



Employee Retirement System of the City of Providence

Actuarial Valuation as of July 1, 2023 to
Determine the County's Contribution for the
Fiscal Year Ending June 30, 2025

Bolton

Submitted by:

Tom Vicente, FSA, EA
Senior Consulting Actuary
(443) 573-3918
tvicente@boltonusa.com

Jordan McClane, FSA, EA, FCA, MAAA
Consulting Actuary
(667) 218-6935
jmcclane@boltonusa.com



Table of Contents

	Page
Transmittal Letter.....	1
Section I Executive Summary.....	2
Section II Actuarial Certification.....	4
Section III Determination of Contributions.....	7
Derivation of Liabilities.....	7
Normal Cost.....	8
Projection of Unfunded Liability.....	8
Actuarially Determined Contribution.....	8
Actuarial Gain/Loss.....	10
Actuarial Experience.....	11
Schedule of Amortization Bases.....	12
Section IV Risk Discussion.....	13
Risk Measures.....	13
Additional Review.....	15
Section V Assets.....	16
Statement of Assets.....	16
Reconciliation of Assets.....	17
Determination of Investment Gain/(Loss) for Assets.....	18
Development of Actuarial Value of Assets.....	19
10-Year: Market Value vs. Actuarial Value of Assets.....	20
10-Year: Market Value vs. Actuarial Value Rates of Return.....	20
Summary of Investment Returns & Historical Cash Flows.....	21
Comparison of Net Income versus Historical Cash Flows.....	21
Benefit Payment Projection.....	22
Section VI Participant Information.....	23
Participant Summary.....	23
Plan Participation: Ten Years.....	24
Active Age/Service Distribution Including Compensation.....	25
Participant Reconciliation.....	26
Section VII Summary of Plan Provisions.....	32
Section VIII Actuarial Methods and Assumptions.....	39
Appendices.....	44
Summary of Funding Progress.....	44
Additional Risk Assessments.....	45
Summary of Funding Schedule.....	50
Cost Allocations.....	51
Glossary.....	53

Bolton

Employee Benefits, Actuarial & Investment Consulting

October 31, 2023

Gina Costa
Internal Auditor
City of Providence, RI
25 Dorrance Street
Providence, RI 02903

Re: City of Providence, RI Valuation

Dear Gina:

The following sets forth the actuarial valuation of the Employee Retirement System of the City of Providence as of July 1, 2023. The actuarial valuation was performed at the request of the City. Section I of the report provides the Executive Summary, Section II sets forth our Actuarial Certification, and Section III contains the development of the City's contribution for the 2025 fiscal year. Section IV provides discussion of risk metrics in accordance with ASOP 51, while sections V through VIII contain a summary of the census and asset data, a ten-year projection of benefit payments, plan provisions, assumptions and actuarial methods. The appendices of the report provide information on plan funding and cost allocations, as well as a glossary of many of the terms used in this report.

We are available to answer any questions on the material in this report or to provide explanations or further details as appropriate.

Respectfully submitted,



Thomas Vicente, FSA, EA, FCA, MAAA



Jordan McClane, FSA, EA, FCA, MAAA



Section I. Executive Summary

Background

Bolton Partners, Inc. has prepared the following report that sets forth the actuarial valuation of the Employee Retirement System of the City of Providence as of July 1, 2023. This report provides the funded status of the plan as of July 1, 2023 as well as the Actuarially Determined Contribution (ADC) for the plan for the fiscal year ending June 30, 2025 (FY 2025). Accounting results under Government Accounting Standards Board Statements 67 and 68 are provided in a separate report.

Actuarially Determined Contributions (ADC)

	FYE 2023	FYE 2024	FYE 2025
ADC	\$100,323,373	\$104,943,383	\$113,615,890
Percent of Total Payroll	55.77%	60.60%	61.31%

Details of the determination of the County's contribution for FY2025 are shown in Section II of this report.

Key Demographic Elements

Participants	7/1/2022	7/1/2023
1. Participants		
a. Active Members	2,994	3,055
b. Service Retirements	2,300	2,302
c. Beneficiaries	537	548
d. Disabled Retirements	431	418
e. Inactives with Deferred Benefits	98	128
f. Members Due a Refund of Contributions	581	617
g. Total	6,941	7,068
2. Active Payroll	\$ 178,118,180	\$ 191,330,154

Funding Measures

	7/1/2022	7/1/2023	% Change
1. Actuarial Accrued Liability	\$ 1,726,736,078	\$ 1,786,547,360	3.5%
2. Actuarial Value of Assets	\$ 439,085,986	\$ 470,139,241	7.1%
3. Plan Funded Ratio (2. / 1.)	25.4%	26.3%	
4. Market Value of Assets	\$ 402,149,000	\$ 453,622,000	12.8%
5. Funded Ratio based on Market Value of Assets (4. / 1.)	23.3%	25.4%	

Experience Analysis

The following factors affected the City of Providence, Rhode Island 's contribution as a percentage of payroll:

- **Plan assets and investment performance** – the net return for the year ended June 30, 2023 after investment expenses was 9.8% on a market value basis and 4.4% on an actuarial value basis. Investment returns during FY2023 were about \$11.2 million higher than assumed. A portion of this gain is reflected in the actuarial value of assets (AVA) in this valuation, and the remaining portions will be reflected in future valuations. The AVA and the return on the AVA also reflect the continued recognition of net investment gains and losses from prior valuations. As of July 1, 2023, there is a total of \$-16.5 million in net deferred investment losses that will be reflected in future valuations.
- **Payroll changes** - Pay for returning employees increased approximately 7.2% over the prior year; more than our expected increase of 3.8% for returning actives. Total participant payroll increased by 7.4%, over the prior year; more than the assumption of 3.0% growth per year.

Risk Measures

The primary risk that a plan sponsor incurs from a defined benefit plan is the risk of substantial increases in annual contributions. Many variables can influence future results and the sensitivity of the ADC will vary from plan to plan. As part of the annual valuation, we monitor commonly used measures of the relative riskiness of a pension plan, relative to the plan sponsor and the employee group covered by the plan. A brief review of the risk metrics and a discussion of key risks are shown in Section IV. Additional detailed or focused assessment of risks is outside the scope of the actuarial valuation but can be conducted as a separate assignment.

Changes in Methods, Assumptions, and Plan Provisions

There were no changes in methods, assumptions or plan provisions.

Sources of Information

The July 1, 2023 participant data and market value of assets were provided by or at the direction of the City. While we have reviewed this data for consistency and completeness, we have not audited this data.

Impact of COVID-19

Because the net impact of COVID-19 on mortality, salary increases, and changes in turnover and retirement behavior are difficult to estimate at this time, we have not made any adjustments to the assumptions for the potential impact of the COVID-19 pandemic.



Section II. Actuarial Certification

This actuarial valuation sets forth our calculation of an estimate of the liabilities of the Employee Retirement System of the City of Providence (the Plan), together with a comparison of these liabilities with the value of the plan assets, as submitted by The City of Providence, Rhode Island (the City). This liability calculation and comparison with assets are applicable for the valuation date only. The future is uncertain, and the plan may become better funded or more poorly funded in the future. This valuation does not provide any guarantee that the plan will be able to provide the promised benefits in the future.

This report was prepared for the internal use of the City of Providence, Rhode Island, and its auditors in connection with our actuarial valuations of the pension plan. The purpose of this report is to provide the recommended employer contribution for the 2025 fiscal year. It is neither intended nor necessarily suitable for other purposes. Bolton is not responsible for the consequences of any other use or the reliance upon this report by any other party.

This report is based on plan provisions, census data, and asset data submitted by the City of Providence, Rhode Island. We have relied on this information for purposes of preparing this report. We have not audited the census or asset data provided, however based on our review the data appears to be reasonable and consistent with previously provided information. Unless otherwise noted in our report, we believe the information provided is sufficiently complete and reliable for purposes of the results presented in this report. The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information. The City of Providence, Rhode Island is solely responsible for the validity and completeness of this information.

The City of Providence, Rhode Island is responsible for selecting the plan's funding policy, actuarial valuation methods, asset valuation methods, and assumptions. The policies, methods and assumptions used in this valuation are those that have been so prescribed and are described in this report. The City of Providence, Rhode Island is solely responsible for communicating to Bolton any changes required thereto.

The City of Providence, Rhode Island is solely responsible for selecting the plan's investment policies, asset allocations and individual investments. Bolton's actuaries have not provided any investment advice to the City of Providence, Rhode Island.

This is a deterministic valuation in that it is based on a single set of assumptions. This set of assumptions is one possible basis for our calculations. We may consider that some factors are not material to the valuation of the plan and may not provide a specific assumption for those factors. We may have used other assumptions in the past. We will likely consider changes in assumptions at a future date.

Different assumptions or scenarios within the range of possibilities may also be reasonable and results based on those assumptions would be different. As a result of the uncertainty inherent in a forward-looking projection over a very long period of time, no one projection is uniquely "correct" and many alternative projections of the future could also be regarded as reasonable. Two different actuaries could, quite reasonably, arrive at different results based on the same data and different views of the future.



The City of Providence, Rhode Island could reasonably ask how the valuation would change if we used a different assumption set or if plan experience exhibited variations from our assumptions. This report does not contain such an analysis. That type of analysis would be a separate assignment.

In addition, decisions regarding benefit improvements, benefit changes, the trust's investment policy, and similar issues should not be based on this valuation. These issues are complex and other factors should be considered when making such decisions. Other factors might include the anticipated vitality of the local economy and future growth expectations, as well as other economic and financial factors.

The cost of this plan is determined by the benefits promised by the plan, the plan's participant population, the investment experience of the plan and many other factors. An actuarial valuation is a budgeting tool for the City of Providence, Rhode Island. It does not affect the cost of the plan. Different funding methods provide for different timing of contributions to the plan. As the experience of the plan evolves, it is normal for the level of contributions to the plan to change. If a contribution is not made for a particular year, either by deliberate choice or because of an error in a calculation, that contribution can be made in later years. We are not responsible for the consequences of any decision by the City of Providence, Rhode Island to make contributions at a future time rather than an earlier time. The City of Providence, Rhode Island is responsible for funding the cost of the plan.

The report is conditioned on the assumption of an ongoing plan and is not meant to present the actuarial position of the plan in the case of plan termination. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic or demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status), and changes in plan provisions or applicable law.

The valuation was completed using both proprietary and third-party models (including software and tools). We have tested these models to ensure they are used for their intended purposes, within their known limitations, and without any known material inconsistencies unless otherwise stated.

The calculations in this report have been computed in accordance with our understanding of generally accepted actuarial principles and practices and fairly reflect the actuarial position of the plan. The various actuarial assumptions and methods which have been used are, in our opinion, appropriate for the purposes of this report.

We make every effort to ensure that our calculations are accurately performed. We reserve the right to correct any potential errors by amending the results of this report or by including the corrections in a future valuation report.

Bolton does not practice law and, therefore, cannot and does not provide legal advice. Any statutory interpretation on which this report is based reflects Bolton's understanding as an actuarial firm. Bolton recommends that recipients of this report consult with legal counsel when making any decisions regarding compliance with ERISA, the Internal Revenue Code, or any other statute or regulation.

The City of Providence, Rhode Island should notify Bolton promptly after receipt of this report if the City of Providence, Rhode Island disagrees with anything contained in the report or is aware of any information that would affect the results of the report that has not been communicated to Bolton or incorporated herein. The report will be deemed final and acceptable to the City of Providence, Rhode Island unless the City of Providence, Rhode Island promptly provides such notice to Bolton.

The undersigned credentialed actuaries meet/actuary meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. We are not aware of any direct or material indirect financial interest or relationship, including investments or other services, which could create a conflict of interest that would impair the objectivity of our work.

We are available to answer any questions on the material in this report to provide explanations or further details as appropriate.



Thomas Vicente, FSA, EA, FCA, MAAA



Jordan McClane, FSA, EA, FCA, MAAA



Section III. Determination of Contributions

Derivation of Liabilities

Below is a summary of the actuarial accrued liability of the future benefits expected to be paid from the plan.

Participants	7/1/2022	7/1/2023
1. Participants		
a. Active Members	2,994	3,055
b. Service Retirements	2,300	2,302
c. Beneficiaries	537	548
d. Disabled Retirements	431	418
e. Inactives with Deferred Benefits	98	128
f. Members Due a Refund of Contributions	581	617
g. Total	6,941	7,068
2. Active Payroll	\$ 178,118,180	\$ 191,330,154

Actuarial Accrued Liability	7/1/2022	7/1/2023
1. Active Participants	\$ 538,779,223	\$ 564,608,127
2. In-pay Participants		
a. Service Retirements	\$ 749,483,119	\$ 774,242,404
b. Beneficiaries	140,189,637	150,446,805
c. Disabled Retirements	\$ 274,129,694	270,987,868
d. Total In-pay Participants	\$ 1,163,802,450	\$ 1,195,677,077
3. Inactives with Deferred Benefits	\$ 15,553,673	\$ 18,126,187
4. Members Due a Refund of Contributions	\$ 8,600,732	\$ 8,135,969
5. Total Actuarial Accrued Liability (1. + 2.d. + 3. + 4.)	\$ 1,726,736,078	\$ 1,786,547,360
6. Actuarial Value of Assets (AVA)	\$ 439,085,986	\$ 470,139,241
7. Unfunded Liability Based on AVA (5. - 6.)	\$ 1,287,650,092	\$ 1,316,408,119
8. Funded Ratio Based on AVA (6. / 5.)	25.4%	26.3%
9. Market Value of Assets (MVA)	\$ 402,149,000	\$ 453,622,000
10. Unfunded Liability Based on MVA (5. - 9.)	\$ 1,324,587,078	\$ 1,332,925,360
11. Funded Ratio Based on MVA (9. / 5.)	23.3%	25.4%



Normal Cost

The normal cost and the projected normal cost are shown below.

Normal Cost	7/1/2022	7/1/2023
1. Total Benefit Normal Cost	\$ 26,466,475	\$ 28,802,487
2. Expected Employee Contributions	(14,946,423)	(15,851,216)
3. Net Normal Cost for the Plan Year	\$ 11,520,052	\$ 12,951,271
4. Projected Normal Cost for FYE 06/30/2025		\$ 13,339,808

Projection of Unfunded Liability

The projection of the unfunded actuarial liability from July 1, 2023 to July 1, 2024 is shown below.

Projection of Unfunded Liability	7/1/2023
1. Unfunded Liability as of July 1, 2023	\$ 1,316,408,119
2. Expected Employer Contributions 07/01/2023-06/30/2024	\$ 104,943,383
3. Expected Employee Contributions 07/01/2023-06/30/2024	\$ 16,396,625
4. Expected Expenses 07/01/2023-06/30/2024	0
5. Total Benefit Normal Cost 07/01/2023-06/30/2024	\$ 28,802,487
6. Interest	\$ 93,600,567
7. Projected Unfunded Liability as of July 1, 2024 (1. - 2. - 3. + 4. + 5. + 6.)	\$ 1,317,471,165

Actuarially Determined Contribution

Below is the derivation of the Actuarially Determined Contribution.

Actuarially Determined Contribution	FY 2025
1. Projected Normal Cost for FYE 06/30/2025	\$ 29,666,562
2. Expected Employee Contributions	(16,326,752)
3. Employer Normal Cost (1. + 2.)	\$ 13,339,810
4. Amortization Amount	92,843,265
5. Actuarially Determined Contribution (ADC) (3. + 4.)	\$ 106,183,075
6. ADC Adjusted for Timing of Payment	\$ 113,615,890
7. Projected Participant Payroll	185,320,010
Employer Contribution as a Percentage of Participant Payroll	61.31%



Actuarial Gain/Loss

Development of Actuarial (Gain)/Loss for July 1, 2022 to June 30, 2023.

	Liability	Actuarial Value of Assets	UAAL
1. Beginning of year total	\$ 1,726,736,078	\$ 439,085,986	\$ 1,287,650,092
2. Normal cost (net of admin exp)	26,466,475		26,466,475
3. Administration expense		(216,000)	216,000
4. Benefit payments	(105,311,000)	(105,311,000)	0
5. Contributions		117,219,000	(117,219,000)
6. Interest	119,038,294	31,145,239	87,893,055
7. Expected end of year total	\$ 1,766,929,847	\$ 481,923,225	\$ 1,285,006,622
8. Actual end of year (before changes)	1,786,547,360	470,139,241	1,316,408,119
9. (Gain)/Loss	\$ 19,617,513	\$ 11,783,984	\$ 31,401,497

Development of Actuarial Unfunded Accrued Liability as of June 30, 2023.

Development of Unfunded Actuarial Accrued Liability as of June 30, 2023	
1. Expected UAAL as of June 30, 2023	\$ 1,285,006,622
2. Changes to UAAL due to:	
a. Actuarial (Gain)/Loss	31,401,497
b. Plan Change	0
c. Assumption Change	0
d. Method Change	0
e. Other	0
3. Total of all changes in UAAL	31,401,497
4. Actual UAAL as of June 30, 2023 (1. + 3.)	\$ 1,316,408,119

The following section provides the breakdown of this year's Actuarial (Gain)/Loss.



Actuarial Experience

There was an actuarial loss on liabilities of \$19,617,513 for the 2022-2023 fiscal year. The gain or loss is measured by comparing expected liabilities to actual liabilities before any changes are made to the valuation, such as any assumption or plan changes reflected in the current valuation. The individual sources of gains and losses that follow are based upon a comparison of actual and expected experience in the year ending on the valuation date.

Source	(Gain)/Loss
1. Investments	\$ 11,783,984
2. New Entrants	742,000
3. COLAs	1,718,000
4. Salary increases	10,635,000
5. Mortality	1,346,000
6. Turnover	3,118,000
7. Disability	(1,344,000)
8. Retirement	(5,883,000)
9. Data Corrections	8,578,000
10. Miscellaneous	707,513
11. Total	\$ 31,401,497



Schedule of Amortization Bases

Below is a schedule of the amortization bases as of July 1, 2025.

Description	Years Remaining	Outstanding Balance	Amortization Amount
Deferral Liability	7	\$ 2,373,751	\$ 411,642
Remaining Unfunded Liability	16	\$ 1,315,097,414	\$ 92,431,623
Totals		\$ 1,317,471,165	\$ 92,843,265

The deferral liability amortization base is amortized as a level dollar amount, while the remaining unfunded liability is amortized as an equal percent of payroll each year with total payroll expected to increase 5.3% annually. The July 1, 2024 amortization payment of \$92,843,265 is sufficient to cover the interest on the plan's unfunded liability. Based on the the total payment shown above, the total amount will be fully amortized in approximately 16 years.

Section IV. Risk Discussion

Risk Measures

Pension plans are complicated financial instruments designed to provide income security for plan participants as they move through their working lives and into retirement. As such they can be subject to many different forces that can put the plan in better or worse positions over time. The primary risk that a plan sponsor incurs from a defined benefit plan is the risk of substantial increases in annual contributions.

The “maturity” level of a plan can indicate the likely sensitivity the plan will have to different events whether positive or negative. Variations in the investment returns are a common source of these types of events or shocks. Other sources might be experience that differs from that assumed, assumption changes or plan changes.

Actuarial Standard of Practice No. 51 *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions* requires actuaries to provide information so that users of the report can better understand the potential for future results to vary from the results presented in this report and identify risks on the plan’s future financial condition. This standard does not require the assessment to be based on numerical calculations. In some cases, a more in-depth review of plan risk is warranted.

Examples of risk common to most public plans include the following (generally listed from greatest to least risk):

- **Investment risk:** The potential that investment returns will be different than expected. The Trustees are well aware of this risk. This valuation reflects the smoothing of asset returns, which reduces the risk of wide year-by-year contribution changes due to investment return fluctuations but does not ultimately reduce the risk inherent in a defined benefit plan.
- **Contribution risk:** Most commonly this is associated with the potential that actual future contributions are not made in accordance with the plan’s actuarially based funding policy. When this occurs, it can create negative long-term problems.
- **Longevity and other demographic risks:** The potential that mortality or other demographic experience will be different than expected.
- **Asset/liability mismatch risk:** The potential that changes in asset values are not matched by changes in the value of liabilities.
- **Cash flow risks:** The potential that contributions coming into the plan will not cover benefit payments. While common in well-funded plans, this still requires the use of interest, dividends, or principal to cover benefit payments. When assets need to be sold (or more cash held) it can be an issue. Poorly funded plans with DROP lump sum payments can magnify the issue.

One item left off this list is “interest rate risk” (i.e., the potential that interest rates will be different than expected). This risk is common in corporate ERISA plans where funding is based on bond rates. Interest rates on bonds are still an important consideration when setting an expected return assumption and can change over time.

There are several plan maturity measures that can be significant to understanding the risks associated with the plan. The following table shows four commonly used measures of the relative riskiness of a pension plan, relative to the plan sponsor and the employee group covered by the plan and how they have changed over time.

Risk Measure	July 1, 2020	July 1, 2021	July 1, 2022	July 1, 2023	Median Measures
Inactive Liability as a Percent of Total Liability	67%	68%	69%	68%	79%
Assets to Payroll	2.2	2.6	2.3	2.4	6.9
Liabilities to Payroll	10.1	10.0	9.7	9.3	5.0
Benefit Payments to Contributions	1.0	1.0	1.0	0.9	1.6

The Assets to Payroll ratio, also called the Asset Volatility Ratio (AVR) is equal to the market value of assets (MVA) divided by payroll. A higher AVR implies that the plan is exposed to greater contribution volatility. The current AVR of 2.4 indicates that a:

- 1% asset gain/loss can be related to about 2.4% of the annual payroll.
- The County’s contribution changes by about 0.2% of payroll for each 1.0% gain or loss on the market assets.

The Liabilities to Payroll ratio also call the Liability Volatility Ratio (LVR) is equal to the Actuarial Accrued Liability (AAL) divided by payroll. A higher LVR implies that the plan is exposed to greater contribution volatility due to changes in liability measurements. The current LVR of 9.3 indicates that a:

- 1% liability gain/loss can be related to about 9.3% of the annual payroll.
- The County’s contribution changes by about 0.8% of payroll for each 1.0% gain or loss on the AAL.

As the plan approaches a 100% funded level, the AVR will converge to the LVR.

The use of payroll in these risk measures is an easily available substitute for the employer’s revenue and often reflects the employer’s ability to afford the plan. Each of these measures are a measure of plan maturity. The common evolution of a pension plan is to become more mature over time. Mature plans present more risk to plan sponsors because changes to the liability or assets will result in large changes in the unfunded liability as compared to the overall size of the employer as measured by payroll. As a result, the change in the metrics over time can be as important as the nominal size of the metric itself.

Additional Review

In some instances, more detailed quantitative assessment of risks is warranted either by the above maturity metrics, part of a periodic self-assessment of risks, or due to changes in investment allocations and capital market assumptions. The following are examples of tests that could be performed:

- **Scenario Test**—A process for assessing the impact of one possible event, or several simultaneously or sequentially occurring possible events, on a plan’s financial condition. A scenario test could show, for example, the effect of a layoff or reduction in workforce, or early retirement program.
- **Sensitivity Test**—A process for assessing the impact of a change in an actuarial assumption on an actuarial measurement. A sensitivity analysis could demonstrate, for example, the impact of a decrease in the valuation discount rate or a change in future life expectancies.
- **Stochastic Modeling**—A process for generating numerous potential outcomes by allowing for random variations in one or more inputs over time for the purpose of assessing the distribution of those outcomes. This type of analysis could show, for example, a range of potential future contribution levels and the likelihood of contributions increasing to a certain level.
- **Stress Test**—A process for assessing the impact of adverse changes in one or relatively few factors affecting a plan’s financial condition. A stress test could show, for example, the impact of a single year or period of several years with significant investment losses.



Section V. Assets

Statement of Assets

Below is a statement of assets as of June 30, 2022 and June 30, 2023 from the trust asset statements provided by the City.

	6/30/2022	6/30/2023
1. Receivables		
a. Employer Contributions	\$ 0	\$ 0
b. Employee Contributions	0	0
c. Loans	24,493,000	25,225,000
d. Other	42,000	2,398,000
e. Due from Fiduciary, Net	52,481,000	39,385,000
f. Total Receivables	\$ 77,016,000	\$ 67,008,000
2. Investments at Fair Value		
a. Equities	\$ 264,310,000	\$ 310,150,000
b. Alternative Investments	0	0
c. Money Market Mutual Funds	13,676,000	5,662,000
d. Fixed Income	47,666,000	71,905,000
e. Real Estate	0	0
f. Other	0	0
g. Total Investments	\$ 325,652,000	\$ 387,717,000
3. Prepaid Insurance	0	0
4. Total Assets (1.f. + 2.g. + 3.)	\$ 402,668,000	\$ 454,725,000
5. Liabilities		
a. Investments Purchased	0	0
b. Accounts Payable	398,000	979,000
c. Other	121,000	124,000
d. Total Liabilities	\$ 519,000	\$ 1,103,000
6. End of Year Assets (4. - 5.d.)	\$ 402,149,000	\$ 453,622,000



Reconciliation of Assets

Below is a reconciliation of assets (unaudited) from July 1, 2021 through June 30, 2023.

	07/01/2021 to 06/30/2022	07/01/2022 to 06/30/2023
1. Beginning of Year Assets	\$ 439,388,000	\$ 402,149,000
2. Receipts		
a. Employer Contributions	\$ 93,585,000	\$ 100,323,000
b. Employee Contributions	14,611,000	16,896,000
c. Interest and Dividends	6,568,000	6,105,000
d. Realized and Unrealized Gain/(Loss)	(46,315,000)	33,676,000
e. Stock Loan Income	0	0
f. Other	0	0
g. Total Receipts	\$ 68,449,000	\$ 157,000,000
3. Deductions		
a. Benefit Payments	\$ (105,438,000)	\$ (105,311,000)
b. Administrative Expenses	(250,000)	(216,000)
c. Investment Expenses	0	0
d. Total Disbursements	\$ (105,688,000)	\$ (105,527,000)
4. Net Increase (2.g. + 3.d.)	\$ (37,239,000)	\$ 51,473,000
5. Preliminary Ending Value (1. + 4.)	\$ 402,149,000	\$ 453,622,000
6. Contribution Receivable	\$ 0	\$ 0
7. End of Year Assets (5. + 6.)	\$ 402,149,000	\$ 453,622,000
8. Rate of Return Net of Investment Fees	-9.02%	9.75%



Determination of Investment Gain/(Loss) for Assets

Market Value of Assets				
As of June 30, 2022				\$ 402,149,000
Actual Return				
Item (1)	Amount (2)	Weight for Timing (3)	Weighted Amount (2) × (3)	
Contributions	\$ 117,219,000	50%	\$ 58,609,500	
Benefits Paid	(105,311,000)	50%	(52,655,500)	
Expenses	(216,000)	50%	<u>(108,000)</u>	
Total			5,846,000	
Market Value plus Total Weighted Amount				407,995,000
Assumed Rate of Return for the Year				7.00%
Expected Return				\$ 28,559,650
Actual Return				
1.	Market Value as of June 30, 2022		\$ 402,149,000	
2.	Contributions		117,219,000	
3.	Benefits and Administrative Expenses Paid		(105,527,000)	
4.	Market Value as of June 30, 2023		453,622,000	
Actual Return [(4) - (1) - (2) - (3)]				\$ 39,781,000
Calculation Base (1) + 50% × [(2) + (3)]				407,995,000
Market Value Return as a Percentage				9.8%
Investment Gain/(Loss)				
Actual Return minus Expected Return				\$ 11,221,350

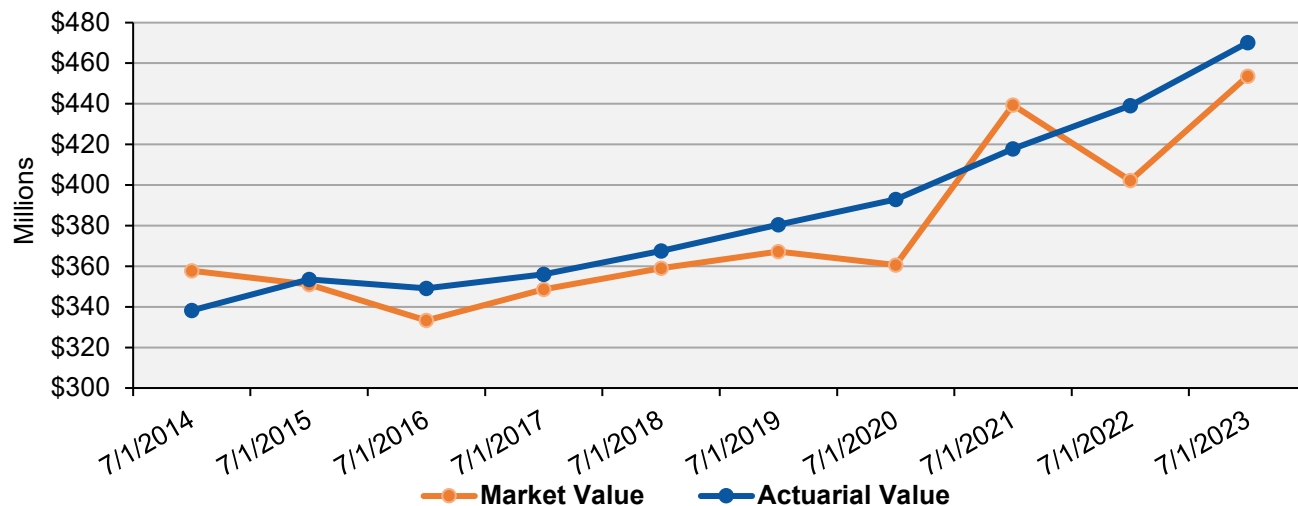


Development of Actuarial Value of Assets

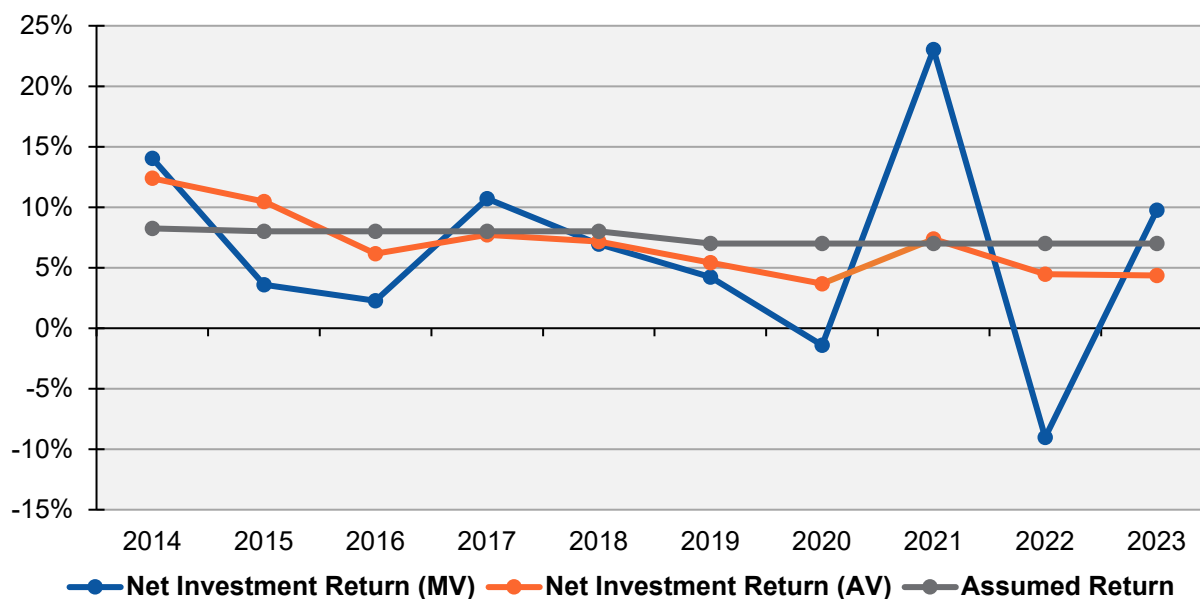
The actuarial asset value as of July 1, 2023 is determined by spreading the asset gain or loss for each year over a five-year period. The asset gain or loss is the amount by which the actual asset return differs from the expected asset return.

Market Value of Assets					
As of June 30, 2023					\$ 453,622,000
Plan Year End (1)	Investment Gain/(Loss) (2)	Percent Recognized (3)	Percent Deferred (4)	Deferred Gain/(Loss) (2) × (4)	
6/30/2023	11,221,350	20%	80%	\$	8,977,080
6/30/2022	(70,591,940)	40%	60%		(42,355,164)
6/30/2021	57,551,520	60%	40%		23,020,608
6/30/2020	(30,798,825)	80%	20%		(6,159,765)
Total				\$	(16,517,241)
Preliminary Actuarial Value of Assets					
As of July 1, 2023 (Market Value of Assets less Total Deferred Gain/(Loss))					\$ 470,139,241
Final Actuarial Value of Assets					
Minimum Actuarial Value of Assets (80% of MVA)					362,897,600
Maximum Actuarial Value of Assets (120% of MVA)					544,346,400
As a Percentage of Market Value					103.6%
Actuarial Value of Assets as of July 1, 2023					\$ 470,139,241
Calculation of Actuarial Return					
1. Actuarial Value as of July 1, 2022					\$ 439,085,986
2. Contributions					117,219,000
3. Benefits and Administrative Expenses Paid					(105,527,000)
4. Actuarial Value as of July 1, 2023					470,139,241
5. Actuarial Return [(4) - (1) - (2) - (3)]					19,361,255
6. Calculation Base (1) + 50% × [(2) + (3)]					444,931,986
Actuarial Return as a Percentage [(5) / (6)]					4.4%

10-Year: Market Value vs. Actuarial Value of Assets



10-Year: Market Value vs. Actuarial Value Rates of Return



The assumed long-term rate of return 7.00% considers past experience, the Trustees' asset allocation policy and future expectations.

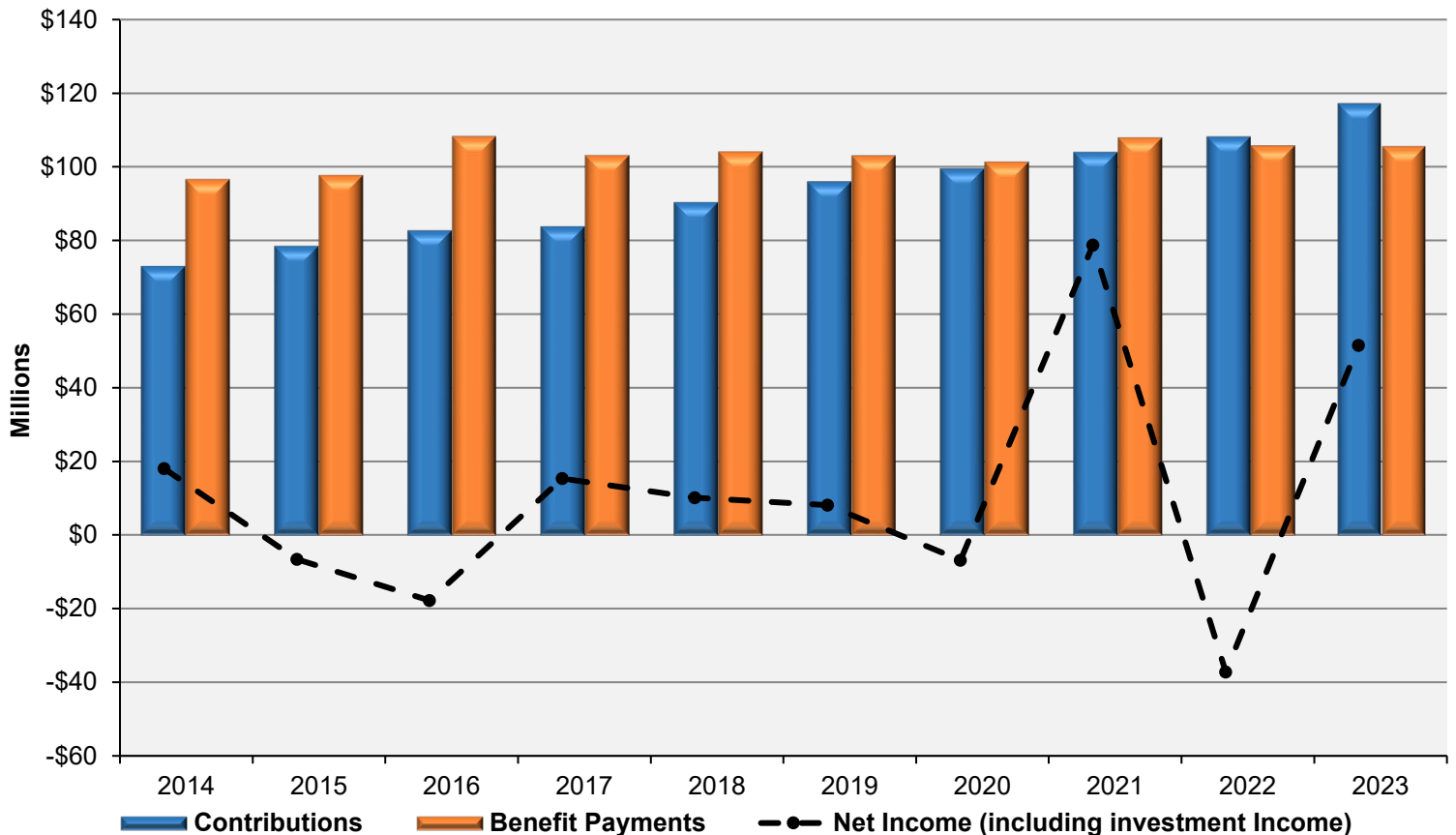
Average Rates of Return	Market Value	Actuarial Value
Most recent year return	9.8%	4.4%
Most recent five-year average return	4.8%	5.0%
Most recent ten-year average return	6.1%	6.9%



Summary of Investment Returns & Historical Cash Flows

Plan Year Ending	Market Value		Total Contributions	Benefit Payments & Expenses		Net Income
	Net Investment Return Amount	Percent				
2014	\$ 41,549,000	14.0%	\$ 73,013,000	\$ 96,570,000	\$ 17,992,000	
2015	12,507,000	3.6%	78,500,000	97,651,000	(6,644,000)	
2016	7,665,000	2.3%	82,747,000	108,193,000	(17,781,000)	
2017	34,630,000	10.7%	83,815,000	103,088,000	15,357,000	
2018	23,802,000	7.0%	90,369,000	104,042,000	10,129,000	
2019	15,073,000	4.2%	96,011,000	103,004,000	8,080,000	
2020	(5,144,000)	-1.4%	99,565,000	101,259,000	(6,838,000)	
2021	82,658,000	23.0%	103,964,000	107,832,000	78,790,000	
2022	(39,747,000)	-9.0%	108,196,000	105,688,000	(37,239,000)	
2023	39,781,000	9.8%	117,219,000	105,527,000	51,473,000	
Total	\$ 212,774,000		\$ 933,399,000	\$ 1,032,854,000	\$ 113,319,000	

Comparison of Net Income versus Historical Cash Flows





Benefit Payment Projection

The following table shows the estimated benefit payments from July 1, 2023 through June 30, 2033 based on existing members of the plan.

Fiscal Year End	Benefits
2024	\$ 115,633,570
2025	111,772,849
2026	115,689,367
2027	119,639,312
2028	123,898,268
2029	127,656,414
2030	131,525,191
2031	135,569,545
2032	138,931,044
2033	141,885,386



Section VI. Participant Information

Total Participant Summary

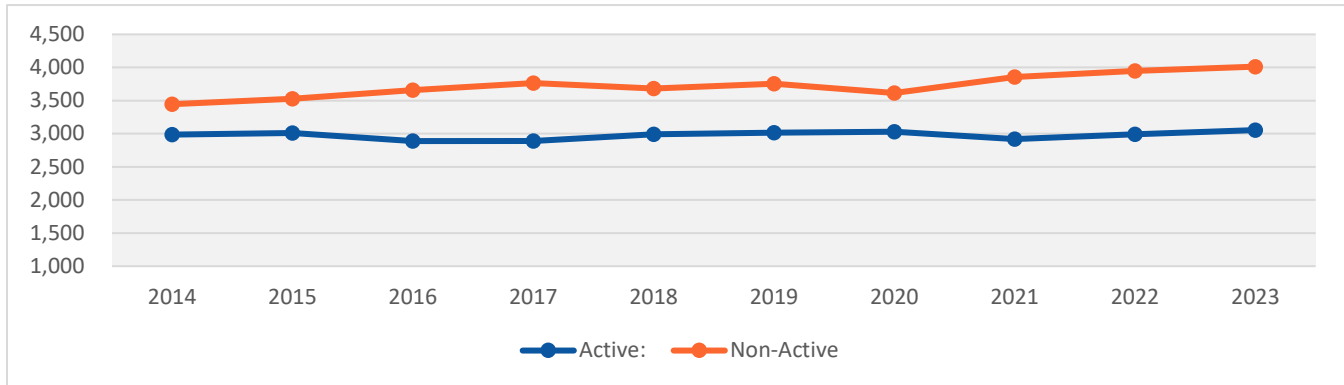
The following table summarizes the counts, ages and benefit information for plan participants used in this valuation and the last valuation.

		7/1/2022	7/1/2023	% Change
1.	Actives			
a.	Number	2,994	3,055	2.0%
b.	Average Age	46.4	46.4	0.1%
c.	Average Service	11.9	11.9	-0.2%
d.	Total Compensation	\$ 178,118,180	\$ 191,330,154	7.4%
e.	Average Salary	\$ 59,492	\$ 62,629	5.3%
f.	Participant Contributions	\$ 195,767,466	\$ 203,414,682	3.9%
2.	Inactives with Deferred Benefits			
a.	Number	98	128	30.6%
b.	Average Age	52.2	52.2	0.0%
c.	Average Monthly Benefits	\$ 1,475	\$ 1,304	-11.6%
3.	Members Due a Refund of Contributions			
a.	Number	581	617	6.2%
b.	Total Contributions Due	\$ 8,600,732	\$ 8,135,969	-5.4%
4.	Retired Participants			
a.	Number	2,300	2,302	0.1%
b.	Average Age	70.7	71.0	0.4%
c.	Average Monthly Benefits	\$ 2,195	\$ 2,241	2.1%
5.	Disabled Participants			
a.	Number	431	418	-3.0%
b.	Average Age	69.8	70.3	0.7%
c.	Average Monthly Benefits	\$ 4,383	\$ 4,459	1.7%
6.	Beneficiaries			
a.	Number	537	548	2.0%
b.	Average Age	75.5	75.6	0.2%
c.	Average Monthly Benefits	\$ 2,258	\$ 2,371	5.0%



Total Plan Participation: Ten Years

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
In Pay:	3,018	3,094	3,185	3,234	3,220	3,255	3,152	3,260	3,268	3,268
Inactive:	428	432	473	533	465	500	463	598	679	745
Active:	2,986	3,012	2,889	2,891	2,993	3,017	3,031	2,921	2,994	3,055
Total:	6,432	6,538	6,547	6,658	6,678	6,772	6,646	6,779	6,941	7,068





Participant Summary: Class A

The following table summarizes the counts, ages and benefit information for plan participants used in this valuation and the last valuation.

		7/1/2022	7/1/2023	% Change
1.	Actives			
a.	Number	2,183	2,244	2.8%
b.	Average Age	48.3	48.3	0.0%
c.	Average Service	11.4	11.3	-0.4%
d.	Total Compensation	\$ 112,281,016	\$ 123,119,138	9.7%
e.	Average Salary	\$ 51,434	\$ 54,866	6.7%
f.	Participant Contributions	\$ 110,767,733	\$ 115,095,877	3.9%
2.	Inactives with Deferred Benefits			
a.	Number	91	122	34.1%
b.	Average Age	52.7	52.5	-0.3%
c.	Average Monthly Benefits	\$ 1,418	\$ 1,255	-11.5%
3.	Members Due a Refund of Contributions			
a.	Number	548	589	7.5%
b.	Total Contributions Due	\$ 6,890,327	\$ 7,138,003	3.6%
4.	Retired Participants			
a.	Number	1,544	1,536	-0.5%
b.	Average Age	72.9	73.2	0.5%
c.	Average Monthly Benefits	\$ 1,602	\$ 1,611	0.6%
5.	Disabled Participants			
a.	Number	75	73	-2.7%
b.	Average Age	71.3	72.2	1.2%
c.	Average Monthly Benefits	\$ 1,683	\$ 1,760	4.5%
6.	Beneficiaries			
a.	Number	187	193	3.2%
b.	Average Age	76.1	75.9	-0.3%
c.	Average Monthly Benefits	\$ 1,375	\$ 1,432	4.1%



Participant Summary: Class B

The following table summarizes the counts, ages and benefit information for plan participants used in this valuation and the last valuation.

		7/1/2022	7/1/2023	% Change
1.	Actives			
a.	Number	811	811	0.0%
b.	Average Age	41.1	41.1	0.0%
c.	Average Service	13.4	13.5	0.5%
d.	Total Compensation	\$ 65,837,164	\$ 68,211,016	3.6%
e.	Average Salary	\$ 81,180	\$ 84,107	3.6%
f.	Participant Contributions	\$ 84,999,733	\$ 88,318,806	3.9%
2.	Inactives with Deferred Benefits			
a.	Number	7	6	-14.3%
b.	Average Age	46.2	46.3	0.2%
c.	Average Monthly Benefits	\$ 2,223	\$ 2,297	3.3%
3.	Members Due a Refund of Contributions			
a.	Number	33	28	-15.2%
b.	Total Contributions Due	\$ 1,710,405	\$ 997,966	-41.7%
4.	Retired Participants			
a.	Number	756	766	1.3%
b.	Average Age	66.1	66.4	0.5%
c.	Average Monthly Benefits	\$ 3,405	\$ 3,505	2.9%
5.	Disabled Participants			
a.	Number	356	345	-3.1%
b.	Average Age	69.5	69.9	0.6%
c.	Average Monthly Benefits	\$ 4,952	\$ 5,030	1.6%
6.	Beneficiaries			
a.	Number	350	355	1.4%
b.	Average Age	75.1	75.5	0.5%
c.	Average Monthly Benefits	\$ 2,730	\$ 2,882	5.6%



Active Age/Service Distribution Including Compensation: Class A

Shown below is the distribution of active participants in Class A based on age and service. The compensation shown is the average rate of pay as of July 1, 2023.

Age	Years of Service as of 07/01/2023										Total	
	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Up		
Under 25	44	34	3	-	-	-	-	-	-	-	-	81
	38,355	41,731	41,980	-	-	-	-	-	-	-	-	39,906
25 to 29	49	84	17	1	-	-	-	-	-	-	-	151
	50,134	47,127	54,608	62,779	-	-	-	-	-	-	-	49,049
30 to 34	36	78	46	14	-	-	-	-	-	-	-	174
	61,844	53,384	58,095	60,812	-	-	-	-	-	-	-	56,978
35 to 39	40	84	57	50	14	-	-	-	-	-	-	245
	55,038	54,506	62,276	59,759	55,207	-	-	-	-	-	-	57,513
40 to 44	28	74	35	43	22	23	2	-	-	-	-	227
	77,184	56,279	60,459	59,276	65,908	56,625	55,591	-	-	-	-	61,032
45 to 49	19	66	34	35	35	38	25	-	-	-	-	252
	61,891	46,687	59,593	48,079	61,606	67,432	59,435	-	-	-	-	56,233
50 to 54	17	49	45	54	41	51	59	14	1	-	-	331
	49,034	48,316	52,367	55,721	58,149	56,177	60,299	72,116	84,152	-	-	55,792
55 to 59	13	50	53	48	36	60	39	22	6	-	-	327
	90,059	49,472	52,747	44,751	53,059	59,937	62,610	72,015	70,958	-	-	56,716
60 to 64	10	34	35	48	44	51	33	12	5	-	-	272
	38,487	42,801	52,865	48,856	59,380	51,007	56,852	66,163	72,861	-	-	52,514
65 to 69	5	14	19	19	18	15	24	9	2	2	2	127
	30,087	34,102	52,240	44,076	51,967	55,661	63,641	59,838	138,558	67,924	52,812	
70 & up	2	6	8	6	9	7	4	9	1	5	5	57
	41,188	33,449	40,518	68,121	46,810	40,947	38,447	35,873	37,217	41,737	42,920	
Total	263	573	352	318	219	245	186	66	15	7	2,244	
	55,252	49,460	56,073	53,088	57,729	57,343	59,967	64,384	79,236	49,219	54,866	

Averages	
Age	48.3
Service	11.3



Active Age/Service Distribution Including Compensation: Class B

Shown below is the distribution of active participants in Class B based on age and service. The compensation shown is the average rate of pay as of July 1, 2023.

Age	Years of Service as of 07/01/2023										Total	
	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Up		
Under 25	8	11	1	-	-	-	-	-	-	-	-	20
	42,848	61,621	74,183	-	-	-	-	-	-	-	-	54,740
25 to 29	16	50	46	-	-	-	-	-	-	-	-	112
	47,329	65,970	74,424	-	-	-	-	-	-	-	-	66,779
30 to 34	3	18	117	11	-	-	-	-	-	-	-	149
	42,848	71,920	76,398	85,015	-	-	-	-	-	-	-	75,818
35 to 39	5	9	72	28	21	-	-	-	-	-	-	135
	50,017	74,474	77,568	85,875	95,860	-	-	-	-	-	-	80,910
40 to 44	-	3	30	12	55	13	-	-	-	-	-	113
	-	78,200	74,650	88,203	94,739	96,298	-	-	-	-	-	88,452
45 to 49	-	-	11	4	32	26	1	-	-	-	-	74
	-	-	78,869	88,993	89,750	96,973	116,090	-	-	-	-	90,985
50 to 54	-	-	2	2	27	31	33	16	-	-	-	111
	-	-	88,399	89,354	91,292	93,911	106,443	109,595	-	-	-	99,079
55 to 59	-	-	1	-	7	7	22	27	8	-	-	72
	-	-	83,947	-	88,384	93,449	98,421	105,554	98,062	-	-	99,395
60 to 64	-	-	-	-	2	4	5	7	3	2	-	23
	-	-	-	-	100,517	93,101	91,124	93,143	109,729	123,228	-	98,117
65 to 69	-	-	-	-	-	-	-	-	1	1	-	2
	-	-	-	-	-	-	-	-	214,963	63,507	-	139,235
70 & up	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
Total	32	91	280	57	144	81	61	50	12	3	-	811
	46,208	67,865	76,389	86,540	92,919	95,197	102,452	105,110	110,721	103,321	-	84,108

Averages

Age	41.1
Service	13.5



Total Participant Reconciliation

Shown below is the reconciliation of participants between the prior and current valuation date.

	Active Participants	Inactive Participants		Total
		Receiving Benefits	With Deferred Benefits	
Participants in Last Valuation	2,994	3,268	679	6,941
Retired	(53)	63	(10)	0
Vested Termination	(49)	0	49	0
Nonvested Termination	(109)	0	109	0
Disabled	(5)	5	0	0
Deceased/Payment Expired	(2)	(120)	(1)	(123)
Benefits Suspended	0	0	0	0
Return of Employee Contributions	(84)	0	(23)	(107)
New QDRO	0	0	0	0
New Participants	311	0	0	311
Rehired	64	(1)	(63)	0
Beneficiary	0	42	0	42
Adjustments	<u>(12)</u>	<u>11</u>	<u>5</u>	<u>4</u>
Participants in This Valuation	3,055	3,268	745	7,068

Note: Inactive participants 'With Deferred Benefits' includes those participants due only a refund of contributions.



Participant Reconciliation: Class A

Shown below is the reconciliation of participants between the prior and current valuation date.

	Active Participants	Inactive Participants		Total
		Receiving Benefits	With Deferred Benefits	
Participants in Last Valuation	2,183	1,806	639	4,628
Retired	(25)	34	(9)	0
Vested Termination	(49)	0	49	0
Nonvested Termination	(107)	0	107	0
Disabled	(3)	3	0	0
Deceased/Payment Expired	(1)	(69)	(1)	(71)
Benefits Suspended	0	0	0	0
Return of Employee Contributions	(80)	0	(21)	(101)
New QDRO	0	0	0	0
New Participants	278	0	0	278
Rehired	59	(1)	(58)	0
Beneficiary	0	18	0	18
Adjustments	<u>(11)</u>	<u>11</u>	<u>5</u>	<u>5</u>
Participants in This Valuation	2,244	1,802	711	4,757

Note: Inactive participants 'With Deferred Benefits' includes those participants due only a refund of contributions.



Participant Reconciliation: Class B

Shown below is the reconciliation of participants between the prior and current valuation date.

	Active Participants	Inactive Participants		Total
		Receiving Benefits	With Deferred Benefits	
Participants in Last Valuation	811	1,462	40	2,313
Retired	(28)	29	(1)	0
Vested Termination	0	0	0	0
Nonvested Termination	(2)	0	2	0
Disabled	(2)	2	0	0
Deceased/Payment Expired	(1)	(51)	0	(52)
Benefits Suspended	0	0	0	0
Return of Employee Contributions	(4)	0	(2)	(6)
New QDRO	0	0	0	0
New Participants	33	0	0	33
Rehired	5	0	(5)	0
Beneficiary	0	24	0	24
Adjustments	(1)	0	0	(1)
Participants in This Valuation	811	1,466	34	2,311

Note: Inactive participants 'With Deferred Benefits' includes those participants due only a refund of contributions.



Section VII. Summary of Plan Provisions

Plan Year

July 1 – June 30.

Compensation

Regular annual rate of pay, exclusive of extra compensation of any kind such as overtime pay, bonuses, and commissions.

Final Compensation

Final compensation is the average of the highest four years of base compensation including the base wage increases for longevity earned by a member during their total service as an employee.

Employee Contributions

Member Type	Contribution Rate
Class A	8% of compensation
Class B – Police ¹	11.5% of compensation for fiscal 2021, 12.0% of compensation for fiscal 2022, and 13.5% for the fiscal years thereafter.
Class B - Fire hired before 7/1/2011	8% of compensation
Class B – Fire hired on or after 7/1/2011	9% of compensation
Elected Officials (Class A)	\$350 per year plus 8% compensation

The interest on employee contributions is 4.00%, compounded weekly. There is no interest on employee contributions for inactive members after 5 years.

Class B member contributions may cease after 32.5 years of service.



Normal Retirement Date

The age and service requirements for normal retirement are as follows:

Group Criteria	Age and Service Requirements
Class A:	
Hired before 7/1/1995	Age 55 or 25 years of service
Hired between 7/1/1995 and 6/30/2004	Age 55 or 30 years of service
Hired between 7/1/2004 and 6/30/2009	Age 60 with 10 years of service or 30 years of service
Hired on or after 7/1/2009	Age 62 with 10 years of service or 30 years of service
Class B Fire:	
Hired before 9/18/2010	Age 55 or 20 years of service
Hired between 9/18/2010 and 6/30/2012	Age 55 or 23 years of service
Hired on or after 7/1/2012	Age 55 or 23 years of service. Payment cannot commence until 25 years after membership date.
Class B Police:	
Hired before 7/1/2011	Age 55 or 20 years of service
Hired on or after 7/1/2011	Age 55 or 25 years of service

Normal Retirement Benefit

The Normal Retirement Benefit is equal to an annuity portion which is the actuarial equivalent of the member's accumulated contributions at the time of their retirement plus a pension portion. The total retirement allowance varies based on member type, hire date, years of total service and Union membership for members of the Police Department.

The total retirement allowance are as follows:

Class A, hired prior to July 1, 1996

Years of Service	Percentage of Final Compensation
0 - 20	2.5% per year
20+	2.0% per year

*Limited to 100% of final compensation.

Class A, hired on or after July 1, 1996

Years of Service	Percentage of Final Compensation
All	2.0% per year

*Limited to 100% of final compensation.

Class B, Fire

Years of Service	Percentage of Final Compensation
0 - 20	2.5% per year
20+	2.0% per year

*Limited to 75% of final compensation.

Class B, Police hired before September 1, 2001

Years Of Service	Percentage Of Final Compensation
Less Than 20	2.5% per year
20	50%
21	52%
22	54%
23	56%
24	58%
25	65%
26	62%
27	64%
28	66%
29	68%
30	75%
31	72%
32	80%

*Non-union members are limited to 75% of compensation.



Class B, Police hired between September 1, 2001 and July 1, 2011

Non-union members get the same benefits as listed below, but with a maximum benefit of 75% of compensation.

Years of Service	Percentage of Final Compensation
Less than 20	2.5% per year
20	50%
21	52%
22	54%
23	56%
24	58%
25	60%
26	62%
27	64%
28	66%
29	68%
30	70%
31	72%
32	80%

*Non-union members are limited to 75% of compensation.

Class B, Police hired on or after July 1, 2011

Years of Service	Percentage of Final Compensation
Less than 20	2.5% per year
20-25	50.0%
26	52.5%
27	55.0%
28	57.5%
29	60.0%
30	62.5%
31	65.0%
32	67.5%
33	70.0%
34	72.5%
35	75.0%

*Non-union members are limited to 75% of compensation.

Forms of Benefit

For *Maximum Retirement Option*, a life annuity where, upon the member's death, any unpaid portion of the member's accumulated contributions will be paid to their beneficiary.

Option 1, a reduced life annuity where, upon the member's death, the beneficiary will receive the difference between the value of the expected benefit at the member's date of retirement and the total value of payments made by the life annuity.

Option 2, a reduced 100% Joint & Survivor Annuity.

Option 3, a reduced 50% Joint & Survivor Annuity.

Option 4, a single life annuity where members receive their annuity portion as an immediate lump sum payment upon retirement (equivalent to the member's employee contribution balance).

Class B members who retire on Accidental Disability Retirement may not elect Option 4.

Married Class B members may not elect Option 1.

Class B members may not elect Option 2 or Option 3.

There is an optional form that is exclusive to Class B members, a life annuity with a 67.5% spouse's survivor benefit.

Early Retirement Eligibility

Class A members hired on or after July 1, 2004 with at least 10 years of service.

All other members are not eligible for early retirement benefits.

Early Retirement Benefit

For Class A members hired before June 30, 2009: the member's normal retirement benefit reduced by 5/12% for each month benefit commencement date precedes the Normal Retirement Date.

For Class A members hired on or after July 1, 2009: the member's normal retirement benefit reduced by 5/12% for each month benefit commencement date precedes age 62.

Termination Benefit

Members may receive a refund of contributions with payable interest.

In lieu of a refund of contributions, members with at least 10 years of service, are eligible for a deferred benefit payable upon minimum age for Normal Retirement

Disability Eligibility

Members are eligible for Ordinary Disability after 10 years of service.

There is no age or service requirement for Accidental Disability.

Ordinary Disability Benefit

For Class A: a pension which, when added to the annuity portion, is equivalent to 1.8% of final compensation for each year of total service had the member continued in service to the minimum age for Normal Retirement.

Class B Fire: a pension which, when added to the annuity portion, is equivalent to 2.25% of final compensation for each year of total service had the member continued in service to the minimum age for Normal Retirement. Such total is not to exceed 45% of the member's final compensation.

Class B Police: a pension which, when added to the annuity portion, is equivalent to a percentage of final compensation, as described in the following table:

Years of Service	Percentage of Final Compensation
10	22.50%
11	24.75%
12	27.00%
13	29.25%
14	31.50%
15	33.75%
16	36.00%
17	38.25%
18	40.50%
19	42.75%

Accidental Disability Benefit

For all, the annuity portion of benefit plus a pension equal to 66 $\frac{2}{3}$ % of final compensation, but not less than the Normal Retirement benefit.

Upon the death of the member within 5 years after accidental disability, 50% of final compensation is payable to surviving spouse (if Class B, 67.5% of the member's benefit be paid to surviving spouse).

Pre-Retirement Death Benefit

Accidental Death Benefit

Greater of accrued benefit or 50% of final earnings.

Ordinary Death Benefit

A refund of the member's accumulated contributions with interest. If the member is of minimum retirement age, the surviving spouse is entitled to, in lieu of a refund of contributions, to a benefit equal to that which would have been payable under an Option 2 retirement. For Class B, the benefit of to the spouse shall not be less than 67 $\frac{1}{2}$ % of the benefit that would have been paid to such retired member without reduction.

Normal Form of Benefit

For Class A, the normal form of benefit is the *Maximum Retirement Option*.

For Class B, the normal form of benefit is the *Maximum Retirement Option*, however, an reduced 67½% Joint & Survivor annuity is granted for married participants.

Cost of Living Adjustment – COLA

COLAs commence on January 1, 2023, except for widows of accidental death participants who receive an immediate COLA and participants identified by the City who opted out of the Consent Judgements agreed to by the City.

For participants who opted out of the Consent Judgements, COLAs have been reinstated as a result of the Rhode Island Supreme Court decision issued on June 30, 2020.

A ten-year freeze period was implemented effective January 1, 2013 and no COLAs will be issued during this period. COLAs will resume on January 1, 2023. Once COLAs resume, they will be paid in the amount of the lesser of 3% compounded or the percentage the member received prior to the freeze, provided that their total benefit is lower than 150% of Rhode Island state median income and is lower than the base compensation of a current employee holding the same rank that the retiree held at the time of retirement. If a member's benefit is above either of these amounts, no COLA is granted.

150% of the state median income as reported by the City was approximately \$105,458 as of the valuation date. It is assumed that the median income will increase by 3.0% per year. The initial COLA payment is deferred until the January 1 that occurs three years after the member's retirement date.



The following COLAs will resume on January 1, 2023:

Member Type	Retirement Date	COLAs
Class A, was not a member of Local 1033	Before 12/18/91	3% compounded
Class A, was a member of Local 1033	Before 12/18/91	3% simple on first 12,000 of annual benefit
Class A	After 12/18/91	None
Class B - Police	Before 1/1/1990	5% compounded
Class B - Police	Between 1/1/1990 and 12/18/1991	6% compounded
Class B - Police	Between 12/19/1991 and 12/31/1992	5% compounded
Class B – Police, Non-Union	On or after 1/1/1993	3% simple on first 12,000 of annual benefit
Class B – Police, Union	On or after 1/1/1993	3% compounded
Class B – Police, Special Court Awarded Members	-	5% compounded
Class B – Police, Hired on or after 7/1/2012	-	Will be based on the CPI for the Northeastern Region, shall not be less than 1% simple and shall not exceed 3% simple and %150 of RI state median income
Class B - Fire	Before >1/1/1990	5% compounded
Class B – Fire	Between 1/1/1990 and 12/18/1991	6% compounded
Class B - Fire	Between 12/19/1991 and 6/30/1992	5% compounded
Class B - Fire	Between 7/1/1992 and 6/30/1995	6% compounded
Class B - Fire	Between 7/1/1995 and 3/16/2006	3% simple on first \$12,000
Class B - Fire	On or after 3/16/06	3% compounded
Class B – Fire, Special Court Awarded Members	-	5% compounded
Class B – Fire, hired on or after 7/1/2012	-	Will be based on the CPI for the Northeastern Region, shall not exceed 3% simple

Elected Officials

Any Class A member who has served as Mayor or City Councilman for at least 8 years prior to January 2015, is entitled to an additional retirement allowance. Such allowance is based on service as an elected official upon attainment of age 52 or the completion of 20 consecutive years as an elected official, whichever is earlier, or the occurrence of total and permanent disability.

Such retirement allowance is currently \$350 for each year of service, provided that no more than 20 years of such service are to be used.

Changes in Plan Provisions Since Prior Valuation

None.

Section VIII. Actuarial Methods and Assumptions

Discount Rate and Investment Rate of Return

7.00% compounded annually, net of investment expenses. This assumption is based on the plan's investment policy and the long-term expectation of each investment class, based upon the recommendations of the plan's investment advisor.

Inflation

3.00%, compounded annually.

Cost of Living Increase in Benefits

Any Class B retired participant whose total benefit is greater than 150% of the Rhode Island state median income and is greater than the base of compensation of a current employee holding the same rank that the retiree held at the time of retirement, will not receive a COLA in any year until this is no longer true. 150% of the state median income was approximately \$100,750 as of the valuation date. The median income and Class B average compensation for all ranks is assumed to increase by 3.0% per year. Future COLAs will not exceed 3% per year.

Salary Increases

Salary increases before reflecting longevity for members is assumed to be 3.0% per year. For Class B – Police members, salary increases before reflecting longevity are assumed to be 4.5% for fiscal 2021 and 2022 and 3.75% for fiscal 2023. Base wages are also increased to reflect longevity compensation, but the percentage of that increase varies based on member type, date of hire and years of service.

Below are tables that reflect the rate of base wage increase for longevity for Class A, Class B – Fire and Class B – Police.

Class A:

Date of Hire	Years of Service	Rate of Base Wage Increase
On or before 10/23/1999	5-10	4%
On or before 10/23/1999	10-15	5%
On or before 10/23/1999	15-20	6%
On or before 10/23/1999	20+	7%
After 10/23/1999	7-12	3%
After 10/23/1999	12-17	4%
After 10/23/1999	17-20	5%
After 10/23/1999	20+	6%

Class B – Fire:

Date of Hire	Years of Service	Rate of Base Wage Increase
On or before 6/30/1996	5-10	8%
On or before 6/30/1996	10-15	9%
On or before 6/30/1996	15-20	10%
On or before 6/30/1996	20+	11%
After 6/30/1996	5-10	7%
After 6/30/1996	10-15	8%
After 6/30/1996	15-20	9%
After 6/30/1996	20+	10%

Class B – Police:

Date of Hire	Years of Service	Rate of Base Wage Increase
On or Before 6/30/1998	6-11	8%
On or Before 6/30/1998	11-16	9%
On or Before 6/30/1998	16-21	10%
On or Before 6/30/1998	21+	11%
After 6/30/1998 and Before 9/1/2016	6-11	7%
After 6/30/1998 and Before 9/1/2016	11-16	8%
After 6/30/1998 and Before 9/1/2016	16-21	9%
After 6/30/1998 and Before 9/1/2016	21+	10%
On or After 9/1/2016	6-11	4%
On or After 9/1/2016	11-16	5%
On or After 9/1/2016	16-21	6%
On or After 9/1/2016	21+	7%

Mortality

Pre-Retirement:

Class A Healthy: Pub-2010 General Employee Amount-Weighted Mortality Tables projected generationally using Scale MP-2019

Class B Healthy: Pub-2010 Safety Employee Amount-Weighted Mortality Tables projected generationally using Scale MP-2019

Post-Retirement:

Class A Healthy Retiree: Pub-2010 General Healthy Retiree Amount-Weighted Mortality Tables projected generationally using Scale MP-2019

Class B Healthy Retiree: Pub-2010 Safety Healthy Retiree Amount-Weighted Mortality Tables projected generationally using Scale MP-2019

Class A Beneficiary: Pub-2010 General Contingent Survivor Amount-Weighted Mortality Tables projected generationally using Scale MP-2019

Class B Beneficiary: Pub-2010 Safety Contingent Survivor Amount-Weighted Mortality Tables projected generationally using Scale MP-2019

Class A Disabled Retirees: Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Tables projected generationally using Scale MP-2019

Class B Disabled Retirees: Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Tables projected generationally using Scale MP-2019

Ordinary vs. Accidental Deaths:

40% of Class A deaths are assumed to be Accidental.

55% of Class B deaths are assumed to be Accidental.

Active Retirement Rates

The retirement rates are listed in the table below:

Age	Rate per year (%)		
	Fewer than 10 years of Service – Class A	10+ years of Service – Class A	Class B
40	2.00	2.50	5.5
41	2.25	2.50	5.5
42	2.50	2.50	5.5
43	2.75	2.50	5.5
44	3.00	2.50	5.5
45	3.25	7.50	5.75
46	3.50	7.50	6.00
47	3.75	7.50	6.25
48	4.00	7.50	6.50
49	4.25	7.50	6.75
50	4.50	7.50	7.00
51	5.0	10.0	7.25
52	5.5	10.0	7.50
53	6.0	10.0	7.75
54	6.5	10.0	8.00
55	7.0	10.0	10.00
56	7.0	10.0	12.5
57	7.0	10.0	15.0
58	7.0	10.0	17.5
59	7.0	10.0	25.0
60	10.0	7.50	100.0
61	11.0	7.50	--
62	12.0	15.00	--
63	13.0	15.00	--
64	14.0	15.00	--
65	15.0	20.0	--
66-74	15.0	20.0	--
75	100.0	100.0	--

Inactive Retirement Rates

Vested former participants who terminated after June 30, 2013 are assumed to retire at the minimum age for normal retirement. Vested participants who terminated before or on June 30, 2013 were assumed to take an immediate refund of their employee contributions. Current active participants in the Fire department who terminate with 23 years or more of service are assumed to retire on their 25th anniversary of employment. Other participants who terminate at age 45 or older and are vested are assumed to retire at their minimum age for a normal retirement. Other participants who terminate prior to age 45 or without vesting are assumed to take an immediate refund of their employee contributions.

Termination of Employment

Sample termination rates are as follows:

Age	Rate per year (%)	
	Class A	Class B
20	20.00	2.50
25	15.00	1.90
30	12.50	1.40
35	10.00	0.90
40	8.70	0.55
45	7.50	0.35
50	6.20	0.15
55	5.00	0.00
60	5.00	0.00

Non-Vested Terminations

Non-vested terminated participants are assumed to take an immediate refund of their employee contribution.

Disability Rates

Sample disability rates are as follows:

Age	Rate per year (%)	
	Class A	Class B
20	0.02	0.08
25	0.02	0.13
30	0.04	0.19
35	0.06	0.25
40	0.08	0.37
45	0.13	0.66
50	0.17	1.14
55	0.21	1.64
60	0.27	2.28

For Class A, 33.33% of disabilities are assumed to be Accidental disabilities.
 For Class B, 90% of disabilities are assumed to be Accidental disabilities.



Marital Status

80% of participants are assumed to be married. Females are assumed to be three years younger than males

Administrative Expenses

None.

Rationale for Assumptions

All current assumptions have been inherited from the previous plan actuary. We believe the assumptions are reasonable for the valuation purposes.

Changes Since Prior Valuation

None.



Appendix 1

Summary of Funding Progress

	(1)	(2)	(3)	(4)	(5)	(6)
Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Percentage Funded (1) / (2)	Unfunded Actuarial Accrued Liability (2) - (1)	Annual Covered Payroll	Unfunded Actuarial Accrued Liability as a Percentage of Covered Payroll (4) / (5)
7/1/2014	\$338,253,329	\$1,232,590,168	27.44%	\$894,336,839	\$137,504,822	650.40%
7/1/2015	\$353,520,549	\$1,305,338,091	27.08%	\$951,817,542	\$140,908,879	675.48%
7/1/2016	\$349,094,428	\$1,330,301,262	26.24%	\$981,206,834	\$138,236,828	709.80%
7/1/2017	\$356,030,203	\$1,356,171,912	26.25%	\$1,000,141,709	\$140,752,162	710.57%
7/1/2018	\$367,599,364	\$1,378,187,364	26.67%	\$1,010,588,000	\$149,921,633	674.08%
7/1/2019	\$380,468,536	\$1,593,646,026	23.87%	\$1,213,177,490	\$154,798,802	783.71%
7/1/2020	\$392,934,540	\$1,641,199,008	23.94%	\$1,248,264,468	\$163,191,115	764.91%
7/1/2021	\$417,886,023	\$1,694,544,265	24.66%	\$1,276,658,242	\$168,623,965	757.10%
7/1/2022	\$439,085,986	\$1,726,736,078	25.43%	\$1,287,650,092	\$178,118,180	722.92%
7/1/2023	\$470,139,241	\$1,786,547,360	26.32%	\$1,316,408,119	\$191,330,154	688.03%

Analysis of the dollar amounts of net assets available for benefits, actuarial accrued liability, and unfunded actuarial accrued liability in isolation can be misleading. Expressing the net assets available for benefits as a percentage of the actuarial accrued liability provides one indication of funding status on a going-concern basis. Analysis of this percentage over time indicates whether the plan is becoming financially stronger or weaker. Generally, the greater this percentage, the stronger the plan. Trends in unfunded actuarial accrued liability and annual covered payroll are both affected by inflation. Expressing the unfunded actuarial accrued liability as a percentage of annual covered payroll approximately adjusts for the effects of inflation and aids analysis of City of Providence, Rhode Island’s progress made in accumulating sufficient assets to pay benefits when due. Generally, the smaller this percentage, the stronger the plan.

Appendix 2 – Additional Risk Assessments

Risk Measures

Pension plans are complicated financial instruments designed to provide income security for plan participants as they move through their working lives and into retirement. As such they can be subject to many different forces that can put the plan in better or worse positions over time. The primary risk that a plan sponsor incurs from a defined benefit plan is the risk of substantial increases in annual contributions.

The “maturity” level of a plan can indicate the likely sensitivity the plan will have to different events whether positive or negative. Variations in the investment returns are a common source of these types of events or shocks. Other sources might be experience that differs from that assumed, assumption changes or plan changes.

The purpose of this section is to provide the reader with a basic understanding of the fundamentals of pension financing and the associated risks, including implications of the Plan’s funding policy on future plan funding, how future experience may differ from the assumptions used, and the potential volatility of future measurements resulting from these differences.

Elements of Pension Plan Financing

The following equation lays out the fundamental elements of pension plan financing:

$$\text{Contributions} + \text{Investment Returns} = \text{Benefit Payments} + \text{Expenses}$$

Employers and employees **contribute** to a plan based on the statutory requirements, plan terms, and plan sponsor funding policy. The plan invests these contributions and earns a **return** on that investment. Together, these contributions and investment returns are the sole sources of income to the plan. **Benefits** are paid to participants who have met the eligibility and vesting requirements defined by the plan. Plans also pay administrative, investment, auditing, legal, and other **expenses** for maintaining the plan. **Over time, contributions and investment earnings must equal benefits and expenses.**

From this equation, it is evident that funding, investment, and benefit policies must be developed together. Once the benefit terms are established, each plan sponsor must determine the desired balance of contributions versus investment returns needed to finance benefits accrued to participants. It is important to remember that the plan sponsor’s investment and funding policies, along with the selected actuarial assumptions, determine the assumed balance between contributions and investment returns. **The actual cost of a plan is based on the actual experience of the plan and may result in a different balance than is assumed.** Ultimately, the expected return does not impact the long-term relationship between the contributions required and the benefit level that can be supported by such contributions. Using a higher or lower expected return assumption may give a incorrect sense of benefit security if the plan does not realize that level of actual returns over time.

The development of integrated benefit, funding, and investment policies generally requires consideration of many factors such as:

- Balancing benefit security and intergenerational equity;
- Risk appetite and ability to absorb short-term volatility in plan contributions;
- Current plan funded status;
- Timing and expected duration of benefit payments; and
- Nature and frequency of past and anticipated future plan amendments.

Significant Risks Affecting Pension Plans

Examples of risk common to most public plans include the following (generally listed from greatest to least risk):

- **Investment risk:** The potential that investment returns will be different than expected.
- **Contribution risk:** the potential that actual future contributions are not made in accordance with the plan's actuarially based funding policy.
- **Longevity and other demographic risks:** The potential that mortality or other demographic experience will be different than expected.
- **Asset/liability mismatch risk:** The potential that changes in the value of liabilities are not matched by changes in asset values.
- **Cash flow risks:** The potential that contributions to the plan will not cover benefit payments and expenses.

Investment risk is often the single most significant risk for defined benefit plans. Plans that seek a higher investment return are typically forced to accept a higher level of volatility that can change the plan's funded status drastically year-to-year. Use of an asset smoothing method that phases in investment gains and losses over a period of years can give the perception of less volatility in the funded status from year to year.

Contribution risk most commonly results from either large contribution increases that are difficult for the plan sponsor to meet, or from a material decrease in the number of covered employees and/or covered payroll.

Assumptions regarding mortality and other demographic factors related to participant behavior bring the risk that future experience will diverge from the reasonable assumptions utilized within the actuarial valuation model. For example, participants living longer than

expected will increase plan costs, while people terminating sooner than expected will generally decrease plan costs. Additionally, what is considered a reasonable assumption may change over time and lead to an increase or decrease in future contributions. Since the start of the COVID-19 pandemic, there has been much discussion about how this event will affect longevity, both over the short-term and long-term, and how certain demographic groups may be impacted to a greater degree than others. Actual life expectancies may be longer or shorter than what is reflected in the valuation and benefit payment projections, and will increase or decrease the cost of the plan as actual experience emerges.

Asset/liability mismatch risk is also another potential risk for many pension plans. To the extent that the duration of plan assets is not matched to the duration of plan liabilities a change in discount rates could have an impact on the plan’s funded status. For most public pension plans, changes in asset values and interest rates do not directly affect the measurement of the plan’s liability.

As plans mature, they become more reliant on investment returns to pay benefits and expenses. When plans have negative cash flows, they must spend interest and dividends, or may be forced to sell assets at inopportune times, to meet those obligations. Plans with DROP or other lump sum payment features are particularly exposed to this risk.

Quantifying Investment and Funded Status Risk

Although cash and money market funds have the lowest absolute investment risk, they are typically not the lowest risk investment for a pension plan. With respect to interest rate risk, a pension plan liability behaves like the price of a bond because both equal the discounted value of a series of future cash flows. The present value will change in the opposite direction to a change in interest rates. Therefore, a bond portfolio with the timing of expected income cash flows matched to the expected benefit payment outflows is typically the lowest risk investment approach for a pension plan.

Corporate, Treasury, and municipal bonds, often considered lower risk investment classes, can still have a high level of interest rate risk in their present values. If the duration (timing and pattern of income payments) of the fixed income assets are misaligned with the duration of the plan’s liability, there can be significant funded status volatility as interest rates change. The way to mitigate this volatility is minimizing the asset/liability (or duration) mismatch risk.

One means of quantifying the expected cost of assuming future investment and asset/liability mismatch risk is to compare the Plan’s current assets to a liability calculated assuming very low default risk. One such measure is called a **Low Default-Risk Obligation Measure (LDRM)**. An example of an LDRM is the Plan’s Funding Liability determined using a discount rate based on the yields on high quality municipal bonds, similar to what is referenced under GASB statement 68.

		Liability Measure	Assumed Return
Actuarial Liability - Funding Policy Return	\$	1,786,547,360	7.00%
Actuarial Liability - Municipal Bond Yield (LDRM)	\$	2,692,496,687	3.86%

The difference between the LDRM and the Actuarial Liability used to determine funding contributions can be viewed in several ways, and certain views of this measure may be more relevant for different plan sponsors:

- The expected long-term contribution savings to be achieved by investing in asset classes with higher expected risk and returns than bonds.
- The cost of investing in an all-bond portfolio and significantly lowering expected long-term investment returns in exchange for protecting the Plan's current funded status.
- A measure of the Plan's non-diversifiable investment risk.

Investors expect to be compensated for assuming risk when they make an investment. The risk premium of an investment is the return an asset is expected to generate in excess of the risk-free rate of return. The more risk assumed by the investor, the greater the return they expect to achieve in exchange for accepting that risk.

For plans whose assumed long-term rate of return on plan assets is greater than the municipal bond yield used for the LDRM calculation, the expected cost to the plan sponsor of funding the plan will be lower because of the greater level of investment risk accepted. This in turn leads to greater volatility in the plan's funded status because the actual return on plan investments is expected to vary considerably year-to-year. Conversely, if a plan has taken steps to reduce asset/liability mismatch risk the expected cost of contributions to fund the plan will be greater (if the plan is not already fully funded) and the volatility in the plan's funded status will be reduced.

Selecting the right level of investment risk (and associated asset/liability mismatch risk) for a plan requires complex analysis that goes beyond the scope of these basic disclosures. Included in any such analysis must be an evaluation of the plan sponsor's funding policy.

Risk Considerations in Assessing a Funding Policy

When assessing a plan's funding policy, two primary considerations are:

- whether the contributions are determined using reasonable and appropriate actuarial cost, amortization, and asset valuation methods (i.e., is the contribution an Actuarially Determined Contribution (ADC)), and
- the projected period until any Unfunded Actuarial Accrued Liability (UAAL) is fully amortized.

Under the current funding policy, the annual contribution is an ADC. The Plan's UAAL is required to be amortized over 16 years, with new layered amortization bases established annually.

Assuming all actuarial assumptions reflected in the annual valuation are met and the funding policy contributions are made as expected, this funding policy is expected to reduce the plan's UAAL in future years. The funding policy contribution is at least equal to the sum of the normal cost and interest on the UAAL. The effect of declining interest rates, investment losses, or other actuarial losses may offset the favorable effect of these contributions and cause the UAAL to remain steady or increase in future years.

Some examples of changes from year to year that will shorten or lengthen the period until the UAAL is fully amortized include:

Factors that Shorten the Amortization Period	Factors that Lengthen the Amortization Period
Contributing more than the ADC	Contributing less than the ADC
Investment and demographic gains	Investment and demographic losses
Increasing interest rates	Decreasing interest rates
Shorter life expectancies	Longer life expectancies
Reducing or eliminating future benefit accruals	Increasing benefit accruals (past and/or future)



Appendix 3

Summary of Funding Schedule

(1) Fiscal Year Ended June 30:	(2) Employer Normal Cost	(3) Amortization of Deferral Liability	(4) Amortization of Remaining Unfunded Liability	(5) Interest Adjustment for Assumed Payment Timing End of Year	(6) Actuarially Determined Contribution (2)+(3)+(4)+(5)	(7) Increase	(8) Payroll	(9) Contributions as a % of Payroll	(10) Actuarial Accrued Liability (BOY)	(11) Actuarial Value of Assets (BOY)	(12) Total Unfunded Actuarial Accrued Liability	(13) Projected UAAL	(14) Funded Ratio
2024	12,951,271	411,642	84,715,015	6,865,455	104,943,383		179,922,340	58.33%	1,786,547,360	470,139,241	1,316,408,119	1,317,471,164	26.32%
2025	13,339,810	411,642	92,431,623	7,432,815	113,615,890	8.26%	185,320,010	61.31%	1,822,743,591	497,592,641	1,325,150,950	1,318,569,223	27.30%
2026	13,740,004	411,642	97,952,068	7,847,260	119,950,974	5.58%	190,879,610	62.84%	1,866,393,965	546,761,371	1,319,632,594	1,306,757,706	29.30%
2027	14,152,204	411,642	103,239,984	8,246,268	126,050,098	5.08%	196,605,998	64.11%	1,909,998,566	590,692,653	1,319,305,913	1,300,750,087	30.93%
2028	14,576,770	411,642	109,849,142	8,738,629	133,576,183	5.97%	202,504,178	65.96%	1,953,548,162	655,199,443	1,298,348,719	1,271,254,090	33.54%
2029	15,014,073	411,642	115,435,922	9,160,315	140,021,952	4.83%	208,579,303	67.13%	1,996,748,502	725,494,412	1,271,254,090	1,236,284,982	36.33%
2030	15,464,495	411,642	121,547,663	9,619,666	147,043,466	5.01%	214,836,682	68.44%	2,040,123,785	803,838,803	1,236,284,982	1,192,328,474	39.40%
2031	15,928,430	411,642	127,978,178	10,102,278	154,420,528	5.02%	221,281,782	69.78%	2,083,602,972	891,274,497	1,192,328,475	1,138,414,360	42.78%
2032	16,406,283	0	134,743,627	10,580,494	161,730,404	4.73%	227,920,235	70.96%	2,127,043,768	988,629,408	1,138,414,360	1,073,927,684	46.48%
2033	16,898,472	0	141,885,040	11,114,846	169,898,358	5.05%	234,757,842	72.37%	2,171,183,360	1,097,255,676	1,073,927,684	997,285,629	50.54%
2034	17,405,426	0	149,404,947	11,676,726	178,487,099	5.06%	241,800,577	73.82%	2,216,526,185	1,219,240,556	997,285,629	907,232,330	55.01%
2035	17,927,589	0	157,323,409	12,267,570	187,518,568	5.06%	249,054,594	75.29%	2,263,493,861	1,356,261,531	907,232,330	802,402,545	59.92%
2036	18,465,416	0	165,661,549	12,888,888	197,015,853	5.06%	256,526,232	76.80%	2,312,208,043	1,509,805,497	802,402,546	681,312,866	65.30%
2037	19,019,379	0	174,441,612	13,542,269	207,003,260	5.07%	264,222,019	78.34%	2,363,362,663	1,682,049,796	681,312,867	542,352,243	71.17%
2038	19,589,961	0	183,687,017	14,229,388	217,506,366	5.07%	272,148,680	79.92%	2,417,141,892	1,874,789,649	542,352,243	383,771,792	77.56%
2039	20,177,659	0	193,422,429	14,952,006	228,552,094	5.08%	280,313,140	81.53%	2,474,060,181	2,090,288,388	383,771,793	203,673,820	84.49%
2040	20,782,989	0	203,673,820	15,711,977	240,168,786	5.08%	288,722,534	83.18%	2,534,117,613	2,330,443,794	203,673,819	0	91.96%
2041	21,406,479	0	0	1,498,454	22,904,933	-90.46%	297,384,210	7.70%	2,597,975,716	2,597,975,716	0	0	100.00%
2042	22,048,674	0	0	1,543,407	23,592,081	3.00%	306,305,736	7.70%	2,666,110,945	2,666,110,945	0	0	100.00%
2043	22,710,134	0	0	1,589,709	24,299,843	3.00%	315,494,908	7.70%	2,738,753,875	2,738,753,875	0	0	100.00%
2044	23,391,438	0	0	1,637,401	25,028,839	3.00%	324,959,755	7.70%	2,816,279,513	2,816,279,513	0	0	100.00%



Appendix 4

Cost Allocations

	<u>Class A</u>	<u>Class B - Police</u>	<u>Class B - Fire</u>	<u>Class B - Total</u>	<u>Total</u>
	<u>Amount</u>	<u>Amount</u>	<u>Amount</u>	<u>Amount</u>	<u>Amount</u>
1. Projected Compensation for Fiscal 2025	119,848,770	33,884,222	31,587,018	65,471,240	185,320,010
2. Total Benefit Normal Cost 7/1/2023	\$ 12,594,027	\$ 8,295,226	\$ 7,913,234	\$ 16,208,460	\$ 28,802,487
as a % of Projected Compensation	10.5%	24.5%	25.1%	24.8%	15.5%
3. Expected Employee Contributions	(9,006,887)	(4,295,274)	(2,549,055)	(6,844,329)	(15,851,216)
as a % of Projected Compensation	-7.5%	-12.7%	-8.1%	-10.5%	-8.6%
4. Net Normal Cost for the Plan Year	\$ 3,587,140	\$ 3,999,952	\$ 5,364,179	\$ 9,364,131	\$ 12,951,271
as a % of Projected Compensation	3.0%	11.8%	17.0%	14.3%	7.0%
5. Actuarial Accrued Liability	587,973,927	593,376,536	605,196,897	1,198,573,433	1,786,547,360
6. Actuarial Value of Assets	154,728,401	156,150,125	159,260,715	315,410,840	470,139,241
7. Unfunded Actuarial Accrued Liability	433,245,526	437,226,411	445,936,182	883,162,593	1,316,408,119
8. Total Fiscal 2025 Contribution	37,392,337	37,735,917	38,487,636	76,223,553	113,615,890
as a % of Projected Compensation	31.2%	111.4%	121.8%	116.4%	61.3%

Appendix 4

Cost Allocations

Department	Fiscal 2024		Fiscal 2025	
	Total Contribution	Projected Compensation	Total Contribution	Projected Compensation
General	\$ 13,878,343	\$ 44,327,935	\$ 14,605,704	\$ 46,813,751
School	13,733,059	43,863,891	15,530,741	49,778,655
School Crossing Guards	-	-	-	-
Water	4,655,976	14,871,357	5,142,043	16,481,118
Workforce Development	176,212	562,828	142,345	456,241
Fire Civilians	435,286	1,390,320	435,652	1,396,340
Police Civilians	1,415,174	4,520,117	1,535,852	4,922,665
Total	34,294,050	109,536,448	37,392,337	119,848,770

Appendix 5 – Glossary

Actuarial Accrued Liability (AAL)

The difference between the Present Value of Future Benefits and the Present Value of Future Normal Costs or the portion of the present value of future benefits allocated to service before the valuation date in accordance with the actuarial cost method. Represents the present value of benefits expected to be paid from the plan in the future allocated to service prior to the date of the measurement.

Actuarial Assumptions

Estimates of future plan experience such as investment return, expected lifetimes and the likelihood of receiving a pension from the pension plan. Demographic, or “people” assumptions include rates of mortality, retirement and separation. Economic, or “money” assumptions, include expected investment return, inflation and salary increases.

Actuarial Cost Method

A procedure for allocating the Present Value of Future Benefits into the Present Value of Future Normal Costs and the Actuarial Accrued Liability. Also known as the “funding method”.

Actuarial Value of Assets (AVA)

The value of the assets as of a given date, used by the actuary for valuation purposes. The AVA may be the market or fair value of plan assets or a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the actuarially determined contribution (ADC).

Actuarially Determined Contribution (ADC)

The employer’s periodic determined contribution to a pension plan, calculated in accordance with the assumptions and methods used by the plan actuary.

Amortization Method

A procedure for payment of the Unfunded Actuarial Accrued Liability (UAAL) by means of periodic contributions of interest and principal. The components of the amortization payment for the UAAL includes the amortization period length, amortization payment increase (level dollar or level percentage of pay), and amortization type (closed or open).

Experience Gain/Loss

A measure of the difference between actuarial experience and experience anticipated by a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

Funded Ratio

The actuarial value of assets expressed as a percentage of the plan’s actuarial accrued liability.

Market Value of Assets (MVA)

The value of the assets as of a given date held in the trust available to pay for benefits of the pension plan.

Normal Cost

That portion of the Present Value of Future Benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.

Present Value of Future Benefits (PVFB)

The present value of amounts which are expected to be paid at various future times to active members, retired members, beneficiaries receiving benefits, and inactive, non-retired members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.

Present Value of Future Normal Cost (PVFNC)

The portion of the Present Value of Future Benefits (PVFB) allocated to future service.

Unfunded Actuarial Accrued Liabilities (UAAL)

The difference between the Actuarial Accrued Liability (AAL) and the Actuarial Value of Assets (AVA).