January 1, 2025. The decrease in Plan Cost over the two-year period is primarily due to the change in the discount rate from 5.25% to 5.50%.

**Figure IV-3
Cost of Plan as a Percentage of Payroll
Defined Benefit Plans**



PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025

**SECTION V — ACCOUNTING AND FINANCIAL STATEMENT
INFORMATION**

GASB Statement Nos. 67 (GASB 67) and No. 68 (GASB 68) established standards for disclosure of pension information by public employee retirement systems and governmental employers in notes to financial statements and supplementary information. The System is defined as an agent multiple-employer plan system under GASB 67. The assets of an agent multiple-employer plan system are pooled for investment purposes but separate accounts are maintained for each individual participating employer. As a result, each participating employer's share of the pooled assets is legally available to pay the pensions of only its retirees.

The Actuarial Liability is determined assuming that the System is on-going and members continue to terminate employment, retire, etc., in accordance with the actuarial assumptions. Liabilities are discounted at the assumed valuation interest rate of 5.5% per annum.

Tables V-1 through V-6 provide the exhibits to be used with the System's ACFR based upon review of GASB 67 and input from PMRS:

- Table V-1 is the Notes to Required Supplementary Information;
- Table V-2 is the Solvency Test which shows the portion of Actuarial Liability covered by Assets;
- Table V-3 is the Funded Status of Actuarial Liabilities;
- Table V-4 is the Number of Plans in the System
- Table V-5 is the Schedule of Retirees and Beneficiaries;
- Table V-6 is the Schedule of Total Membership by Status; and,
- Table V-7 is the Schedule of Total Membership and Salary.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION V — ACCOUNTING AND FINANCIAL STATEMENT INFORMATION

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the date indicated. Additional information on key methods and assumptions as of the latest actuarial valuation follows.

**Table V-1
Notes to Required Supplementary Information**

Assumption/Method	
Valuation date	January 1, 2024 – County Plans (active and vested terminated accounts) January 1, 2025 – Non-County Plans and Cash Balance (CB) and retiree liabilities
Measurement date	January 1, 2025
Actuarial cost method	Entry Age Normal
Amortization method	Level dollar for Plan Bases and an average for Aggregate Gain/Loss, 10% of surplus is credited against aggregate cost where applicable
Investment rate of return	5.5%
Projected salary increases	2.2%-6.22% based on age and service
Inflation	2.2%
Cost-of-Living Adjustments (COLA)	2.2% per year up to plan maximum

The actuarial assumptions used have been adopted by the System’s Board based on the most recent review of the System’s experience for the period January 1, 2014 through December 31, 2018 and completed in 2020.

The rate of employer contributions to the System is comprised of the normal cost, amortization of the Unfunded Actuarial Liability, and an allowance for administrative expenses. The normal cost is a level percentage of payroll which, along with member contributions, will pay for projected benefits at retirement for the average plan member. The actuarial liability is that portion of the present value of projected benefits that will not be paid by future employer normal costs or future member contributions. The difference between this liability and the Actuarial Value of Asset as of the same date is the Unfunded Actuarial Liability (or surplus if funds exceed the liabilities). The allowance for administrative expenses is based on the System’s actual administrative expenses.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION V — ACCOUNTING AND FINANCIAL STATEMENT INFORMATION

**Table V-2
Solvency Test**

Valuation Date January 1,	Aggregate Accrued Liabilities			Actuarial Value of Reported Assets	Portion of Accrued Liabilities Covered by Reported Assets		
	Active Member Contributions (1)	Retirees, Beneficiaries & Vested Terminated Members (2)	Active Member Employer Financed Contributions (3)		(1)	(2)	(3)
2025	\$557,265,518	\$1,814,550,351	\$865,915,583	\$3,291,257,902	100%	100%	106%
2024	540,576,312	1,755,400,709	878,293,654	3,137,461,781	100%	100%	96%
2023	523,080,932	1,682,880,929	868,706,126	3,030,510,553	100%	100%	95%
2022	508,436,602	1,575,137,867	839,241,639	2,929,944,455	100%	100%	101%
2021	494,275,157	1,495,048,974	841,964,053	2,827,402,985	100%	100%	100%
2020	485,374,472	1,315,859,327	800,247,415	2,631,849,434	100%	100%	104%

Notes for Table V-2: Accrued Liabilities due to Active Member Contributions include the sum of the active members' contribution balances, the member separate annuity account balances, the municipal for member separate annuity account balances, and the excess interest allocations.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION V — ACCOUNTING AND FINANCIAL STATEMENT INFORMATION

**Table V-3
Funded Status of Actuarial Liabilities**

Valuation Date January 1,	Actuarial Value of Assets (A)	Actuarial Liability (B)	Unfunded Actuarial Liability / (Surplus) (B-A)	Funded Ratio (A/B)	Discount Rate
2025	\$3,291,257,902	\$3,237,731,452	(\$53,526,450)	101.7%	5.50%
2024	3,137,461,781	3,174,270,675	36,808,894	98.8%	5.25%
2023	3,030,510,553	3,074,667,986	44,157,433	98.6%	5.25%
2022	2,929,944,455	2,922,816,108	(7,128,347)	100.2%	5.25%
2021	2,827,402,985	2,831,288,184	3,885,199	99.9%	5.25%
2020	2,631,849,434	2,601,481,214	(30,368,220)	101.2%	5.25%

The actuarial assumptions as of January 1, 2025 are shown in the assumptions and methods section which are used, along with the member data and plan provisions provided by PMRS, to determine the liabilities above. The following table shows the number of pension plans valued each year, and the number of plans that have liabilities rolled-forward from the prior year. The counts from this table may not match the counts of the pension plans on Table I-3a, which is based on the number of plans listed on the asset statement from PMRS.

**Table V-4
Number of Plans**

Valuation Date January 1,	Defined Benefit Plans		Cash Balance Plans
	Complete Valuation	Roll-Forward	
2025	714	4	342
2024	4	718	336
2023	719	4	329
2022	4	718	322
2021	720	4	328
2020	4	724	328

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION V — ACCOUNTING AND FINANCIAL STATEMENT INFORMATION

The table below is a schedule of the changes to the retiree and beneficiary rolls over the last six years.

**Table V-5
Schedule of Retirees and Beneficiaries Added to and Removed from Roll**

Valuation Date	Added to roll	Average Annual Annuities Added	Average Annual Benefit Increase	Deleted from roll	Average Annual Annuities Removed	Number on roll	Annual Annuities	Percentage Increase in Annuities	Average Annual Annuities	Percentage Increase in Average Annuities
2025	450	\$23,052	\$919	208	\$11,490	7,738	\$145,251,238	6.0%	\$18,771	2.7%
2024	415	19,476	1,033	157	12,638	7,496	137,056,342	4.9%	18,284	1.3%
2023	437	22,692	1,796	202	11,829	7,238	130,702,823	6.5%	18,058	3.1%
2022	409	21,174	1,603	150	14,441	7,003	122,707,214	6.1%	17,522	2.1%
2021	434	21,588	375	125	10,350	6,744	115,697,265	7.6%	17,156	2.7%
2020	381	19,656	528	135	11,392	6,435	107,504,808	6.0%	16,706	2.0%

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION V — ACCOUNTING AND FINANCIAL STATEMENT INFORMATION

The table below is a summary of the total membership over the last six years.

**Table V-6
Schedule of Total Membership by Status**

Valuation Date	Defined Benefit Active Members	Cash Balance Active Members	Retirees		Members with Deferred Pensions		Inactive Members	Total
			Retirees	Beneficiaries	Deferred Pensions	Inactive Members		
2025	8,158	1,858	6,924	814	1,645	945	20,344	
2024	8,185	1,835	6,719	777	1,504	996	20,016	
2023	7,895	1,725	6,461	777	1,491	755	19,104	
2022	7,969	1,650	6,295	708	1,343	40	18,005	
2021	7,860	1,486	6,050	694	1,284	47	17,421	
2020	7,970	1,502	5,781	654	1,205	47	17,159	

Notes for Table V-6: Inactive members represent inactive non-vested members with member contribution account balances. This increased substantially in 2023 due to improved reporting from the System.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

SECTION V — ACCOUNTING AND FINANCIAL STATEMENT INFORMATION

The table below is a schedule of the total membership over the last four years.

**Table V-7
Schedule of Total System Membership and Salary**

Description	January 1,			
	2025	2024	2023	2022
a. Retirees currently receiving benefits	6,924	6,719	6,461	6,295
b. Beneficiaries currently receiving benefits	814	777	777	708
c. Terminated vested members entitled to future benefits from Defined Benefit plans	1,188	1,094	1,092	957
d. Terminated non-vested members entitled to contribution refunds	945	996	755	40
e. Active members in Defined Benefit plans	8,158	8,185	7,895	7,969
i. Aggregate Salary	\$562,019,212	\$536,974,651	\$508,976,064	\$497,193,829
ii. Vested	3,961	4,007	4,017	4,224
iii. Non-vested	4,197	4,178	3,878	3,745
f. Non-Retired Members in Cash Balance plans	2,315	2,245	2,124	2,036
i. Aggregate Salary	\$105,287,152	\$95,431,331	\$87,705,525	\$79,029,741
ii. Active	1,858	1,835	1,725	1,650
iii. Inactive	457	410	399	386

Notes for Table V-7:

1. 2023 increase in terminated non-vested members entitled to contribution refunds from Defined Benefit plans is due to improved reporting from the System of inactive members with account balances.
2. Aggregate salary for active members is annualized salary paid during the prior plan year for Defined Benefit plan members and actual salary for Cash Balance plan members.
3. Count of vested active members in defined benefit plans is estimated based on service as of the valuation date.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

APPENDIX A — MEMBERSHIP INFORMATION

This appendix provides various member information including age-service distribution tables for active members by count and salary, benefit distribution information for members in pay status, including a break-down by pension type.

**Table A-1
Distribution of Active Members by Age and Service as of January 1, 2025
Defined Benefit Counts**

Age	Years of Service										Total	
	0 to 1	1 to 2	2 to 3	3 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 & up		
Under 20	18	3	0	0	0	0	0	0	0	0	0	21
20 to 24	137	93	42	29	4	0	0	0	0	0	0	305
25 to 29	151	134	97	120	94	5	0	0	0	0	0	601
30 to 34	152	112	104	129	255	62	4	0	0	0	0	818
35 to 39	137	107	105	129	263	162	52	2	0	0	0	957
40 to 44	118	100	78	95	236	144	142	43	2	0	0	958
45 to 49	83	96	69	94	192	117	110	151	32	1	0	945
50 to 54	84	72	70	92	201	119	138	131	90	54	0	1,051
55 to 59	81	79	52	80	193	141	129	146	121	123	0	1,145
60 to 64	38	40	23	43	153	111	110	111	81	194	0	904
65 & up	10	13	14	33	91	54	52	60	44	82	0	453
Total	1,009	849	654	844	1,682	915	737	644	370	454	0	8,158

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

APPENDIX A — MEMBERSHIP INFORMATION

**Table A-2
Distribution of Active Members by Age and Service as of January 1, 2025
Defined Benefit Average Salary**

Age	Years of Service										Total	
	0 to 1	1 to 2	2 to 3	3 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 & up		
Under 20	\$37,685	\$47,275	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$39,055
20 to 24	45,627	47,376	53,909	56,388	58,310	0	0	0	0	0	0	48,490
25 to 29	44,661	54,073	61,633	65,298	71,345	90,682	0	0	0	0	0	58,176
30 to 34	51,324	60,133	64,434	70,543	73,150	79,803	78,814	0	0	0	0	66,325
35 to 39	50,880	58,268	66,220	69,238	78,389	79,705	77,865	93,594	0	0	0	69,859
40 to 44	50,444	58,523	63,965	62,145	72,941	79,622	87,434	84,908	107,687	0	0	70,626
45 to 49	48,068	59,931	56,800	65,631	70,552	76,558	84,618	91,513	94,047	55,411	0	72,514
50 to 54	55,785	57,130	56,191	64,082	70,568	74,642	78,323	89,884	86,808	86,485	0	73,036
55 to 59	48,514	62,943	54,968	61,737	62,915	70,766	71,152	78,560	78,753	87,862	0	69,698
60 to 64	50,615	57,905	62,731	63,165	69,957	72,621	71,789	72,094	72,874	86,511	0	72,730
65 & up	49,233	53,416	68,205	56,625	64,880	72,743	67,084	82,181	68,568	80,003	0	70,284
Total	\$48,977	\$57,085	\$61,154	\$65,160	\$71,286	\$76,050	\$77,965	\$83,594	\$79,693	\$85,630	\$0	\$68,892

Notes for Table A-2: Average salary is based on annualized salary paid during the prior plan year for Defined Benefit plan members.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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APPENDIX A — MEMBERSHIP INFORMATION

**Table A-3
Distribution of Active Members by Age and Service as of January 1, 2025
Cash Balance Counts**

Age	Years of Service										Total	
	0 to 1	1 to 2	2 to 3	3 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 & up		
Under 20	4	0	1	0	0	0	0	0	0	0	0	5
20 to 24	37	14	8	6	1	0	0	0	0	0	0	66
25 to 29	31	34	23	30	32	1	0	0	0	0	0	151
30 to 34	29	30	28	37	46	7	0	0	0	0	0	177
35 to 39	27	35	28	27	53	13	8	0	0	0	0	191
40 to 44	21	27	25	19	47	14	12	5	0	0	0	170
45 to 49	17	19	28	25	41	17	20	14	1	0	0	182
50 to 54	27	25	24	24	66	27	22	23	16	4	0	258
55 to 59	33	29	21	28	59	24	22	20	19	18	0	273
60 to 64	20	9	20	18	39	33	27	23	24	26	0	239
65 & up	5	3	5	14	29	20	17	14	12	27	0	146
Total	251	225	211	228	413	156	128	99	72	75	0	1,858

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

APPENDIX A — MEMBERSHIP INFORMATION

**Table A-4
Distribution of Active Members by Age and Service as of January 1, 2025
Cash Balance Average Salary**

Age	Years of Service										Total	
	0 to 1	1 to 2	2 to 3	3 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 & up		
Under 20	\$13,992	\$0	\$36,688	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,531
20 to 24	25,425	46,610	58,384	48,904	51,411	0	0	0	0	0	0	36,442
25 to 29	27,506	60,782	56,092	58,443	62,356	47,554	0	0	0	0	0	53,017
30 to 34	23,302	55,844	56,088	57,931	70,202	60,759	0	0	0	0	0	54,913
35 to 39	26,930	55,031	58,289	52,842	66,432	69,804	71,790	0	0	0	0	56,098
40 to 44	26,016	60,000	55,337	57,146	67,947	53,931	67,367	66,576	0	0	0	57,208
45 to 49	50,683	56,747	58,566	59,839	61,585	78,173	65,190	63,445	151,632	0	0	61,941
50 to 54	34,954	52,420	59,913	57,510	65,028	64,931	67,049	71,119	75,853	84,056	0	61,155
55 to 59	38,253	56,383	48,766	60,275	59,303	55,211	67,180	58,127	66,921	76,917	0	57,618
60 to 64	31,138	54,267	61,095	53,928	61,371	61,969	61,710	57,155	68,610	65,807	0	58,914
65 & up	15,144	38,947	60,882	47,151	54,423	54,761	53,206	69,907	51,721	52,894	0	53,168
Total	\$30,138	\$55,865	\$56,910	\$56,567	\$63,627	\$62,069	\$64,143	\$63,764	\$68,112	\$64,798	\$0	\$56,667

Notes for Table A-4: Average salary is based on actual salary for Cash Balance plan members.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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APPENDIX A — MEMBERSHIP INFORMATION

**Table A-5
Distribution of Active Members by Age and Service as of January 1, 2025
Total System Counts**

Age	Years of Service										Total	
	0 to 1	1 to 2	2 to 3	3 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 & up		
Under 20	22	3	1	0	0	0	0	0	0	0	0	26
20 to 24	174	107	50	35	5	0	0	0	0	0	0	371
25 to 29	182	168	120	150	126	6	0	0	0	0	0	752
30 to 34	181	142	132	166	301	69	4	0	0	0	0	995
35 to 39	164	142	133	156	316	175	60	2	0	0	0	1,148
40 to 44	139	127	103	114	283	158	154	48	2	0	0	1,128
45 to 49	100	115	97	119	233	134	130	165	33	1	1	1,127
50 to 54	111	97	94	116	267	146	160	154	106	58	58	1,309
55 to 59	114	108	73	108	252	165	151	166	140	141	141	1,418
60 to 64	58	49	43	61	192	144	137	134	105	220	220	1,143
65 & up	15	16	19	47	120	74	69	74	56	109	109	599
Total	1,260	1,074	865	1,072	2,095	1,071	865	743	442	529	529	10,016

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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APPENDIX A — MEMBERSHIP INFORMATION

**Table A-6
Distribution of Active Members by Age and Service as of January 1, 2025
Total System Average Salary**

Age	Years of Service										Total	
	0 to 1	1 to 2	2 to 3	3 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 & up		
Under 20	\$33,377	\$47,275	\$36,688	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$35,108
20 to 24	41,331	47,276	54,625	55,105	56,930	0	0	0	0	0	0	46,347
25 to 29	41,739	55,431	60,571	63,927	69,062	83,494	0	0	0	0	0	57,140
30 to 34	46,834	59,227	62,663	67,732	72,700	77,871	78,814	0	0	0	0	64,295
35 to 39	46,937	57,470	64,551	66,400	76,383	78,969	77,055	93,594	0	0	0	67,569
40 to 44	46,753	58,837	61,871	61,311	72,112	77,346	85,870	82,998	107,687	0	0	68,604
45 to 49	48,512	59,405	57,310	64,414	68,974	76,763	81,629	89,131	95,792	55,411	0	70,807
50 to 54	50,718	55,916	57,141	62,723	69,198	72,846	76,773	87,082	85,154	86,318	0	70,695
55 to 59	45,543	61,181	53,184	61,358	62,069	68,503	70,574	76,098	77,148	86,465	0	67,373
60 to 64	43,899	57,236	61,970	60,440	68,213	70,180	69,803	69,530	71,899	84,064	0	69,841
65 & up	37,870	50,703	66,278	53,803	62,353	67,883	63,665	79,859	64,958	73,288	0	66,112
Total	\$45,224	\$56,829	\$60,119	\$63,332	\$69,776	\$74,013	\$75,920	\$80,952	\$77,807	\$82,676	\$0	\$66,624

Notes for Table A-6: Average salary is based on annualized salary paid during the prior plan year for Defined Benefit plan members and on actual salary for Cash Balance plan members.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

APPENDIX A — MEMBERSHIP INFORMATION

**Table A-7
Distribution of Retirees and Beneficiaries by Age as of January 1, 2025**

Age	Count	Monthly Benefit
Under 30	3	\$6,618
30 to 34	2	970
35 to 39	11	11,350
40 to 44	14	12,971
45 to 49	34	31,986
50 to 54	123	274,027
55 to 59	328	718,853
60 to 64	914	1,781,421
65 to 69	1,934	3,235,406
70 to 74	1,826	2,995,497
75 to 79	1,285	1,715,625
80 to 84	724	822,286
85 & up	540	497,260
Total	7,738	\$12,104,270

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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APPENDIX A — MEMBERSHIP INFORMATION

**Table A-8
Distribution of Terminated Vested Members Entitled to Future Benefits by
Age as of January 1, 2025**

Age	Defined Benefit Plans	
	Count	Deferred Monthly Benefit
Under 30	25	\$6,366
30 to 34	53	22,144
35 to 39	74	41,169
40 to 44	133	142,159
45 to 49	179	229,203
50 to 54	227	285,717
55 to 59	267	280,473
60 to 64	165	164,039
65 to 69	47	37,755
70 to 74	14	6,282
75 to 79	2	201
80 to 84	2	596
85 & up	0	0
Total	1,188	\$1,216,104

Notes for Table A-8: The 457 terminated vested members in cash balance plans are not included in this table because their deferred monthly benefits will be determined only upon their retirement.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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APPENDIX A — MEMBERSHIP INFORMATION

**Table A-9
Distribution of Retirees and Beneficiaries by Monthly Benefit and Pension
Type as of January 1, 2025**

Monthly Benefit	Pension Type					Total
	Normal	Involuntary Early	Voluntary Early	Service Disability	Non-Service Disability	
Under \$100	255	21	17	1	1	295
\$100 - \$199	324	28	32	1	0	385
200 - 299	291	28	30	0	0	349
300 - 399	304	22	35	3	2	366
400 - 499	330	23	30	1	2	386
500 - 599	287	9	32	1	5	334
600 - 699	241	15	37	2	0	295
700 - 799	261	13	34	1	0	309
800 - 899	262	12	35	1	8	318
900 - 999	234	8	28	6	5	281
1,000 - 1,199	490	15	67	5	13	590
1,200 - 1,399	395	12	59	7	4	477
1,400 - 1,599	356	6	40	7	4	413
1,600 - 1,799	320	7	33	3	2	365
1,800 - 1,999	304	3	34	3	4	348
2,000 - 2,199	272	2	17	2	2	295
2,200 - 2,399	243	4	23	4	0	274
2,400 - 2,599	212	1	18	1	2	234
2,600 - 2,799	164	0	12	2	2	180
2,800 - 2,999	141	0	8	0	1	150
3,000 - 3,499	326	1	18	0	1	346
3,500 - 3,999	244	0	13	1	0	258
\$4,000 and over	471	0	17	0	2	490
Total	6,727	230	669	52	60	7,738

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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APPENDIX A — MEMBERSHIP INFORMATION

**Table A-10
Distribution of Pensions Awarded by Pension Type in Prior Ten Years**

Year Ended December 31	Normal		Involuntary Early		Voluntary Early		Disability			Total	
	Count	Average Monthly Benefit	Count	Average Monthly Benefit	Count	Average Monthly Benefit	Count for Non- Service	Count for Service	Average Monthly Benefit	Count	Average Monthly Benefit
2024	421	\$1,943	5	\$621	15	\$1,737	5	4	\$1,918	450	\$1,921
2023	389	1,643	5	828	18	1,399	1	2	1,589	415	1,623
2022	406	1,888	5	1,491	23	2,080	1	2	1,529	437	1,891
2021	371	1,762	6	493	21	1,589	6	5	2,869	409	1,764
2020	406	1,797	1	2,312	22	1,790	2	3	1,931	434	1,799
2019	341	1,644	8	781	27	1,887	0	5	1,247	381	1,638
2018	382	1,651	9	963	33	1,475	1	4	2,277	429	1,631
2017	342	1,616	8	822	29	1,350	3	1	1,311	383	1,576
2016	397	1,600	11	627	28	1,428	8	3	1,485	447	1,562
2015	309	1,593	4	562	22	1,569	2	2	1,113	339	1,574

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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APPENDIX A — MEMBERSHIP INFORMATION

**Table A-11
Count of Membership by Type of Plan and Status**

	2025	2024
Active Members		
Defined Benefit		
Non-Uniform	7,060	7,070
Police	963	973
Firefighters	135	142
Total Defined Benefit Active Members	8,158	8,185
Cash Balance		
Non-Uniform	1,786	1,757
Police	26	34
Firefighters	46	44
Total Cash Balance Active Members	1,858	1,835
Total Active Members	10,016	10,020
Retirees and Beneficiaries		
Retirees	6,924	6,719
Beneficiaries	814	777
Total Retirees and Beneficiaries	7,738	7,496
Inactive Vested Members		
Defined Benefit	1,188	1,094
Cash Balance	457	410
Total Inactive Vested Members	1,645	1,504
Inactive Non-Vested Members		
Defined Benefit	719	873
Cash Balance	226	123
Total Inactive Non-Vested Members	945	996
Total System Members	20,344	20,016

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

APPENDIX B — ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Assumptions

The PMRS demographic actuarial assumptions were most recently updated by the Board effective January 1, 2021, while the Regular Interest Rate (investment return assumption) was most recently updated by the Board effective January 1, 2025.

MORTALITY

The mortality assumption, inclusive of the projected mortality improvements described below to the mid-year point of the next experience study, was selected as a reasonable representation of the ultimate projected payout of benefits from the Plan using nationally available mortality tables as well as data provided by PMRS.

Pre-Retirement Healthy Life Mortality Base Tables

Males: PUB-2010 General Employees male table

Females: PUB-2010 General Employees female table

Type of Pre-Retirement Death

Non-Uniform Plans: 20% of pre-retirement deaths are assumed to be service related

Uniform Plans: 70% of pre-retirement deaths are assumed to be service related

Post-Retirement Healthy Life Mortality Base Tables

Males: RP-2006 annuitant male table

Females: RP-2006 annuitant female table

Disabled Life Mortality Base Tables

Males: RP-2006 disabled annuitant male table

Females: RP-2006 disabled annuitant female table

Mortality Improvement

All base mortality tables described above are projected from the applicable table's base year to 2023 using Mortality Improvement Scale MP-2018

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

APPENDIX B — ACTUARIAL ASSUMPTIONS AND METHODS

TERMINATION

Rates Before Retirement

**Table B-1
Termination Rates Before Retirement**

Years of Service	Non-Uniform Members		Uniform Members
	Plans with Less than 25 Active Members	Plans with 25 or More Active Members	All Plans
<1	11.00%	12.00%	10.00%
1	11.00%	12.00%	10.00%
2	10.00%	11.00%	10.00%
3	9.00%	10.00%	10.00%
4	8.00%	9.00%	10.00%
5	7.00%	7.50%	5.00%
6	8.00%	7.50%	4.00%
7	6.00%	7.00%	4.00%
8	5.00%	6.00%	4.00%
9	4.00%	5.00%	3.00%
10+	3.00%	3.50%	3.00%

DISABILITY

Incidence Rates

50% of the 2017 CalPERS Public Miscellaneous Group disability rates for males.

**Table B-2
Sample Disability Incidence Rates**

Age	All Members eligible for Disability Benefits
25	0.01%
35	0.02%
45	0.10%
55	0.11%
65	0.11%

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
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APPENDIX B — ACTUARIAL ASSUMPTIONS AND METHODS

Type of Disability

Non-Uniform Plans: 20% of disablements are assumed to be service related

Uniform Plans: 70% of disablements are assumed to be service related

Workers Compensation

Service-related disability benefits payable from municipal plans are offset by 25% of final average salary.

SALARY SCALE

Inflation rate of 2.2% plus merit-based increases.

**Table B-3
Sample Salary Increase Rates inclusive of Inflation**

Age	Years of Service			
	Under 3	3 and 4	5 and 6	7 or more
25	9.29%	8.26%	7.24%	6.22%
30	8.23%	7.20%	6.18%	5.16%
35	7.56%	6.53%	5.51%	4.49%
40	7.21%	6.18%	5.16%	4.14%
45	6.89%	5.86%	4.84%	3.82%
50	6.62%	5.59%	4.57%	3.55%
55	6.35%	5.32%	4.30%	3.28%
60	6.18%	5.15%	4.13%	3.11%
65	5.86%	4.83%	3.81%	2.79%

For 2021 and 2022, merit-based increases are assumed to be 0%.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

APPENDIX B — ACTUARIAL ASSUMPTIONS AND METHODS

RETIREMENT

Retirement Age

The age at which unreduced benefits are available. No early retirement is assumed.

Rates of Retirement

Members are assumed to retire over a range of ages as shown below.

**Table B-4
Non-Uniform Member Retirement Rates**

Age	First Year of Normal Retirement Eligibility	After First Year of Normal Retirement Eligibility
Under 55	33%	33%
55	30%	30%
56 – 57	12%	12%
58 – 59	14%	14%
60	18%	18%
61	20%	10%
62	30%	20%
63	28%	18%
64	20%	15%
65 – 67	30%	25%
68 – 70	25%	20%
71 – 73	22%	22%
74	20%	20%
75	100%	100%

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

APPENDIX B — ACTUARIAL ASSUMPTIONS AND METHODS

**Table B-5
Uniform Member Retirement Rates**

Age	All Years of Normal Retirement Eligibility
Under 50	0%
50	25%
51 – 53	10%
54 – 55	15%
56 – 58	17%
59 – 60	15%
61	20%
62	28%
63	22%
64	25%
65	35%
66	30%
67	100%

For any members participating in a Deferred Retirement Option Program (DROP), the member’s date of entry into the DROP is considered the retirement date.

DROP (Deferred Retirement Option Plans) or In-Service Distribution Plan Adjustments

For plans with these options, at the member’s Normal Retirement Age, retirement rate multiplied by the following factors.

Uniform: 130%

Non-uniform: 115%

MARITAL STATUS AND SPOUSE’S AGE

For plans with the 50% J&S form of payment, 85%/65% of active male/female members are assumed to be married. Male spouses are assumed to be three years older than female spouses.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

APPENDIX B — ACTUARIAL ASSUMPTIONS AND METHODS

SOCIAL SECURITY PROJECTIONS

The Social Security Taxable Wage Base will increase by 2.7% compounded annually.

The Consumer Price Index will increase 2.2% compounded annually.

The Average Total Wages of All Workers will increase by 2.7% compounded annually.

POST-RETIREMENT COST OF LIVING INCREASES/INFLATION:

2.2% per year, subject to plan limitations.

INVESTMENT RETURN ASSUMPTION FOR MUNICIPAL ASSETS (REGULAR INTEREST RATE)

5.50% compounded annually (net of investment expenses) for funding purposes.

ADMINISTRATIVE EXPENSES

System-wide Actuarial Value of Assets

The expense assumption is based on the previous year's actual expenses.

Municipalities

The expense assumption is based on the expected expenses for the current year, as reported on the Act 205 forms.

RATIONALE FOR ASSUMPTIONS

An experience study is completed every five years for the System. The assumptions outlined above were reviewed and adopted by the Board based on the most recent experience study for the period covering January 1, 2014 – December 31, 2018. This is the last valuation that will incorporate the results of the experience study completed September 2020. The January 1, 2026 actuarial valuation will incorporate the results of the experience study completed October 2025.

CHANGES IN ACTUARIAL ASSUMPTIONS

The Regular Interest Rate was increased by the Board effective January 1, 2025 from 5.25% to 5.50%.

**PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JANUARY 1, 2025**

APPENDIX B — ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Methods

Contribution requirements are individually determined for each participating municipality, on an actuarial basis as described below in the Funding of the Unfunded Actuarial Liability section, at least biennially. The frequency of the actuarial valuation is determined by applicable Commonwealth statute (Act 205 of 1984 and Act 293 of 1972). The following actuarial methods were adopted effective January 1, 1985, unless indicated otherwise.

ACTUARIAL VALUE OF ASSETS (AVA)

The AVA calculations start by determining the sum of all audited reserve accounts as of the valuation date, including Members', Municipal, Retired Members', Disability, and DROP Participant Reserves, as provided in the December 31, 2024 ACFR, and a one-year administration expense reserve, plus any additional adjustments as made during the year by the Board of Trustees without reflecting any Excess Interest. This amount is defined as the Preliminary Actuarial Value of Assets. In years where an excess interest distribution occurs, the following year's valuation will incorporate the distribution once the type and amount of distribution to each plan has been determined. This better aligns the Actuarial Liabilities and AVA.

If the entire excess interest allocation available is distributed in accordance with Policy Statement 05-2, then the Systems' AVA cannot be less than 90 percent of fair market value.

Each year, municipalities may receive an excess interest allocation derived as a portion of new surplus created during the prior year based on the current financial standing of the System. "Surplus" refers to the excess of fair market value over the AVA. Once the preliminary AVA has been determined, a formula is used to allocate the new surplus. Generally, depending on the relative size of surplus to fair market value, between 10 percent and 90 percent of the new surplus will become available for possible distribution as excess interest pending Board approval.

The AVA is set equal to reserves under the System based on the unique legislative structure of PMRS. These reserves are increased annually at a set rate agreed on by the Board named "Regular Interest" as defined under the Pennsylvania Municipal Retirement Law. These assets do not relate directly or indirectly with the current market value of assets as required under Actuarial Standard of Practice Statement No. 44 which states under Section 3.3:

"...the actuary should select an asset valuation method that is designed to produce actuarial values of assets that bear a reasonable relationship to the corresponding market values. The qualities of such an asset valuation method include the following:

- a. The asset valuation method is likely to produce actuarial values of assets that are sometimes greater than and sometimes less than the corresponding market values.*

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- b. *The asset valuation method is likely to produce actuarial values of assets that, in the actuary's professional judgment, satisfy both of the following:*
1. *The asset values fall within a reasonable range around the corresponding market values. For example, there might be a corridor centered at market value, outside of which the actuarial value of assets may not fall, in order to assure that the difference from market value is not greater than the actuary deems reasonable.*
 2. *Any differences between the actuarial value of assets and the market value are recognized within a reasonable period of time. For example, the actuary might use a method where the actuarial value of assets converges toward market value at a pace that the actuary deems reasonable, if the investment return assumption is realized in future periods.*

In lieu of satisfying both (1) and (2) above, an asset valuation method could satisfy section 3.3(b) if, in the actuary's professional judgment, the asset valuation method either (i) produces values within a sufficiently narrow range around market value or (ii) recognizes differences from market value in a sufficiently short period."

The administrative rules adopted by the PMRS Board in conjunction with Pennsylvania Municipal Retirement Law, which are not required to comply with Actuarial Standards of Practice (ASOP) when defining the Actuarial Value of Assets, do not necessarily meet the requirement of ASOP 44 Selection and Use of Asset Valuation Methods for Pension Valuations. The Actuarial Value of Assets provided within this report follow the Pennsylvania Municipal Retirement Law and the PMRS policy statement.

ACTUARIAL COST METHOD

The Entry Age Normal Actuarial Cost Method was used for active employees, whereby the normal cost is computed as the level annual percentage of salary required to fund the retirement benefits between each member's date of hire and assumed retirement. Entry age is defined as attained age less credited service. The normal cost is based on taking the value, as of entry age into the plan, of each member's projected future benefits. This value is then divided by the value, also at entry age, of each member's expected future salary producing a normal cost rate as a percentage of salary. The normal cost rate is multiplied by current salary to determine each member's normal cost. If a plan provides for a Separate Member Annuity through required member contributions, this contribution rate is then added to the total normal cost rate to determine the final total normal cost rate. Within the MMO calculation, the normal cost is reduced by the member contribution to produce the employer normal cost to be paid.

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The Actuarial Liability is the difference between the present value of future benefits and the present value of future normal cost. The Unfunded Actuarial Liability is the difference between the Actuarial Liability and the Actuarial Value of Assets.

FUNDING OF THE UNFUNDED ACTUARIAL LIABILITY

Actuarial gains (or losses), including the effect of contributions greater or less than the previously determined actuarial determined contribution, are reflected by decreases (or increases) in the unfunded actuarial liability. Under Act 205 of 1984, and updated by Act 44, the unfunded actuarial liability generated by the categories below for each plan is amortized as a level dollar amount over the lesser of:

- (a) A closed period of:
 - (i) 30 years, with respect to the initial liability as of 1/1/85 (or first valuation);
 - (ii) 20 years, with respect to actuarial gains and losses;
 - (iii) 15 years, with respect to changes due to actuarial assumptions;
 - (iv) 20 years, with respect to changes due to plan provisions (if state mandated);
 - (v) 10 years, with respect to changes in benefits for currently active members and 1 year for retired members (if local benefit changes); or

- (b) The average assumed working lifetime of active employees as of the date the liability was established. If there are no active employees, the unfunded liability is amortized one year after the liability was established.

With the two exceptions which follow, the funding method is applied individually with respect to each municipality:

1. Retired and disabled members are paid monthly benefits from the System's Retired Members' Reserve account, which at the time of retirement receives a transfer from the Municipal and Members' Reserve Accounts in an amount actuarially determined to be sufficient to pay all future benefits for the member (and, if applicable, a surviving beneficiary). Thus, post-retirement experience is pooled with the System.

2. A disabled member's pension is met in part from the amount that can be provided by the value of that portion of the member's accrued benefit attributable to municipal contributions, with the balance of the pension being provided by the appropriate transfer from the Disability Reserve Account. The amount of annual transfer from the accumulated municipal contributions to the Disability Reserve Account is determined on a one-year term cost basis, i.e., the expected cost of disabilities in the coming year.

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If a plan is in a surplus position, then 10% of the surplus is credited against the aggregate cost of the plan.

METHOD TO ROLL FORWARD LIABILITIES

The non-county defined benefit pension plans are valued explicitly every odd calendar year. The county plans are valued explicitly every even calendar year. Cash balance plans are valued every year for the active and terminated vested accounts while the retiree liabilities are explicitly valued every odd calendar year.

In the off-valuation year, defined benefit plan liabilities are rolled forward using actual benefit payments and reflecting new retirements. These liabilities reflect any material changes that may have occurred since the prior actuarial valuation, such as new actuarial assumptions and material plan provision changes. When the retiree liabilities are explicitly calculated, the rolled forward active and deferred vested liabilities are proportionally adjusted based on the prior year liabilities net of liabilities attributable to members in pay status.

VALUATION SOFTWARE

Cheiron utilizes ProVal, an actuarial valuation software leased from Winklevoss Technologies (WinTech) to calculate liabilities and project benefit payments. We have relied on WinTech as the developer of ProVal. We have reviewed ProVal and have a basic understanding of it and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect this actuarial valuation.

DISCLOSURES REGARDING MODELS USED

Cheiron utilizes ProVal, an actuarial valuation software leased from Winklevoss Technologies for the intended purpose of calculating liabilities and projected benefit payments. We have examined the reasonableness of the input data and assumptions, reviewed sample calculations for accuracy, reconciled the actuarial gain loss, and find the aggregate results reasonable and appropriate. We are not aware of any material inconsistencies, unreasonable output resulting from the aggregation of assumptions, material limitations or known weaknesses that would affect this actuarial valuation.

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The deterministic projections are based on our propriety model P-Scan developed by our firm that utilize the results shown in this valuation report. The model is also used to stress test the impact of volatile asset returns over the projection period. The projections assume continuation of the plan provisions and actuarial assumptions (other than projected returns on MVA where noted in Section I) in effect as of the valuation date and do not reflect the impact of any changes in benefits or actuarial assumptions that may be adopted after the valuation date. While the assumptions individually are reasonable for the underlying valuation that supports the projections, specifically for projection purposes, they are also considered reasonable in the aggregate. Additional assumptions are disclosed in the Projected Financial Trends of Section I to provide scenarios related to projected returns and distribution of excess interest.

CHANGES IN METHODS

There have been no changes in methods this year.