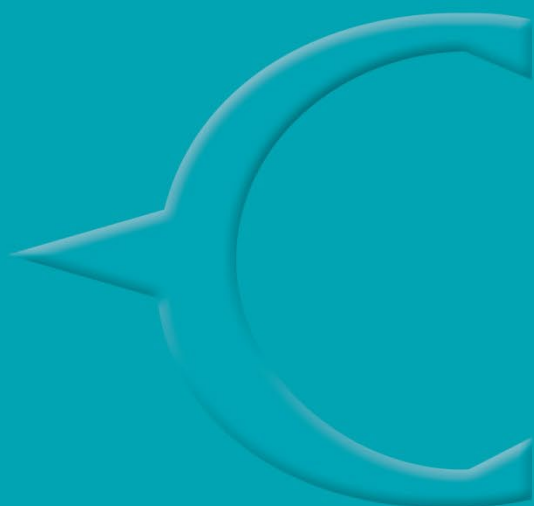




Classic Values, Innovative Advice



Public Employees' Retirement System of New Jersey

Actuarial Valuation Report as of July 1, 2023

Produced by Cheiron

February 2024

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Letter Of Transmittal

February 13, 2024

Board of Trustees
Public Employees' Retirement System of New Jersey
State of New Jersey
Department of the Treasury
Division of Pension and Benefits, CN 295
Trenton, New Jersey 08625-0295

Dear Board Members:

At your request, we have performed the July 1, 2023 Actuarial Valuation of the Public Employees' Retirement System of New Jersey (PERS or System).

In preparing our report, we relied without audit on information (some oral and some written) supplied by the Division of Pensions and Benefits (DPB). 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 for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23, Data Quality.

The results of this report are only applicable to the System's contribution for Fiscal Year Ending 2025. Future results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the assumptions; changes in assumptions; and changes in plan provisions or applicable law.

The actuarial assumptions are the same as those used in the July 1, 2022 valuation. The demographic and economic (other than the investment rate of return) actuarial assumptions are based on the recommended assumptions from the July 1, 2018 – June 30, 2021 Experience Study, approved by the Board of Trustees on November 16, 2022. The investment rate of return assumption of 7.00% is based on the recommendation of the State Treasurer.

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 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.

This actuarial valuation report was prepared exclusively for PERS, the DPB, and the System auditors for the purposes described herein and in preparing financial reports in accordance with applicable law and annual report requirements. 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.

Sincerely,
Cheiron



Janet Cranna, FSA, FCA, MAAA, EA
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Consulting Actuary

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

- The financial condition of the Public Employees Retirement System of New Jersey,
- Past and expected future trends and risks to the System's financial condition, and
- The State's and Local employers' contributions for the Fiscal Year Ending (FYE) 2025.

In this Section we present a summary of the principal valuation results. This includes the basis on which the July 1, 2023 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. The stress testing in accordance with the requirements set out in Chapter 277, P.L. 2017 follows in Section II.

This report does not include calculations under GASB Statements Nos. 67 and 68 which were provided in separate reports.

Results shown in this report for years prior to July 1, 2018 are based on the prior actuary's valuation reports.

Valuation Basis

The July 1, 2023 valuation results are based on the same actuarial methods and assumptions as used in the July 1, 2022 valuation. The demographic and economic assumptions, aside from the valuation interest rate, are based on the July 1, 2018 – June 30, 2021 Experience Study, which was approved by the Board of Trustees on November 16, 2022. The valuation is based on a 7.00% interest rate as recommended by the State Treasurer.

This report is prepared using census data, plan provisions, and financial information as of July 1, 2023 provided by the Division of Pensions and Benefits, and does not reflect any changes in the membership, plan provisions, or assets that occur after the valuation date. Events following that date are not, and should not be, reflected in this report. Actual experience, both demographic and economic, will be reflected in subsequent valuations as experience emerges.

The Appropriations Act of Fiscal Year 2023 increased the State pension contribution from the Statutory amount of \$1,757,720,407 to \$1,874,640,270. The \$1,874,640,270 is based on an appropriation amount of 100% of the Statutory contribution and includes revenue of \$245,934,000 from the Lottery Enterprise Contribution Act. In addition, there was a Chapter 259, P.L. 2001 contribution of \$2,002,681, which was payable by fund transfer from the Second Injury Fund.

The potential impact of the Appropriations Act of 2024 increases the State pension contribution for Fiscal Year Ending 2024 from the Statutory amount of \$1,821,307,122 to \$1,925,738,603 (100.00% of the State Statutory contribution less the Lottery Enterprise Contribution offset plus expected revenue from the Lottery Enterprise Contribution Act {100.00% x \$1,821,307,122 - \$130,078,903 + \$234,510,384}). The \$1,925,738,603 also includes expected State-paid Local contributions of \$61,435,556. In addition, there is a Chapter 259, P.L. 2001 contribution of \$2,103,817, which is payable by fund transfer from the Second Injury Fund. This valuation reflects the potential impact of the Appropriations Act of 2024.

Chapter 83, P.L. 2016 requires the State to make the required pension contributions on a quarterly basis: at least 25% by September 30, at least 50% by December 31, at least 75% by March 31, and at least 100% by June 30. As such, State contributions are assumed to be made on a quarterly basis with the first contribution 15 months after the associated valuation date.

In accordance with Chapter 78, P.L. 2011, a pension committee is to be established for the State portion of the System and the Local portion of the System when the employer's "target funded ratio" is achieved. The "target funded ratio" is defined as the ratio of the actuarial value of assets divided by the actuarial liability expressed as a percentage that is 75% in fiscal year 2012 and increased annually by equal increments in each of the subsequent seven fiscal years, until the funded ratio equals 80% at which time it will remain at 80% for all subsequent fiscal years. The Local employers' portion of the System attained the required "target funded ratio" in Fiscal Year Ending 2012, establishing the committee for the Local employers' portion of the System. The State portion of the System has not attained the required "target funded ratio" and thus the pension committee has not been established for the State portion of the System.

Under Chapter 98, P.L. 2017, the Lottery Enterprise Contribution Act, the Public Employees' Retirement System receives 21.02% of the proceeds of the Lottery Enterprise, based on its members' past or present employment in schools and institutions in the State for a term of 30 years. As of the July 1, 2023 valuation, 23 years remain. Revenues from Chapter 98, P.L. 2017, the Lottery Enterprise Contribution Act, are assumed to be contributed to the trust on a monthly basis. The Chapter 78, P.L. 2011 "target funded ratio" is based on the actuarial value of assets plus the allocable special asset value. The special asset value is the present value of remaining lottery contributions to the retirement systems. As per N. J. Statute, the special asset value is to be appraised once every five years. The values shown in this report reflect the New Jersey Lottery Valuation Report as of December 31, 2021 as provided to us by the Division of Pensions and Benefits. Effective with the fiscal year 2018, the State's pension contribution shall be reduced by the product of the allocable percentage for such retirement system, the adjustment percentage for such retirement system and the special asset adjustment.

The valuation excludes assets and liabilities under the Non-Contributory Group Insurance Premium Fund. The Non-Contributory Group Insurance premiums are separately funded on a pay-as-you-go basis. For Local employers, the Non-Contributory Group Insurance Contribution is calculated as the present value of expected benefit payments for the upcoming year based on valuation assumptions.

Key Results

Following are Table I-1 and Table I-2 which summarize the key results of the valuation with respect to the System's membership, assets and liabilities, and contributions for State and Local employers. The results are presented and compared for both the current and prior year.

Table I-1
Summary of Key Valuation Results
State

Valuation Date Fiscal Year Ending (FYE)	July 1, 2023 2025	July 1, 2022 2024	% Change
<u>Member Data</u>			
Contributing Actives ¹	64,048	64,357	-0.5%
Non-Contributing Members ¹	10,519	9,786	7.5%
Deferred Beneficiaries	10	11	-9.1%
Deferred Vesteds	146	147	-0.7%
Retirees and Beneficiaries ²	63,777	62,842	1.5%
Total Members	138,500	137,143	1.0%
Appropriation Payroll ³	\$ 4,769,262,833	\$ 4,664,968,264	2.2%
Annual Retirement Allowances in Pay	\$ 1,918,915,717	\$ 1,857,631,695	3.3%
<u>Assets and Liabilities</u>			
Actuarial Liability	\$ 28,762,696,821	\$ 28,185,048,883	2.0%
Actuarial Value of Assets (AVA) ⁴	9,900,003,769	9,354,810,560	5.8%
Unfunded Actuarial Liability/(Surplus)	\$ 18,862,693,052	\$ 18,830,238,323	0.2%
Funded Ratio (AVA)	34.4%	33.2%	1.2%
Actuarial Value of Assets ⁴ including Special Asset Value (AVA + SAV)	\$ 12,502,517,768	\$ 11,979,875,759	4.4%
Unfunded Actuarial Liability/(Surplus)	\$ 16,260,179,053	\$ 16,205,173,124	0.3%
Funded Ratio (AVA + SAV)	43.5%	42.5%	1.0%
Market Value of Assets (MVA) ⁴	\$ 9,222,531,715	\$ 8,485,901,686	8.7%
Unfunded Actuarial Liability/(Surplus)	\$ 19,540,165,106	\$ 19,699,147,197	-0.8%
Funded Ratio (MVA)	32.1%	30.1%	2.0%
<u>Contribution Amounts⁵</u>			
State Normal Cost at End of Year ⁶	\$ 230,256,565	\$ 233,760,135	-1.5%
Amortization Payment of UAL ⁶	1,611,778,144	1,587,546,987	1.5%
Total Statutory Contribution for FYE	\$ 1,842,034,709	\$ 1,821,307,122	1.1%
Expected Percent Appropriated	100%	100%	0.0%
State Appropriation for Pension	\$ 1,842,034,709	\$ 1,821,307,122	1.1%
Lottery Enterprise Contribution Offset	(130,078,903)	(130,078,903)	0.0%
Net State Contribution	\$ 1,711,955,806	\$ 1,691,228,219	1.2%

¹ Reflects all records for multiple members, which are members employed by more than one PERS-participating employer at the same time

² QDRO recipients are excluded from member counts

³ Limited annual compensation for contributing actives

⁴ Includes discounted State receivable contributions and Lottery proceeds from the upcoming Fiscal Year as shown in Table III-2

⁵ In addition to the amounts shown, the Statutory Contributions are satisfied by funds transferred from the Second Injury Fund in amounts equal to \$2,120,000 and \$2,103,817 for FYE 2025 and 2024, respectively.

⁶ Includes \$59,812,730 and \$61,435,556 for FYE 2025 and 2024, respectively for Local obligations payable by the State in accordance with Chapter 133, P.L. 2001 and Chapter 366, P.L. 2001

**Table I-2
Summary of Key Valuation Results
Local Employers**

Valuation Date Fiscal Year Ending (FYE)	July 1, 2023 2025	July 1, 2022 2024	% Change
<u>Member Data</u>			
Contributing Actives ¹	140,550	139,073	1.1%
Non-Contributing Members ¹	29,207	27,935	4.6%
Deferred Beneficiaries	63	67	-6.0%
Deferred Vesteds	427	433	-1.4%
Retirees and Beneficiaries ²	130,138	128,199	1.5%
Total Members	300,385	295,707	1.6%
Appropriation Payroll ³	\$ 7,952,897,088	\$ 7,591,465,466	4.8%
Annual Retirement Allowances in Pay	\$ 2,612,310,525	\$ 2,517,340,724	3.8%
<u>Assets and Liabilities</u>			
Actuarial Liability	\$ 40,366,610,080	\$ 39,317,139,093	2.7%
Actuarial Value of Assets (AVA) ⁴	27,638,369,472	26,694,121,356	3.5%
Unfunded Actuarial Liability/(Surplus)	\$ 12,728,240,608	\$ 12,623,017,737	0.8%
Funded Ratio (AVA)	68.5%	67.9%	0.6%
Market Value of Assets (MVA) ⁴	\$ 27,347,606,002	\$ 25,757,807,667	6.2%
Unfunded Actuarial Liability/(Surplus)	\$ 13,019,004,078	\$ 13,559,331,426	-4.0%
Funded Ratio (MVA)	67.7%	65.5%	2.2%
<u>Contribution Amounts</u>			
Employer Normal Cost at End of Year ⁵	\$ 235,787,117	\$ 237,206,737	-0.6%
Amortization Payment of UAL ⁵	1,066,641,172	1,042,896,986	2.3%
ERI Payments	2,057,243	2,013,391	2.2%
Chapter 19, P.L. 2009 Payments	8,737,980	8,779,022	-0.5%
Total Statutory Contribution for FYE	\$ 1,313,223,512	\$ 1,290,896,136	1.7%
Non-Contributory Group Insurance Contribution	\$ 58,306,504	\$ 56,424,620	3.3%

¹ Reflects all records for multiple members, which are members employed by more than one PERS-participating employer at the same time

² QDRO recipients are excluded from member counts

³ Limited annual compensation for contributing actives

⁴ Includes discounted State receivable contributions as shown in Table III-2

⁵ Excludes \$59,812,730 and \$61,435,556 for FYE 2025 and 2024, respectively for Local obligations payable by the State in accordance with Chapter 133, P.L. 2001 and Chapter 366, P.L. 2001

The key results of the July 1, 2023 actuarial valuation **for the State** are as follows:

- The total Statutory contribution increased from \$1,821 million for FYE 2024 to \$1,842 million for FYE 2025 prior to any adjustments for the potential Appropriations Act of 2025 or the Lottery Enterprise offset.
- The funded ratio, the ratio of actuarial asset value over liabilities, increased from 33.2% to 34.4%. The funded ratio that is used to measure against the “target funded ratio” and is based on the actuarial value of assets plus special asset value, increased from 42.5% as of July 1, 2022 to 43.5% as of July 1, 2023. Using the market value of assets, the funded ratio also increased from 30.1% to 32.1%.
- The unfunded actuarial liability used in determining the Statutory contributions (excess of actuarial liability over the actuarial value of assets) increased from \$18.8 billion to \$18.9 billion. The unfunded actuarial liability based on the actuarial asset value plus special asset value increased from \$16.2 billion on July 1, 2022 to \$16.3 billion on July 1, 2023.
- During the year there was a total actuarial experience loss of \$355 million, consisting of an asset loss of \$176 million and a liability loss of \$179 million. The liability loss of \$179 million represents 0.6% of liabilities and is primarily driven by salary increases slightly higher than expected and the allocation to the State of benefit payments associated with Local employer members who worked for more than one employer. The rate of return on the actuarial value of assets was 4.74% compared to the expected return of 7.00%, resulting in the \$176 million asset loss.

The key results of the July 1, 2023 actuarial valuation **for Local employers** are as follows:

- The total Statutory contribution increased from \$1,291 million for FYE 2024 to \$1,313 million for FYE 2025.
- The funded ratio, the ratio of actuarial asset value over liabilities, increased from 67.9% as of July 1, 2022 to 68.5% as of July 1, 2023. Based on the market value of assets, the funded ratio also increased from 65.5% to 67.7%.
- The unfunded actuarial liability increased from \$12.6 billion on July 1, 2022 to \$12.7 billion on July 1, 2023 on an actuarial value of assets basis.
- During the year, there was a total actuarial experience loss of \$287 million, consisting of an asset loss of \$86 million and a liability loss of \$201 million. The liability loss of \$201 million represents 0.5% of liabilities and is primarily driven by higher than expected salary increases. The rate of return on the actuarial value of assets was 6.71% compared to the expected return of 7.00%, resulting in the \$86 million asset loss.

Recent Trends

Although most of the attention given to the valuation reflects the current computed unfunded actuarial liability, funded ratio, and contribution amounts, each valuation is merely a snapshot of the long-term progress of a pension fund. It is important to take a step back from these latest results and view them in the context of the System's recent history. Below, we present a series of graphs which display historical trends for key factors in the valuations of the last 10 years. Additionally, in Appendix D we provide the numerical values of the historical unfunded actuarial liability, funded ratio, and contribution amounts. Note that the contribution amounts in this section include State-paid Local obligations with Local employers' contribution amounts to illustrate their impact on the Local employers' portion of the unfunded actuarial liability. The historical amounts in Appendix D show the State-paid Local obligations with State contributions.

In reviewing the historic trends over the 10-year period, the declining funded status coupled with significant negative net cash flow highlights the potential risk of running out of assets to pay benefits unless the State continues to consistently contribute the full amount of the Statutory required contributions.

Assets and Liabilities

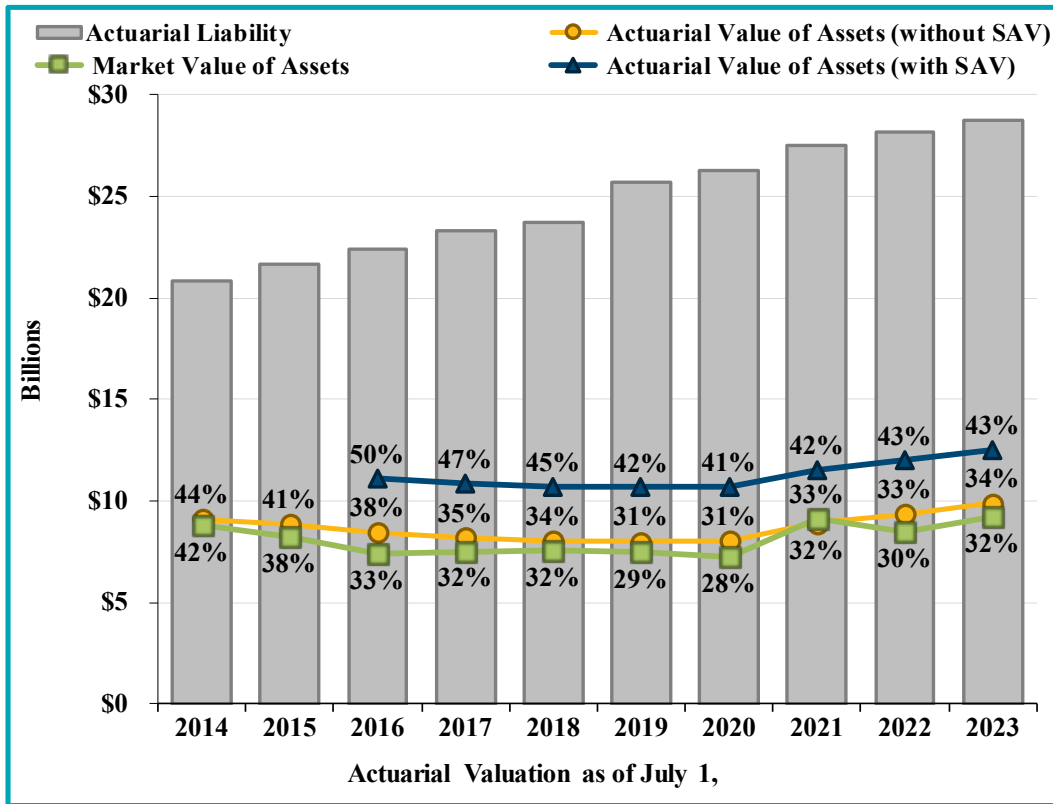
The gray bars represent the Actuarial Liability (AL). The green line is the Market Value of Assets (MVA), the gold line is the Actuarial Value of Assets (AVA) and the blue line (which starts in 2016) is the AVA plus the Special Asset Value (SAV). The System's funded ratio (ratio of assets to actuarial liability) on a MVA basis, an AVA basis and an AVA+SAV basis, is shown next to the respective asset lines.

The liability has been increasing over time in part due to additional benefit accruals but also due to decreases in the discount rate and other changes in assumptions.

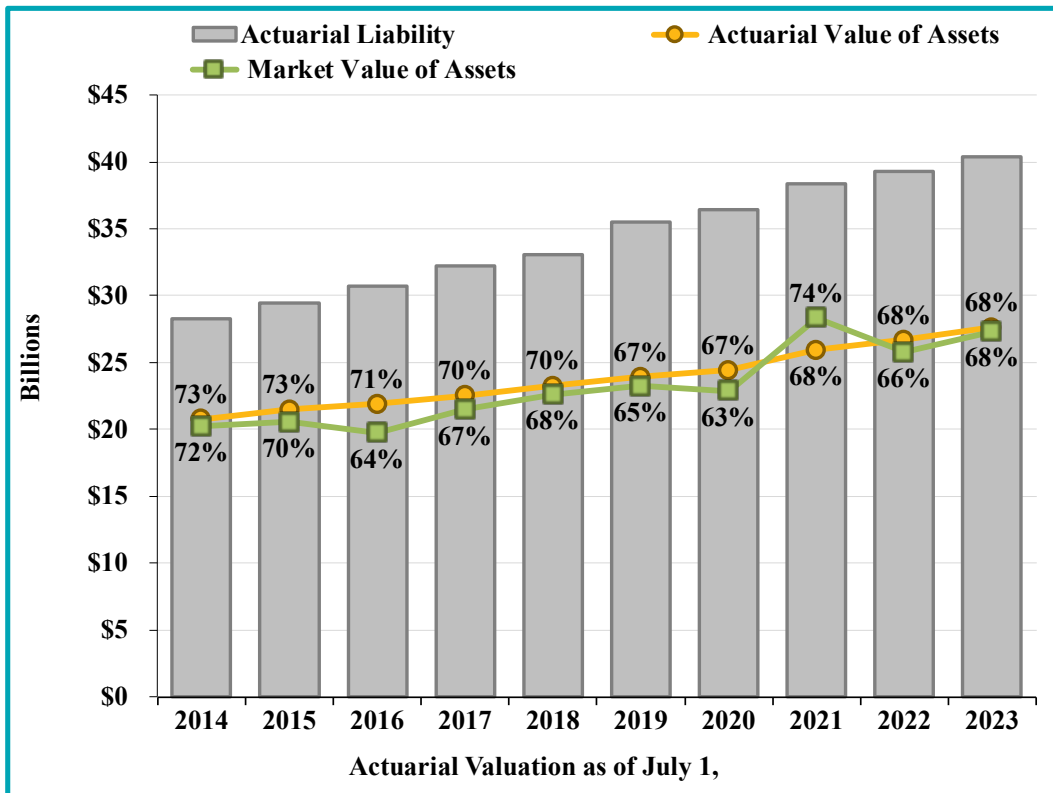
For the State, until 2021, the funded ratio had been decreasing over time in part due to decreases in the discount rate and because the State had not been making the full Statutory contribution. The funded ratio reversed that trend in 2021 and increased due to higher than expected asset returns and State contributions in excess of the Statutory contribution amount. The funded ratio on an actuarial basis also increased in 2022 and 2023, despite liability losses, as the State continued to contribute the full Statutory contribution amount.

For Local employers, until 2021, the AVA funded ratio had decreased over the period due to decreases in the discount rate and asset losses. (The MVA funded ratio behaved differently during the period because the market gains and losses are immediately recognized in the MVA.) In addition, while Local employers have been making the full Statutory contribution, the State had not been making the full State-paid Local Statutory contribution until FYE 2022. Prior to FYE 2022, the State-paid Local Statutory contributions had been small relative to the overall Statutory contribution. However, the State-paid Local obligations have increased over the past few years as the Benefit Enhancement Fund (BEF) was depleted. The State is now responsible for the full Local employer normal cost associated with Chapter 133, P.L. 2001. In 2021, the funded ratio increased due to the higher than expected asset returns. The AVA funded ratio also increased in 2022 and 2023, despite liability losses, as the State and Local employers continued to contribute the full Statutory contribution amount.

State



Local Employers



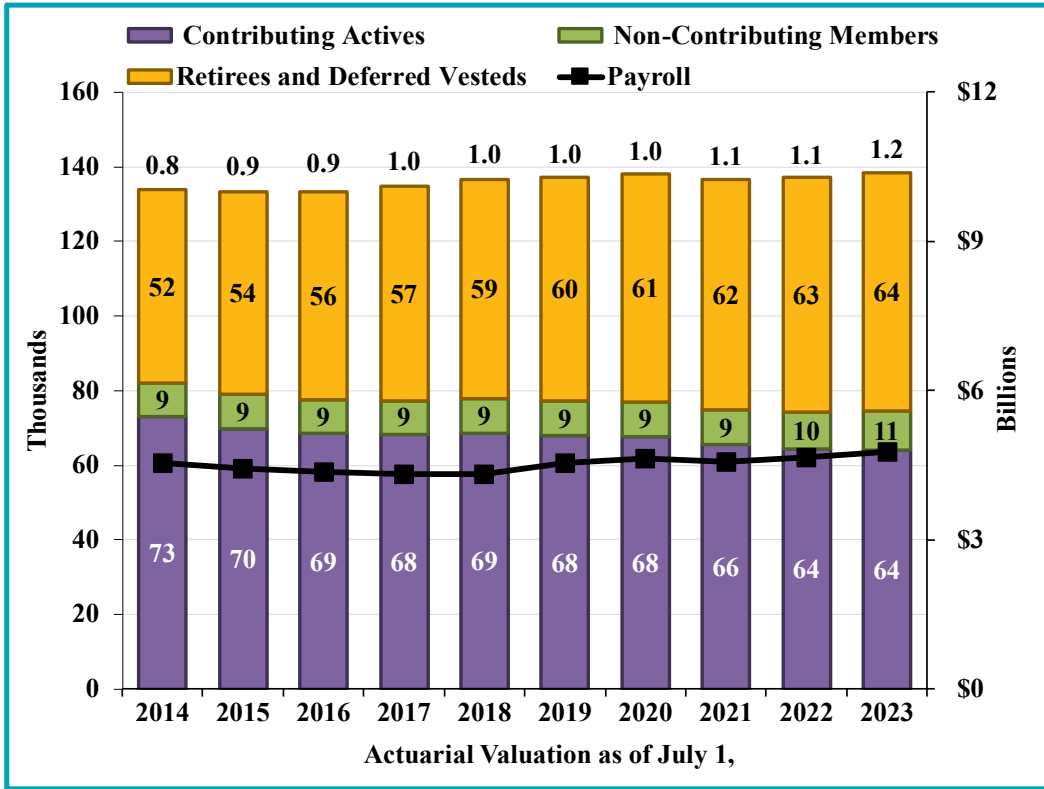
Membership Trends

The following graphs show the membership counts of the System for the last ten valuations. The numbers which appear above each bar represent the ratio of the number of inactive and non-contributing members to contributing active members at each valuation date and provide a measure of the maturity of the System. We refer to this as the *support ratio*. The support ratios for both State and Local employers have increased over the period. As more of the liability moves from actives to inactives, the System will experience more volatility in contribution rates when actuarial gains and losses are recognized.

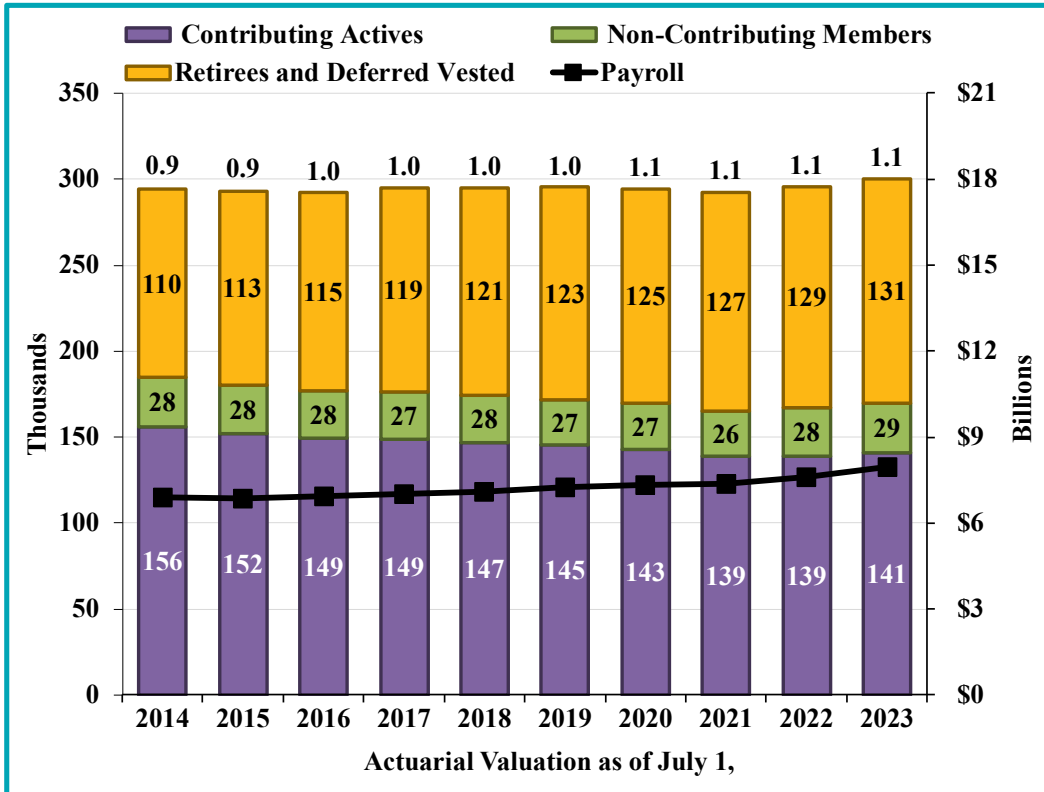
Valuations for 2017 and later reflect all records for multiple members, which are active members employed by more than one participating employer at the same time. Valuations for 2022 and later only reflect one record for retirees who earned benefits under both a State and Local employer.

The numbers that are shown in the middle of the bars represent the number of actives or inactive members in thousands. The black line represents the appropriation payroll for contributing actives over the period and corresponds with the right-hand scale.

State



Local Employers



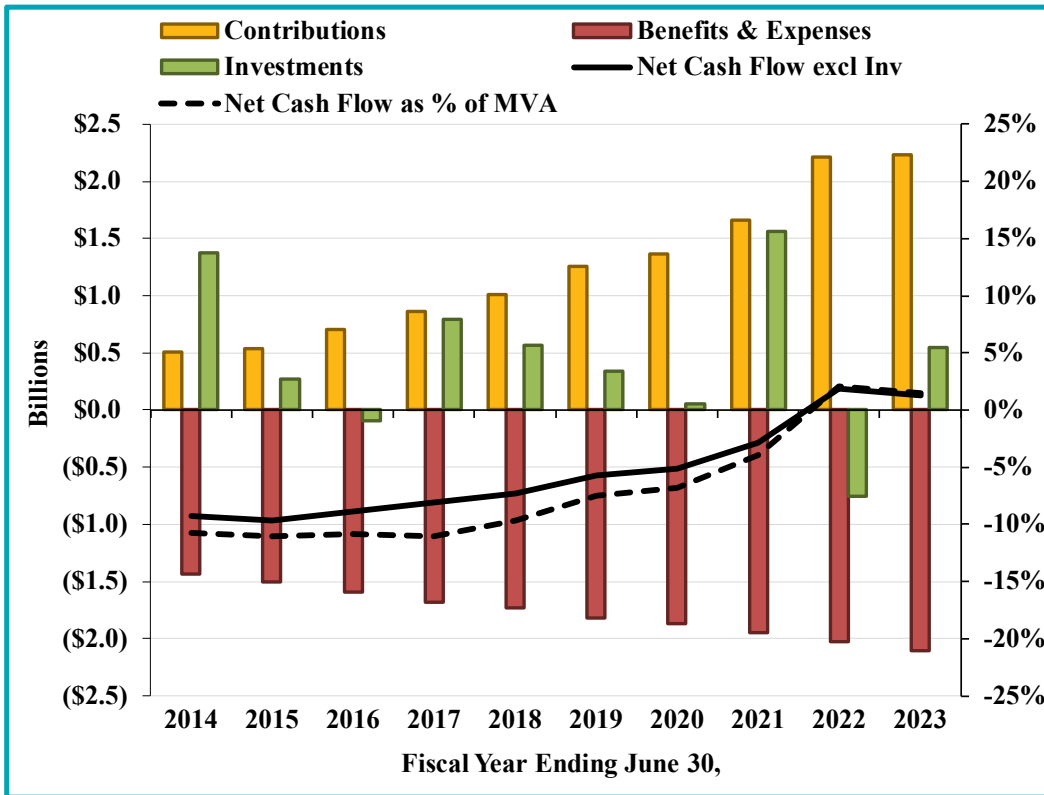
Cash Flows

The following graphs show the System net cash flow (contributions less benefit payments and expenses) at the end of each fiscal year. The net cash flow, which excludes investment returns, has been negative every year for both the State and Local employers, with the notable exception of the State in FYE 2022 and 2023. This illustrates that contributions have not been sufficient to cover benefits and expenses in any years over the past decade, except for the State in FYE 2022 and 2023. A major implication of a negative cash flow is that the difference each year must be met first from cash generated by investments and then be paid out of the principal assets, representing additional risk for the System if investments need to be sold in a down market to cover benefit payments. The black dotted line shows the net cash flow as a percent of the market assets and corresponds with the axis on the right.

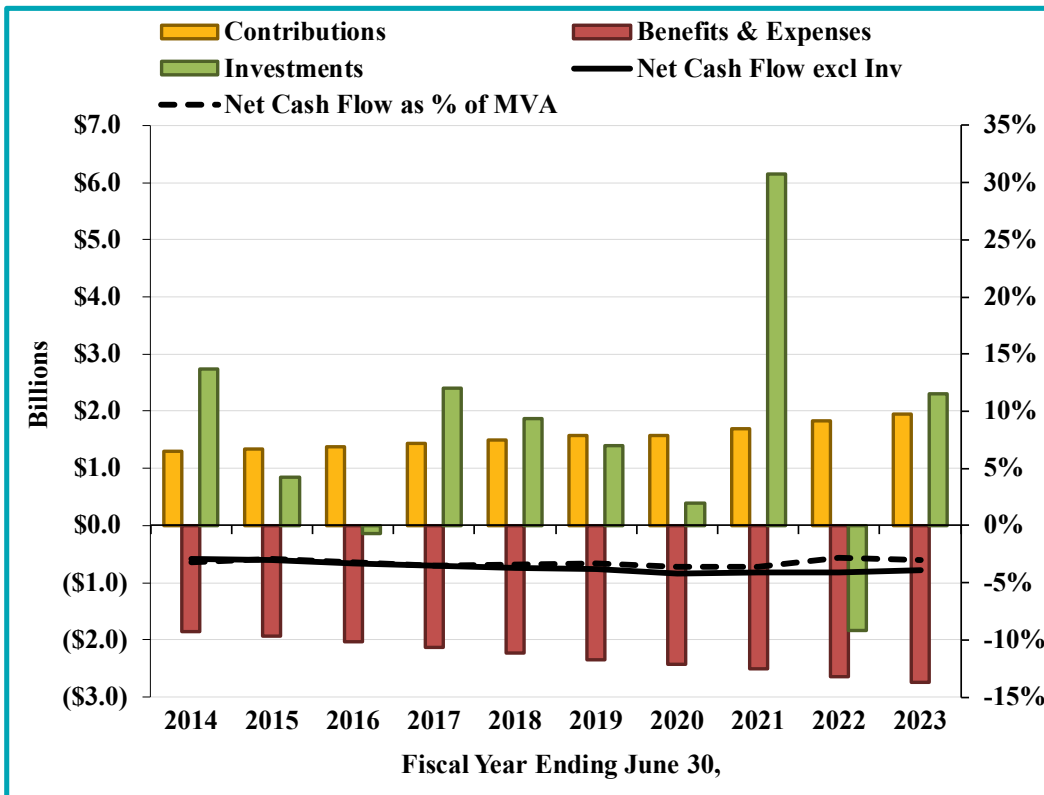
The net cash flow for State had been significantly more negative than the net cash flow for Local employers. At the beginning of the period, the net cash flow for the State as a percent of assets was close to -10%. This indicated that this portion of the System was expected to defund with an increased risk of insolvency if the contributions did not consistently cover a higher portion of the benefit payments and expenses. However, the net cash flow improved significantly over the last few years, and turned positive for the first time in 2022, as a result of the increase in the State appropriation percentage. For the 10-year period shown, the average net cash flow for State as a percent of assets is -6.8%. For 2023, the positive net cash flow of 1.5% indicates that this portion of the System did not need to rely on investment returns to cover benefit payments and expenses.

For Local employers, the negative cash flow as a percent of assets has remained level over the period shown due to both an increase in the assets and an increase in the number of retirees and their corresponding benefit payments. For comparison with the State, the Local employers had an average net cash flow as a percent of assets of -3.3% over the 10-year period and a 2023 net cash flow of -3.0%.

State



Local Employers



Contributions

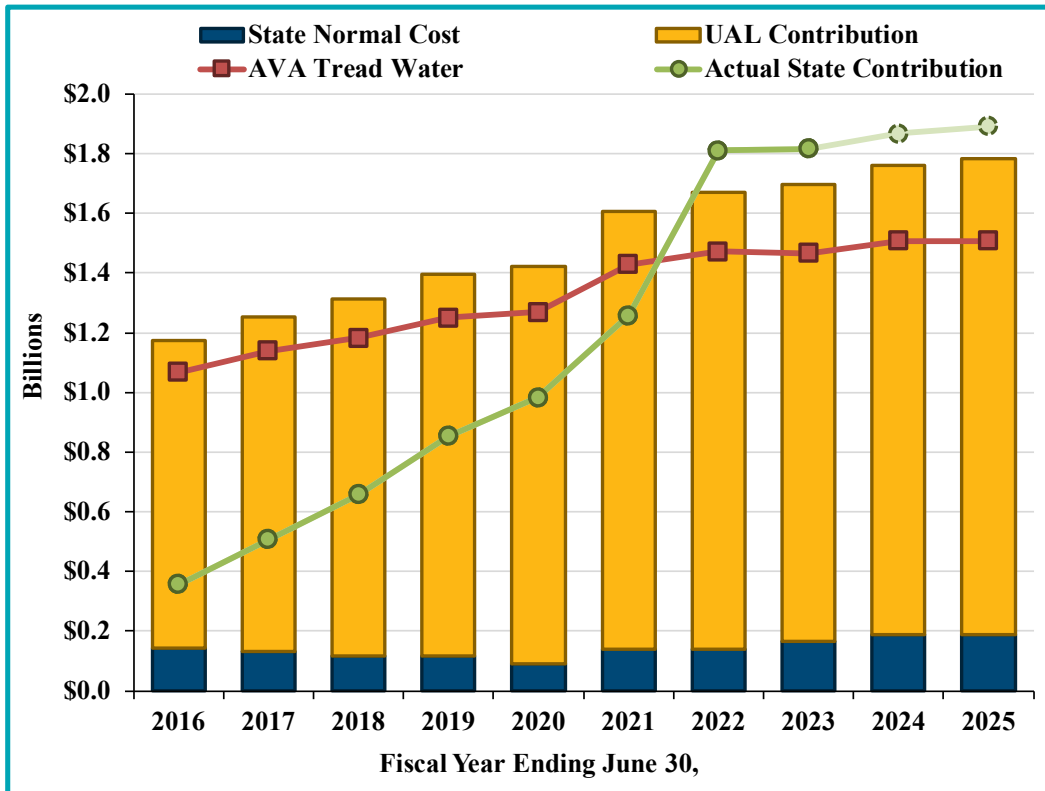
These graphs show the historical trends for the State and Local employer contributions. The Local employer contributions include the State-paid Local obligations, but not Early Retirement Incentive (ERI) or Chapter 19, P.L. 2009 payments. The Statutory contributions are comprised of the normal cost (blue bars) and the amortization of the UAL (gold bars). The green line shows the actual contributions over the period. For FYE 2024 and 2025, the green line has a lighter shade to indicate that these are expected, rather than actual, contributions based on the State appropriating 100% of the Statutory contribution in both years. Beginning in FYE 2023, the State contribution was larger than the Statutory contribution because lottery revenue was greater than the Lottery Enterprise Contribution Offset. The expected State appropriations are shown in Table I-1 and Table I-2.

The red line is the **tread water line**, which is the normal cost plus the interest on the UAL. The tread water line shows the minimum contributions needed to avoid an increase in the UAL.

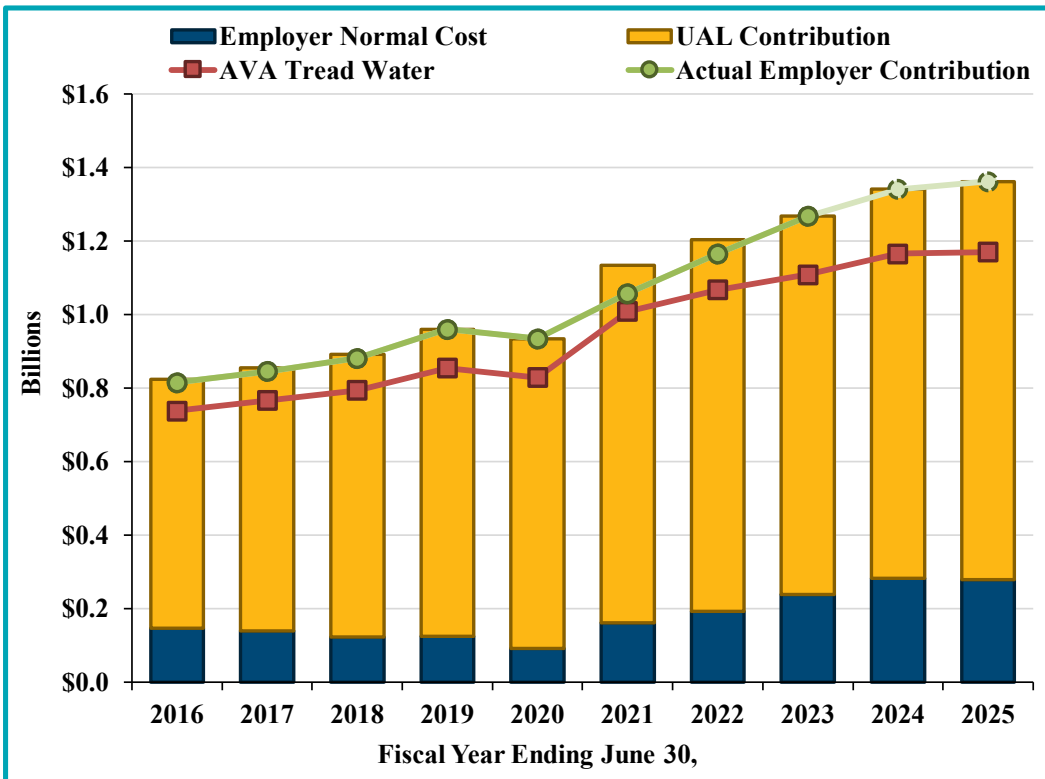
The graph for State shows that, prior to FYE 2022, not only had the State been making contributions less than required by Statute, but that the State contributions had historically been significantly below the tread water line. When contributions are lower than the normal cost plus interest on the UAL, the UAL is expected to grow from one year to the next. In FYE 2022, actual State contributions were greater than the tread water amount for the first time during the period. State contributions are expected to be greater than the tread water amount as the State continues to contribute 100% of the Statutory contribution.

The graph for Local employers shows that the Local employers have consistently made their Statutory contributions. While the State was not contributing the full State-paid Local obligations, the total contributions were still greater than the tread water line. For FYE 2021 and FYE 2022, actual contributions were lower than the Statutory contribution because the Board adopted a three-year phase-in of the impact of the assumption changes from the July 1, 2014 – June 30, 2018 Experience Study. Even with the phase-in, actual contributions exceeded the tread water line each year. Actual contributions returned to the Statutory contribution level in FYE 2023 as the impact of the assumption changes has been fully phased-in and are expected to remain at that level thereafter.

State



Local Employers



Projected Future Outlook

The analysis of projected financial trends is perhaps the most important component of the valuation. This has been recognized by the State Legislation in its adoption of Chapter 277, P.L. 2017 requiring the System to have stress testing performed annually. The graphs presented in this section show the expected progress of the System's funded status over the next 30 years, measured in terms of the expected funded ratios and State and Local employer contributions assuming that the System is ongoing.

While experience will not conform exactly to the assumptions every year, the trends reflect reasonable expectations. As a result, in addition to the baseline projection in this section, we provided additional **stress testing** in Section II based on varying investment returns in the future. It is our opinion that the stress testing analyses shown in Section II meet the requirements of Chapter 277, P. L. 2017.

The projections assume a constant active population. As members retire, terminate and die based on the current valuation assumptions, it is assumed that new members will replace them based on characteristics (age/gender/salary) similar to recent new members.

Additional assumptions used for these projections, including the investment rate of return for each subsequent valuation as recommended by the State Treasurer, as well as the anticipated appropriation percentages, are shown in Appendix B.

Baseline Scenario

The baseline projection shows the outcome if all actuarial assumptions, including the long-term rate of return assumption of 7.00%, as recommended by the State Treasurer, are exactly met. For each scenario we show two graphs.

The top graph compares the Market Value of Assets (green line) and the Actuarial or smoothed Value of Assets (gold line) to the System's Actuarial Liabilities (gray bars). For the State, the graph also shows the Actuarial Value of Assets plus the Special Asset Value (blue line). In addition, at the top of the graph, we show the System's funded ratio on an Actuarial Value of Assets basis (ratio of Actuarial Value of Assets to Actuarial Liabilities). The years shown in the graph signify the valuation date as of July 1 of the labeled year.

The State's funded ratio on an Actuarial Value of Assets basis is projected to steadily increase to 100% by 2049.

The Local employers' funded ratio on an Actuarial Value of Assets basis is projected to increase slowly over the next few years as deferred investment losses are recognized in the Actuarial Value of Assets, and then increase more quickly to 99% by 2053. The Local employers' UAL is expected to be fully amortized after the 30-year projection period. The estimated period to fully amortize the UAL is longer than the Statutory amortization period due to the timing of contributions during the fiscal year, slow recognition of past investment losses in the actuarial value of assets, and the lack of a dedicated administrative expense contribution.

The funded ratio for State increases faster than the Local employers' portion and reaches 100% by 2049 compared to 99% for Local employers by the end of the projection period because of the expected lottery revenue that is contributed each year in excess of the Statutory contributions. This additional revenue helps pay down the UAL sooner for the State portion of the System.

The bottom graph shows the contributions by fiscal year. The member contributions are in purple, the State contributions are in gold, the State-paid Local contributions are in light blue and the Local employers' contributions are in green. We show the contribution values in dollars except for the State-paid Local contributions which are small compared to total contributions.

The projected lottery revenue is provided by the DPB and is outlined in dark blue. Lottery revenue amounts shaded in gold are offsets to Statutory contributions. Lottery revenue amounts shaded white are additional contributions in excess of the Statutory contributions that pay down the UAL. Beginning in FYE 2023, the lottery revenue includes additional payments toward the UAL. The lottery offsets during the projection period are calculated based on the methodology as defined in Chapter 98, P.L. 2017.

The projection assumes the State and Local employers contribute 100% of the Statutory amount each year. Both the appropriated State and Local employer contributions and the member contributions are labeled. The contributions exclude amounts payable for the Non-Contributory Group Insurance.

The dashed black line in the bottom graph shows the gross normal cost. The difference between the dashed black line and the purple bar is the State and Local employers' portion of the normal cost.

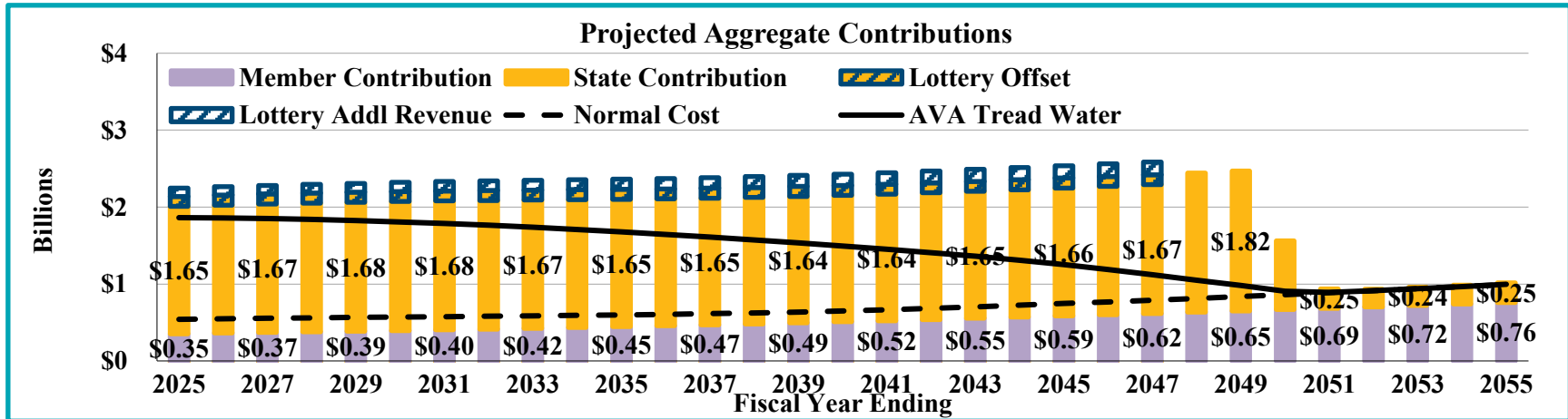
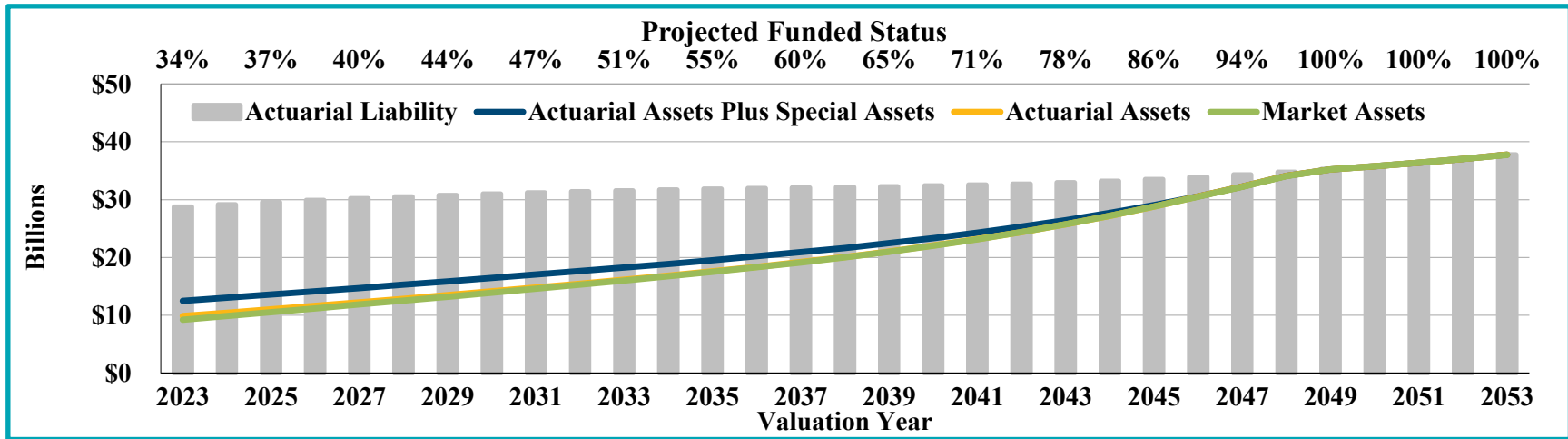
The solid black line is the tread water line based on the Actuarial Value of Assets. Because the tread water metric equals the normal cost plus interest on the UAL, the difference between the solid black line and the dashed black line is the interest on the UAL. When the contributions exceed the solid line, as is the case throughout the projection period for both State and Local employers, the UAL is expected to decrease and the funded ratio is expected to increase. If contributions fall below the solid black line, the UAL would be expected to increase and the funded ratio would be expected to decrease.

While total member contributions are expected to increase throughout the projection period based on payroll increases, the State's contributions are expected to remain relatively steady until the projected lottery revenue offsets run out in FYE 2047, at which point there is an increase. Following that, when the System reaches 100%, the contributions drop down to the normal cost level. Because the appropriated amounts equal the Statutory contributions, the contributions are at the level necessary to pay down the UAL and the tread water line decreases relative to the Statutory contribution. Additionally, expected lottery revenue that is contributed each year in excess of the Statutory contribution also helps pay down the UAL sooner.

The Local employers' contributions gradually increase over the next five years as deferred investment losses are recognized in the Actuarial Value of Assets before leveling off for the next ten years and then once again gradually increasing. The State-paid Local contributions gradually decrease as the population eligible for the Chapter 133, P.L. 2001 benefit enhancements decreases.

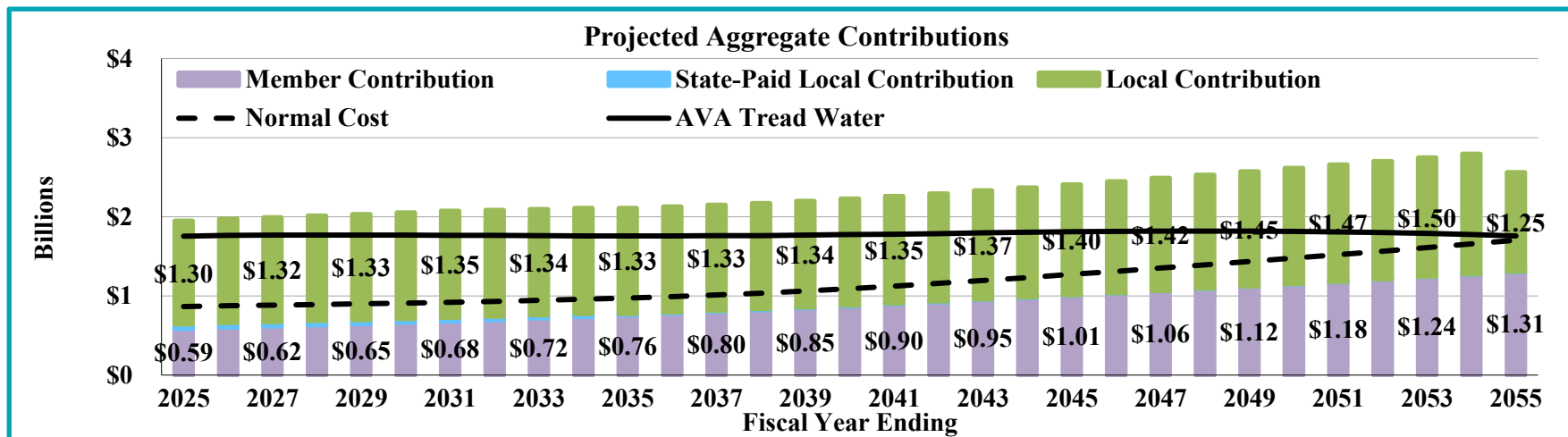
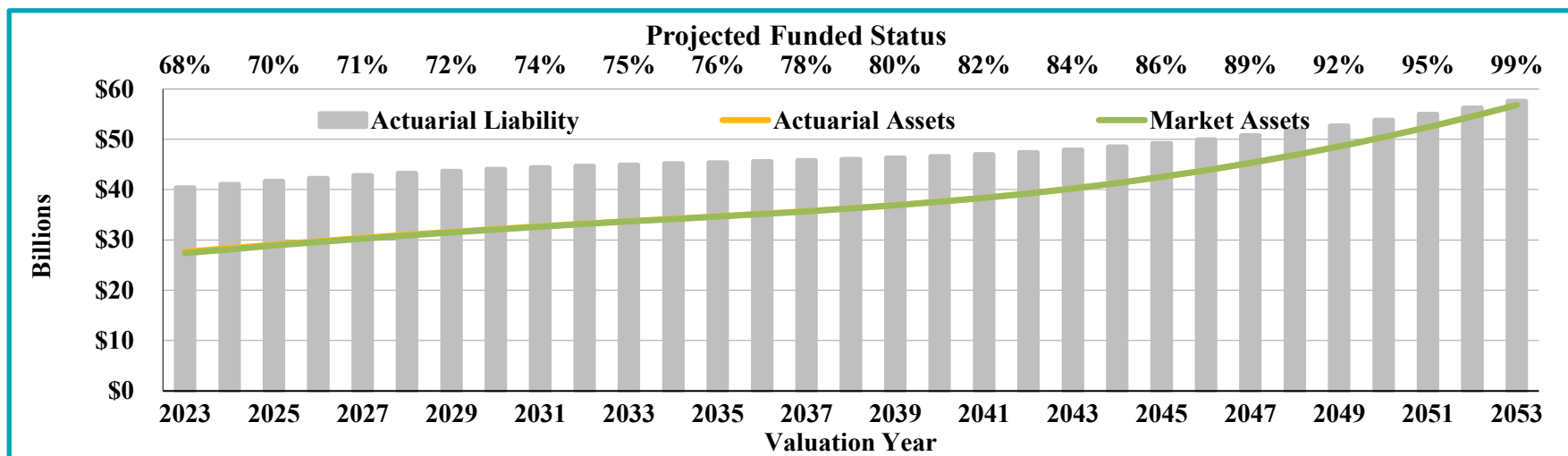
Baseline: 7.0% return for all years

State



Baseline: 7.0% return for all years

Local Employers



Actuarial valuations are based on a set of assumptions about future economic and demographic experience. These assumptions represent a reasonable estimate of future experience, but actual future experience will undoubtedly be different and may be significantly different. This section of the report is intended to identify the primary risks to the plan, provide some background information about those risks, and provide an assessment of those risks.

Identification of Risks

The fundamental risk to the System is that the contributions needed to pay the benefits become unaffordable. While there are a number of factors that could lead to contribution amounts becoming unaffordable, we believe the primary risks are:

- Investment risk,
- Assumption change risk, and
- Contribution risk.

Other risks that we have not identified may also turn out to be important.

Investment risk is the potential for investment returns to be different than expected. Lower investment returns than anticipated will increase the unfunded actuarial liability necessitating higher contributions in the future unless there are other gains that offset these investment losses. The potential volatility of future investment returns is determined by the System's asset allocation and the affordability of the investment risk is determined by the amount of assets invested relative to the size of the plan sponsor or other contribution base.

Assumption change risk is the potential for the environment to change such that future valuation assumptions are different than the current assumptions. For example, declines in interest rates over the last three decades resulted in higher investment returns for fixed income investments, but lower expected future returns necessitating either a change in investment policy, a reduction in discount rate, or some combination of the two. Assumption change risk is an extension of the other risks identified, but rather than capturing the risk as it is experienced, it captures the cost of recognizing a change in environment when the current assumption is no longer reasonable.

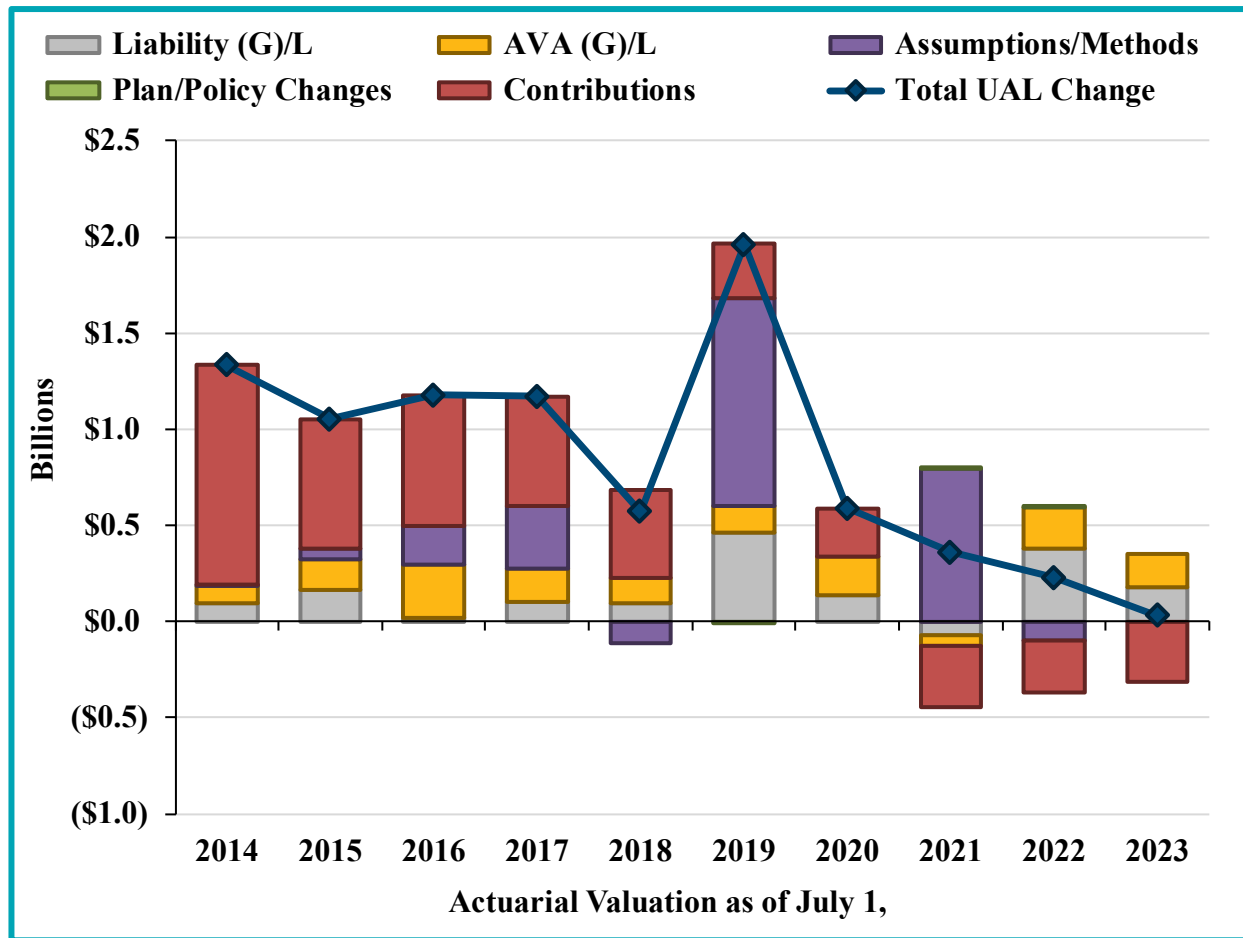
Contribution risk is the potential for actual future contributions to deviate from expected future Statutory contributions. There are different sources of contribution risk ranging from the sponsor choosing to not make contributions in accordance with the funding policy to material changes in the contribution base (e.g., covered employees, covered payroll, sponsor revenue, lottery revenue) that affect the amount of contributions the System can collect.

The charts below show the components of changes in the Unfunded Actuarial Liability (UAL) for the State and Local employers over the last 10 years, including investment gains and losses on the Actuarial Value of Assets, liability gains and losses, assumption and plan/policy changes, and contributions compared to the tread water level of contributions (normal cost plus interest on the UAL.) The net UAL change is shown by the dark blue line. Tables II-1 and II-2 below the chart summarize the changes in the UAL over the last 10 years.

These total changes in UAL support our identification of investment returns, assumption changes, and contributions as the primary risks to the System.

Historical Changes in UAL 2014-2023

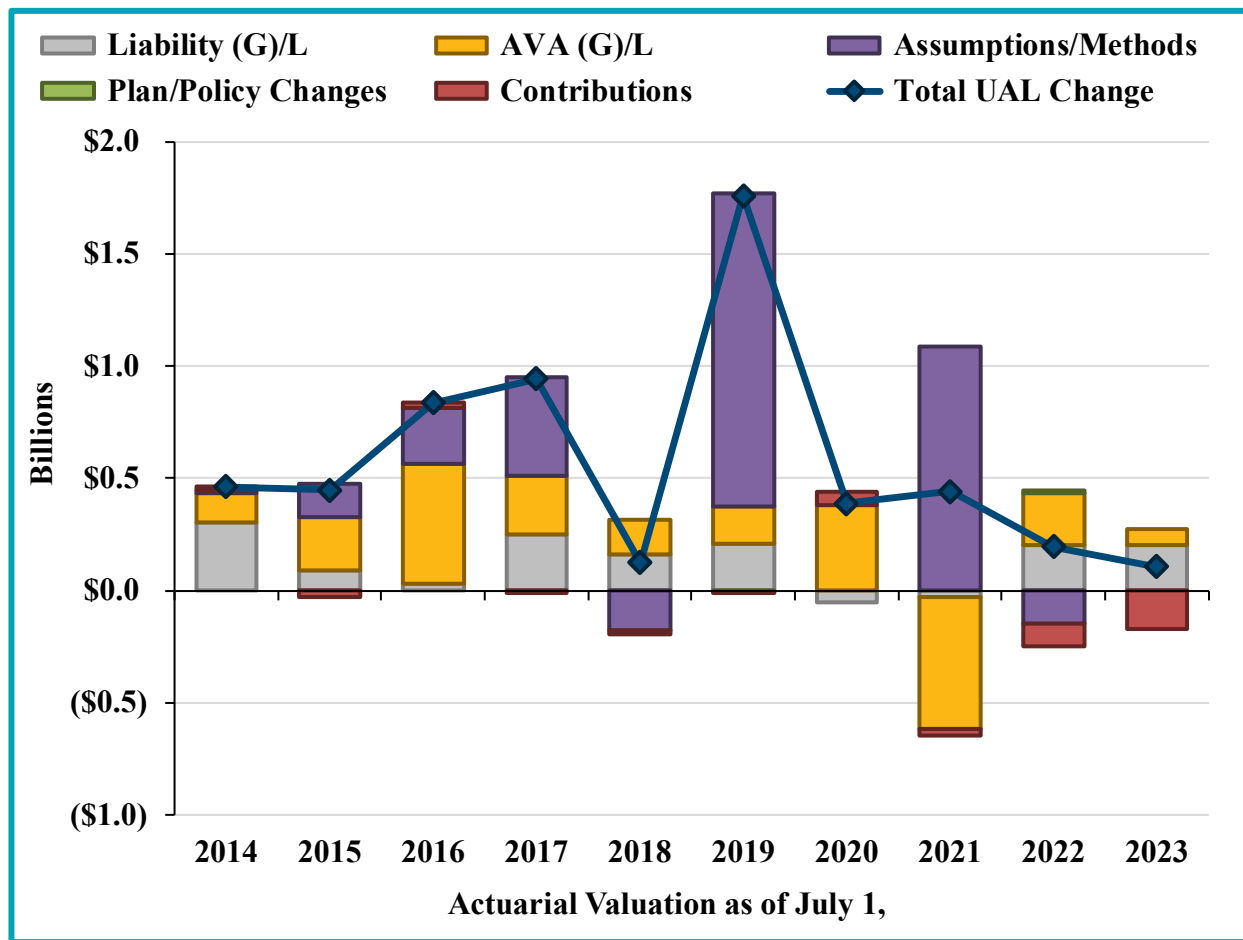
State



	2014	2015	2016	2017	State 2018	2019	2020	2021	2022	2023	Total
Discount Rate	7.90%	7.90%	7.65%	7.50%	7.50%	7.30%	7.30%	7.00%	7.00%	7.00%	
Source											
AVA (G)/L	\$ 87.5	\$ 162.4	\$ 274.0	\$ 171.9	\$ 131.0	\$ 140.7	\$ 199.0	\$ (56.7)	\$ 217.2	\$ 169.4	\$ 1,496.4
Liability (G)/L	95.3	164.5	21.2	103.2	93.3	461.3	138.4	(70.6)	377.5	179.4	1,563.4
Assumptions/Methods	10.7	53.2	199.0	328.7	(112.3)	1,081.7	0.0	798.4	(100.6)	0.0	2,259.0
Plan/Policy Changes	0.0	0.0	0.0	0.0	0.0	(6.6)	0.0	4.8	2.9	0.0	1.1
Contributions ¹	1,141.6	672.7	683.4	567.9	460.2	283.5	252.8	(315.1)	(267.1)	(316.3)	3,163.5
Net UAL Change	\$ 1,335.2	\$ 1,052.8	\$ 1,177.6	\$ 1,171.7	\$ 572.1	\$ 1,960.7	\$ 590.1	\$ 360.9	\$ 230.0	\$ 32.5	\$ 8,483.4

¹ UAL change due to contributions (greater)/less than normal cost plus interest on the UAL

Local Employers



Actuarial Valuation as of July 1,

Table II-2
Changes in Unfunded Actuarial Liability
(Dollar amounts in millions)
Local Employers

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Discount Rate	7.90%	7.90%	7.65%	7.50%	7.50%	7.30%	7.30%	7.00%	7.00%	7.00%	
Source											
AVA (G)/L	\$ 129.1	\$ 234.6	\$ 536.0	\$ 263.1	\$ 154.9	\$ 169.8	\$ 383.2	\$ (591.0)	\$ 234.1	\$ 72.7	\$ 1,586.5
Liability (G)/L	303.9	90.1	28.9	249.2	161.1	207.2	(53.2)	(27.0)	202.5	200.7	1,363.4
Assumptions/Methods	12.6	152.6	252.0	439.2	(176.7)	1,392.6	0.0	1,086.4	(150.1)	0.0	3,008.3
Plan/Policy Changes	0.0	0.0	0.0	0.0	0.0	(6.4)	0.0	0.0	8.2	0.0	1.8
Contributions ¹	15.6	(29.6)	20.5	(9.2)	(16.2)	(4.2)	57.8	(26.0)	(99.5)	(168.2)	(259.0)
Net UAL Change	\$ 461.2	\$ 447.7	\$ 837.4	\$ 942.2	\$ 123.0	\$ 1,758.9	\$ 387.8	\$ 442.4	\$ 195.2	\$ 105.2	\$ 5,701.1

¹ UAL change due to contributions (greater)/less than normal cost plus interest on the UAL

On a smoothed asset basis, the investment gains and losses (gold bars) from 2014 to 2023 largely reflect investment losses, with the exception of the investment gain during FYE 2021. In aggregate, over the 10-year period, investment losses have added approximately \$1,496.4 million to the State's UAL and approximately \$1,586.5 million to the Local employers' UAL.

On the liability side (gray bars), the System has experienced mostly losses, increasing the UAL by approximately \$1,563.4 million for the State and \$1,363.4 million for Local employers over the 10-year period. Triennial experience studies are performed in an effort to identify emerging trends and avoid consistent liability gains or losses.

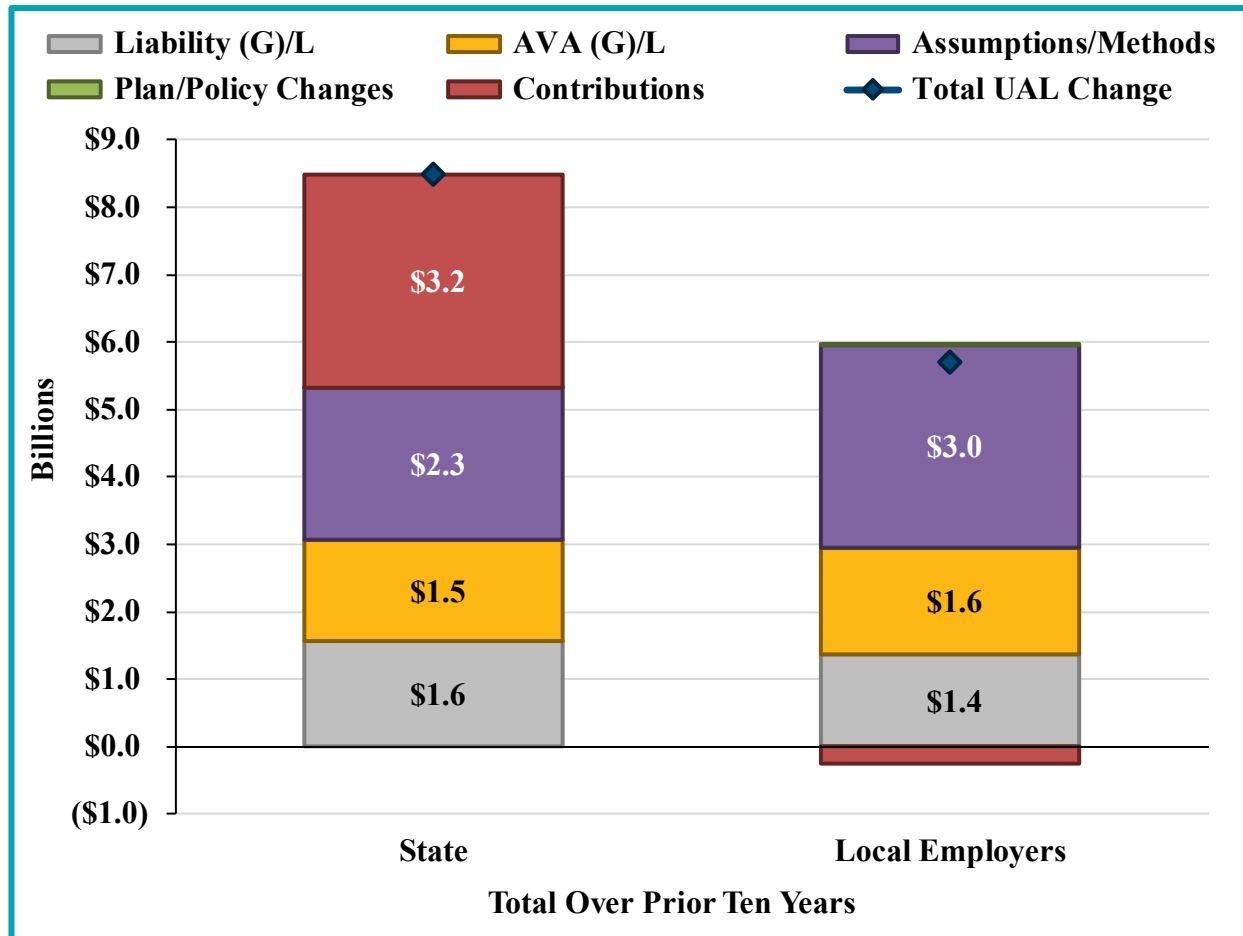
Assumption and method changes (purple bars) over the last 10 years have increased the UAL by approximately \$2,259.0 million for the State and \$3,008.3 million for Local employers. The significant assumption changes have included reductions in the discount rate from 7.90% to 7.00% as well as decreases in mortality rates, increases in projected mortality improvement and adjustments to salary increase rates. It is important to note that the discount rate changes simply reflect a downward revision to the estimate of future investment earnings and ultimately costs will be determined by actual investment earnings.

Plan and policy changes (green bars) over the last 10 years have increased the UAL by approximately \$1.1 million for the State and \$1.8 million for Local employers.

Each year, the UAL is expected to increase for benefit accruals attributable to the current year (the normal cost) and interest on the UAL. This expected increase is referred to as the tread water level. If contributions are greater than the tread water level, the UAL is expected to decrease. Conversely, if contributions are less than the tread water level, the UAL is expected to increase. Changes due to contributions greater or less than the tread water level (red bars) have increased the State's UAL by approximately \$3,163.5 million and decreased Local employers' UAL by approximately \$259.0 million over the last 10 years.

In general, the amortization methods used to determine the Statutory contributions are designed to collect more than the tread water level. However, contributions may be less than this threshold due to the State appropriating less than the Statutory contributions. Notably, the trend of contributions less than the tread water level reversed beginning in FYE 2021 which resulted in the contributions decreasing the UAL since then.

The following chart shows the total changes to the UAL for each portion of the System over the 10-year period by source.



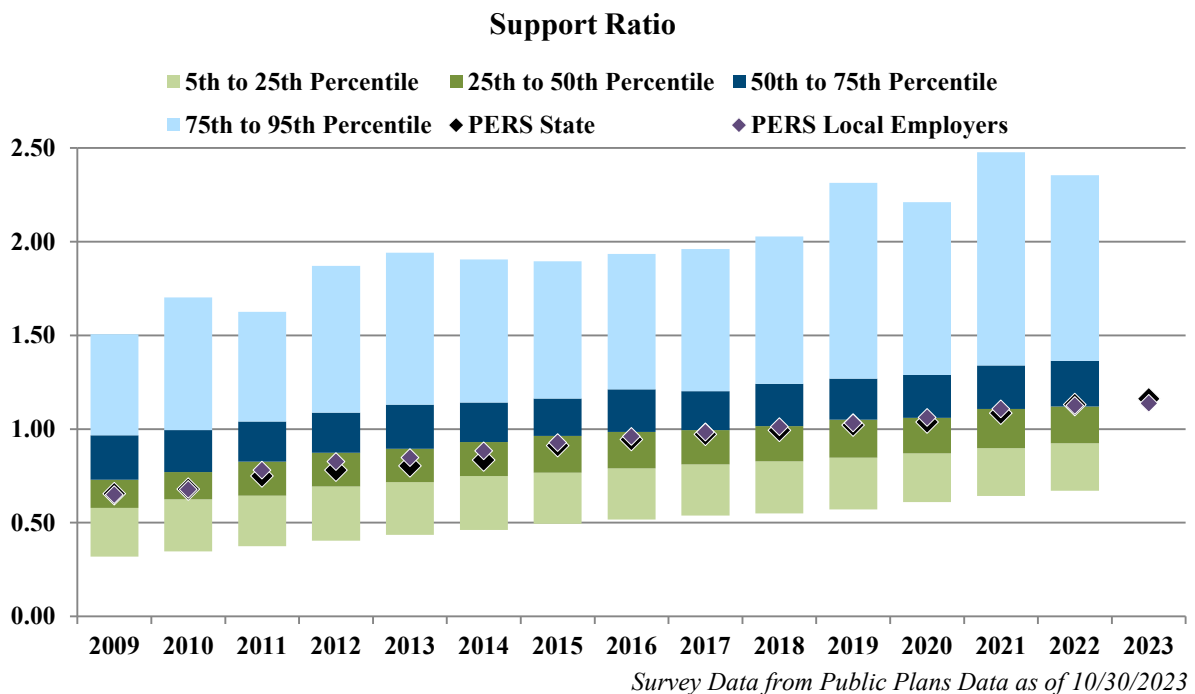
Plan Maturity Measures

The future financial condition of a mature pension plan is more sensitive to each of the risks identified above than a less mature plan. Before assessing each of these risks, it is important to understand the maturity of the plan compared to other plans and how the maturity has changed over time.

Plan maturity can be measured in a variety of ways, but they all get at one basic dynamic - the larger the plan is compared to the contribution or revenue base that supports it, the more sensitive the plan will be to risk. The measures below have been selected as the most important in understanding the primary risks identified for the System.

Inactives per Active (Support Ratio)

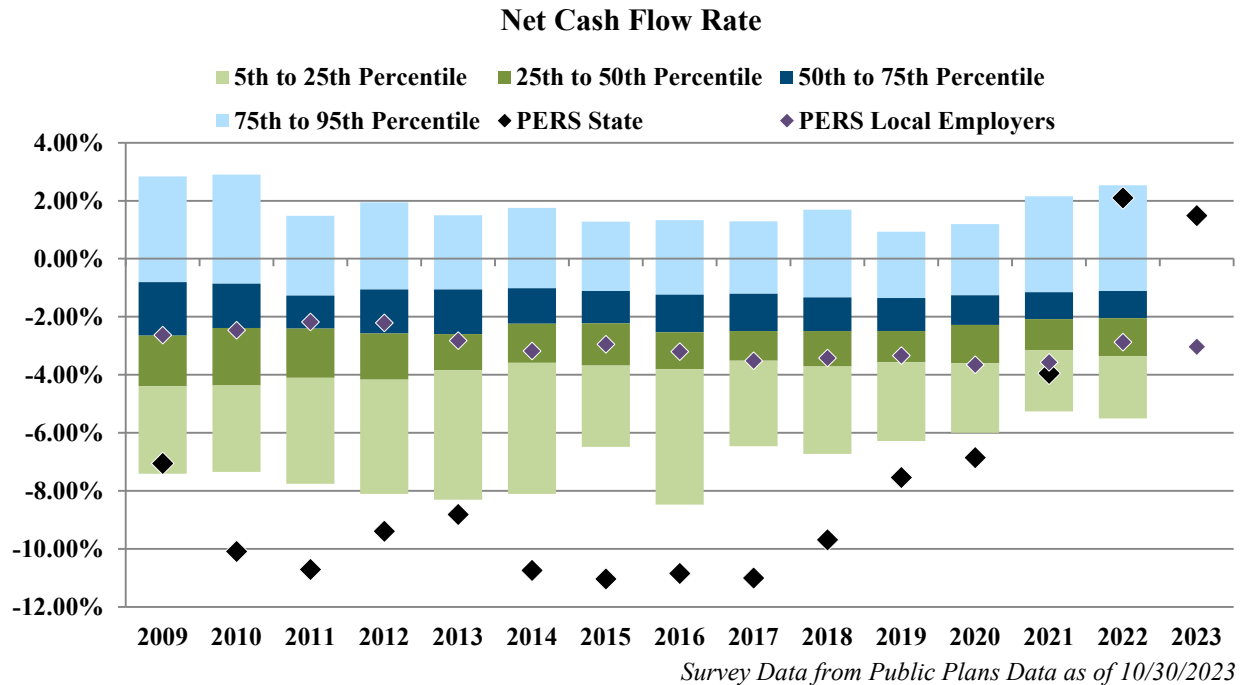
One simple measure of plan maturity is the ratio of the number of inactive members (those receiving benefits or entitled to a deferred benefit) to the number of active members. We refer to this ratio as the *support ratio*. The revenue base supporting the plan is usually proportional to the number of active members, so a relatively high number of inactives compared to actives indicates a larger plan relative to its revenue base as well. We also discussed this risk metric in Section I.



The chart above shows the distribution from the 5th to 95th percentile of support ratios for the plans in the Public Plans Database. The diamonds show how the State (black) and Local employers (purple) compare to other Systems dating back to 2009. Note that the PERS support ratios for State and Local employers are very similar to each other and overlap in some years. Both State and Local employers have been slightly less mature than the median plan. The support ratios increased following the Great Recession, but have since stabilized near the 50th percentile.

Net Cash Flow

The net cash flow of the plan as a percentage of the beginning of year assets indicates the sensitivity of the plan to short-term investment returns. Net cash flow is equal to contributions less benefit payments and administrative expenses. Mature plans can have large amounts of benefit payments compared to contributions, particularly if they are well funded. Investment losses in the short-term are compounded by the net withdrawal from the plan leaving a smaller asset base to try to recover from the investment losses. Large negative cash flows can also create liquidity issues. We also discussed this risk metric in Section I.



The chart above shows the distribution from the 5th to 95th percentile of net cash flow for the plans in the Public Plans Database. The diamonds show how the State and Local employers' net cash flow compares to other public plans. The State had been at or below the 5th percentile compared to the database of other public plans in terms of negative cash flow as a percentage of assets, causing a serious defunding risk for the System. However, with the State's increased appropriation percentages, the State's net cash flow has improved considerably since 2017. For State, the net cash flow has been positive since 2022 and will likely remain above the 75th percentile for 2023. The Local employers were near the 50th percentile from 2009 to 2013 and have since fallen closer to the 25th percentile.

Assessing Costs and Risks

The fundamental risk to the System is that the contributions needed to fund the benefits become unaffordable. Assessing this risk, however, is complex because there is no bright line of what is unaffordable and the contribution amounts themselves are affected not just by the experience of the System, but also by the interaction of that experience and decisions by the State and the Board related to the amount of contributions appropriated, assumptions, asset smoothing methods, and amortization periods.

Investment Risk - Stress Testing

This section illustrates stress testing of the investment return assumption and is an extension of the baseline projections provided in the Summary section. Under the baseline results, we assumed a 7.00% investment return assumption each year.

For stress testing purposes, we developed six hypothetical scenarios to illustrate the impact actual investment returns may have on future funded status and contribution amounts. The scenarios are balanced between positive and negative scenarios and are based on a lognormal distribution of one and five year expected returns as shown in the following table using the capital market assumptions from the New Jersey Division of Investment (geometric return of 8.05%, standard deviation of 12.05%).

Distribution of Expected Average Annual Returns		
Percentile	1 Year	5 Year
5%	-9.8%	-0.3%
25%	0.4%	4.6%
50%	8.1%	8.1%
75%	16.5%	11.8%
95%	29.7%	17.3%

The scenarios include: a one-year shock using the 5th and 95th percentile returns for one year; a 5-year moderate scenario using the 25th and 75th percentile returns for five years; and a 5-year significant scenario using the 5th and 95th percentile returns for five years. The table below summarizes the theoretical scenarios.

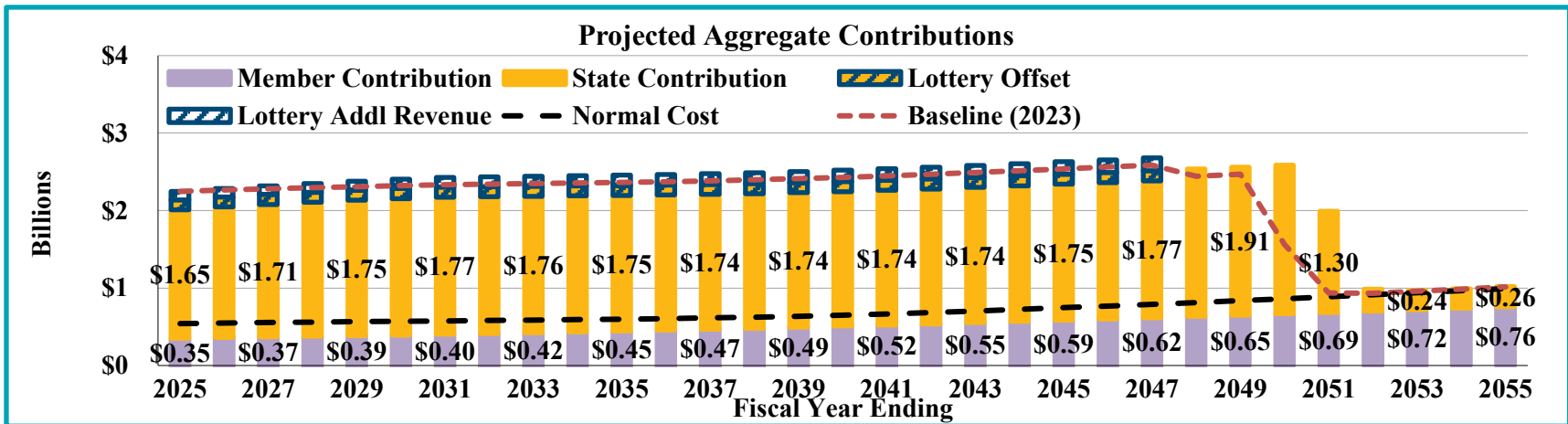
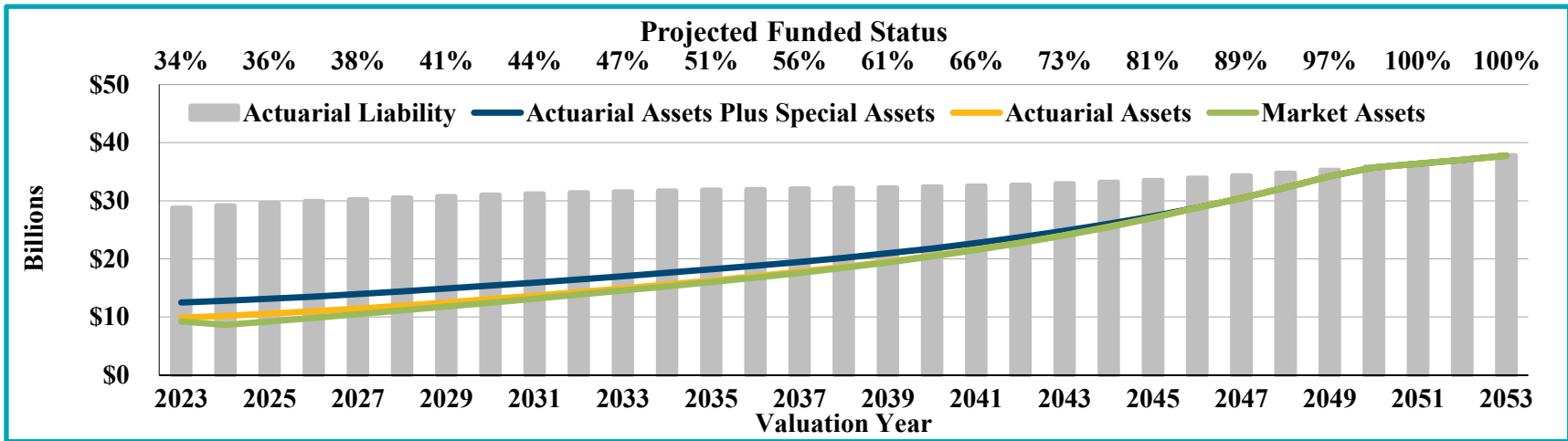
FYE	Theoretical Scenarios					
	1-Yr Shock		5-Yr Moderate		5-Yr Significant	
	Neg	Pos	Neg	Pos	Neg	Pos
2024	-9.8%	29.7%	4.6%	11.8%	-0.3%	17.3%
2025	7.0%	7.0%	4.6%	11.8%	-0.3%	17.3%
2026	7.0%	7.0%	4.6%	11.8%	-0.3%	17.3%
2027	7.0%	7.0%	4.6%	11.8%	-0.3%	17.3%
2028	7.0%	7.0%	4.6%	11.8%	-0.3%	17.3%
2029+	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%

In reviewing each of these projections, it is the future trends, not necessarily the actual values, that are important to observe in consideration of the risks of the System and the potential volatility of future funded ratios and Statutory contribution levels.

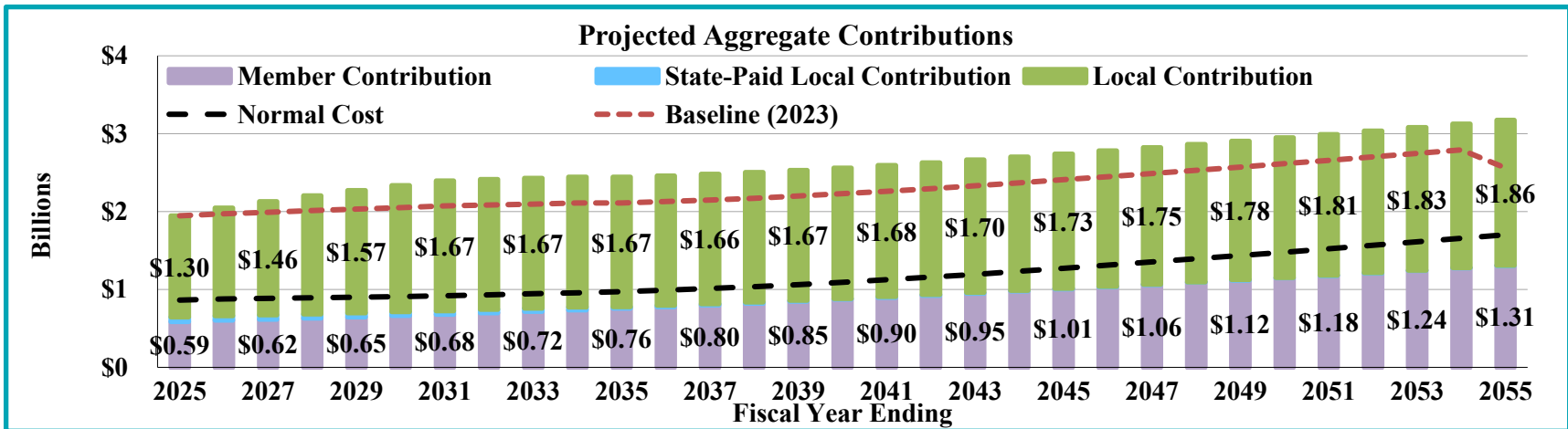
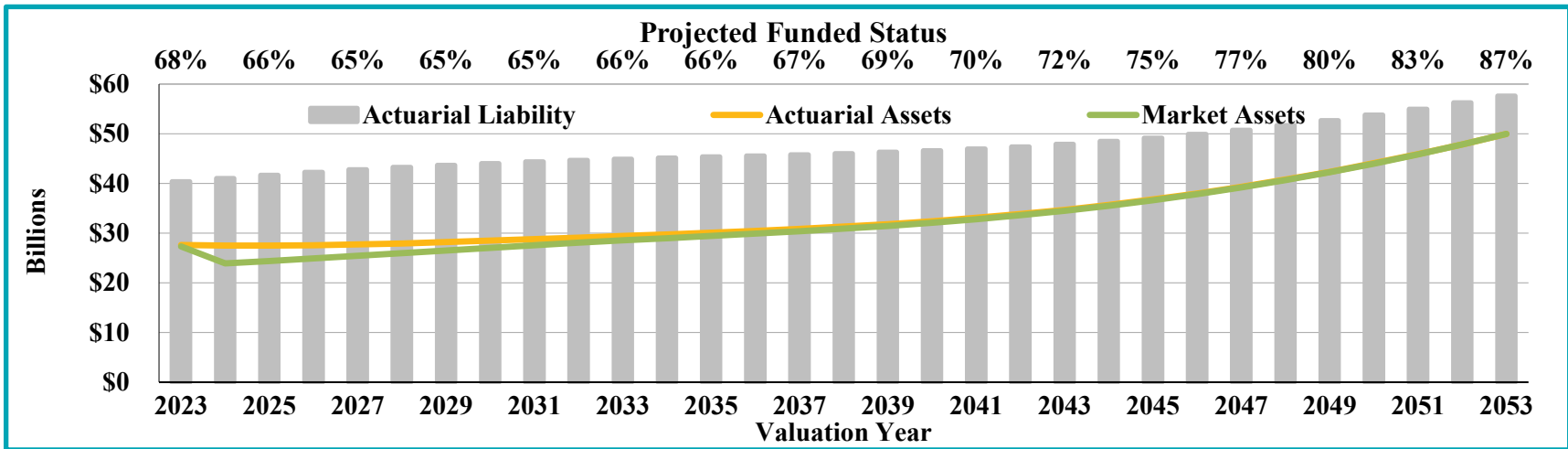
We note that when asset returns are high, excess assets may be used to offset employer costs. We have not shown the implications of a surplus and assume that the employer will always contribute at least the normal cost.

The graphs on the following pages show the projections under each of these theoretical scenarios. Instead of the tread water line shown for the baseline projection, the contribution graphs include a dashed red line representing the expected contributions under the baseline projections shown in the Summary section to facilitate the comparison between the particular scenario and the baseline projections assuming all assumptions are met.

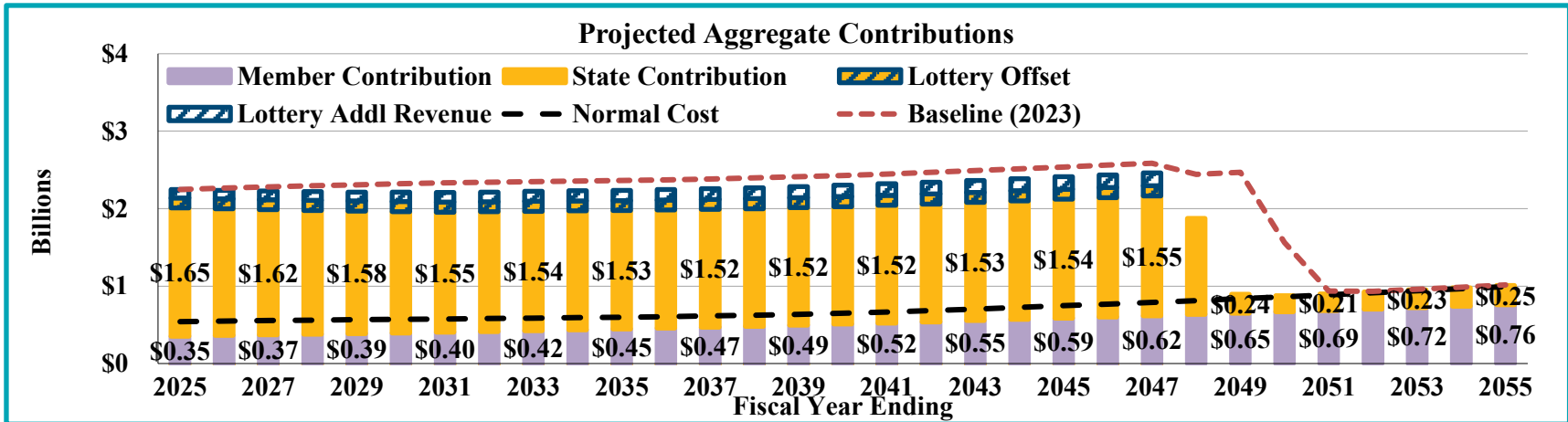
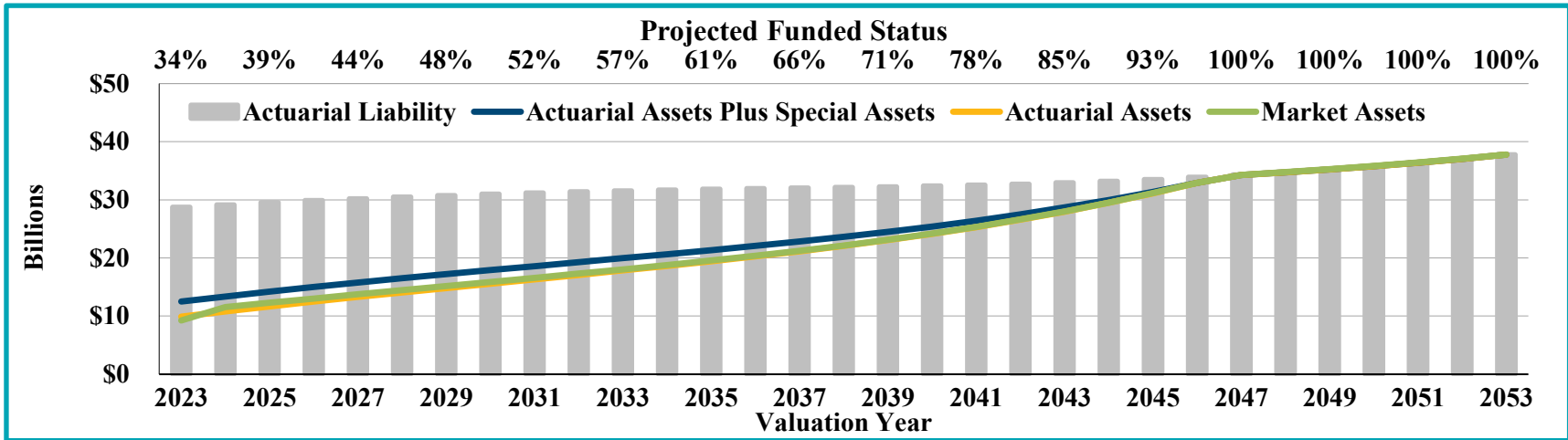
One-Year Negative Shock Scenario: -9.8% return FYE 2024, 7.0% after
State



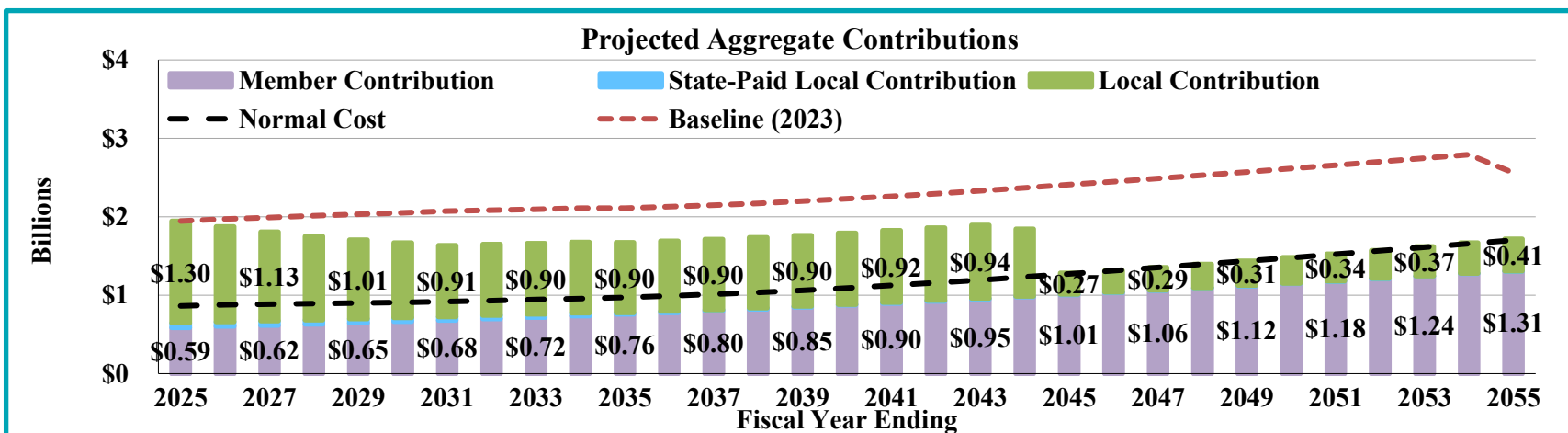
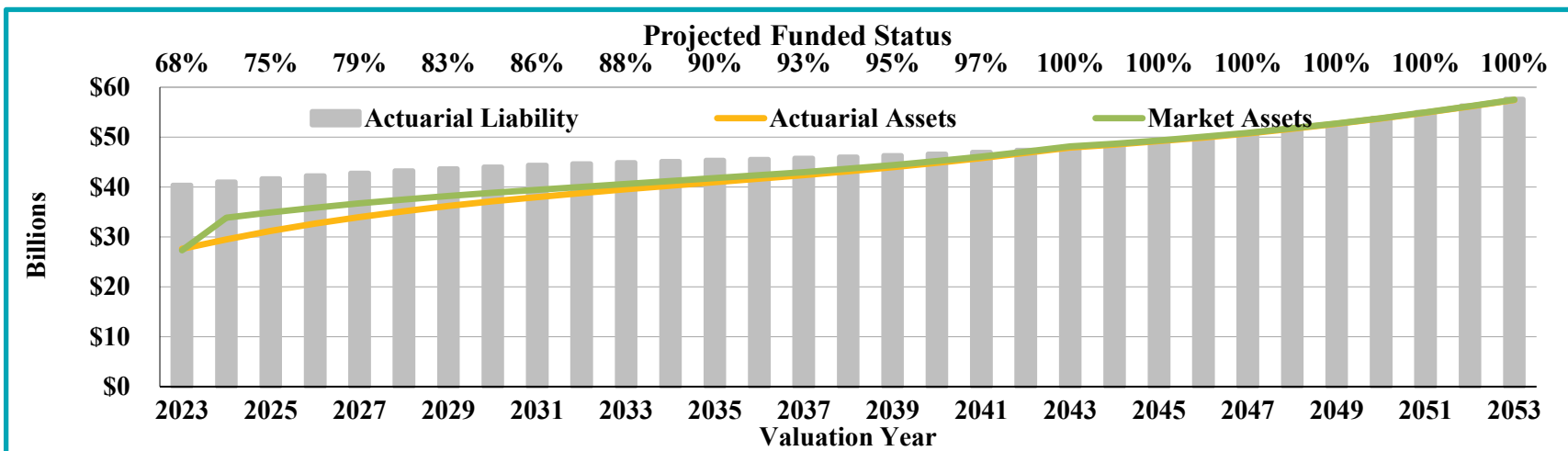
One-Year Negative Shock Scenario: -9.8% return FYE 2024, 7.0% after
Local Employers



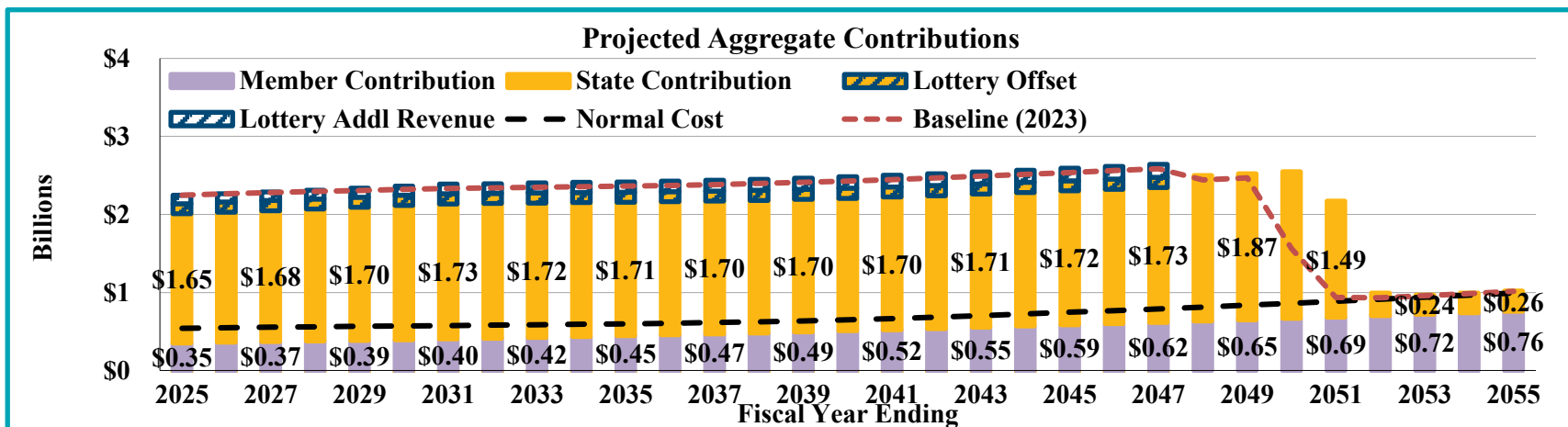
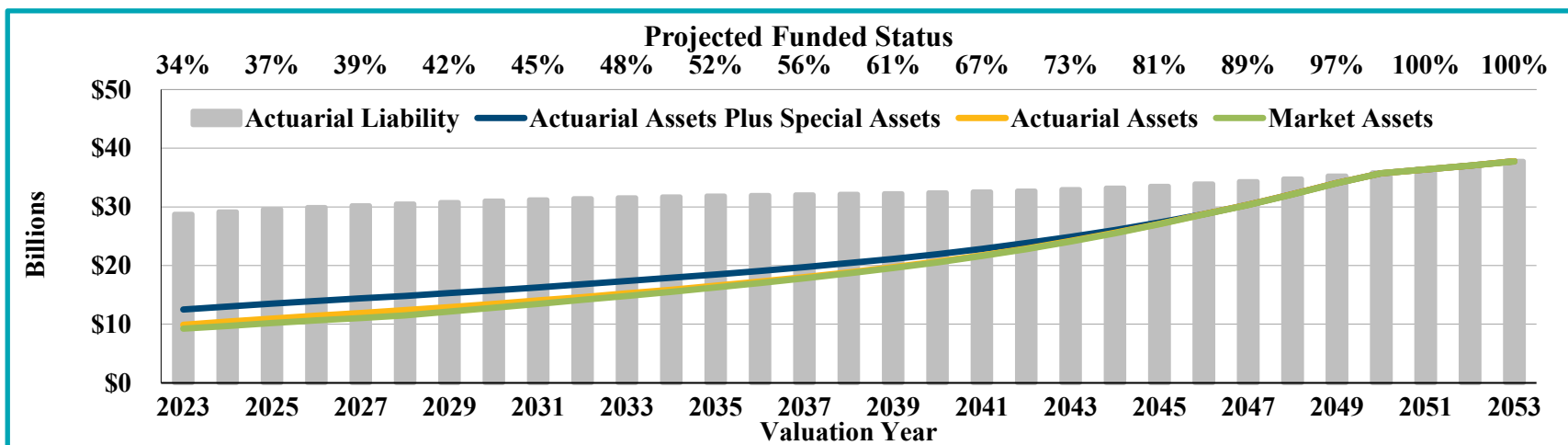
One-Year Positive Shock Scenario: 29.7% return FYE 2024, 7.0% after
State



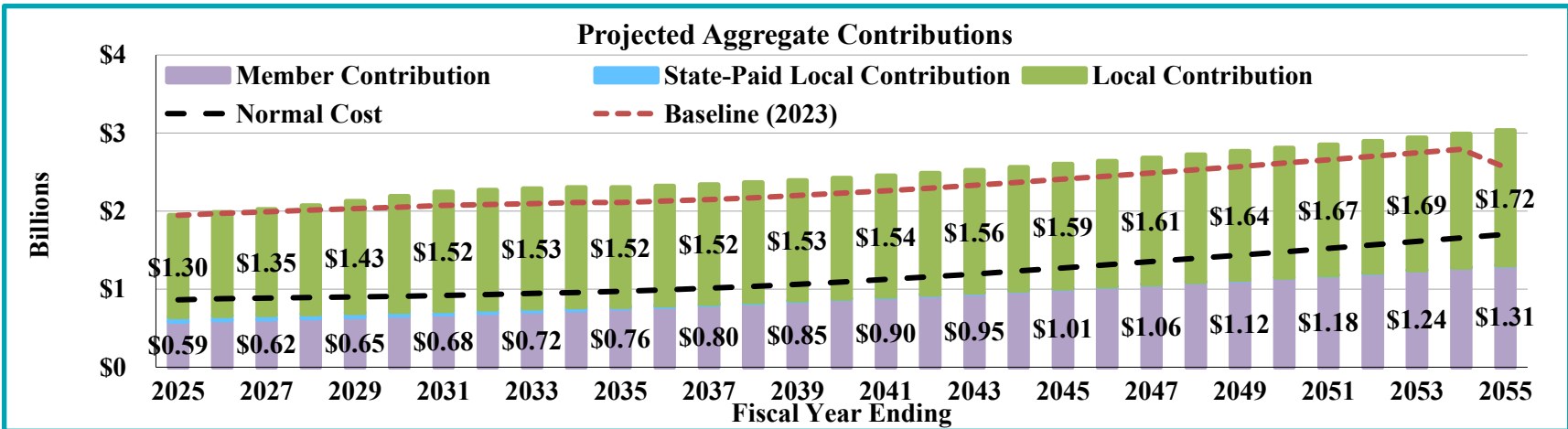
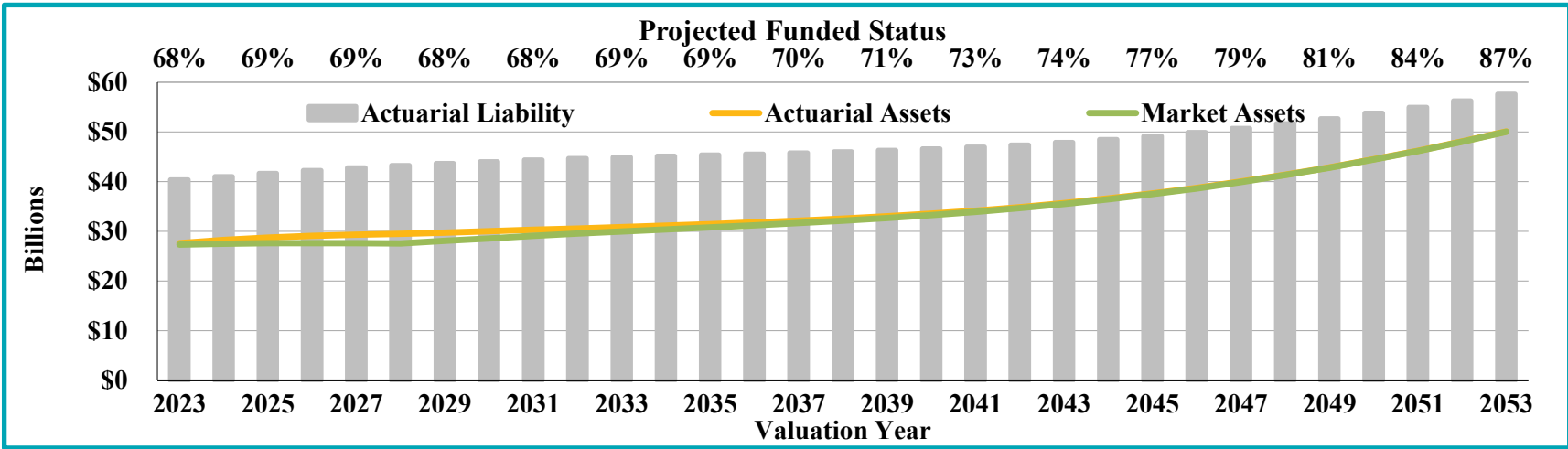
One-Year Positive Shock Scenario: 29.7% return FYE 2024, 7.0% after
Local Employers



Five-Year Moderate Negative Scenario: 4.6% return FYE 2024-2028, 7.0% after
State

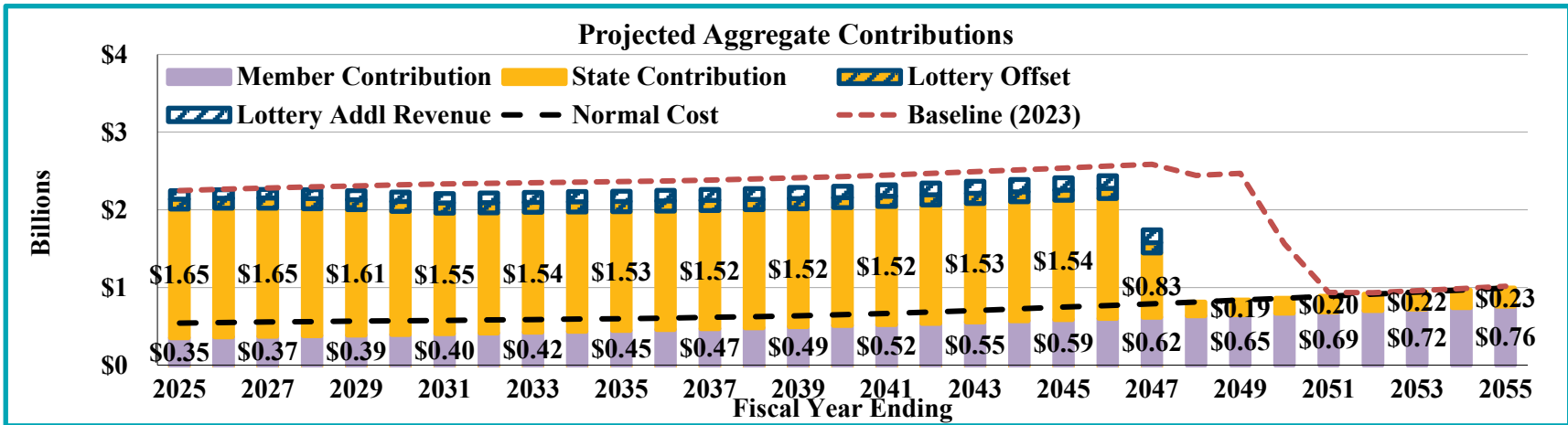
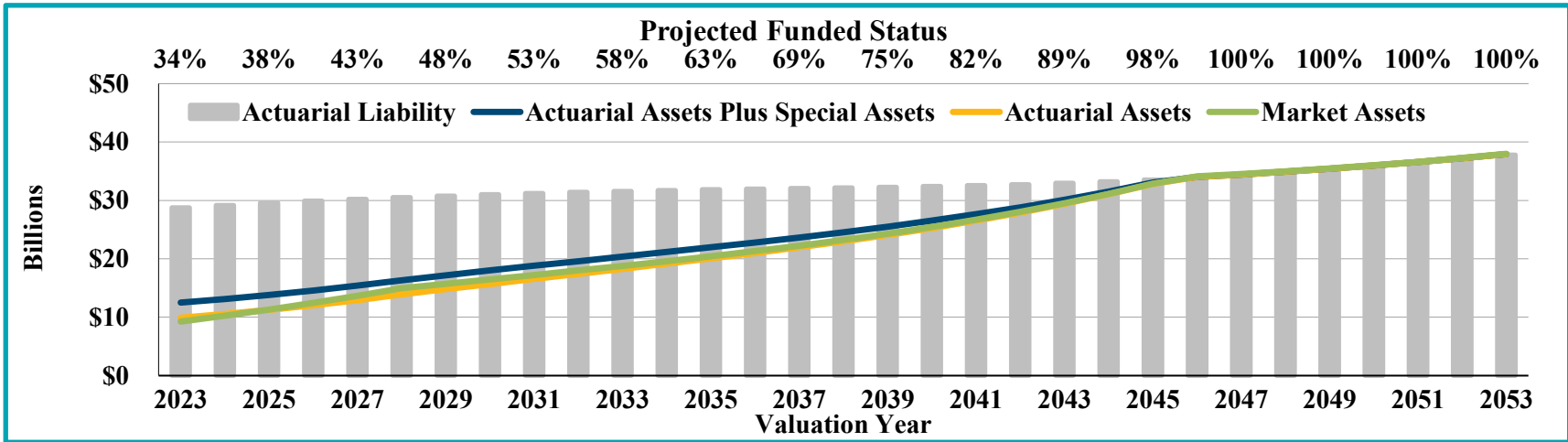


Five-Year Moderate Negative Scenario: 4.6% return FYE 2024-2028, 7.0% after
Local Employers

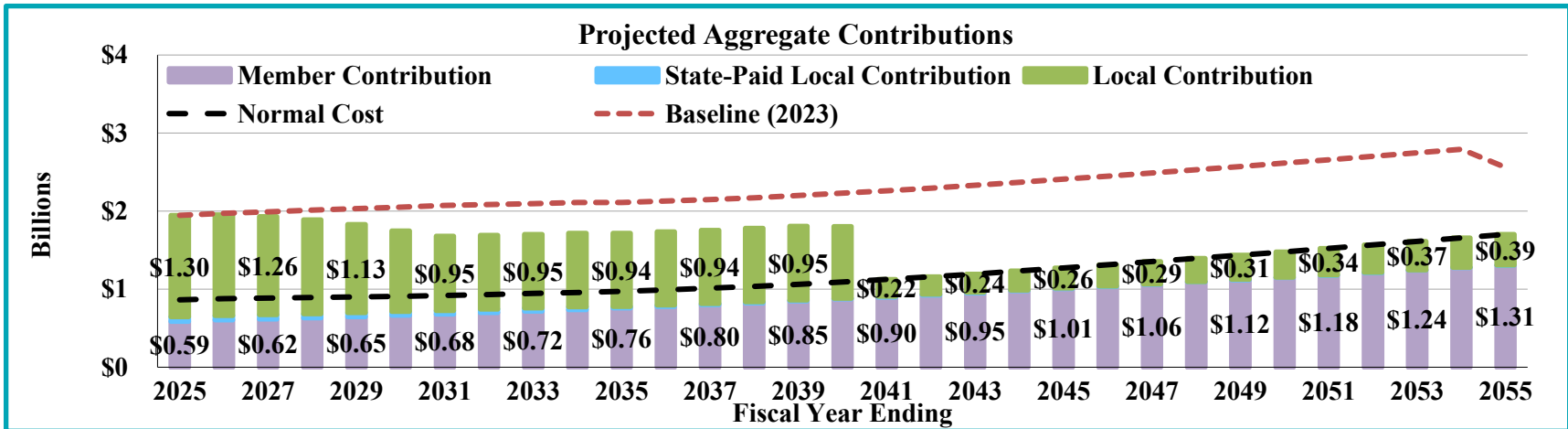
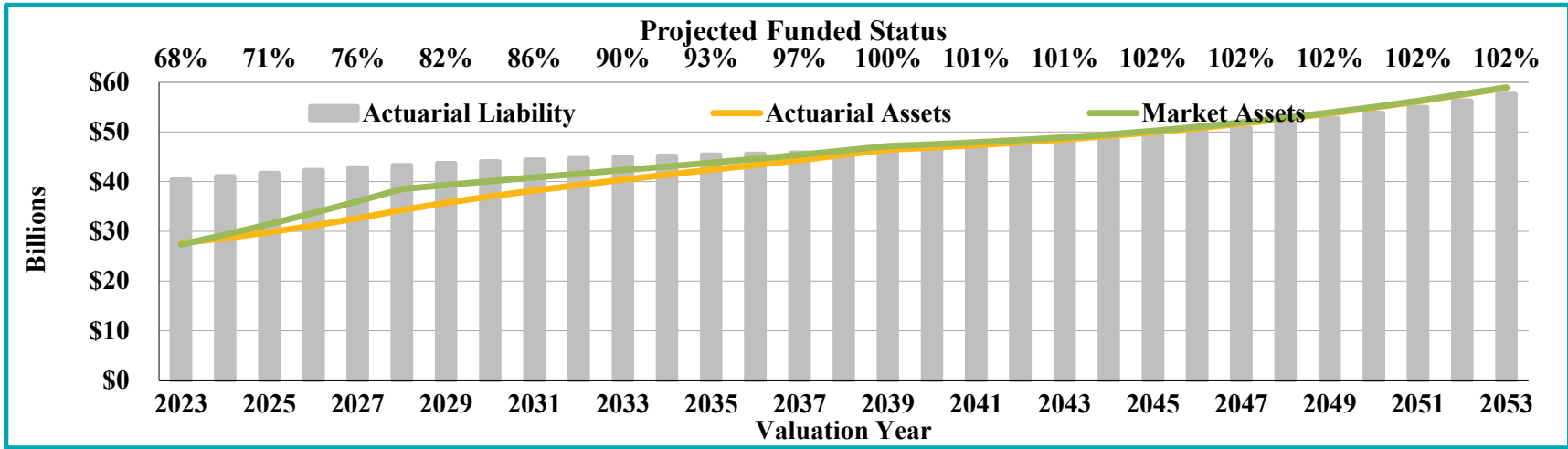


Five-Year Moderate Positive Scenario: 11.8% return FYE 2024-2028, 7.0% after

State

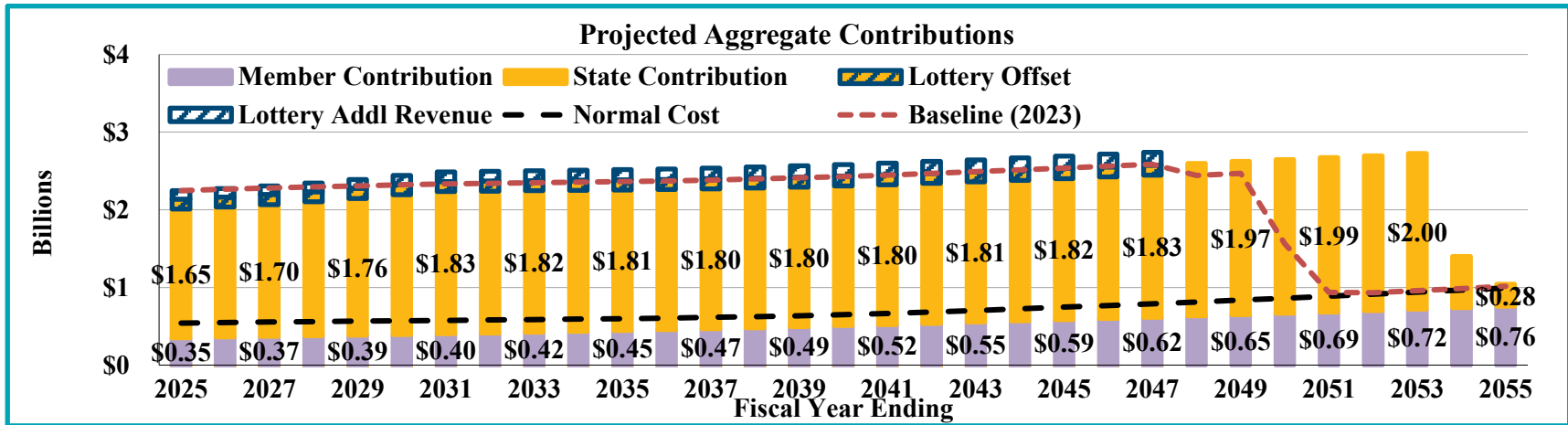
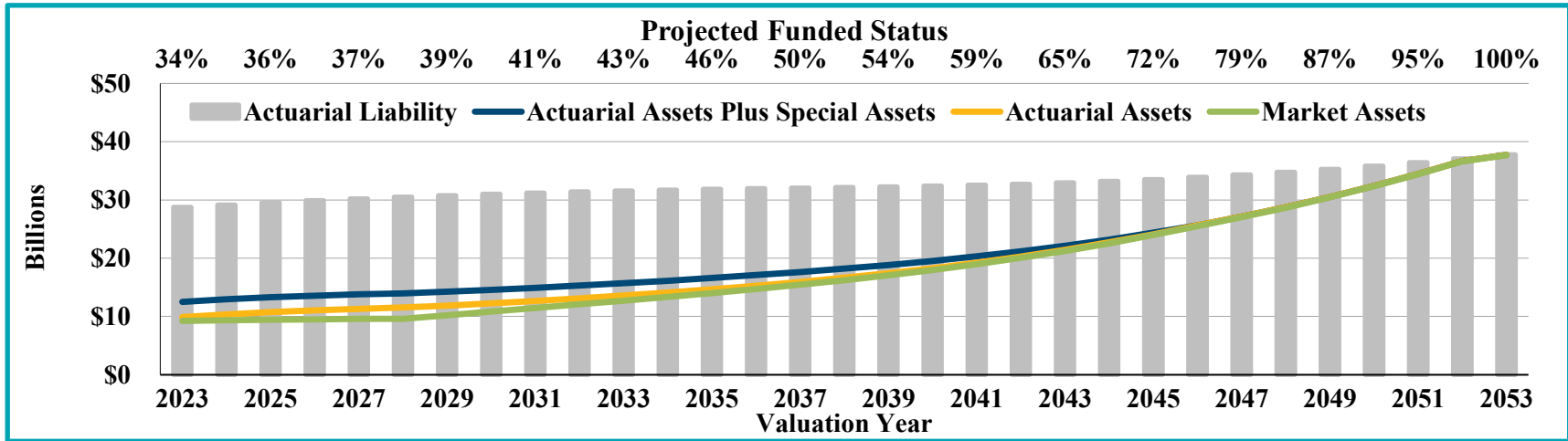


Five-Year Moderate Positive Scenario: 11.8% return FYE 2024-2028, 7.0% after
Local Employers

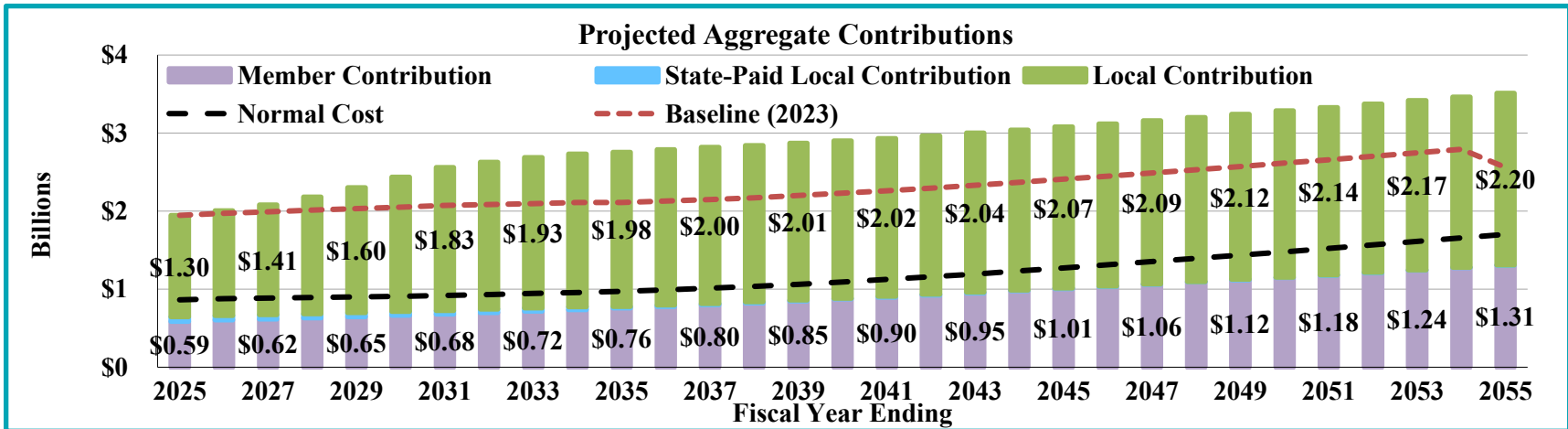
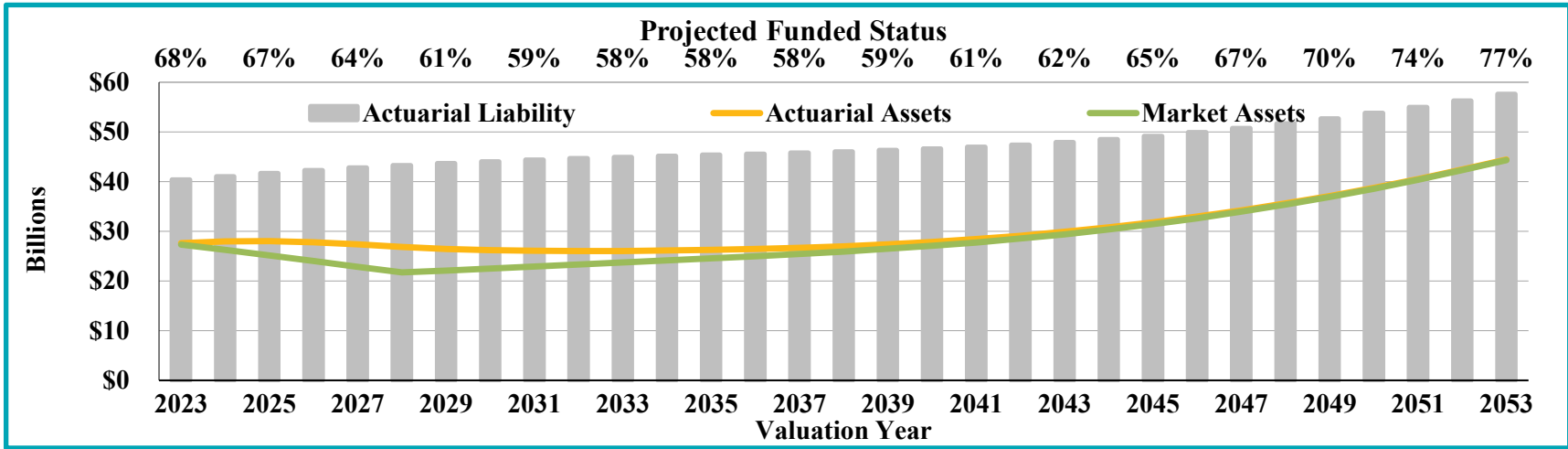


Five-Year Significant Negative Scenario: -0.3% return FYE 2024-2028, 7.0% after

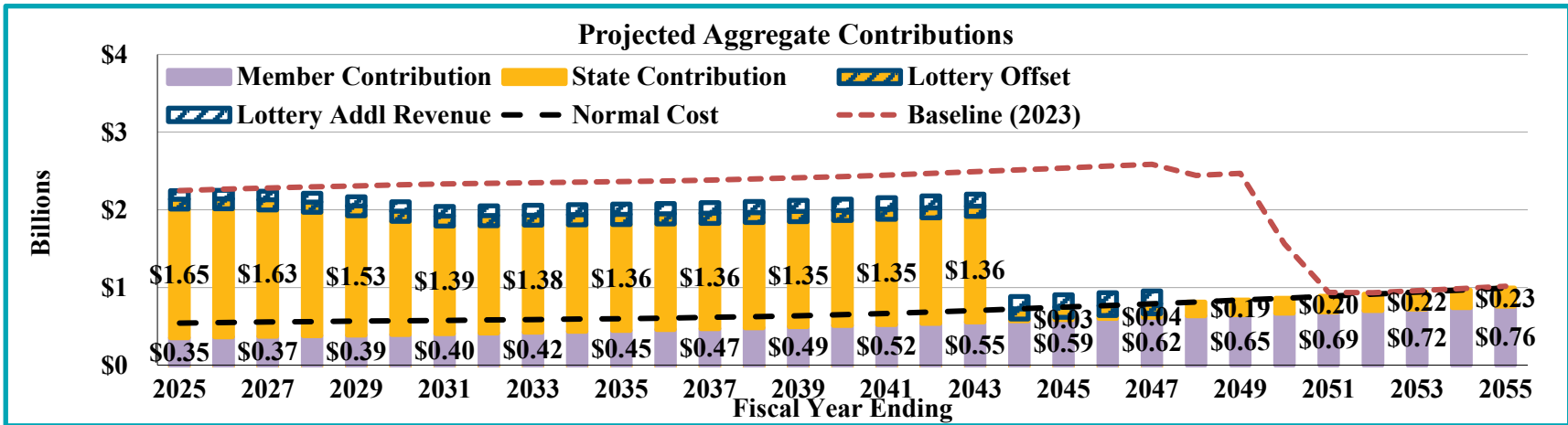
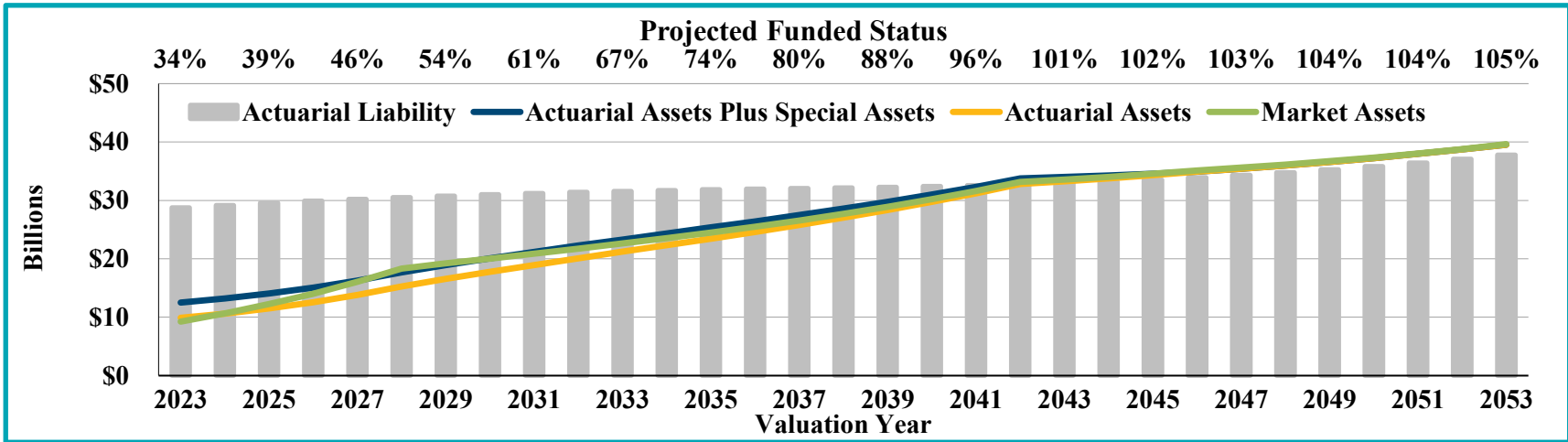
State



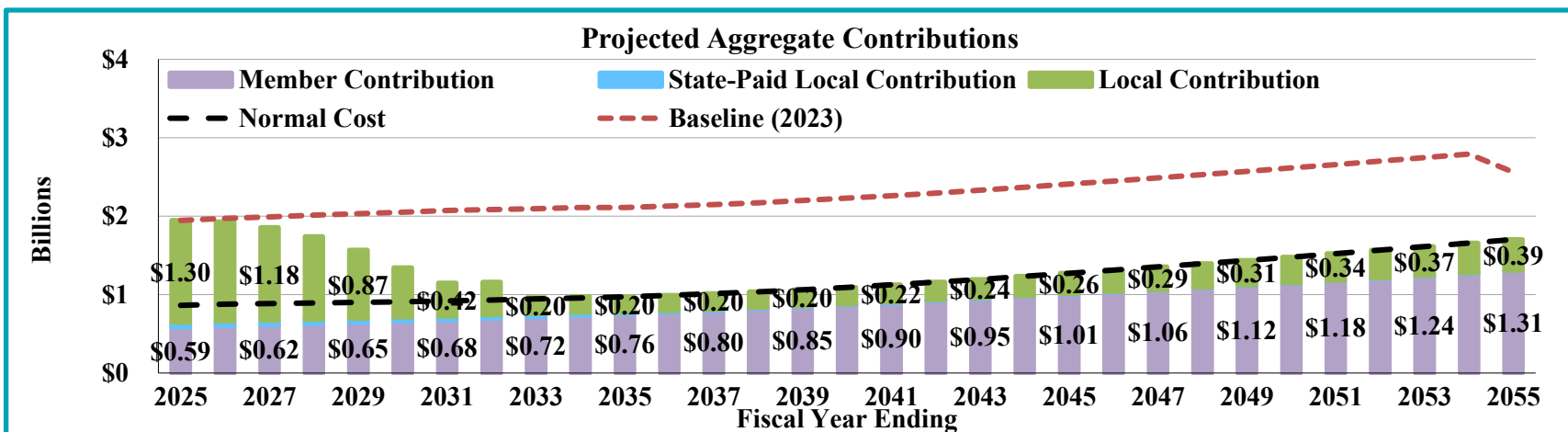
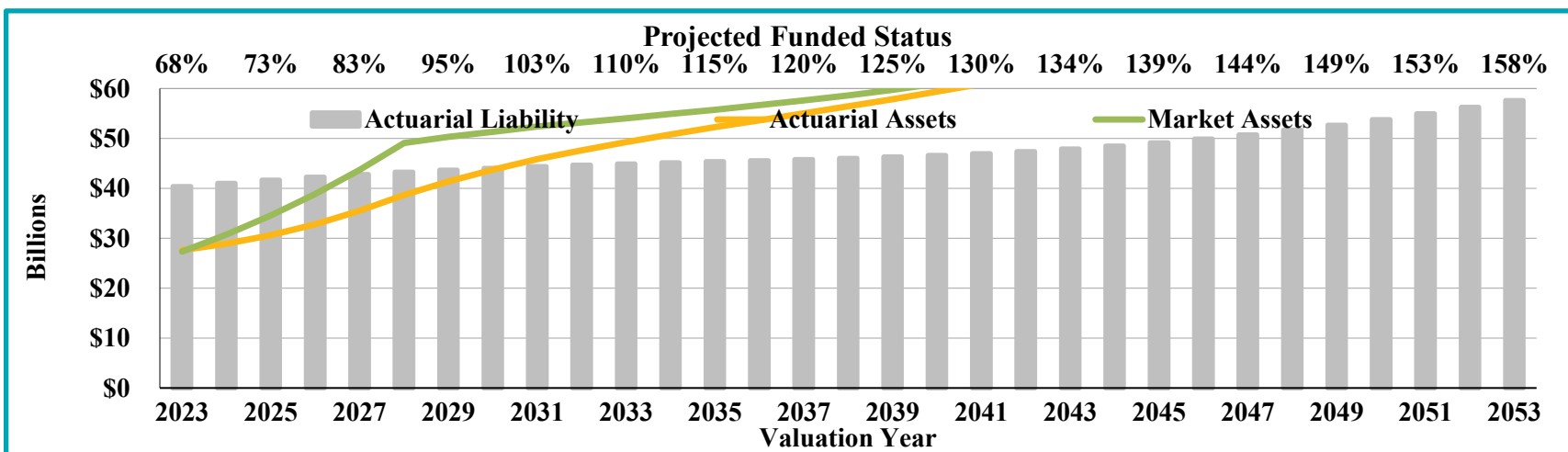
Five-Year Significant Negative Scenario: -0.3% return FYE 2024-2028, 7.0% after
Local Employers



Five-Year Significant Positive Scenario: 17.3% return FYE 2024-2028, 7.0% after
State



Five-Year Significant Positive Scenario: 17.3% return FYE 2024-2028, 7.0% after
Local Employers



These scenarios show that actual future investment returns have a significant impact on future State and Local employer contribution amounts. The following table summarizes the impact on the State and Local employer contributions in FYE 2037 for the various investment return scenarios compared to the baseline projections in Section I.

Table II-3 Impact on Contributions for FYE 2037 (dollar amounts in millions)						
	1-Yr Shock		5-Yr Moderate		5-Yr Significant	
	Neg	Pos	Neg	Pos	Neg	Pos
<u>State</u>						
Amount	\$93	(\$126)	\$55	(\$123)	\$154	(\$290)
Percent	6%	-8%	3%	-7%	9%	-18%
<u>Local Employers</u>						
Amount	\$332	(\$436)	\$192	(\$393)	\$668	(\$1,136)
Percent	25%	-33%	14%	-29%	50%	-85%

The positive scenarios sometimes show the System achieving a 100% funded status during the 30-year projection period, which results in the contribution decreasing to equal the employer normal cost.

Local employer contributions are clearly more sensitive than State contributions to investment returns deviating from the assumption. This is caused by the funded status at the beginning of the projection period. The State is less well funded and, as a result, has less to gain or lose from positive or negative investment experience.

The investment returns used in the projections above were selected solely to illustrate the impact of investment volatility on the pattern of future funded status and contribution amounts. They are not intended to be predictive of actual future contributions or funded status or even to represent a realistic pattern of investment returns.

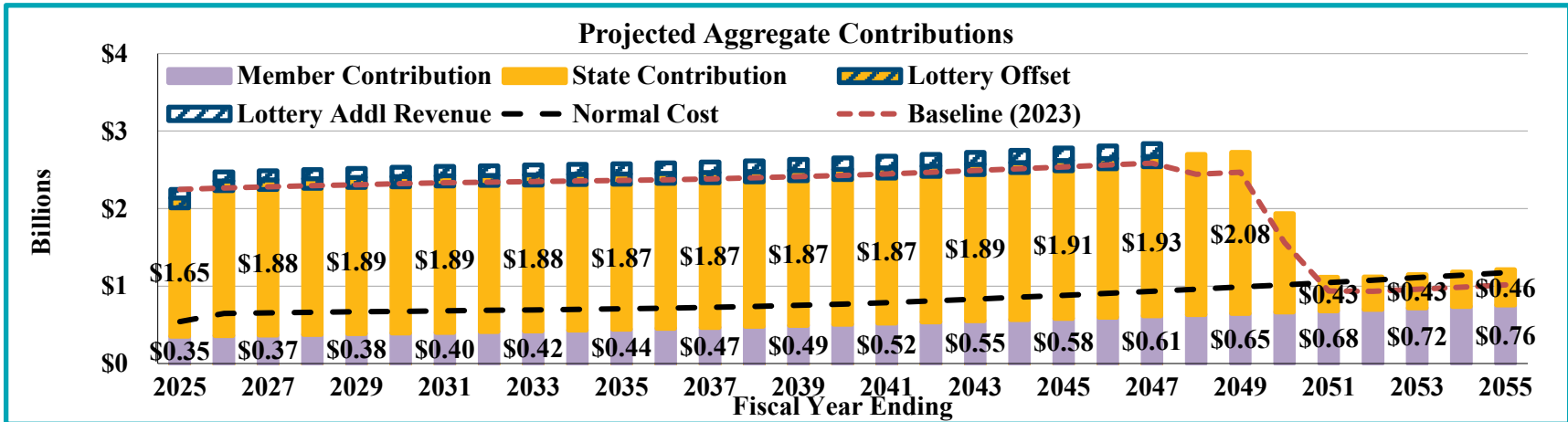
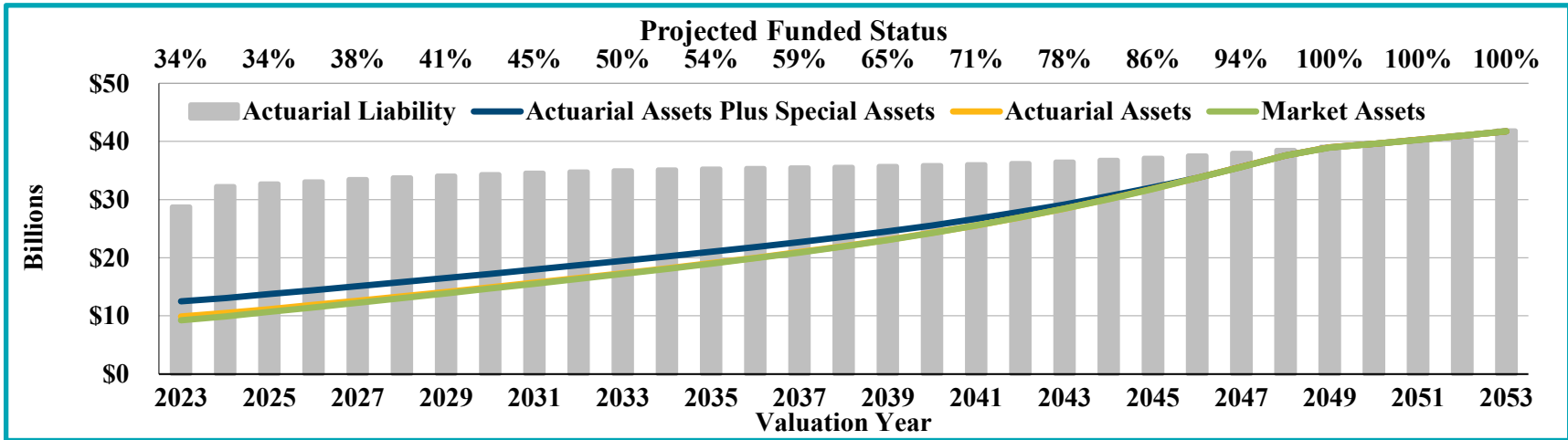
Assumption Change Risk – Sensitivity Testing

As shown in Tables II-1 and II-2, assumption changes over the last decade have increased the State's UAL by approximately \$2,259.0 million and increased the Local employers' UAL by approximately \$3,008.3 million. The most significant changes were reductions in the discount rate, decreases in mortality rates, increases in projected mortality improvement and adjustments to the salary increase rates. While interest rates have increased over the past few years, the reductions in discount rates over the last ten years have been largely driven by declines in interest rates that affect expectations of future investment returns. If there are declines in interest rates or if there is a desire or need to reduce investment risk that reduces expected returns, the discount rate and expected returns may need to be reduced further. The charts on the following pages show the impact on projected future funded status and contribution amounts if the discount rate and expected returns were reduced by 100 basis points to 6.00% beginning with the July 1, 2024 valuation.

This scenario results in Statutory contributions that are about 13% higher for State and 32% higher for Local employers in FYE 2037 when compared to the baseline projection. Again, the contributions for Local employers are more sensitive to assumption changes because of the funded status at the time of the change.

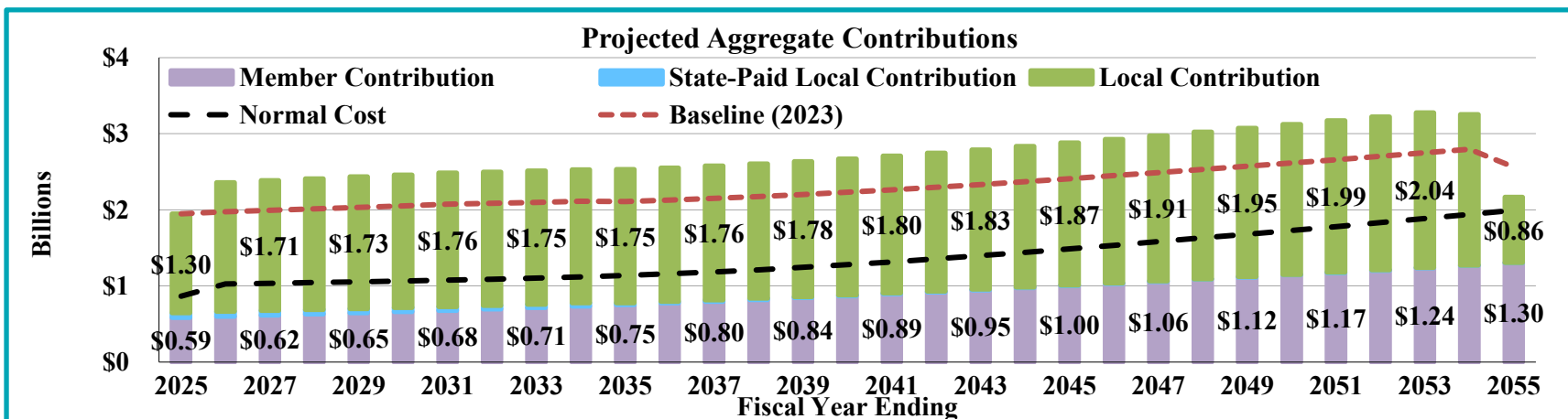
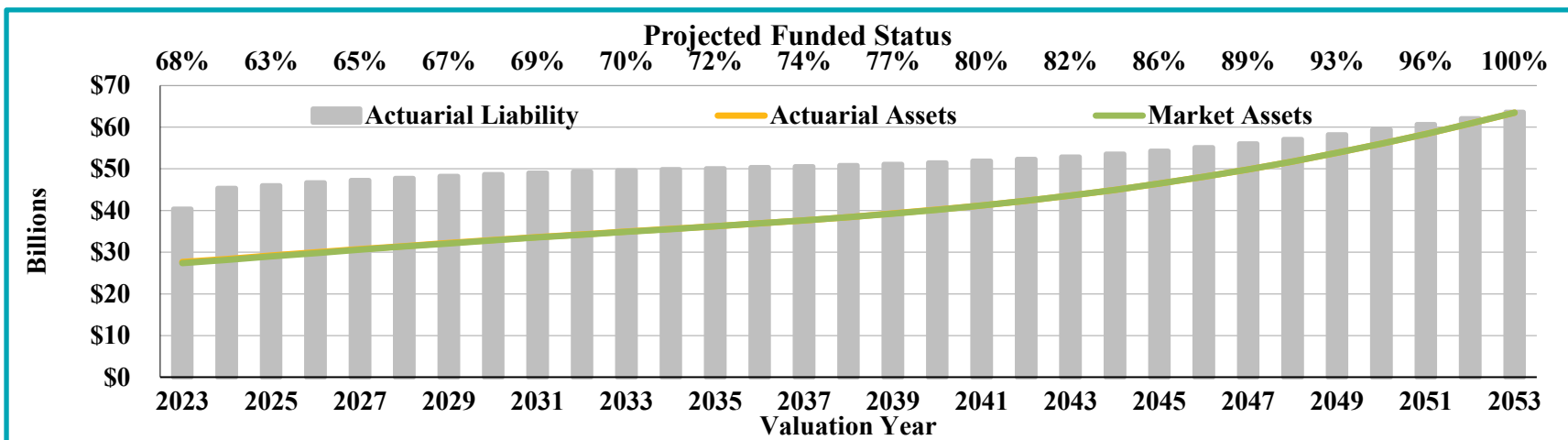
6.00% Discount Rate and Investment Return Assumption Effective July 1, 2024

State



6.00% Discount Rate and Investment Return Assumption Effective July 1, 2024

Local Employers



Low-Default-Risk Obligation Measure (LDROM)

The System invests in a diversified portfolio to achieve the best possible return at an acceptable level of risk. The lowest investment risk portfolio for a pension plan would be composed entirely of low-default-risk fixed income securities whose cash flows approximately match the cash flow needs of the System. However, such a portfolio would have a lower expected rate of return (4.92% as of June 30, 2023) than the diversified portfolio (7.00%). Low-Default-Risk Obligation Measure (LDROM) represents what the Actuarial Liability would be if the System's assets were invested in such a portfolio. As of June 30, 2023 the LDROM is \$86.6 billion¹ compared to the Actuarial Liability of \$69.1 billion for the System in total (State and Local employers). The \$17.5 billion difference can be viewed as the expected savings from taking on the investment risk of the diversified portfolio. Alternatively, it can be viewed as the potential cost of eliminating the investment risk of the non-fixed income allocations of the diversified portfolio.

If the System were to invest in the LDROM portfolio, the funded ratios would decrease, and contribution requirements would increase for the State and Local employers. The security of the System's pension benefits relies on the current assets, future investment earnings, and the ability and willingness of State and Local employers to make future contributions. If the System were to invest in the LDROM portfolio, it would not change the current assets, but it would reduce future investment earnings and increase future State and Local employer contributions. However, the range of future investment earnings and future contributions would narrow significantly.

¹ Based on a discount rate equal to the June 30, 2023 FTSE Pension Liability Index of 4.92%, and all other assumptions and methods as used to calculate the Actuarial Liability

Contribution Risk – Sensitivity Testing

The amortization method used to determine the Statutory contributions is designed to collect more than the tread water level and, therefore, gradually pay down the UAL. However, prior to FYE 2022, State appropriated contributions had consistently been less than the Statutory contributions and the tread water level, increasing the State's UAL by \$3,163.5 million over the last ten years. Since FYE 2022, the State appropriated contributions have been greater than or equal to the Statutory contribution. Over the same period, the Local employers' UAL decreased by \$259.0 million due to contributions mostly greater than the tread water level. Local employers generally made their portion of the Statutory contributions, and while the State appropriated less than the required amount, the State-paid Local contributions were only a small portion of the Local employers' Statutory contributions. The baseline projections assume the State and Local employers contribute 100% of the Statutory amount each year. State and Local employer contributions are projected to be greater than the tread water level for the entire period.

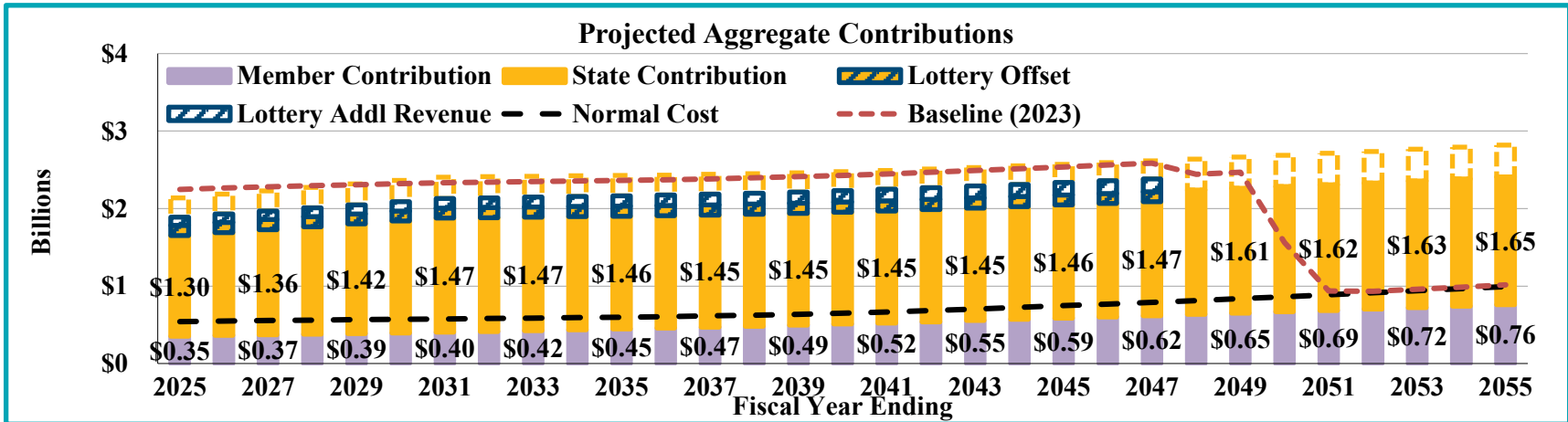
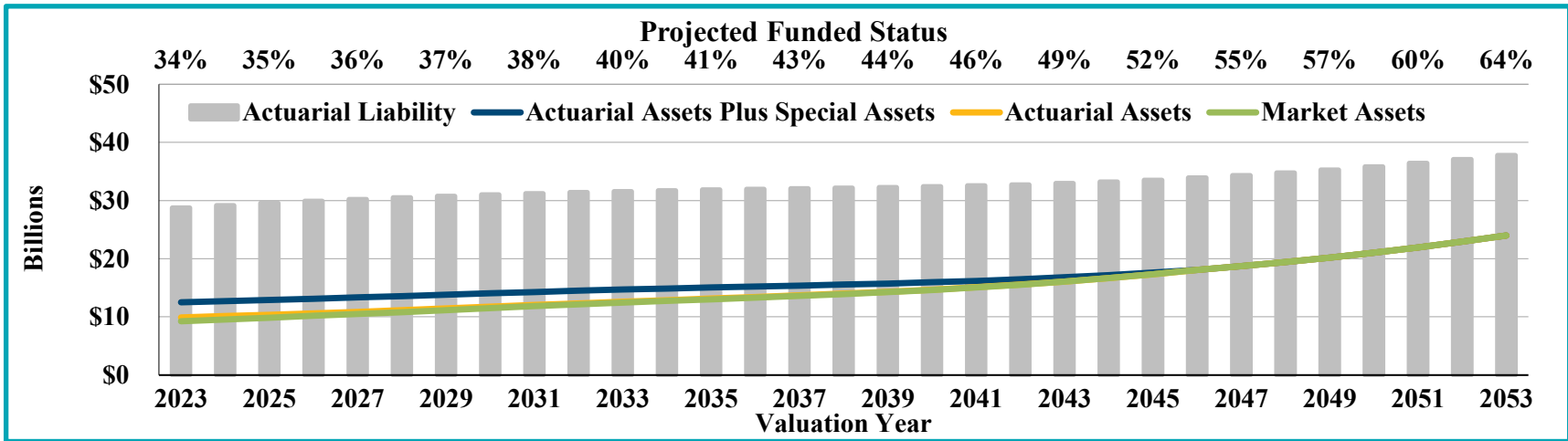
Contribution risk is the potential for actual future contributions to deviate from expected future contributions. The charts on the following pages illustrate the impact on projected future funded status and contribution amounts if the State appropriation declines to 80% of the Statutory contribution for each year in the future, rather than remaining at 100% of the Statutory contribution. We assume that Local employers will continue to contribute 100% of the Statutory contribution as they have done historically, with the exception of FYE 2021 and FYE 2022 when the impact of assumption changes from an experience study was phased-in.

The gold and green outlines in the bottom graphs show the full Statutory contributions for the State and Local employers, respectively, with the shaded portion showing the anticipated appropriated amount.

This scenario shows both the Statutory and appropriated State contributions gradually increasing over time. The State Statutory contributions quickly exceed the baseline. The appropriated State contributions are below the baseline initially and eventually grow to reach a similar level, but with a lower funded ratio. The funded ratio at the end of the projection period is 64% compared to 100% under the baseline projections for the State portion. The projection of the Local employers' portion of the System changes relatively little from the baseline because the State-paid Local obligation represents a relatively small portion of the total contributions for Local employers.

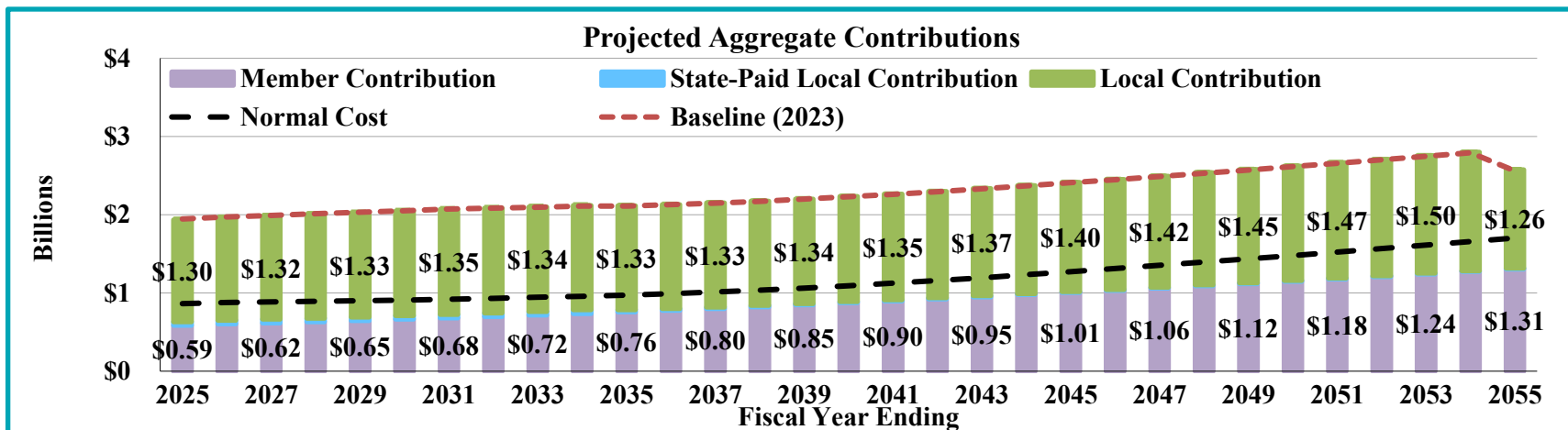
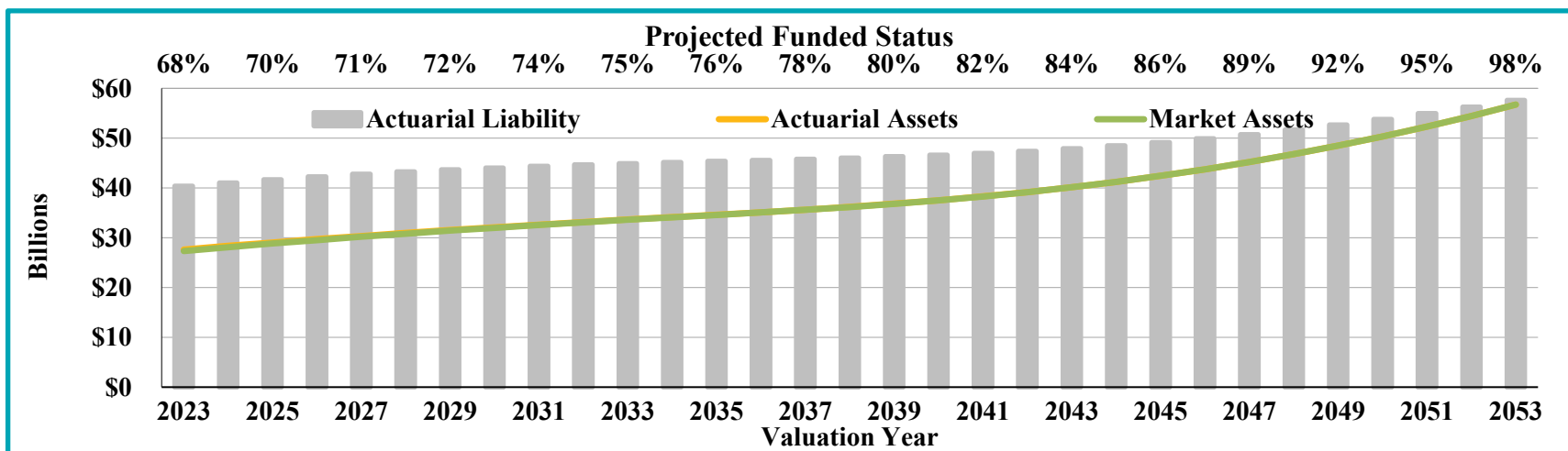
State Appropriates 80% of Statutory Contribution for Fiscal Year Ending June 30, 2025 and Thereafter

State



State Appropriates 80% of Statutory Contribution for Fiscal Year Ending June 30, 2025 and Thereafter

Local Employers



More Detailed Assessment

While a more detailed assessment is always valuable to enhance the understanding of the risks identified above, we believe the scenarios illustrated above cover the primary risks facing the System at this time. We would be happy to provide the Board with a more in-depth analysis at their request.

The System uses and discloses two different asset measurements for funding, which are presented in this section of the report: market value and actuarial value of assets. The market value represents the value of the assets if they were liquidated on the valuation date. The actuarial value of assets is a value that smooths annual investment returns to reduce annual investment volatility and is used in determining contribution levels. In compliance with New Jersey Statute, the method used to calculate the actuarial value of assets recognizes 20% of the difference between the market value of assets and the expected actuarial value of assets each year.

Actuarial Standards of Practice (ASOP) No. 44 states that the asset valuation method should produce an actuarial value of assets that falls within a reasonable range of market value, recognizes the difference between the market value and actuarial value of assets within a reasonably short period of time, and is likely to produce actuarial values that are sometimes greater than and sometimes less than the corresponding market values. The asset method required under N. J. Statute does not meet the requirements of ASOP No. 44 because this method has produced actuarial asset values which have consistently been greater than the market asset values and recognizes investment losses slowly over time. Additionally, the method may produce an actuarial value of assets that falls outside of what is generally considered to be a reasonable range of the market value.

On the following pages, we present detailed information on the System's assets:

- Disclosure of assets at July 1, 2022 and July 1, 2023,
- Statement of cash flows during the year,
- Development of the actuarial value of assets,
- Disclosure of investment performance for the year,
- Development of the Special Asset Value (SAV), and
- Development of the Actuarial Balance Sheet.

Disclosure

The market value of assets represents a “snap-shot” value as of the last day of the fiscal year that 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 value of the investments. Because these fluctuations would cause volatility in employer contributions, an actuarial value of assets is developed. Table III-1 on the following page presents the market value as of June 30, 2022 and June 30, 2023. Table III-2 presents the System's net cash flows from June 30, 2022 to June 30, 2023. Table III-3 presents the development of the Actuarial Value of Assets as of July 1, 2023. Tables III-4 and III-5 show the market and actuarial value of assets historical investment returns compared to the assumed return for each year, as well as the cumulative returns over various periods and durations of time.

**Table III-1
Statement of Assets at Market Value**

	June 30, 2023	June 30, 2022
Assets		
Cash	\$ 383,839,905	\$ 8,336,933
Investment Holdings	33,054,506,783	31,201,550,223
Employers' Contributions Receivable - Chapter 19	2,910,384	10,055,321
Employers' Contributions Receivable - State	0	750,617
Employers' Contributions Receivable - NCGI State	5,142,878	5,315,770
Employers' Contributions Receivable - NCGI Local Employers	56,424,620	54,603,937
Employers' Contributions Receivable - Lottery	27,115,800	26,485,200
Employers' Contributions Receivable - Local Employers	1,291,151,013	1,214,657,728
Employers' Contributions Receivable - Local Employers ERI	15,455,009	17,579,674
Employers' Contributions Receivable - Retroactive Contributions	7,451,989	6,082,664
Employers' Contributions Receivable - Delayed Enrollments	1,353,826	1,525,938
Employers' Contributions Receivable - Delayed Appropriations	2,517,271	2,521,601
Members' Contributions Receivable	62,905,922	63,633,001
Accrued Interest on Investments	332,946	22,357
Accounts Receivable - Other	5,710,289	21,464,942
Loans Receivable	545,441,085	540,443,540
Securities Lending Collateral	626,200,511	553,283,361
Total Assets	\$ 36,088,460,231	\$ 33,728,312,807
Liabilities		
Pension Payroll Payable	\$ (359,471,749)	\$ (341,951,061)
Pension Adjustment Payroll Payable	(14,699,606)	(15,456,997)
Withholdings Payable	(36,273,766)	(36,390,695)
Death Benefits Payable	(12,380,936)	(13,538,218)
Securities Lending Collateral & Rebates Payable	(625,971,066)	(552,883,466)
Administrative Expenses Payable	(26,692,669)	(24,043,034)
Accounts Payable - Other	(181,317,503)	(175,927,027)
Total Liabilities	\$ (1,256,807,295)	\$ (1,160,190,498)
Preliminary Market Value of Assets	\$ 34,831,652,936	\$ 32,568,122,309
Discounted Receivables		
State Appropriations	\$ 1,623,509,819	\$ 1,562,553,978
Expected Lottery Revenue	226,709,745	224,145,136
Adjustments to June 30, 2023 Financial Report		
Discounting of Local Employers Appropriations Receivable	(63,336,990)	(59,692,457)
Discounting of Local Employers ERI Contributions Receivable	(1,002,735)	(1,144,339)
True-up of Present Value of Chapter 19, P.L. 2009 Contributions Receivable	20,376,788	20,181,327
Exclusion of Reserve for Non-Contributory Group Insurance	(67,771,846)	(70,456,601)
Market Value of Assets	\$ 36,570,137,717	\$ 34,243,709,353

System Cash Flows as of June 30, 2023

Table III-2 Changes in Market Values for FYE June 30, 2023			
	State	Local Employers	Total
Additions			
Contributions			
Member Contributions	\$ 357,335,214	\$ 604,584,027	\$ 961,919,241
Member Transfer Contributions	12,192,438	1,035,936	13,228,374
State and Local Employers Appropriations	1,569,342,915	1,280,103,723	2,849,446,638
State Contributions on Behalf of Locals	0	61,366,036	61,366,036
State Lottery	245,934,000	0	245,934,000
NCGI Premium	45,638,724	56,423,536	102,062,260
Transfers from Other Systems	232,743	1,045,380	1,278,123
Delayed Enrollments	240,648	746,888	987,536
Delayed Appropriations	0	3,050,065	3,050,065
Retroactive Employer Contributions	0	7,305,219	7,305,219
Additional Employer Contributions	0	38,784	38,784
NCGI Adjustment	0	0	0
Total Contributions	\$ 2,230,916,682	\$ 2,015,699,594	\$ 4,246,616,276
Net Investment Income	546,916,081	2,308,223,907	2,855,139,988
Total Additions	\$ 2,777,832,763	\$ 4,323,923,501	\$ 7,101,756,264
Deductions			
Withdrawal of Member Contributions	\$ 70,377,784	\$ 101,754,220	\$ 172,132,004
Transfers to Other Systems - Member Contributions	8,556,695	13,711,092	22,267,787
Transfers to Other Systems - Employer Contributions	528,121	3,001,664	3,529,785
Adjustments to Member Account Loans	264,648	0	264,648
Retirement Allowances	1,907,148,237	2,461,970,693	4,369,118,930
Pension Adjustment Benefits	66,231,212	75,861,706	142,092,918
NGCI Premium	45,638,724	64,040,253	109,678,977
Administrative Expenses	5,911,110	13,229,478	19,140,588
Total Deductions	\$ 2,104,656,531	\$ 2,733,569,106	\$ 4,838,225,637
Net Increase/(Decrease)	\$ 673,176,232	\$ 1,590,354,395	\$ 2,263,530,627
Preliminary Market Value of Assets Beginning of Year	\$ 6,758,038,264	\$ 25,810,084,045	\$ 32,568,122,309
Preliminary Market Value of Assets End of Year	\$ 7,431,214,496	\$ 27,400,438,440	\$ 34,831,652,936
Discounted Receivables			
State Appropriations	\$ 1,564,607,474	58,902,345	\$ 1,623,509,819
Expected Lottery Revenue	226,709,745	0	226,709,745
Adjustments to June 30, 2023 Financial Report			
Discounting of Local Employers Appropriations Receivable	0	(63,336,990)	(63,336,990)
Discounting of Local Employers ERI Contributions Receivable	0	(1,002,735)	(1,002,735)
True-up of Present Value of Chapter 19, P.L. 2009 Contributions Receivable	0	20,376,788	20,376,788
Exclusion of Reserve for Non-Contributory Group Insurance	0	(67,771,846)	(67,771,846)
Market Value of Assets End of Year	\$ 9,222,531,715	\$ 27,347,606,002	\$ 36,570,137,717
Approximate Return	8.25%	9.68%	9.37%

Actuarial Value of Assets (AVA)

To determine on-going funding requirements, most pension systems utilize an actuarial value of assets that differs from the market value of assets. The actuarial value of assets represents an asset value based on averaging or smoothing year-to-year market value returns for purposes of reducing contribution volatility. Each year, 20% of the difference between the market value of assets and the expected actuarial value of assets is added to the expected actuarial value of assets. This method is prescribed by N. J. Statute.

Table III-3 Development of Actuarial Value of Assets as of June 30, 2023			
	State	Local Employers	Total
1. Preliminary Actuarial Value of Assets as of July 1, 2022 ¹	\$ 7,626,947,138	\$ 26,743,964,730	\$ 34,370,911,868
2. Net Cash Flow excluding Investment Income ²	126,260,151	(708,937,737)	(582,677,586)
3. Expected Investment Income ³	<u>524,847,275</u>	<u>1,733,653,591</u>	<u>2,258,500,866</u>
4. Expected Actuarial Value of Assets as of July 1, 2023: [1 + 2 + 3]	\$ 8,278,054,564	\$ 27,768,680,584	\$ 36,046,735,148
5. Preliminary Market Value of Assets as of June 30, 2023 ⁴	\$ 7,431,214,496	\$ 27,405,226,246	\$ 34,836,440,742
6. 20% of Difference from MVA [20% * (5 - 4)]	\$ (169,368,014)	\$ (72,690,868)	\$ (242,058,882)
7. Preliminary Actuarial Value of Assets as of July 1, 2023: [4 + 6]	\$ 8,108,686,550	\$ 27,695,989,716	\$ 35,804,676,266
8. Discounted Receivable Contributions			
State Appropriations	\$ 1,564,607,474	\$ 58,902,345	\$ 1,623,509,819
Expected Lottery Revenue	226,709,745	0	226,709,745
Chapter 19, P.L. 2009 Contributions for FYE 2025 and Later	<u>0</u>	<u>15,016,751</u>	<u>15,016,751</u>
Total	\$ 1,791,317,219	\$ 73,919,096	\$ 1,865,236,315
9. Adjustments			
Discounting of Local Employers Appropriations Receivable	\$ 0	\$ (63,336,990)	\$ (63,336,990)
Discounting of Chapter 19, P.L. 2009 Contributions Receivable for FYE 2024	0	(430,504)	(430,504)
Exclusion of Reserve for Non-Contributory Group Insurance	<u>0</u>	<u>(67,771,846)</u>	<u>(67,771,846)</u>
Total	\$ 0	\$ (131,539,340)	\$ (131,539,340)
10. Actuarial Value of Assets as of July 1, 2023: [7 + 8 + 9]	\$ 9,900,003,769	\$ 27,638,369,472	\$ 37,538,373,241
11. Rate of Return on Actuarial Value of Assets	4.74%	6.71%	6.25%
12. Ratio of Actuarial Value of Assets to Market Value of Assets	107.3%	101.1%	102.6%

¹ Includes Local appropriations receivable from June 30, 2022 Financial Report but excludes discounted State receivable contributions, present value of Chapter 19, P.L. 2009 contributions receivable and other adjustments.

² Amount for Local Employers includes expected Chapter 19, P.L. 2009 payments for FYE 2024 of \$8,700,925 plus lump sum payoffs of the present value in FYE 2023 of \$230,850.

³ Refer to Appendix B, Actuarial Methods, for details on the assumed timing of contributions.

⁴ Amount for Local Employers includes adjustments to June 30, 2023 Financial Report for discounting of Local Employers ERI contributions receivable of \$(1,002,735) and true-up of Chapter 19, P.L. 2009 contributions receivable for FYE 2024 of \$5,790,541.

Investment Performance

In reviewing the investment performance for the System's assets in aggregate, the market value of assets rate of return was 9.37% for the year ending June 30, 2023. This is compared to an assumed return of 7.00% for the same period. On an actuarial value of assets basis, the return for FYE 2023 was 6.25%.

The calculated returns for State and Local employers' portions separately differ due to the size of cash flows relative to the beginning of year asset value, the timing of contributions, and the income allocation methodology. For the year ending June 30, 2023 the market value of assets rate of return was 8.25% and 9.68% for the State and Local employers' portions, respectively. On an actuarial value of assets basis, the return for FYE 2023 was 4.74% and 6.71% for the State and Local employers portions, respectively.

In Table III-4 we show the historical asset returns compared to the investment return assumption, beginning with the year ending on June 30, 2000. As of July 1, 1999, the actuarial value of assets was reset to equal the market value of assets.

**Table III-4
Annual Rates of Return
Total System**

Year Ended June 30	Investment Return Assumption	Market Value¹	Actuarial Value²
2000	8.75%	11.86%	9.29%
2001	8.75%	-9.80%	5.50%
2002	8.75%	-8.61%	3.07%
2003	8.75%	3.31%	2.93%
2004	8.75%	14.16%	4.44%
2005	8.25%	8.77%	4.74%
2006	8.25%	9.79%	5.78%
2007	8.25%	17.14%	7.96%
2008	8.25%	-2.61%	6.83%
2009	8.25%	-15.49%	3.24%
2010	8.25%	13.34%	3.16%
2011	8.25%	17.97%	5.26%
2012	7.95%	2.47%	4.58%
2013	7.90%	11.72%	5.52%
2014	7.90%	16.79%	7.60%
2015	7.90%	4.08%	5.94%
2016	7.90%	-1.15%	4.95%
2017	7.65%	12.71%	5.99%
2018	7.50%	9.17%	6.49%
2019	7.50%	6.33%	6.41%
2020	7.30%	1.64%	5.30%
2021	7.30%	28.50%	9.51%
2022	7.00%	-7.47%	5.60%
2023	7.00%	9.37%	6.25%

¹Beginning in 2017, the returns are from the System’s Actuarial Valuation Report. Since the prior actuary did not calculate a market value return prior to 2017, earlier returns are from other sources. Returns for 2014 through 2016 are money-weighted returns for the Pension Funds from the DPB’s Comprehensive Annual Financial Reports. Returns for 2000 through 2013 are returns for the Pension Funds from the New Jersey State Investment Council Annual Reports.

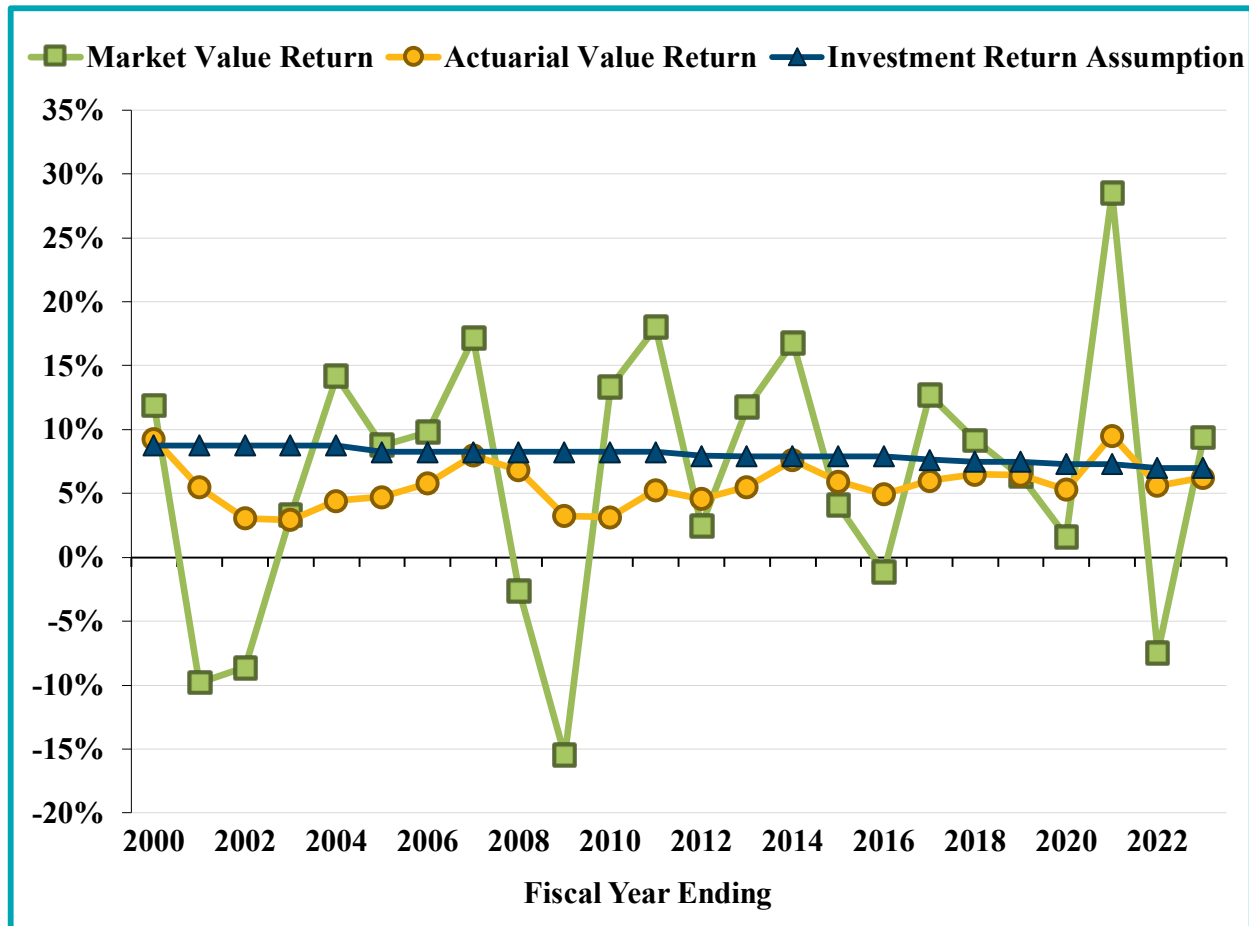
²The prior actuary did not report an actuarial value return in the year 2000. The return shown was calculated based on available information.

Additionally, we show the compound annualized rates of return for various periods since the July 1, 1999 AVA reset in the following table. On a cumulative basis, there are periods where the market value return significantly exceeds the actuarial value return. This is due to the recognition of market value losses from earlier years in the actuarial value. We present compound annualized rates of return over consecutive five-year periods to help illustrate this.

Table III-5 Compound Annualized Rates of Returns			
Period	Investment Return		
	Assumption	Market Value	Actuarial Value
Since July 1, 1999	8.01%	5.93%	5.67%
20-Year	7.86%	7.41%	5.77%
15-Year	7.70%	6.81%	5.71%
10-Year	7.49%	7.59%	6.40%
5-Year	7.22%	7.04%	6.60%
Consecutive Five-Year Periods			
2000 to 2004	8.75%	1.69%	5.02%
2005 to 2009	8.25%	2.86%	5.70%
2010 to 2014	8.05%	12.32%	5.21%
2015 to 2019	7.69%	6.12%	5.96%
2020 to 2023 (Four-Year)	7.15%	7.22%	6.65%

The annual rates of return from Table III-4 are presented in the following graph. The market value returns (green) show significant volatility with years above and below the investment return assumption (blue). The largest deviations from expectations are losses in 2001 and 2002 and again in 2008 and 2009, as well as the mostly offsetting gain and loss in 2021 and 2022, respectively. The actuarial value returns (yellow) follow the direction of market value returns, but much more gradually as gains and losses are recognized over time.

For nearly the entire period, the actuarial value returns fall short of the investment return assumption and result in AVA losses and UAL increases. When the actuarial return approaches the assumption, the MVA is closing in on the AVA with the possibility of AVA gains in the near future. However, two such instances (2007 and 2014) are followed by market value losses (large, sharp losses in 2008-2009 and small cumulative losses in 2015-2020). In contrast, the 2021 market return of 28.50% was sufficiently large so that the market value of assets exceeded the actuarial value of assets and the actuarial value return was slightly greater than the investment return assumption, resulting in an actuarial asset gain for the July 1, 2021 valuation. However, the significant negative market return in 2022 again resulted in actuarial losses in 2022 and 2023 as the investment loss is gradually recognized in the actuarial returns.



Development of Special Asset Value (SAV)

Under Chapter 98, P.L. 2017, the Lottery Enterprise Contribution Act, PERS receives 21.02% of the proceeds of the Lottery Enterprise for a term of 30 years. The value of the Lottery Enterprise is classified as a special asset and is included in the State’s actuarial value of assets used for the purpose of calculating the target funding ratio under Chapter 78, P.L. 2010. The special asset value is the present value of remaining lottery contributions to the retirement systems.

Table III-6 shows the development of the special asset value as of July 1, 2023. The depreciated value is a roll forward of the Lottery Enterprise Value from the appraisal date.

Table III-6		
Development of Special Asset Value as of July 1, 2023		
1. Lottery Enterprise Value as of Appraisal Date of June 30, 2017 ¹	\$	13,535,103,380
2. Depreciated Value as of end of Valuation Year at June 30, 2024 ¹	\$	13,247,811,507
3. Discounted Value as of July 1, 2023 at 7.0%	\$	12,381,132,250
4. Allocation to PERS		21.02%
5. Special Asset Value as of July 1, 2023	\$	2,602,513,999

¹ Provided by the Division of Pensions and Benefits

Actuarial Balance Sheet

Table III-7			
Actuarial Balance Sheet as of July 1, 2023			
	State	Local Employers	Total
Assets			
<u>Retirement Fund Reserve (RFR)</u>			
Credited to Fund with Distribution of Income	\$ 16,967,506,146	\$ 23,753,669,359	\$ 40,721,175,505
Add/(Deduct) reserve transferable from/(to) ECR ¹	1,472,997,883	783,706,362	2,256,704,245
Adjusted RFR ²	<u>\$ 18,440,504,029</u>	<u>\$ 24,537,375,721</u> ³	<u>\$ 42,977,879,750</u>
Members' Contributions Reserve (MCR) ²	\$ 3,418,583,436	\$ 5,516,660,540	\$ 8,935,243,976
Accumulative Interest Reserve (AIR) with Distribution of Income ²	\$ 3,318,675,977	\$ 4,897,345,300	\$ 8,216,021,277
<u>Employers' Contributions Reserve (ECR)</u>			
Credited to Fund with Distribution of Income	\$ (13,804,761,790)	\$ (6,529,305,727)	\$ (20,334,067,517)
Add/(Deduct) reserve transferable from/(to) RFR	(1,472,997,883)	(783,706,362)	(2,256,704,245)
Add/(Deduct) reserve transferable from/(to) BEF	0	0	0
Adjusted ECR ²	<u>\$ (15,277,759,673)</u>	<u>\$ (7,313,012,089)</u>	<u>\$ (22,590,771,762)</u>
<u>Benefit Enhancement Fund (BEF)</u>			
Credited to Fund with Distribution of Income	\$ 0	\$ 0	\$ 0
Add/(Deduct) reserve transferable from/(to) ECR	0	0	0
Adjusted BEF ²	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>
Special Asset Value as of July 1, 2023	\$ 2,602,513,999	\$ 0	\$ 2,602,513,999
Present Value of Prospective Contributions by State and Local Employers to ECR	\$ 16,260,179,053	\$ 12,728,240,608	\$ 28,988,419,661
Assets Allocated to the BEF	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>
Total Assets	\$ 28,762,696,821	\$ 40,366,610,080	\$ 69,129,306,901
Liabilities			
<u>Payable from RFR</u>			
Retirees, Disableds, and Beneficiaries currently receiving benefits	\$ 18,440,504,029	\$ 24,537,375,721 ³	\$ 42,977,879,750
<u>Payable from MCR, AIR and ECR</u>			
Actives and Deferred Vesteds due a future benefit	\$ 10,322,192,792	\$ 15,829,234,359	\$ 26,151,427,151
Total Liabilities	\$ 28,762,696,821	\$ 40,366,610,080	\$ 69,129,306,901

¹ It is recommended that the RFR be put into balance each year by transferring assets from the ECR to the RFR so that the RFR will contain sufficient assets to cover the retiree and beneficiary liability.

² Actuarial Value of Assets equals RFR + MCR + AIR + ECR + BEF.

³ Includes the present value of ERI payments of \$13,541,237.

In this section, we present detailed information on the liabilities of the System, including:

- Disclosure of liabilities at July 1, 2022 and July 1, 2023,
- Active liabilities broken down by Tier, and
- The development of the actuarial gain and loss.

Disclosure

The Actuarial Liability is used for determining employer contributions. For PERS, the funding method employed is the Projected Unit Credit (PUC) Actuarial Cost Method. Under this funding method, the actuarial liability is calculated as the actuarial present value of the projected benefits allocated to periods prior to the valuation year.

This liability is determined for funding purposes and is not appropriate for measuring the cost of settling plan liabilities by purchasing annuities or paying lump sums.

Table IV-1 shows the actuarial liability, unfunded actuarial liability and funded ratio as of July 1, 2023 for the System. The unfunded actuarial liability (UAL) and funded ratio based on the actuarial value of assets plus the special asset value (AVA + SAV) are used to compare against the “target funded ratio” and is different from the UAL used in determining Statutory contributions which is based on just the actuarial value of assets (AVA).

**Table IV-1
Disclosure of Liabilities**

	State	Local Employers	Total
Actuarial Liability			
Contributing Actives	\$ 9,736,931,971	\$ 14,781,307,811	\$ 24,518,239,782
Non-Contributing Members	562,974,359	1,000,664,301	1,563,638,660
Deferred Beneficiaries	1,027,916	2,816,400	3,844,316
Deferred Vesteds	21,258,546	44,445,847	65,704,393
Retirees	16,705,943,499	21,833,369,974	38,539,313,473
Disabled	947,108,016	1,362,939,281	2,310,047,297
Beneficiaries	787,452,514	1,341,066,466	2,128,518,980
Total Actuarial Liability	\$ 28,762,696,821	\$ 40,366,610,080	\$ 69,129,306,901
Actuarial Value of Assets	\$ 9,900,003,769	\$ 27,638,369,472	\$ 37,538,373,241
Unfunded Actuarial Liability/(Surplus)	\$ 18,862,693,052	\$ 12,728,240,608	\$ 31,590,933,660
Funded Ratio (AVA)	34.42%	68.47%	54.30%
Actuarial Value of Assets + Special Asset Value	\$ 12,502,517,768	\$ 27,638,369,472	\$ 40,140,887,240
Unfunded Actuarial Liability/(Surplus) (AVA + SAV)	\$ 16,260,179,053	\$ 12,728,240,608	\$ 28,988,419,661
	43.47%	68.47%	58.07%

¹ Includes the present value of ERI payments of \$13,541,237.

Table IV-2 and Table IV-3 show the number of members, total appropriation salary, actuarial liability, and gross normal cost of contributing active members by Tier for State and Local employers as of July 1, 2023.

Table IV-2 Contributing Active Liabilities by Tier State				
	Number of Members	Appropriation Payroll¹	Actuarial Liability	Gross Normal Cost
Tier 1	27,761	\$ 2,363,392,164	\$ 8,219,638,240	\$ 317,531,640
Tier 2	2,437	183,205,851	337,168,620	21,231,200
Tier 3	1,671	124,583,213	200,566,611	13,940,275
Tier 4	1,193	94,758,741	116,172,422	8,838,672
Tier 5	30,986	2,003,322,864	863,386,078	145,067,878
Total	64,048	\$ 4,769,262,833	\$ 9,736,931,971	\$ 506,609,665

Table IV-3 Contributing Active Liabilities by Tier Local Employers				
	Number of Members	Appropriation Payroll¹	Actuarial Liability	Gross Normal Cost
Tier 1	52,920	\$ 3,437,443,824	\$ 12,043,949,414	\$ 450,230,466
Tier 2	6,181	335,532,812	637,583,583	39,416,630
Tier 3	3,889	224,506,434	369,861,822	25,291,617
Tier 4	1,806	118,915,864	148,600,489	11,173,635
Tier 5	75,754	3,836,498,154	1,581,312,503	282,422,160
Total	140,550	\$ 7,952,897,088	\$ 14,781,307,811	\$ 808,534,508

¹ Tier 1 members limited to the 401(a)(17) pay limit. Other tiers limited to the Social Security Wage Base.

Table IV-4 and Table IV-5 show the number of members, actuarial liability, and gross normal cost of non-contributing members by Tier for State and Local employers as of July 1, 2023. The gross normal cost is zero for non-contributing members because these members are no longer accruing additional annual benefits.

Table IV-4			
Non-Contributing Member Liabilities by Tier			
State			
	Number of Members	Actuarial Liability	Gross Normal Cost
Tier 1	4,855	\$ 462,142,166	\$ 0
Tier 2	375	21,609,889	0
Tier 3	244	13,775,836	0
Tier 4	129	6,871,125	0
Tier 5	4,916	58,575,343	0
Total	10,519	\$ 562,974,359	\$ 0

Table IV-5			
Non-Contributing Member Liabilities by Tier			
Local Employers			
	Number of Members	Actuarial Liability	Gross Normal Cost
Tier 1	13,223	\$ 805,068,758	\$ 0
Tier 2	1,279	41,290,967	0
Tier 3	732	26,207,942	0
Tier 4	230	9,941,603	0
Tier 5	13,743	118,155,031	0
Total	29,207	\$ 1,000,664,301	\$ 0

Tables IV-6 and IV-7 present the change in the actuarial liabilities, actuarial assets, and unfunded actuarial liability during the plan year for State and Local employers. In general, the unfunded actuarial liability (UAL) of any retirement system is expected to change at each subsequent valuation for a variety of reasons. In each valuation, we report on those elements of change in the UAL which are of particular significance, potentially affecting the long-term financial outlook of the System.

For this purpose, we focus on the UAL without considering the SAV because this UAL is used to determine the Statutory contribution. The UAL is also prior to any adjustments for State-paid Local obligations.

**Table IV-6
Development of 2023 Experience (Gain)/Loss
State**

	Actuarial Liability	Actuarial Value of Assets	Unfunded Actuarial Liability/(Surplus)
1. Value as of July 1, 2022	\$ 28,185,048,883	\$ (9,354,810,560)	\$ 18,830,238,323
2. Additions			
Normal Cost	\$ 501,117,218	\$ 0	\$ 501,117,218
Statutory State Contributions	0	(1,761,975,383)	(1,761,975,383)
Expected Member Contributions	0	(334,910,677)	(334,910,677)
Total Additions	\$ 501,117,218	\$ (2,096,886,060)	\$ (1,595,768,842)
3. Deductions			
Benefit Payments	\$ (2,044,021,881)	\$ 2,044,021,881	\$ 0
Expected Administrative Expenses	0	0	0
Total Deductions	\$ (2,044,021,881)	\$ 2,044,021,881	\$ 0
4. Net Transfers from Other Systems			
State Contributions	\$ (295,378)	\$ 295,378	\$ 0
Member Contributions	3,635,743	(3,635,743)	0
Total Net Transfers	\$ 3,340,365	\$ (3,340,365)	\$ 0
5. Expected Interest	\$ 1,937,815,769	\$ (596,144,502)	\$ 1,341,671,267
6. Expected Value as of July 1, 2023: [1 + 2 + 3 + 4 + 5]	\$ 28,583,300,354	\$(10,007,159,606)	\$ 18,576,140,748
7. Other Changes			
Appropriation Adjustment	\$ 0	\$ (978,980)	\$ (978,980)
Contribution Timing	0	75,089,645	75,089,645
Actual Lottery Revenue	0	(118,992,293)	(118,992,293)
Other Employer Contributions	0	(248,928)	(248,928)
Actual Member Contributions	0	(23,196,121)	(23,196,121)
Change in Methods/Assumptions	0	0	0
Change in Benefits/Policy	0	0	0
Total Other Changes	\$ 0	\$ (68,326,677)	\$ (68,326,677)
8. Expected value after changes: [6 + 7]	\$ 28,583,300,354	\$(10,075,486,283)	\$ 18,507,814,071
9. Actual Value as of July 1, 2023	\$ 28,762,696,821	\$ (9,900,003,769)	\$ 18,862,693,052
10. Actuarial (Gain)/Loss: [9 - 8]	\$ 179,396,467	\$ 175,482,514	\$ 354,878,981

**Table IV-7
Development of 2023 Experience (Gain)/Loss
Local Employers**

	Actuarial Liability	Actuarial Value of Assets	Unfunded Actuarial Liability/(Surplus)
1. Value as of July 1, 2022	\$ 39,317,139,093	\$ (26,694,121,356)	\$ 12,623,017,737
2. Additions			
Normal Cost	\$ 787,008,136	\$ 0	\$ 787,008,136
Statutory Contributions	0	(1,341,539,279)	(1,341,539,279)
Expected Member Contributions	0	(541,122,333)	(541,122,333)
Total Additions	\$ 787,008,136	\$ (1,882,661,612)	\$ (1,095,653,476)
3. Deductions			
Benefit Payments	\$ (2,639,586,619)	\$ 2,639,586,619	\$ 0
Expected Administrative Expenses	0	0	0
Total Deductions	\$ (2,639,586,619)	\$ 2,639,586,619	\$ 0
4. Net Transfers from Other Systems			
State Contributions	\$ (1,956,284)	\$ 1,956,284	\$ 0
Member Contributions	(12,675,156)	12,675,156	0
Total Net Transfers	\$ (14,631,440)	\$ 14,631,440	\$ 0
5. Expected Interest	\$ 2,715,963,856	\$ (1,795,881,006)	\$ 920,082,850
6. Expected Value as of July 1, 2023: [1 + 2 + 3 + 4 + 5]	\$ 40,165,893,026	\$ (27,718,445,915)	\$ 12,447,447,111
7. Other Changes			
Appropriation Adjustment	\$ 0	\$ 0	\$ 0
Contribution Timing	0	65,870,201	65,870,201
Other Employer Contributions	0	(11,524,294)	(11,524,294)
Actual Member Contributions	0	(65,645,287)	(65,645,287)
ERI and Ch. 19 Receivables	0	(94,036)	(94,036)
Interest on NCGI Cash Flows	0	5,094,313	5,094,313
Change in Methods/Assumptions	0	0	0
Change in Benefits/Policy	0	0	0
Total Other Changes	\$ 0	\$ (6,299,103)	\$ (6,299,103)
8. Expected value after changes: [6 + 7]	\$ 40,165,893,026	\$ (27,724,745,018)	\$ 12,441,148,008
9. Actual Value as of July 1, 2023	\$ 40,366,610,080	\$ (27,638,369,472)	\$ 12,728,240,608
10. Actuarial (Gain)/Loss: [9 - 8]	\$ 200,717,054	\$ 86,375,546	\$ 287,092,600

Table IV-8 shows the components of the Actuarial (gain)/loss for the State.

Table IV-8 Actuarial (Gain)/Loss Analysis State		
Components	July 1, 2023	July 1, 2022
Actuarial Value of Assets		
Investment Return	\$ 169,368,014	\$ 217,227,219
Administrative Expenses	6,114,500	5,793,184
Total	<u>\$ 175,482,514</u>	<u>\$ 223,020,403</u>
Actuarial Liability		
Salary Increases	\$ 50,344,329	\$ 215,714,064
New Entrants	21,103,709	18,564,591
Benefit Payments ¹	79,296,695	79,472,158
Demographic Experience and Census Data Updates		
Contributing Actives and Non-Contributing Members	42,320,308	87,827,540
Inactives	<u>(10,213,274)</u>	<u>(24,150,594)</u>
Sub-Total	\$ 182,851,767	\$ 377,427,759
Impact of Net Transfers from Other Systems	<u>(3,455,300)</u>	<u>100,242</u>
Total	<u>\$ 179,396,467</u>	<u>\$ 377,528,001</u>
Actuarial (Gain)/Loss	\$ 354,878,981	\$ 600,548,404

¹ This loss is due to the allocation to the State reserve of benefit payments associated with Local employer members who worked for more than one employer. This administrative practice was identified during the 2021 Experience Study process, and we first quantified the impact beginning with the July 1, 2022 valuation. We anticipate a benefit payment loss to occur each year in the future for the State portion unless the administrative practice is revised, or we are directed to allocate the liabilities associated with these members to the State and assets associated with these members are transferred from the Local employers' reserve to the State reserve.

Table IV-9 shows the components of the Actuarial (gain)/loss for Local employers.

Table IV-9 Actuarial (Gain)/Loss Analysis Local Employers		
Components	July 1, 2023	July 1, 2022
Actuarial Value of Assets		
Investment Return	\$ 72,690,868	\$ 234,078,422
Administrative Expenses	13,684,678	12,857,414
Total	\$ 86,375,546	\$ 246,935,836
Actuarial Liability		
Salary Increases	\$ 196,833,629	\$ 217,223,713
New Entrants	46,754,164	34,743,660
Benefit Payments ¹	(79,296,695)	(79,472,158)
Demographic Experience and Census Data Updates		
Contributing Actives and Non-Contributing Members	72,005,111	80,522,081
Inactives	(50,714,034)	(66,487,887)
Sub-Total	\$ 185,582,175	\$ 186,529,409
Impact of Net Transfers from Other Systems	15,134,879	16,010,845
Total	\$ 200,717,054	\$ 202,540,254
Actuarial (Gain)/Loss	\$ 287,092,600	\$ 449,476,090

¹ This gain is due to the allocation to the State reserve of benefit payments associated with Local employer members who worked for more than one employer. This administrative practice was identified during the 2021 Experience Study process, and we first quantified the impact beginning with the July 1, 2022 valuation. We anticipate a benefit payment gain to occur each year in the future for the Local employers' portion unless the administrative practice is revised, or we are directed to assign the liabilities associated with these members to the State and assets associated with these members are transferred from the Local employers' reserve to the State reserve.

In the process of evaluating the financial condition of any pension plan, the actuary analyzes the assets and liabilities to determine what level (if any) of contributions is needed to properly maintain the funding status of 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.

Under the current funding policy, the State and Local employer funding requirements contain two components: the employer normal cost and an amortization of the unfunded actuarial liability (UAL). The UAL for this purpose does not include the special asset value. The funding methodology prescribed by NJ State Statute does not include a cost component for administrative expenses, and therefore administrative expenses are implicitly covered by the investment rate of return assumption.

For PERS, the funding method employed is the Projected Unit Credit (PUC) Actuarial Cost Method. Under this funding method, the actuarial liability is calculated as the actuarial present value of the projected benefits linearly allocated to periods prior to the valuation year. Refunds are valued as the Accumulated Deductions with interest as of the valuation date as provided by the Division of Pensions and Benefits. The unfunded actuarial liability is the actuarial liability on the valuation date less the actuarial value of assets.

In accordance with Chapter 78, P. L. 2011, beginning with the July 1, 2019 valuation, the unfunded actuarial liability is amortized over a closed 30-year period as a level dollar amount. As of the July 1, 2023 valuation, the remaining amortization period is 26 years.

Under Chapter 98, P.L. 2017, the Lottery Enterprise Contribution Act, PERS receives 21.02% of the proceeds of the Lottery Enterprise for a term of 30 years. As of July 1, 2023 there are 23 years remaining. The State's pension contribution shall be reduced by the product of the allocable percentage for such retirement system, the adjustment percentage for such retirement system and the special asset adjustment.

Table V-1	
Development of Lottery Enterprise Contribution Offset for Fiscal Year Ending 2025	
1. Special Asset Value Allocated to PERS as of July 1, 2023	\$ 2,602,513,999
2. 23-Year Level Dollar Amortization payable June 30, 2024	\$ 230,879,235
3. Initial Special Asset Value allocable to PERS as of July 1, 2016	\$ 2,642,897,102
4. Maximum Special Asset Adjustment: 30-Year Level-Dollar Amortization at 7.65%	\$ 227,053,417
5. Special Asset Adjustment as of June 30, 2024: [lesser of 2. and 4.]	\$ 227,053,417
6. Adjustment Percentage	57.29%
7. Funded Ratio based on Actuarial Value + Special Asset Value for Total System	58.07%
8. Applicable Adjustment Percentage: [If 7. < 50%, 6. - 3 x (50% - 7.), otherwise 6.]	57.29%
9. Lottery Enterprise Contribution Offset as of June 30, 2024: [5. x 8.]	\$ 130,078,903

Table V-2 through Table V-5 show the development of the Statutory pension contributions for the State and Local employers.

Table V-2 Development of Unfunded Actuarial Liability						
	<u>July 1, 2023 Valuation</u>			<u>July 1, 2022 Valuation</u>		
	<u>State</u>	<u>Local Employers¹</u>	<u>Total</u>	<u>State</u>	<u>Local Employers¹</u>	<u>Total</u>
1. Actuarial Liability	\$ 28,762,696,821	\$ 40,366,610,080	\$ 69,129,306,901	\$ 28,185,048,883	\$ 39,317,139,093	\$ 67,502,187,976
2. Actuarial Value of Assets²	\$ 9,900,003,769	\$ 27,638,369,472	\$ 37,538,373,241	\$ 9,354,810,560	\$ 26,694,121,356	\$ 36,048,931,916
3. Unfunded Actuarial Liability						
a. Basic ³	\$ 18,835,149,325	\$ 12,613,862,419	\$ 31,449,011,744	\$ 18,801,014,440	\$ 12,500,902,718	\$ 31,301,917,158
b. Chapter 133, P.L. 2001 ⁴	0	0	0	0	0	0
c. Chapter 366, P.L. 2001 ⁵	19,481,139	114,378,189	133,859,328	20,798,893	122,115,019	142,913,912
d. Chapter 259, P.L. 2001	3,505,822	0	3,505,822	3,742,965	0	3,742,965
e. Chapter 140, P.L. 2021	4,556,766	0	4,556,766	4,682,025	0	4,682,025
f. Total	<u>\$ 18,862,693,052</u>	<u>\$ 12,728,240,608</u>	<u>\$ 31,590,933,660</u>	<u>\$ 18,830,238,323</u>	<u>\$ 12,623,017,737</u>	<u>\$ 31,453,256,060</u>
4. Adjustment to UAL for Phase-In of State-Paid Local Obligations						
a. Chapter 133, P.L. 2001	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
b. Chapter 366, P.L. 2001	<u>114,378,189</u>	<u>(114,378,189)</u>	<u>0</u>	<u>122,115,019</u>	<u>(122,115,019)</u>	<u>0</u>
d. Total	<u>\$ 114,378,189</u>	<u>\$ (114,378,189)</u>	<u>\$ 0</u>	<u>\$ 122,115,019</u>	<u>\$ (122,115,019)</u>	<u>\$ 0</u>
5. Net UAL [3 + 4]	<u>\$ 18,977,071,241</u>	<u>\$ 12,613,862,419</u>	<u>\$ 31,590,933,660</u>	<u>\$ 18,952,353,342</u>	<u>\$ 12,500,902,718</u>	<u>\$ 31,453,256,060</u>

¹ Excludes UAL amounts due to Local employer ERI programs and Chapter 19, P.L. 2009 Local employer deferrals because receivables for these amounts are included in the AVA.

² AVA without Special Asset Value used to calculate the Statutory Contribution.

³ Includes UAL amounts due to State ERI programs.

⁴ For State, the UAL related to the phase-in of Chapter 133, P.L. 2001 normal costs is not tracked and is included with the Basic UAL.

⁵ Reflects the reopening of the Prosecutors Part of PERS based on Chapter 226, P.L. 2021.

**Table V-3
Development of Unfunded Actuarial Liability Contribution**

	July 1, 2023 Valuation			July 1, 2022 Valuation		
	Fiscal Year Ending 2025 Payment			Fiscal Year Ending 2024 Payment		
	State	Local Employers ¹	Total	State	Local Employers ¹	Total
1. Amortization of UAL						
a. Basic ²	\$ 1,488,522,979	\$ 996,860,908	\$ 2,485,383,887	\$ 1,465,877,037	\$ 974,670,080	\$ 2,440,547,117
b. Chapter 133, P.L. 2001 ³	0	0	0	0	0	0
c. Chapter 366, P.L. 2001 ⁴	2,592,220	15,219,515	17,811,735	2,592,221	15,219,515	17,811,736
d. Chapter 259, P.L. 2001 ^{4,5}	466,495	0	466,495	466,496	0	466,496
e. Chapter 140, P.L. 2021 ^{5,6}	423,364	0	423,364	423,365	0	423,365
f. Total	\$ 1,492,005,058	\$ 1,012,080,423	\$ 2,504,085,481	\$ 1,469,359,119	\$ 989,889,595	\$ 2,459,248,714
2. Adjustment to UAL Contribution for State-Paid Local Obligations						
a. Chapter 133, P.L. 2001	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
b. Chapter 366, P.L. 2001	15,219,515	(15,219,515)	0	15,219,515	(15,219,515)	0
c. Total	\$ 15,219,515	\$ (15,219,515)	\$ 0	\$ 15,219,515	\$ (15,219,515)	\$ 0
3. UAL Contribution as of Valuation Date [1 + 2]	\$ 1,507,224,573	\$ 996,860,908	\$ 2,504,085,481	\$ 1,484,578,634	\$ 974,670,080	\$ 2,459,248,714
4. Interest to the Beginning of the Fiscal Year	\$ 105,505,720	\$ 69,780,264	\$ 175,285,984	\$ 103,920,505	\$ 68,226,906	\$ 172,147,411
5. UAL Contribution as of Beginning of Fiscal Year [3 + 4]	\$ 1,612,730,293	\$ 1,066,641,172	\$ 2,679,371,465	\$ 1,588,499,139	\$ 1,042,896,986	\$ 2,631,396,125

¹ Excludes UAL amounts due to Local employer ERI programs and Chapter 19, P.L. 2009 Local employer deferrals because receivables for these amounts are included in the AVA.

² Includes UAL Amounts due to State ERI programs.

³ For State, the UAL related to the phase-in of Chapter 133, P.L. 2001 normal costs is not tracked and is included with the Basic UAL.

⁴ Amortized over closed 10 and 11 year periods in 2023 and 2022, respectively, as level dollar amounts.

⁵ Payable by the Second Injury Fund (SIF).

⁶ Amortized over closed 18 and 19 year periods in 2023 and 2022, respectively, as level dollar amounts.

Table V-4 Development of Normal Cost						
	July 1, 2023 Valuation Fiscal Year Ending 2025 Payment			July 1, 2022 Valuation Fiscal Year Ending 2024 Payment		
	State	Local Employers	Total	State	Local Employers	Total
1. Gross Normal Cost, excluding NCGI Premium						
a. Basic	\$ 477,848,692	\$ 765,847,686	\$ 1,243,696,378	\$ 471,581,004	\$ 743,033,991	\$ 1,214,614,995
b. Chapter 133, P.L. 2001	27,085,900	39,276,326	66,362,226	27,973,496	40,753,731	68,727,227
c. Chapter 366, P.L. 2001 ¹	583,624	3,410,496	3,994,120	486,395	3,220,414	3,706,809
d. Chapter 259, P.L. 2001 and Chapter 140, P.L. 2021 ²	<u>1,091,449</u>	<u>0</u>	<u>1,091,449</u>	<u>1,076,323</u>	<u>0</u>	<u>1,076,323</u>
e. Total	<u>\$ 506,609,665</u>	<u>\$ 808,534,508</u>	<u>\$ 1,315,144,173</u>	<u>\$ 501,117,218</u>	<u>\$ 787,008,136</u>	<u>\$ 1,288,125,354</u>
2. Expected Member Contributions						
a. Basic	\$ (330,575,073)	\$ (545,485,895)	\$ (876,060,968)	\$ (323,374,683)	\$ (521,345,452)	\$ (844,720,135)
b. Chapter 366, P.L. 2001 ³	<u>(430,325)</u>	<u>(2,006,589)</u>	<u>(2,436,914)</u>	<u>(395,689)</u>	<u>(1,777,252)</u>	<u>(2,172,941)</u>
c. Total	<u>\$ (331,005,398)</u>	<u>\$ (547,492,484)</u>	<u>\$ (878,497,882)</u>	<u>\$ (323,770,372)</u>	<u>\$ (523,122,704)</u>	<u>\$ (846,893,076)</u>
3. Employer Normal Cost [1 + 2]	<u>\$ 175,604,267</u>	<u>\$ 261,042,024</u>	<u>\$ 436,646,291</u>	<u>\$ 177,346,846</u>	<u>\$ 263,885,432</u>	<u>\$ 441,232,278</u>
4. Portion of Local Normal Cost Payable by State						
a. Chapter 133, P.L. 2001	\$ 39,276,326	\$ (39,276,326)	\$ 0	\$ 40,753,731	\$ (40,753,731)	\$ 0
b. Chapter 366, P.L. 2001	<u>1,403,907</u>	<u>(1,403,907)</u>	<u>0</u>	<u>1,443,162</u>	<u>(1,443,162)</u>	<u>0</u>
c. Total	<u>\$ 40,680,233</u>	<u>\$ (40,680,233)</u>	<u>\$ 0</u>	<u>\$ 42,196,893</u>	<u>\$ (42,196,893)</u>	<u>\$ 0</u>
5. Normal Cost Contribution as of Valuation Date [3 + 4]	<u>\$ 216,284,500</u>	<u>\$ 220,361,791</u>	<u>\$ 436,646,291</u>	<u>\$ 219,543,739</u>	<u>\$ 221,688,539</u>	<u>\$ 441,232,278</u>
6. Interest to the Beginning of the Fiscal Year	<u>\$ 15,139,916</u>	<u>\$ 15,425,326</u>	<u>\$ 30,565,242</u>	<u>\$ 15,368,061</u>	<u>\$ 15,518,198</u>	<u>\$ 30,886,259</u>
7. Normal Cost Contribution as of Beginning of Fiscal Year [5 + 6]	<u>\$ 231,424,416</u>	<u>\$ 235,787,117</u>	<u>\$ 467,211,533</u>	<u>\$ 234,911,800</u>	<u>\$ 237,206,737</u>	<u>\$ 472,118,537</u>
8. Non-Contributory Group Insurance Premium as of Beginning of Fiscal Year (one-year term cost)	N/A	<u>\$ 58,306,504</u>	<u>\$ 58,306,504</u>	N/A	<u>\$ 56,424,620</u>	<u>\$ 56,424,620</u>

¹ Reflects the reopening of the Prosecutors Part of PERS based on Chapter 226, P.L. 2021.

² Payable by the Second Injury Fund (SIF).

³ The member contribution rate for Prosecutors Part members is 10%, 2.5% greater than the regular member contribution rate of 7.5%.

**Table V-5
Development of Statutory Pension Contributions**

As of Beginning of Fiscal Year	July 1, 2023 Valuation Fiscal Year Ending 2025 Payment			July 1, 2022 Valuation Fiscal Year Ending 2024 Payment		
	State	Local Employers	Total	State	Local Employers	Total
1. Normal Cost Contribution¹						
a. Basic	\$ 157,582,772	\$ 235,787,117	\$ 393,369,889	\$ 158,580,764	\$ 237,206,737	\$ 395,787,501
b. Chapter 133, P.L. 2001	71,007,583	0	71,007,583	73,538,132	0	73,538,132
c. Chapter 366, P.L. 2001	1,666,210	0	1,666,210	1,641,239	0	1,641,239
d. Chapter 259, P.L. 2001 and Chapter 140, P.L. 2021 ³	1,167,851	0	1,167,851	1,151,665	0	1,151,665
e. Total	\$ 231,424,416	\$ 235,787,117	\$ 467,211,533	\$ 234,911,800	\$ 237,206,737	\$ 472,118,537
2. UAL Contribution^{1,2}						
a. Basic ⁴	\$ 1,592,719,588	\$ 1,066,641,172	\$ 2,659,360,760	\$ 1,568,488,430	\$ 1,042,896,986	\$ 2,611,385,416
b. Chapter 133, P.L. 2001	0	0	0	0	0	0
c. Chapter 366, P.L. 2001	19,058,556	0	19,058,556	19,058,557	0	19,058,557
d. Chapter 259, P.L. 2001 ³	499,150	0	499,150	499,151	0	499,151
e. Chapter 140, P.L. 2021 ³	452,999	0	452,999	453,001	0	453,001
f. Total	\$ 1,612,730,293	\$ 1,066,641,172	\$ 2,679,371,465	\$ 1,588,499,139	\$ 1,042,896,986	\$ 2,631,396,125
3. Total Statutory Pension Contribution: [1 + 2]	\$ 1,844,154,709	\$ 1,302,428,289	\$ 3,146,582,998	\$ 1,823,410,939	\$ 1,280,103,723	\$ 3,103,514,662
4. SIF Offset of Chapter 259, P.L. 2001 and Chapter 140, P.L. 2021	\$ (2,120,000)	\$ 0	\$ (2,120,000)	\$ (2,103,817)	\$ 0	\$ (2,103,817)
5. Lottery Enterprise Contribution Offset	\$ (130,078,903)	\$ 0	\$ (130,078,903)	\$ (130,078,903)	\$ 0	\$ (130,078,903)
6. Net Pension Contribution: [3 + 4 + 5]	\$ 1,711,955,806	\$ 1,302,428,289	\$ 3,014,384,095	\$ 1,691,228,219	\$ 1,280,103,723	\$ 2,971,331,942
7. Non-Contributory Group Insurance Premium	N/A	\$ 58,306,504	\$ 58,306,504	N/A	\$ 56,424,620	\$ 56,424,620

¹ State amounts for Chapter 133, P.L. 2001 and Chapter 366, P.L. 2001 include contributions toward State-paid Local obligations, both amounts attributable to the current fiscal year and amounts that were not contributed in prior years due to the phase-in of contributions. The total State-paid Local obligations are \$59,812,730 and \$61,435,556 for the July 1, 2023 and July 1, 2022 valuations, respectively.

² Excludes UAL amounts due to Local employer ERI programs and Chapter 19, P.L. 2009 Local employer deferrals because receivables for these amounts are included in the AVA. Refer to Appendices E and F for additional information on these payments.

³ Payable by the Second Injury Fund (SIF).

⁴ Includes UAL Amounts due to State ERI programs.

Tables V-6 shows the State and Local employers' contributions as a percentage of appropriation payroll for FYE 2025 compared to FYE 2024. These rates are appropriate for determining employer contributions when they are applied to appropriation payroll as well as evaluating the impact of State-paid Local adjustments and contribution rate changes from the prior year. For a breakdown of contribution rates by chapter law for administration purposes, refer to Table V-7.

Table V-6						
Contributions as a Percentage of Appropriation Payroll¹						
	July 1, 2023 Valuation Fiscal Year 2025 Payment			July 1, 2022 Valuation Fiscal Year 2024 Payment		
	State	Local Employers	Total	State	Local Employers	Total
<u>Prior to Statutory State-Paid Local Adjustments and Prior to SIF and Lottery Enterprise Contribution Offsets</u>						
Normal Cost Contribution Rate	3.940%	3.512%	3.672%	4.068%	3.719%	3.852%
UAL Contribution Rate	33.474%	13.617%	21.061%	33.703%	13.952%	21.470%
Gross Pension Contribution Rate	37.414%	17.129%	24.733%	37.771%	17.671%	25.322%
Non-Contributory Group Insurance Premium Rate	N/A	0.733%	N/A	N/A	0.743%	N/A
<u>After Statutory State-Paid Local Adjustments and Prior to SIF and Lottery Enterprise Contribution Offsets</u>						
Normal Cost Contribution Rate	4.852%	2.965%	3.672%	5.036%	3.125%	3.852%
UAL Contribution Rate	33.815%	13.412%	21.061%	34.052%	13.738%	21.470%
Gross Pension Contribution Rate	38.667%	16.377%	24.733%	39.088%	16.863%	25.322%
Non-Contributory Group Insurance Premium Rate	N/A	0.733%	N/A	N/A	0.743%	N/A

¹ Excludes UAL amounts due to Local Employer ERI programs and Chapter 19, P.L. 2009 Local Employer deferrals because receivables for these amounts are included in the AVA.

Table V-7 shows the State and Local employer contributions as a percentage of appropriation payroll for FYE 2025 compared to FYE 2024. These contribution rates by chapter law are intended for administration purposes and may not be appropriate for other uses.

Table V-7				
Contributions as a Percentage of Appropriation Payroll¹				
	July 1, 2023 Valuation		July 1, 2022 Valuation	
	Fiscal Year 2025 Payment		Fiscal Year 2024 Payment	
	State	Local Employers	State	Local Employers
1. Normal Cost Rate				
a. Basic	3.304%	2.965%	3.399%	3.125%
b. Chapter 133, P.L. 2001	1.489%	0.000% ²	1.576%	0.000% ²
c. Total Normal Cost Rate	4.793%	2.965%	4.975%	3.125%
2. Unfunded Actuarial Liability (UAL) Contribution				
a. Basic	33.396%	13.412%	33.623%	13.738%
b. Chapter 133, P.L. 2001	0.000%	0.000%	0.000%	0.000%
c. Total UAL Contribution	33.396%	13.412%	33.623%	13.738%
3. Gross Contribution for Fiscal Year 2025: [1 + 2]	38.189%	16.377%	38.598%	16.863%
4. State Non-Contributory Group Insurance Premium Fund	N/A	0.733%	N/A	0.743%

¹Rates exclude contributions required under Chapter 366, P.L. 2001, Chapter 259, P.L. 2001, and Chapter 140, P.L. 2021 as well as ERI and Chapter 19, P.L. 2009 payments.

²Required contributions for Local employers are payable by assets from the Benefit Enhancement Fund. If BEF assets are insufficient, the State will cover any shortfall. The Local employers Chapter 133, P.L. 2001 rates would have been 0.528% and 0.574% for the July 1, 2023 and the July 1, 2022 valuations, respectively.

Table V-8 shows the Statutory contribution payable by the State broken down by various divisions.

Table V-8						
Fiscal Year 2025 Statutory Contributions Payable by the State						
	State	Disability Insurance Services	All Other Units of Division of Employment Security	State Colleges	Total Excluding Second Injury Fund	Second Injury Fund
Member Count	50,048	226	1,560	12,214	64,048	
Appropriation Payroll	\$ 3,882,173,569	\$ 14,533,893	\$ 118,761,618	\$ 753,793,753	\$ 4,769,262,833	
Normal Cost Contribution						
Basic	\$ 128,272,167	\$ 480,219	\$ 3,924,041	\$ 24,906,345	\$ 157,582,772	
Chapter 133, P.L. 2001	71,007,583	0	0	0	71,007,583	
Chapter 366, P.L. 2001	1,666,210	0	0	0	1,666,210	
Sub-Total	<u>\$ 200,945,960</u>	<u>\$ 480,219</u>	<u>\$ 3,924,041</u>	<u>\$ 24,906,345</u>	<u>\$ 230,256,565</u>	
Chapter 259, P.L. 2001						\$ 1,167,851
UAL Contribution						
Basic excluding ERI amounts	\$ 1,177,225,836	\$ 4,900,674	\$ 40,045,151	\$ 229,646,311	\$ 1,451,817,972	
Chapter 23, P.L. 2002	106,047,767	0	0	9,099,916	115,147,683	
Chapter 21, P.L. 2008	25,753,933	0	0	0	25,753,933	
Chapter 133, P.L. 2001	0	0	0	0	0	
Chapter 366, P.L. 2001	19,058,556	0	0	0	19,058,556	
Sub-Total	<u>\$ 1,328,086,092</u>	<u>\$ 4,900,674</u>	<u>\$ 40,045,151</u>	<u>\$ 238,746,227</u>	<u>\$ 1,611,778,144</u>	
Chapter 259, P.L. 2001						\$ 499,150
Chapter 140, P.L. 2021						\$ 452,999
Statutory Pension Contribution	\$ 1,529,032,052	\$ 5,380,893	\$ 43,969,192	\$ 263,652,572	\$ 1,842,034,709	\$ 2,120,000
Lottery Contribution Offset						
Chapter 98, P.L. 2017	\$ (60,633,680)	\$ 0	\$ 0	\$ (69,445,223)	\$ (130,078,903)	\$ 0
Net Pension Contribution	\$ 1,468,398,372	\$ 5,380,893	\$ 43,969,192	\$ 194,207,349	\$ 1,711,955,806	\$ 2,120,000

Table V-9 shows the Statutory contribution attributable to various state colleges.

Table V-9 Fiscal Year 2025 Statutory Contributions for State Colleges									
Location Number	Location Name	Member Count	Appropriation Payroll	Basic Normal Cost Contribution	UAL Contribution		Statutory Pension Contribution	Lottery Contribution Offset ¹	Net Pension Contribution
					Basic	Chapter 23, P.L. 2002			
401	State Library Affiliated ²	73	\$ 5,579,991	\$ 184,370	\$ 1,881,513	\$ 0	\$ 2,065,883	\$ (87,151)	\$ 1,978,732
410	Rowan University	992	58,570,993	1,935,263	17,829,678	785,800	20,550,741	(5,429,426)	15,121,315
411	New Jersey City University	325	20,354,611	672,543	6,196,176	544,199	7,412,918	(1,886,836)	5,526,082
412	Kean University	323	22,358,294	738,748	6,806,120	479,714	8,024,582	(2,072,574)	5,952,008
413	William Patterson University of NJ	343	20,770,739	686,293	6,322,850	335,181	7,344,324	(1,925,410)	5,418,914
414	Monclair State University	560	32,659,582	1,079,116	9,941,949	213,100	11,234,165	(3,027,485)	8,206,680
415	The College of New Jersey	401	25,427,666	840,164	7,740,471	599,150	9,179,785	(2,357,099)	6,822,686
420	Ramapo College of New Jersey	241	16,917,636	558,981	5,149,921	175,459	5,884,361	(1,568,234)	4,316,127
421	Stockton University	593	38,286,002	1,265,020	11,654,695	461,069	13,380,784	(3,549,044)	9,831,740
430	Thomas Edison State University	71	5,562,427	183,790	1,693,266	139,164	2,016,220	(515,627)	1,500,593
497 & 498	Rutgers University	5,228	298,804,077	9,872,884	90,959,367	5,102,607	105,934,858	(27,698,601)	78,236,257
901	University Hospital	2,727	187,342,856	6,190,056	57,029,301	0	63,219,357	(17,366,346)	45,853,011
32700 & 55530	New Jersey Institute of Technology	337	21,158,879	699,117	6,441,004	264,473	7,404,594	(1,961,390)	5,443,204
Total		12,214	\$ 753,793,753	\$ 24,906,345	\$ 229,646,311	\$ 9,099,916	\$ 263,652,572	\$ (69,445,223)	\$ 194,207,349

¹ 53.32% of the total Lottery Enterprise Contribution offset for FYE 2025 is allocated to each State College location based on the location's 2023 appropriation payroll. The percentage allocation to State Colleges was determined using 2023 contributing active and retiree headcounts for locations deemed to be eligible for funding under the Lottery Enterprise.

² The allocation of the Lottery Enterprise Contribution offset to State Library Affiliated is based on the 46.68% allocated to non-State College locations.

The data for this valuation was provided by the New Jersey Division of Pensions and Benefits as of July 1, 2023. Cheiron did not audit any of the data. However, we did perform an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23, Data Quality. The following is a list of data charts contained in this section:

- A-1 to A-3: Contributing Active Member Data by Tier
- A-4: Non-Contributing Member Data by Tier
- A-5: Inactive Member Data by Status
- A-6: Reconciliation of Plan Membership
- A-7 through A-10: Contributing Active Member Data by Age and Service
- A-11 through A-14: Inactive Member Data by Age and Status

Table A-1
Contributing Active Member Data by Tier
State

	July 1, 2023	July 1, 2022	% Change		July 1, 2023	July 1, 2022	% Change
<u>Tier 1</u>				<u>Tier 2</u>			
Count	27,761	30,379	-8.6%	Count	2,437	2,588	-5.8%
Average Age	54.6	54.3	0.7%	Average Age	50.8	50.2	1.1%
Average Service	23.3	22.7	2.6%	Average Service	15.2	14.2	7.1%
Average Appropriation Pay	\$ 85,134	\$ 82,119	3.7%	Average Appropriation Pay	\$ 75,177	\$ 71,934	4.5%
Total Appropriation Payroll	\$ 2,363,392,164	\$ 2,494,692,557	-5.3%	Total Appropriation Payroll	\$ 183,205,851	\$ 186,166,282	-1.6%
<u>Tier 3</u>				<u>Tier 4</u>			
Count	1,671	1,775	-5.9%	Count	1,193	1,265	-5.7%
Average Age	50.0	49.3	1.2%	Average Age	48.6	47.8	1.5%
Average Service	13.7	12.8	7.7%	Average Service	12.5	11.5	8.4%
Average Appropriation Pay	\$ 74,556	\$ 71,007	5.0%	Average Appropriation Pay	\$ 79,429	\$ 75,521	5.2%
Total Appropriation Payroll	\$ 124,583,213	\$ 126,037,227	-1.2%	Total Appropriation Payroll	\$ 94,758,741	\$ 95,534,610	-0.8%
<u>Tier 5</u>				<u>Total</u>			
Count	30,986	28,350	9.3%	Count	64,048	64,357	-0.5%
Average Age	42.0	41.7	0.7%	Average Age	48.1	48.3	-0.4%
Average Service	5.0	4.8	5.5%	Average Service	13.7	14.0	-1.9%
Average Appropriation Pay	\$ 64,653	\$ 62,171	4.0%	Average Appropriation Pay	\$ 74,464	\$ 72,486	2.7%
Total Appropriation Payroll	\$ 2,003,322,864	\$ 1,762,537,588	13.7%	Total Appropriation Payroll	\$ 4,769,262,833	\$ 4,664,968,264	2.2%

Reflects all records for multiple members, which are members employed by more than one PERS-participating employer at the same time.

**Table A-2
Contributing Active Member Data by Tier
Local Employers**

	July 1, 2023	July 1, 2022	% Change		July 1, 2023	July 1, 2022	% Change
<u>Tier 1</u>				<u>Tier 2</u>			
Count	52,920	58,625	-9.7%	Count	6,181	6,656	-7.1%
Average Age	57.9	57.6	0.6%	Average Age	54.6	54.0	1.1%
Average Service	23.4	22.7	3.0%	Average Service	15.3	14.3	6.9%
Average Appropriation Pay \$	64,955	\$ 61,861	5.0%	Average Appropriation Pay \$	54,285	\$ 50,905	6.6%
Total Appropriation Payroll \$	3,437,443,824	\$ 3,626,585,945	-5.2%	Total Appropriation Payroll \$	335,532,812	\$ 338,822,522	-1.0%
<u>Tier 3</u>				<u>Tier 4</u>			
Count	3,889	4,162	-6.6%	Count	1,806	1,925	-6.2%
Average Age	53.6	52.9	1.4%	Average Age	51.4	50.7	1.3%
Average Service	13.8	12.8	7.7%	Average Service	12.6	11.7	8.3%
Average Appropriation Pay \$	57,729	\$ 54,405	6.1%	Average Appropriation Pay \$	65,845	\$ 62,082	6.1%
Total Appropriation Payroll \$	224,506,434	\$ 226,433,989	-0.9%	Total Appropriation Payroll \$	118,915,864	\$ 119,507,684	-0.5%
<u>Tier 5</u>				<u>Total</u>			
Count	75,754	67,705	11.9%	Count	140,550	139,073	1.1%
Average Age	44.1	43.8	0.7%	Average Age	50.1	50.5	-0.7%
Average Service	4.6	4.5	3.7%	Average Service	12.5	13.0	-3.5%
Average Appropriation Pay \$	50,644	\$ 48,447	4.5%	Average Appropriation Pay \$	56,584	\$ 54,586	3.7%
Total Appropriation Payroll \$	3,836,498,154	\$ 3,280,115,326	17.0%	Total Appropriation Payroll \$	7,952,897,088	\$ 7,591,465,466	4.8%

Reflects all records for multiple members, which are members employed by more than one PERS-participating employer at the same time.

Table A-3
Contributing Active Member Data by Tier
Total

	July 1, 2023	July 1, 2022	% Change		July 1, 2023	July 1, 2022	% Change
<u>Tier 1</u>				<u>Tier 2</u>			
Count	80,681	89,004	-9.4%	Count	8,618	9,244	-6.8%
Average Age	56.8	56.5	0.6%	Average Age	53.5	52.9	1.1%
Average Service	23.4	22.7	2.9%	Average Service	15.3	14.3	7.0%
Average Appropriation Pay \$	71,898	\$ 68,775	4.5%	Average Appropriation Pay \$	60,192	\$ 56,792	6.0%
Total Appropriation Payroll \$	5,800,835,988	\$ 6,121,278,502	-5.2%	Total Appropriation Payroll \$	518,738,663	\$ 524,988,804	-1.2%
<u>Tier 3</u>				<u>Tier 4</u>			
Count	5,560	5,937	-6.4%	Count	2,999	3,190	-6.0%
Average Age	52.5	51.8	1.3%	Average Age	50.3	49.6	1.4%
Average Service	13.8	12.8	7.7%	Average Service	12.6	11.6	8.3%
Average Appropriation Pay \$	62,786	\$ 59,369	5.8%	Average Appropriation Pay \$	71,249	\$ 67,411	5.7%
Total Appropriation Payroll \$	349,089,647	\$ 352,471,216	-1.0%	Total Appropriation Payroll \$	213,674,605	\$ 215,042,294	-0.6%
<u>Tier 5</u>				<u>Total</u>			
Count	106,740	96,055	11.1%	Count	204,598	203,430	0.6%
Average Age	43.5	43.2	0.7%	Average Age	49.5	49.8	-0.6%
Average Service	4.8	4.6	4.3%	Average Service	12.9	13.3	-3.0%
Average Appropriation Pay \$	54,711	\$ 52,498	4.2%	Average Appropriation Pay \$	62,181	\$ 60,249	3.2%
Total Appropriation Payroll \$	5,839,821,018	\$ 5,042,652,914	15.8%	Total Appropriation Payroll \$	12,722,159,921	\$ 12,256,433,730	3.8%

Reflects all records for multiple members, which are members employed by more than one PERS-participating employer at the same time.

Table A-4 Non-Contributing Member Data by Tier ¹						
	State		Local Employers		Total	
	July 1, 2023	July 1, 2022	July 1, 2023	July 1, 2022	July 1, 2023	July 1, 2022
<u>Tier 1</u>						
Count	4,865	4,884	13,283	13,873	18,148	18,757
Average Age	60.5	59.9	64.0	63.3	63.0	62.4
Accumulated Deductions with Interest	\$ 379,739,269	\$ 365,915,074	\$ 636,460,125	\$ 640,659,335	\$ 1,016,199,394	\$ 1,006,574,409
Average Reported Pay ²	\$ 58,690	\$ 58,310	\$ 51,589	\$ 49,660	\$ 54,442	\$ 52,904
<u>Tier 2</u>						
Count	375	359	1,281	1,278	1,656	1,637
Average Age	54.1	54.0	57.3	57.3	56.6	56.6
Accumulated Deductions with Interest	\$ 20,255,742	\$ 17,215,775	\$ 38,461,654	\$ 34,534,922	\$ 58,717,396	\$ 51,750,697
Average Reported Pay ²	\$ 61,056	\$ 56,192	\$ 48,398	\$ 40,831	\$ 52,235	\$ 45,798
<u>Tier 3</u>						
Count	244	220	733	739	977	959
Average Age	52.2	51.8	56.2	56.2	55.2	55.2
Accumulated Deductions with Interest	\$ 13,481,979	\$ 10,575,548	\$ 24,786,563	\$ 21,581,730	\$ 38,268,542	\$ 32,157,278
Average Reported Pay ²	\$ 61,160	\$ 66,366	\$ 55,975	\$ 46,464	\$ 57,896	\$ 52,007
<u>Tier 4</u>						
Count	129	112	230	227	359	339
Average Age	49.4	49.4	52.2	51.5	51.2	50.8
Accumulated Deductions with Interest	\$ 7,505,235	\$ 5,272,454	\$ 10,421,741	\$ 8,763,910	\$ 17,926,976	\$ 14,036,364
Average Reported Pay ²	\$ 75,937	\$ 72,352	\$ 61,903	\$ 58,613	\$ 67,682	\$ 63,609
<u>Tier 5</u>						
Count	4,916	4,222	13,743	11,885	18,659	16,107
Average Age	39.0	38.0	40.0	39.7	39.7	39.2
Accumulated Deductions with Interest	\$ 66,945,694	\$ 49,738,053	\$ 131,526,847	\$ 105,459,000	\$ 198,472,541	\$ 155,197,053
Average Reported Pay ²	\$ 57,559	\$ 55,018	\$ 46,022	\$ 43,262	\$ 49,407	\$ 46,869
<u>Total</u>						
Count	10,529	9,797	29,270	28,002	39,799	37,799
Average Age	49.9	49.9	52.1	52.6	51.5	51.9
Accumulated Deductions with Interest	\$ 487,927,919	\$ 448,716,904	\$ 841,656,930	\$ 810,998,897	\$ 1,329,584,849	\$ 1,259,715,801
Average Reported Pay ²	\$ 58,265	\$ 56,311	\$ 47,286	\$ 44,569	\$ 50,749	\$ 48,330

¹ Includes 10 and 63 deferred beneficiaries for State and Local employers, respectively, for 2023 and 11 and 67 deferred beneficiaries for State and Local employers, respectively, for 2022.

² Average reported pay only includes non-contributing members reported with pay.

Accumulated Deductions with Interest as reported by the DPB

**Table A-5
Inactive Member Data by Status¹**

	July 1, 2023			July 1, 2022		
	State	Local Employers	Total	State	Local Employers	Total
Retirees						
Count	53,716	109,721	163,437	52,861	107,918	160,779
Annual Retirement Allowances	\$ 1,714,324,376	\$ 2,285,840,310	\$ 4,000,164,686	\$ 1,656,669,081	\$ 2,196,925,453	\$ 3,853,594,534
Average Retirement Allowance	\$ 31,915	\$ 20,833	\$ 24,475	\$ 31,340	\$ 20,357	\$ 23,968
Beneficiaries						
Count	5,228	12,157	17,385	5,074	11,877	16,951
Annual Retirement Allowances	\$ 97,370,498	\$ 169,313,806	\$ 266,684,304	\$ 93,024,961	\$ 162,833,504	\$ 255,858,465
Average Retirement Allowance	\$ 18,625	\$ 13,927	\$ 15,340	\$ 18,334	\$ 13,710	\$ 15,094
Ordinary Disability						
Count	4,330	7,420	11,750	4,403	7,563	11,966
Annual Retirement Allowances	\$ 91,213,477	\$ 132,045,751	\$ 223,259,228	\$ 91,979,706	\$ 132,681,901	\$ 224,661,607
Average Retirement Allowance	\$ 21,065	\$ 17,796	\$ 19,001	\$ 20,890	\$ 17,544	\$ 18,775
Accidental Disability						
Count	503	840	1,343	504	841	1,345
Annual Retirement Allowances	\$ 16,007,366	\$ 25,110,658	\$ 41,118,024	\$ 15,957,947	\$ 24,899,866	\$ 40,857,813
Average Retirement Allowance	\$ 31,824	\$ 29,894	\$ 30,617	\$ 31,663	\$ 29,607	\$ 30,378
In-Pay Total						
Count	63,777	130,138	193,915	62,842	128,199	191,041
Annual Retirement Allowances	\$ 1,918,915,717	\$ 2,612,310,525	\$ 4,531,226,242	\$ 1,857,631,695	\$ 2,517,340,724	\$ 4,374,972,419
Average Retirement Allowance	\$ 30,088	\$ 20,073	\$ 23,367	\$ 29,560	\$ 19,636	\$ 22,901
Deferred Vested Members						
Count	146	427	573	147	433	580
Annual Retirement Allowances	\$ 2,440,920	\$ 4,857,204	\$ 7,298,124	\$ 2,483,676	\$ 4,890,048	\$ 7,373,724
Average Retirement Allowance	\$ 16,719	\$ 11,375	\$ 12,737	\$ 16,896	\$ 11,293	\$ 12,713

¹ Excludes deferred beneficiaries

QDRO benefits included with member records for valuation purposes.

Table A-6
Reconciliation of Plan Membership from July 1, 2022 to July 1, 2023

	Contributing Actives	Non-Contrib. Members	Deferred Beneficiaries	Deferred Vested	Retired	Disabled	Beneficiaries	Total
1. July 1, 2022	203,430	37,721	78	580	160,779	13,311	16,951	432,850
2. Additions								
a. New entrants	20,512	2,024						22,536
b. Data updates	307	101			23	4	288	723
c. Total	<u>20,819</u>	<u>2,125</u>	<u>0</u>	<u>0</u>	<u>23</u>	<u>4</u>	<u>288</u>	<u>23,259</u>
3. Reductions								
a. Withdrawal/Certain Period End	(3,518)	(6,093)		(1)			(14)	(9,626)
b. Died without beneficiary	(347)	(252)			(5,065)	(480)	(1,037)	(7,181)
c. Data updates	(231)	(123)	(5)	(1)				(360)
d. Total	<u>(4,096)</u>	<u>(6,468)</u>	<u>(5)</u>	<u>(2)</u>	<u>(5,065)</u>	<u>(480)</u>	<u>(1,051)</u>	<u>(17,167)</u>
4. Changes in Status								
a. Contributing Actives	(9,573)	9,573						0
b. Non-Contributing Actives	1,816	(1,816)						0
c. Deferred Vested	(20)	(97)		117				0
d. Retired	(7,622)	(1,054)		(121)	8,740			(57)
e. Disabled	(127)	(240)		(1)	(2)	370		0
f. Died with beneficiary	(29)	(18)			(1,038)	(112)	1,197	0
g. Total	<u>(15,555)</u>	<u>6,348</u>	<u>0</u>	<u>(5)</u>	<u>7,700</u>	<u>258</u>	<u>1,197</u>	<u>(57)</u>
5. July 1, 2023	204,598	39,726	73	573	163,437	13,093	17,385	438,885

QDRO benefits included with member records for valuation purposes.

Reflects all records for multiple members, which are members employed by more than one PERS-participating employer at the same time. The decreases due to Changes in Status occur when active records for multiple members are combined into a single retiree record.

Table A-7
Counts by Age and Service Distribution of Contributing Active Members
State

Attained Age	Years of Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & up	
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Under 30	1,794	2,875	575	1	0	0	0	0	5,245
30 to 34	706	2,203	2,336	338	18	0	0	0	5,601
35 to 39	498	1,609	2,154	1,469	738	28	0	0	6,496
40 to 44	382	1,308	1,610	1,295	3,000	1,075	15	0	8,685
45 to 49	312	1,118	1,161	1,000	2,104	2,279	368	13	8,355
50 to 54	259	1,075	1,122	932	1,764	2,137	1,115	803	9,207
55 & up	432	1,758	2,357	2,107	3,932	4,389	1,730	3,754	20,459
Total	4,383	11,946	11,315	7,142	11,556	9,908	3,228	4,570	64,048

Table A-8
Average Appropriation Pay by Age and Service Distribution of Contributing Active Members
State

Attained Age	Years of Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & up	
	Comp.	Comp.	Comp.	Comp.	Comp.	Comp.	Comp.	Comp.	Comp.
Under 30	\$ 49,832	\$ 54,963	\$ 62,692	\$ 62,302	\$ 0	\$ 0	\$ 0	\$ 0	\$ 54,057
30 to 34	54,906	59,626	70,103	70,614	63,433	0	0	0	64,076
35 to 39	57,623	62,029	72,799	80,812	73,909	80,624	0	0	70,940
40 to 44	55,698	60,445	71,625	82,743	86,407	85,021	79,352	0	77,676
45 to 49	57,091	61,861	71,626	77,580	83,208	91,859	84,757	85,130	79,524
50 to 54	57,431	59,334	69,698	75,586	79,394	88,435	94,326	86,121	79,360
55 & up	56,730	60,946	67,889	70,288	74,353	80,928	87,055	95,470	78,025
Total	\$ 53,691	\$ 59,294	\$ 70,111	\$ 76,438	\$ 79,818	\$ 85,505	\$ 89,269	\$ 93,798	\$ 74,464

Table A-9
Counts by Age and Service Distribution of Contributing Active Members
Local Employers

Attained Age	Years of Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & up	
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Under 30	3,430	7,733	1,497	19	0	0	0	0	12,679
30 to 34	1,361	4,627	3,760	740	57	0	0	0	10,545
35 to 39	1,123	3,756	3,304	1,932	1,330	100	0	0	11,545
40 to 44	1,107	3,566	2,881	1,604	2,643	1,397	60	0	13,258
45 to 49	969	3,624	2,888	1,462	2,338	2,362	800	50	14,493
50 to 54	958	3,909	3,415	2,075	3,221	2,931	1,719	1,252	19,480
55 & up	1,330	6,469	7,728	6,189	12,222	12,289	5,706	6,617	58,550
Total	10,278	33,684	25,473	14,021	21,811	19,079	8,285	7,919	140,550

Table A-10
Average Appropriation Pay by Age and Service Distribution of Contributing Active Members
Local Employers

Attained Age	Years of Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & up	
	Comp.	Comp.	Comp.	Comp.	Comp.	Comp.	Comp.	Comp.	Comp.
Under 30	\$ 41,248	\$ 45,474	\$ 55,935	\$ 62,263	\$ 0	\$ 0	\$ 0	\$ 0	\$ 45,591
30 to 34	44,707	48,793	59,104	65,109	60,490	0	0	0	53,150
35 to 39	44,253	48,534	60,941	67,626	67,231	66,476	0	0	57,172
40 to 44	42,336	46,800	58,739	67,683	69,990	72,530	87,909	0	59,068
45 to 49	42,346	45,675	56,862	63,744	66,441	75,311	78,479	85,684	59,633
50 to 54	44,191	45,376	53,514	60,057	61,163	70,278	79,770	84,259	60,200
55 & up	43,599	45,936	52,987	53,871	51,294	57,151	65,164	80,871	56,947
Total	\$ 42,834	\$ 46,511	\$ 56,255	\$ 59,896	\$ 57,637	\$ 62,591	\$ 69,645	\$ 81,437	\$ 56,584

Table A-11
Counts by Age and Status of Inactive Members
State

Attained Age	Status				Total
	Retirees	Beneficiaries	Ordinary Disability	Accidental Disability	
Under 45	0	143	53	11	207
45 to 49	28	62	126	14	230
50 to 54	355	139	251	41	786
55 to 59	2,644	221	519	65	3,449
60 to 64	6,739	386	734	95	7,954
65 to 69	10,997	589	853	93	12,532
70 to 74	12,052	873	718	75	13,718
75 to 79	9,991	938	590	60	11,579
80 to 84	5,776	787	321	28	6,912
85 & up	5,134	1,090	165	21	6,410
Total	53,716	5,228	4,330	503	63,777

Table A-12
Average Retirement Allowances by Age and Status of Inactive Members
State

Attained Age	Status				Total
	Retirees	Beneficiaries	Ordinary Disability	Accidental Disability	
Under 45	\$ 0	\$ 9,926	\$ 21,061	\$ 34,897	\$ 14,104
45 to 49	24,870	12,000	24,374	34,702	21,728
50 to 54	33,655	11,808	22,794	33,448	26,312
55 to 59	42,687	15,984	22,401	31,527	37,713
60 to 64	39,062	18,573	21,776	33,447	36,406
65 to 69	35,411	19,829	21,492	32,478	33,709
70 to 74	32,912	21,019	20,613	30,591	31,499
75 to 79	29,438	21,691	19,872	32,055	28,337
80 to 84	25,058	18,860	18,355	31,605	24,068
85 & up	19,605	16,189	17,853	19,833	18,980
Total	\$ 31,915	\$ 18,625	\$ 21,065	\$ 31,824	\$ 30,088

QDRO benefits included with member records for valuation purposes.

Table A-13
Counts by Age and Status of Inactive Members
Local

Attained Age	Status				Total
	Retirees	Beneficiaries	Ordinary Disability	Accidental Disability	
Under 45	1	207	51	14	273
45 to 49	42	139	113	24	318
50 to 54	536	239	364	57	1,196
55 to 59	3,178	475	733	123	4,509
60 to 64	11,129	820	1,347	137	13,433
65 to 69	21,752	1,328	1,476	184	24,740
70 to 74	24,035	1,751	1,279	114	27,179
75 to 79	20,912	2,131	1,022	89	24,154
80 to 84	14,199	2,106	685	71	17,061
85 & up	13,937	2,961	350	27	17,275
Total	109,721	12,157	7,420	840	130,138

Table A-14
Average Retirement Allowances by Age and Status of Inactive Members
Local

Attained Age	Status				Total
	Retirees	Beneficiaries	Ordinary Disability	Accidental Disability	
Under 45	\$ 18,717	\$ 8,092	\$ 22,683	\$ 28,252	\$ 11,890
45 to 49	24,492	8,957	20,966	27,682	16,689
50 to 54	34,259	10,799	20,952	33,700	25,495
55 to 59	38,465	12,482	19,920	34,042	32,592
60 to 64	28,267	14,989	18,711	32,634	26,543
65 to 69	23,896	16,453	18,013	30,641	23,196
70 to 74	21,445	15,843	17,098	26,750	20,902
75 to 79	18,504	14,203	16,516	27,274	18,072
80 to 84	15,970	14,034	15,886	25,517	15,768
85 & up	12,964	12,219	13,917	20,196	12,867
Total	\$ 20,833	\$ 13,927	\$ 17,796	\$ 29,894	\$ 20,073

QDRO benefits included with member records for valuation purposes.

A. Actuarial Assumptions

- 1. Investment Rate of Return** 7.00% per annum, compounded annually.

- 2. Administrative Expenses** No explicit assumption is made for administrative expenses for funding purposes per the funding methodology prescribed by NJ State Statute.

- 3. Interest Crediting Rate on Accumulated Deductions** 7.00% per annum, compounded annually. Interest credits are assumed to end upon termination.

- 4. Cost-of-Living Adjustments (COLAs)** No future COLAs are assumed. Previously granted COLAs are included in the data.

5. Salary Increases Salaries are assumed to increase annually as follows:

Years of Service	Rates
0	6.55%
1	6.55
2	6.35
3	6.15
4	5.95
5	5.75
6	5.55
7	5.35
8	5.15
9	4.95
10	4.75
11	4.55
12	4.35
13	4.15
14	3.95
15	3.75
16	3.55
17	3.45
18	3.35
19	3.25
20	3.15
21	3.05
22	2.95
23-27	2.85
28+	2.75

Salary increases are assumed to occur on July 1.

Non-contributing members reported with a salary are assumed to have no future salary increases.

The average assumed salary increase for active contributing members as of July 1, 2023 is 4.83%.

- 6. 401(a)(17) Pay Limit** \$330,000 in 2023 increasing 2.75% per annum, compounded annually.
- 7. Social Security Wage Base** \$160,200 in 2023 increasing 3.25% per annum, compounded annually.

8. Termination

Termination rates are shown separately for members electing a refund of contributions and members electing a deferred annuity.

Termination rates for members electing a refund of contributions are as follows:

Termination Rates for Members Electing a Refund				
Service	State		Local Employers'	
	Less than 31 Years Old	31 Years or Older	Less than 31 Years Old	31 Years or Older
0	21.00%	11.00%	19.00%	11.50%
1	21.00	11.00	19.00	11.50
2	11.50	7.50	15.50	8.50
3	9.50	6.50	14.00	7.50
4	9.00	5.50	11.50	6.50
5	8.00	5.50	10.50	6.00
6	7.00	5.00	8.50	5.50
7	7.00	4.50	8.00	5.00
8	7.00	4.00	7.50	4.50
9	7.00	3.50	6.50	4.00
10	1.70	1.70	1.70	1.70
11	1.50	1.50	1.50	1.50
12	1.10	1.10	1.40	1.40
13	1.10	1.10	1.20	1.20
14	0.70	0.70	1.10	1.10
15	0.60	0.60	0.90	0.90
16	0.60	0.60	0.80	0.80
17	0.60	0.60	0.70	0.70
18	0.50	0.50	0.60	0.60
19	0.50	0.50	0.60	0.60
20	0.50	0.50	0.50	0.50
21	0.50	0.50	0.50	0.50
22	0.40	0.40	0.50	0.50
23	0.40	0.40	0.40	0.40
24-29	0.30	0.30	0.30	0.30

No termination is assumed after attainment of retirement eligibility.

Termination rates for members electing a deferred annuity are as follows:

Termination Rates for Members Electing a Deferred Annuity		
Service	State	Local Employers
< 10	N/A	N/A
10	1.60%	1.80%
11	1.60	1.80
12	1.20	1.70
13	1.20	1.60
14	1.00	1.50
15	0.90	1.40
16	0.90	1.30
17	0.80	1.20
18	0.80	1.10
19	0.80	1.00
20	0.80	1.00
21	0.70	0.90
22	0.50	0.80
23	0.50	0.80
24	0.40	0.70

No termination is assumed after attainment of retirement eligibility.

9. Disability

Ordinary disability rates are as follows:

Ordinary Disability Rates					
Age	State	Local Employers	Age	State	Local Employers
25	0.100%	0.200%	50	0.335%	0.335%
26	0.110	0.200	51	0.350	0.350
27	0.120	0.200	52	0.365	0.365
28	0.130	0.200	53	0.380	0.380
29	0.140	0.200	54	0.395	0.395
30	0.150	0.205	55	0.410	0.405
31	0.160	0.210	56	0.425	0.415
32	0.170	0.215	57	0.440	0.425
33	0.180	0.220	58	0.455	0.435
34	0.190	0.225	59	0.470	0.445
35	0.205	0.225	60	0.485	0.455
36	0.220	0.225	61	0.500	0.465
37	0.220	0.225	62	0.515	0.475
38	0.220	0.225	63	0.530	0.485
39	0.220	0.225	64	0.545	0.495
40	0.230	0.235	65	0.560	0.505
41	0.240	0.245	66	0.575	0.515
42	0.250	0.255	67	0.590	0.525
43	0.260	0.265	68	0.605	0.535
44	0.270	0.275	69	0.620	0.545
45	0.280	0.275	70	0.630	0.560
46	0.290	0.275	71	0.640	0.575
47	0.300	0.290	72	0.650	0.590
48	0.310	0.305	73	0.660	0.605
49	0.320	0.320	74	0.670	0.620

Accidental disability rates are assumed to be 0.02% for all State members and 0.03% for all Local employers' members.

Ordinary disability rates apply upon attainment of 10 years of service and continue through the ultimate retirement age.

Members are assumed to receive the greater of the applicable disability benefit or the early or service retirement benefit, depending on eligibility.

Tier 4 and Tier 5 members are not eligible for the Ordinary or Accidental Disability benefits but the disability rates still apply. Such members terminating under the disability decrement are assumed to separate from service and elect a Deferred Retirement benefit.

10. Mortality

Pre-Retirement Mortality (Non-Annuitants): The Pub-2010 General Below-Median Income Employee mortality table [*PubG-2010(B) Employee*] as published by the Society of Actuaries with an 82.2% adjustment for males and 101.4% adjustment for females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2021.

All pre-retirement deaths are assumed to be ordinary deaths.

Healthy Retirees and Beneficiaries (Healthy Annuitants): The Pub-2010 General Below-Median Income Healthy Retiree mortality table [*PubG-2010(B) Healthy Retiree*] as published by the Society of Actuaries with a 91.4% adjustment for males and 99.7% adjustment for females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2021.

Disabled Retirees (Disabled Annuitants): The Pub-2010 Non-Safety Disabled Retiree mortality table [*PubNS-2010 Disabled Retiree*] as published by the Society of Actuaries with a 127.7% adjustment for males and 117.2% adjustment for females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2021.

11. Retirement

Retirement rates for State Tier 1-4 members are as follows:

State Tiers 1-4 Retirement Rates			
Age	Less Than 25 Years of Service	25 Years of Service	26 or More Years of Service
< 49	N/A	3.50%	2.00%
49	N/A	3.50	2.00
50	N/A	3.50	3.50
51	N/A	3.50	3.50
52	N/A	6.00	4.25
53	N/A	6.00	5.50
54	N/A	7.00	6.75
55	N/A	17.50	18.00
56	N/A	17.50	15.00
57	N/A	17.50	14.00
58	N/A	20.00	14.00
59	N/A	20.00	14.00
60	5.00	20.00	17.00
61	5.00	30.00	17.00
62	8.00	36.50	27.00
63	8.00	36.50	24.00
64	8.00	36.50	21.00
65	12.00	44.00	25.00
66	17.00	55.00	30.00
67	16.00	50.00	26.00
68	15.00	47.00	23.00
69	15.00	47.00	23.00
70	15.00	47.00	26.00
71	15.00	47.00	23.00
72	15.00	47.00	21.00
73	15.00	47.00	21.00
74	15.00	47.00	21.00
75	100.00	100.00	100.00

Rates apply upon retirement eligibility by tier.

Retirement rates for Local employers Tier 1-4 members are as follows:

Local Employers' Tiers 1-4 Retirement Rates			
Age	Less Than 25 Years of Service	25 Years of Service	26 or More Years of Service
< 49	N/A	3.00%	2.25%
49	N/A	3.00	3.00
50	N/A	3.50	3.50
51	N/A	4.25	3.75
52	N/A	4.75	3.75
53	N/A	7.00	5.00
54	N/A	7.00	6.00
55	N/A	15.00	15.00
56	N/A	17.00	13.00
57	N/A	18.00	12.00
58	N/A	18.00	12.00
59	N/A	18.00	12.00
60	4.50	18.00	14.00
61	4.50	18.00	14.00
62	7.50	34.00	25.00
63	7.50	34.00	22.00
64	7.50	34.00	20.00
65	11.00	35.00	20.00
66	15.00	43.00	26.00
67	14.00	40.00	26.00
68	13.00	40.00	22.00
69	13.00	37.00	22.00
70	13.00	37.00	24.00
71	13.00	37.00	24.00
72	13.00	37.00	20.00
73	13.00	37.00	20.00
74	13.00	37.00	20.00
75	100.00	100.00	100.00

Rates apply upon retirement eligibility by tier.

Retirement rates for State Tier 5 members are as follows:

State Tier 5 Retirement Rates					
Age	Less Than 25 Years of Service	25 Years of Service	26 to 29 Years of Service	30 Years of Service	31 or More Years of Service
< 49	N/A	N/A	N/A	3.50%	2.00%
49	N/A	N/A	N/A	3.50	2.00
50	N/A	N/A	N/A	3.50	3.50
51	N/A	N/A	N/A	3.50	3.50
52	N/A	N/A	N/A	6.00	4.25
53	N/A	N/A	N/A	6.00	5.50
54	N/A	N/A	N/A	7.00	6.75
55	N/A	N/A	N/A	17.50	18.00
56	N/A	N/A	N/A	17.50	15.00
57	N/A	N/A	N/A	17.50	14.00
58	N/A	N/A	N/A	20.00	14.00
59	N/A	N/A	N/A	20.00	14.00
60	N/A	N/A	N/A	20.00	17.00
61	N/A	N/A	N/A	30.00	17.00
62	N/A	N/A	N/A	36.50	27.00
63	N/A	N/A	N/A	36.50	24.00
64	N/A	N/A	N/A	36.50	21.00
65	12.00	44.00	44.00	44.00	25.00
66	17.00	55.00	30.00	30.00	30.00
67	16.00	50.00	26.00	26.00	26.00
68	15.00	47.00	23.00	23.00	23.00
69	15.00	47.00	23.00	23.00	23.00
70	15.00	47.00	26.00	26.00	26.00
71	15.00	47.00	23.00	23.00	23.00
72	15.00	47.00	21.00	21.00	21.00
73	15.00	47.00	21.00	21.00	21.00
74	15.00	47.00	21.00	21.00	21.00
75	100.00	100.00	100.00	100.00	100.00

Retirement rates for Local employers Tier 5 members are as follows:

Local Employers' Tier 5 Retirement Rates					
Age	Less Than 25 Years of Service	25 Years of Service	26 to 29 Years of Service	30 Years of Service	31 or More Years of Service
< 49	N/A	N/A	N/A	3.00%	2.25%
49	N/A	N/A	N/A	3.00	3.00
50	N/A	N/A	N/A	3.50	3.50
51	N/A	N/A	N/A	4.25	3.75
52	N/A	N/A	N/A	4.75	3.75
53	N/A	N/A	N/A	7.00	5.00
54	N/A	N/A	N/A	7.00	6.00
55	N/A	N/A	N/A	15.00	15.00
56	N/A	N/A	N/A	17.00	13.00
57	N/A	N/A	N/A	18.00	12.00
58	N/A	N/A	N/A	18.00	12.00
59	N/A	N/A	N/A	18.00	12.00
60	N/A	N/A	N/A	18.00	14.00
61	N/A	N/A	N/A	18.00	14.00
62	N/A	N/A	N/A	34.00	25.00
63	N/A	N/A	N/A	34.00	22.00
64	N/A	N/A	N/A	34.00	20.00
65	11.00	35.00	35.00	35.00	20.00
66	15.00	43.00	26.00	26.00	26.00
67	14.00	40.00	26.00	26.00	26.00
68	13.00	40.00	22.00	22.00	22.00
69	13.00	37.00	22.00	22.00	22.00
70	13.00	37.00	24.00	24.00	24.00
71	13.00	37.00	24.00	24.00	24.00
72	13.00	37.00	20.00	20.00	20.00
73	13.00	37.00	20.00	20.00	20.00
74	13.00	37.00	20.00	20.00	20.00
75	100.00	100.00	100.00	100.00	100.00

Retirement rates for members of Prosecutors Part (Chapter 366, P.L. 2001) are as follows:

- Members with less than 25 years of service: 6.0% for all ages,
- Members with 25 years of service: 40.0% for all ages,
- Members with 26 or more years of service: 20.0% for all ages.

Rates apply upon retirement eligibility. 100% retirement is assumed at age 70.

Retirement rates for members of WCJ Part (Chapter 140, P.L. 2021) are as follows:

Age	Less than 15 Years of WCJ Part Service	15-19 Years of WCJ Part Service	20 or more Years of WCJ Part Service
<60	0.0%	0.0%	0.0%
60	2.0	2.0	20.0
61	2.0	2.0	20.0
62	2.0	2.0	20.0
63	2.0	2.0	20.0
64	2.0	2.0	20.0
65	5.0	40.0	30.0
66	2.0	40.0	20.0
67	2.0	40.0	20.0
68	2.0	40.0	20.0
69	2.0	40.0	20.0
70	100.0	100.0	100.0

12. Family Composition Assumptions

For members not currently in receipt, 50% of members are assumed married to spouses of the opposite sex. Males are assumed to be two years older than females.

For purposes of the optional form of payment death benefit for members currently in receipt, beneficiary status is based on the beneficiary allowance reported. If no beneficiary date of birth is provided, the beneficiary is assumed to be the member’s spouse of the opposite sex with males assumed to be two years older than females.

No additional dependent children or parents are assumed.

13. Form of Payment Current active members are assumed to elect the Maximum Option.

14. Non-Contributory Group Insurance Benefit Form of Payment All benefits are assumed to be paid as lump sums.

15. Data Non-contributing members reported without a salary are included in the valuation with a liability based on the reported Accumulated Deductions with interest (Annuity Savings Fund or ASF), adjusted to include interest through the valuation date.

Per discussions with DPB, the statuses for active records in Locations 4 – 7 (General Assembly and Senate) are based on changes in service instead of the contribution code.

For current beneficiaries with incomplete information, reasonable assumptions were made based on information available in prior years.

Deferred beneficiaries were reported separately from other non-contributing members for the first time in 2021. The benefit is based on the reported Accumulated Deductions with interest (Annuity Savings Fund or ASF).

Inactive participants receiving benefits according to the 2022 data but omitted from the 2023 data are assumed to have died without a beneficiary.

For retirees who earned benefits under both a State and Local employer, their total benefit is assigned to the location with the highest salary prior to retirement.

Tier 4 and 5 members on long-term disability appeared on the active data for the first time in 2019. The number of members on long-term disability is immaterial for valuation purposes. Therefore, we valued these members as regular contributing and non-contributing members while we gain clarity on what happens with these members.

16. Rationale for Assumptions

The demographic and economic assumptions used in this report, except for the investment return assumption, reflect the results of the July 1, 2018 – June 30, 2021 Experience Study, which was approved by the Board of Trustees on November 16, 2022.

The investment return assumption was recommended by the State Treasurer. We find the investment return assumption to be reasonable based on the System's current asset allocation and the capital market outlook of the New Jersey Division of Investment.

The combined effect of the assumptions in aggregate is expected to have no significant bias.

17. Changes in Assumptions since Last Valuation

None.

B. Projection Assumptions

1. **Investment Rate of Return** 7.00% per annum, compounded annually.
2. **Appropriation Percentages** The State is assumed to appropriate 100% of the Statutory contribution each year.
3. **Administrative Expenses** The actual administrative expenses paid in FYE 2023 are assumed to increase by 2.75% per annum, compounded annually.
4. **New Entrants**
 - Contributing active population assumed to remain at 2023 levels.
 - Assumed to join mid-year.
 - Age/sex distributions based on the last three years of new hires.
 - Salary based on salary for most recent hires reported on 2023 data.
 - New entrant salary assumed to increase with the salary increase rates applicable for members with 28 or more years of service (i.e., 2.75%).
5. **Demographic Assumptions** Same as those used for valuation purposes.
6. **Projection Basis**

This report includes projections of future assets, liabilities, funded status and contributions for the purpose of assisting the Board of Trustees with the management of the System.

The projections are based on the same census data and financial information as of July 1, 2023 which has been used for the actuarial valuation. The projections assume continuation of the plan provisions and actuarial assumptions in effect as of July 1, 2023 and do not reflect the impact of any changes in benefits or actuarial assumptions that may be adopted after July 1, 2023 unless otherwise indicated. 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.

The projections are based on our proprietary model *PScan*, developed by our firm, that utilizes the results shown in this valuation report. The projections assume that all future assumptions are met except where indicated with respect to future investment returns and demographic assumptions. The future outcomes become increasingly uncertain over time, and therefore the general trends and not the absolute values should be considered in the review of these projections.

C. Actuarial Methods

The actuarial methods used for determining State and Local employers' contributions are described below.

1. Actuarial Cost Method

The actuarial cost method for funding calculations is the Projected Unit Credit Cost Method. Non-contributing members reported with a salary use the Projected Unit Credit Cost Method without any future projected salary increases.

The actuarial liability is calculated as the actuarial present value of the projected benefits linearly allocated to periods prior to the valuation year based on service (WCJ Part Service for members in the WCJ Part). Refunds are valued as the reported Accumulated Deductions with interest of the valuation date. The unfunded actuarial liability is the actuarial liability on the valuation date less the actuarial value of assets.

In accordance with Chapter 78, P.L. 2011:

- Beginning with the July 1, 2010 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars, it will amortize the unfunded accrued liability over an open 30-year period.
- Beginning with the July 1, 2019 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars, it will amortize the unfunded accrued liability over a closed 30-year period (i.e., for each subsequent actuarial valuation the amortization period shall decrease by one year).
- Beginning with the July 1, 2029 actuarial valuation, when the remaining amortization period reaches 20 years, any increase or decrease in the unfunded accrued liability as a result of actuarial losses or gains for subsequent valuation years shall serve to increase or decrease, respectively, the amortization period for the unfunded accrued liability, unless an increase in the amortization period will cause it to exceed 20 years. If an increase in the amortization period as a result of actuarial losses for a valuation year would exceed 20 years, the accrued liability contribution shall be computed for the valuation year using a 20-year amortization period.

Certain portions of the normal cost and unfunded actuarial liabilities attributable to Local employers are payable by the State and/or over different periods in accordance with the NJ State Statutes.

To the extent that the amortization period remains an open period in future years and depending upon the specific circumstances, it should be noted that in the absence of emerging actuarial gains or contributions made in excess of the actuarially determined contribution, any existing unfunded accrued liability may not be fully amortized in the future.

The non-contributory group life insurance benefit is funded separately through a term cost.

2. Asset Valuation Method

For the purposes of determining contribution rates, an actuarial value of assets is used that dampens the volatility in the market value of assets, resulting in a smoother pattern of contributions.

The actuarial value of assets is adjusted to reflect actual contributions, benefit payments and administrative expenses, and an assumed rate of return on the previous year's assets and current year's cash flow at the prior year's actuarial valuation interest rate, with a further adjustment to reflect 20% of the difference between the resulting value and the actual market value of System assets.

3. Contributions

Chapter 83, P.L. 2016 requires the State to make pension contributions on a quarterly basis in each fiscal year according to the following schedule: at least 25 percent by September 30, at least 50 percent by December 31, at least 75 percent by March 31, and at least 100 percent by June 30. As such, contributions are assumed to be made on a quarterly basis with the first contribution 15 months after the associated valuation date.

Local employers' contributions are expected to be paid on April 1st, 21 months after the associated valuation date.

Chapter 98, P.L. 2017, the Lottery Enterprise Contribution Act, allows PERS to receive 21.02% of the proceeds of the Lottery Enterprise, based upon its members' past or present employment in schools and institutions in the State for a term of 30 years. Revenues from Chapter 98, P.L. 2017, the Lottery Enterprise Contribution Act, are assumed to be contributed to the trust on a monthly basis. The State's pension contribution is reduced by the product of the allocable percentage for the PERS, the adjustment percentage, and the special asset adjustment.

Contributions payable in the fiscal year starting on the valuation date are included in the actuarial value of assets as receivable contributions, discounted by the applicable valuation interest rate.

Legislation has provided for additional benefits and/or funding requirements which are included in this valuation and are described as follows.

Early Retirement Incentive Programs

Local employers which elected to participate in various early retirement incentive programs authorized by NJ Statute make contributions to cover the cost of these programs over amortization periods elected by the employer to the extent permitted by NJ Statute.

Chapter 133, P.L. 2001

Chapter 133, P.L. 2001 increased the accrual rate from 1/60 to 1/55. In addition, it lowered the age required for a veteran benefit equal to 1/55 of highest 12-month Compensation for each Year of Service from 60 to 55.

Chapter 133, P.L. 2001 also established the Benefit Enhancement Fund (BEF) to fund the additional annual employer normal contribution due to the Statute's increased benefits. (Chapter 353, P.L. 2001 extended this coverage to this Statute's additional annual employer normal contribution.) If the assets in the BEF are insufficient to cover the normal contribution for the increased benefits for a valuation period, the State will pay such amount for both the State and Local employers. As of July 1, 2023, there are no assets in the BEF.

Chapter 259, P.L. 2001

Chapter 259, P.L. 2001 established the Workers' Compensation Judges Part of the System with special retirement benefits for Workers' Compensation Judges. See Appendix C for details.

In accordance with the provisions of Chapter 259, P.L. 2001, the additional contributions for these special retirement benefits will be funded by transfers from the Second Injury Fund.

Chapter 366, P.L. 2001

Chapter 366, P.L. 2001 established the Prosecutors Part of the System with special retirement benefits for Prosecutors. See Appendix C for details.

Chapter 366, P.L. 2001 also requires the State be liable for any increase in pension costs to a County that results from the enrollment of Prosecutors in the Prosecutors Part. Any increase in the unfunded actuarial liability arising from the benefits established for the Prosecutors Part are to be amortized over a closed 30-year period.

Chapter 19, P.L. 2009

Chapter 19, P.L. 2009 provided that the State Treasurer will reduce for Local employers the normal and accrued liability contributions to 50 percent of the amount certified for fiscal year 2009. The remaining 50% of the contribution (unfunded liability) will be paid by the Local employers in level annual payments over a period of 15 years with the first payment due in the fiscal year ending June 30, 2012. The unfunded liability will be adjusted by the rate of return on the actuarial value of assets. The legislation also provided that a Local employer may pay 100 percent of the contribution for the fiscal year 2009. Such an employer will be credited with the full payment and any such amounts will not be included in their unfunded liability. In addition, certain Local employers who were eligible to defer 50% of their fiscal year 2009 pension contributions but instead paid 100% of the fiscal year 2009 pension contributions were permitted to defer 50% of their 2010 fiscal year pension contributions. The unfunded liability will be paid by these Local employers over a period of 15 years with the first payment due in the fiscal year ending June 30, 2012. The unfunded liability will be adjusted by the rate of return on the actuarial value of assets.

Chapter 140, P.L. 2021

Chapter 140, P.L. 2021 reopened the Worker's Compensation Judges (WCJ) Part of PERS and transferred WCJs from the Defined Contribution Retirement Program (DCRP) and the regular part of PERS into the WCJ Part of PERS.

The corresponding increase in the unfunded actuarial liability is amortized over a closed 20-year period. The additional unfunded actuarial liability contribution and the increased normal cost contribution will be paid by transfers from the Second Injury Fund (SIF).

4. ASOP No. 4 Disclosure

ASOP No. 4 requires the disclosure of a reasonable actuarially determined contribution (ADC), which includes the use of an asset valuation method that complies with ASOP No. 44. For purposes of this disclosure requirement only, we have calculated an ADC based on the market value of assets instead of the actuarial value of assets. Using the market value of assets would result in more volatile contribution requirements, but would avoid deferral of contribution increases due to unrecognized asset losses. The State's reasonable ADC is \$57 million, or 3.1%, greater than the FYE 2025 Statutory contribution shown in Table I-1 and the Local employers' reasonable ADC is \$25 million, or 1.9%, greater than the FYE 2025 Statutory contribution shown in Table I-2. For purposes of these reasonable ADC calculations, we use an investment rate of return assumption of 7.00%, net of administrative expenses.

The actuarial methods used to determine the reasonable ADC described above have been selected to balance benefit security, intergenerational equity and stability of contributions. The selection of the actuarial methods has taken into account the demographics of plan members, the funding goals and objectives of the State (as expressed through the Statutory contribution), and the need to accumulate assets to make benefit payments when due. The methods used are not the only methods that would result in a reasonable ADC. There are a range of methods that would result in reasonable ADCs. For example, a reasonable ADC could be based on a different asset smoothing method that complies with ASOP No. 44.

5. 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 ProVal assumptions or output that would affect this actuarial valuation.

6. Changes Since Last Valuation

None.

This summary of Plan provisions provides an overview of the major provisions of the PERS used in the actuarial valuation. It is not intended to replace the more precise language of the NJ State Statutes, Title 43, Chapter 15A, and if there is any difference between the description of the plan herein and the actual language in the NJ State Statutes, the NJ State Statutes will govern. This valuation is prepared based on plan provisions in effect as of July 1, 2023 and does not reflect the impact of any changes in the benefits that may have been approved after the valuation date.

1. Eligibility for Membership

Employees of the State or any county, municipality, school district, or public agency employed on a regular basis in a position covered by Social Security and not required to be a member of any other State or local government retirement system. Certain exceptions apply.

- a) Class B (or Tier 1) Member: Any member hired prior to July 1, 2007.
- b) Class D (or Tier 2) Member: Any member hired on or after July 1, 2007 and before November 2, 2008.
- c) Class E (or Tier 3) Member: Any member hired after November 1, 2008 and before May 22, 2010.
- d) Class F (or Tier 4) Member: Any member hired after May 21, 2010 and before June 28, 2011.
- e) Class G (or Tier 5) Member: Any member hired on or after June 28, 2011.

The hiring, rehiring, retention, and benefits of certain public employees during the COVID-19 Public Health Emergency was modified under Executive Order No. 103 of 2020, as extended.

2. Plan Year

The 12-month period beginning on July 1 and ending on June 30.

3. Years of Service

A year of service for each year an employee is a Member of the Retirement System plus service, if any, covered by a prior service liability. Tier 4 and Tier 5 Members must be scheduled to work at least 35 hours per week for the State or 32 hours per week for a Local employer. Tier 3, 4 and 5 Members must have an annual salary of \$7,500 (indexed for inflation) and other members must have an annual salary of \$1,500.

4. Compensation

Base salary upon which contributions by a Member to the Annuity Savings Fund were based. Chapter 113, P.L. 1997 provides that Compensation cannot exceed the compensation limitation of Section 401(a)(17) of the Internal Revenue Code. Chapter 103, P.L. 2007 provides that for a Tier 2, 3, 4 or 5 Member, Compensation cannot exceed the annual maximum wage contribution base for Social Security, pursuant to the Federal Insurance Contribution Act.

5. Final Compensation

The average annual compensation upon which contributions by a Member are made for the three consecutive years of service immediately preceding retirement, or the highest three fiscal years of service, if greater. Chapter 1, P. L. 2010 provides that for a Tier 4 or Tier 5 Member, Final Compensation is the average annual compensation upon which contributions by a Member are made for the five consecutive years of service immediately preceding retirement, or the highest five fiscal years of service, if greater.

6. Final Year Compensation

The compensation upon which contributions by a Member to the Annuity Savings Fund are based in the last year of service.

7. Accumulated Deductions

The sum of all amounts deducted from the compensation of a Member or contributed by the Member or on the Member's behalf without interest.

8. Interest Credits on Accumulated Deductions

Members receive interest credits while contributing and for the first two years of inactivity. The rate depends on the type of benefit. Prior to July 1, 2018, members received interest credits for the entire period of inactivity until retirement or death.

9. Member Contributions

Each Member contributes a percentage of Compensation. Effective October 1, 2011, Chapter 78, P.L. 2011 set the member contribution rate at 6.5% and increased it by 1/7th of 1 % each July thereafter until it attained an ultimate rate of 7.5% on July 1, 2018.

For members who are eligible to retire under the Prosecutors Part as provided by Chapter 366, P.L. 2001, Chapter 78, P.L. 2011 set the member contribution rate at 10.0%, effective October 1, 2011.

10. Benefits

- a) **Service Retirement**: For a Tier 1 or Tier 2 Member, age 60. For a Tier 3 or Tier 4 Member, age 62. For a Tier 5 Member, age 65.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of:

- (1) For a Tier 1, 2 or 3 Member, 1/55 of Final Compensation for each Year of Service.
- (2) For a Tier 4 or 5 Member, 1/60 of Final Compensation for each Year of Service.

- b) **Early Retirement:** Prior to eligibility for Service Retirement. For a Tier 1, 2, 3 or 4 Member, 25 Years of Service. For a Tier 5 Member, 30 Years of Service.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of:

- (1) For a Tier 1 Member, the Service Retirement benefit reduced by 1/4 of one percent for each month the retirement date precedes age 55.
- (2) For a Tier 2 Member, the Service Retirement benefit reduced by 1/12 of one percent for each month the retirement date precedes age 60 through age 55 and by 1/4 of one percent for each month the retirement date precedes age 55.
- (3) For a Tier 3 or 4 Member, the Service Retirement benefit reduced by 1/12 of one percent for each month the retirement date precedes age 62 through age 55 and by 1/4 of one percent for each month the retirement date precedes age 55.
- (4) For a Tier 5 Member, the Service Retirement benefit reduced by 1/4 of one percent for each month the retirement date precedes age 65.

- c) **Veteran Retirement:** Age 55 with 25 Years of Service or Age 60 with 20 Years of Service for a qualified military veteran who retires directly from active service.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of the greater of:

- (1) 54.5% of highest 12-month Compensation, or
- (2) For a member who is at least age 55 with 35 Years of Service, 1/55 of highest 12-month Compensation for each Year of Service.

Veterans may receive a Service Retirement benefit if greater.

- d) **Deferred Retirement:** Termination of service prior to eligibility for Service Retirement with 10 Years of Service.

Benefit is either:

- (1) A refund of Accumulated Deductions plus, if the member has completed three Years of Service, interest accumulated at 2.0% per annum; or
- (2) A deferred life annuity, commencing at age 60 for a Tier 1 or Tier 2 Member, age 62 for a Tier 3 or Tier 4 Member or age 65 for a Tier 5 Member, comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of the Service Retirement benefit based on Final Compensation and Years of Service at date of termination.

For Members who die during the deferral period, the benefit is a return of Accumulated Deductions with credited interest.

- e) **Non-Vested Termination:** Termination of service prior to eligibility for Service Retirement and less than 10 Years of Service.

Benefit is a refund of Accumulated Deductions plus, if the member has completed three Years of Service, interest accumulated at 2.0% per annum.

f) **Death Benefits**

- (1) **Ordinary Death Before Retirement:** Death of an active contributing Member. Benefit is equal to:

- a. Lump sum payment equal to 150% of Final Year Compensation, also known as the non-contributory group life insurance benefit, plus
- b. Accumulated Deductions with credited interest.

- (2) **Accidental Death Before Retirement:** Death of an active Member resulting from injuries received from an accident during performance of duty and not a result of willful negligence. Benefit is equal to:

- a. Lump sum payment equal to 150% of Final Year Compensation, also known as the non-contributory group life insurance benefit, plus
- b. Spouse life annuity of 50% of Final Year Compensation payable until spouse's death or remarriage. If there is no surviving spouse or upon death or remarriage, a total of 20% (35%, 50%) of Final Year Compensation payable to one (two, three or more) dependent child(ren). If there is no surviving spouse or dependent child(ren), 25% (40%) of Final Year Compensation to one (two) dependent parent(s). If there is no surviving spouse, dependent child(ren) or parent(s), the benefit is a refund of Accumulated Deductions with credited interest.

- (3) **Death After Retirement:** Death of a retired Member. Benefit is equal to:

- a. Lump sum payment equal to 3/16 of Final Year Compensation for a Member retired under Service, Early, Veteran or Deferred Retirement with 10 Years of Service. For a Member receiving a Disability benefit, lump sum payment of 150% of Final Year Compensation if death occurs prior to age 60 and 3/16 of Final Compensation if death occurs after age 60. This benefit is also known as the non-contributory group life insurance benefit, plus
- b. Any survivor benefit due under the Member's optional form of payment election. Previously granted COLAs also apply to life annuities.

Members are also eligible for a voluntary, employee-paid life insurance policy, known as the contributory group life insurance policy. This benefit is not paid through the System and is not considered for valuation purposes.

g) **Disability Retirement**

- (1) **Ordinary Disability Retirement**: 10 Years of Service and totally and permanently incapacitated from the performance of normal or assigned duties. Only available to Tier 1, 2 and 3 Members.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of:

- a. 1.64% of Final Compensation for each Year of Service; or
- b. 43.6% of Final Compensation.

- (2) **Accidental Disability Retirement**: Total and permanent incapacitation as a direct result of a traumatic event occurring during and as a result of the performance of regular or assigned duties. Under certain conditions for law enforcement officers or emergency medical technicians, regular or assigned duties may include the World Trade Center (WTC) rescue, recovery, or cleanup operations between September 11, 2001 and October 11, 2001. For such members who participated in the WTC rescue, recovery, or cleanup operations, the total and permanent disability may occur after retirement on a service retirement or an ordinary disability retirement. Only available to Tier 1, 2 and 3 Members.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 72.7% of Compensation at the date of injury.

The pension portion of the benefit will be offset for any periodic Workers' Compensation benefits.

Tier 4 and Tier 5 Members are eligible for long-term disability coverage. This benefit is not paid through the System and is not considered for valuation purposes. Both Member and employer contributions to the System continue while on long-term disability, with the policy covering the Member portion. The long-term disability benefit equals 60% of Final Year Compensation and may be offset for other periodic benefits, such as Workers' Compensation, short-term disability or Social Security. The long-term disability benefit may continue through the earlier of age 70 or commencement of a retirement benefit under the System.

11. Benefits for Special Employee Groups

Certain members qualify for enrollment into special employee groups. Such members receive the greater of the special benefits described below or the regular PERS benefit described above. For benefit types not explicitly mentioned, the regular PERS benefit applies.

a) Law Enforcement Officers (LEOs):

Members employed in eligible job titles as well as individuals who do not meet the age or medical requirements for entry into the Police and Firemen's Retirement System (PFRS).

(1) Service and Special Retirement

Mandatory retirement at age 65. Veterans with less than 20 Years of Service at age 65 must retire upon attainment of 20 Years of Service or age 70, whichever is earlier. Voluntary retirement prior to those ages.

a. Service Retirement: Age 55 after 20 Years of LEO Service.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 2% of Final Compensation for each Year of LEO Service up to 25 years plus 1% of Final Compensation for each Year of LEO Service over 25 years.

The Member is also eligible for a regular PERS benefit based on any non-LEO service.

b. Special Retirement: 25 Years of LEO Service.

Benefit is the Service Retirement benefit plus 5% of Final Compensation with a maximum of 70% of Final Compensation.

(2) Ordinary Disability Retirement: 5 Years of LEO Service.

Benefit is the regular PERS Ordinary Disability benefit.

(3) Death Benefits:

Benefit is the regular PERS Death benefit except, upon Accidental Disability Retirement, the minimum lump sum payment is \$5,000.

b) Legislative Retirement System (LRS):

Members of the State Legislature. Chapter 92, P.L. 2007 closed LRS to new members enrolled on or after July 1, 2007.

(1) Special Legislative Retirement: Age 60.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 3% of Final Compensation for each Year of Legislative Service with a maximum of two-thirds of Final Compensation.

The Member is also eligible for a regular PERS benefit based on any non-legislative service.

(2) Deferred Retirement: Termination of service prior to eligibility for Service or Special Legislative Retirement with 8 Years of Legislative Service.

Benefit is either:

- a. A refund of Accumulated Deductions plus, if the Member has completed three Years of Service, interest accumulated at 2.0% per annum; or
- b. A deferred life annuity, commencing at age 60, comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of the Service or Special Legislative Retirement benefit based on Final Compensation and Years of Service at date of termination.

c) **Prosecutors Part (Chapter 366, P.L. 2001 and Chapter 226, P.L. 2021):**

Covers prosecutors as well as members employed in certain other related job titles. Chapter 1. P.L. 2010 closed the Prosecutors Part to new members enrolled on or after May 22, 2010.

Chapter 226, P.L. 2021 reopened the Prosecutors Part of PERS and made membership in the Prosecutors Part of PERS mandatory for prosecutors.

(1) Service and Special Retirement

Mandatory retirement at age 70. Voluntary retirement prior to that age.

In addition to the benefits described below, the member is eligible for a regular PERS benefit based on any non-Prosecutors Part service.

- a. Service Retirement: For a Prosecutors Part Member enrolled as of January 7, 2002, age 55 or 20 Years of Prosecutors Part Service. For a Prosecutors Part Member enrolled after January 7, 2002, age 55.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of the greater of:

- i. 2% of Final Year Compensation for each Year of Prosecutors Part Service up to 30 years plus 1% of Final Year Compensation for each Year of Prosecutors Part Service over 30 years.
 - ii. 50% of Final Year Compensation for Prosecutors Part Members with 20 or more Years of Prosecutors Part Service.
 - iii. 1/60 of Final Year Compensation for each Year of Prosecutors Part Service.
- b. Special Retirement: 25 Years of Prosecutors Part Service.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 65% of Final Year Compensation plus 1% of Final Year Compensation for each Year of Prosecutors Part Service in excess of 25 years with a maximum of 70% of Final Compensation.

- (2) Deferred Retirement: Termination of service prior to eligibility for Service or Special Retirement with 10 Years of Prosecutors Part Service.

Benefit is either:

- a. A refund of Accumulated Deductions plus, if the Member has completed three Years of Service, interest accumulated at 2.0% per annum; or
- b. A deferred life annuity, commencing at age 55, comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 2% of Final Year Compensation for each Year of Prosecutors Part Service.

- (3) Death Benefits:

Benefit is the regular PERS Death benefit except, upon Service, Special or Deferred Prosecutors Part Retirement with 10 Years of Prosecutors Part Service, the lump sum payment equals 50% of Final Year Compensation.

- d) **Workers Compensation Judges (WCJ) Part (Chapter 259, P.L. 2001 and Chapter 140, P.L. 2021)**:

Member employed in an eligible job title by the Division of Workers' Compensation. Chapter 92, P.L. 2007 closed the Workers Compensation Judges Part to new members enrolled on or after July 1, 2007.

Chapter 140, P.L. 2021 reopened the Worker's Compensation Judges (WCJ) Part of PERS and transferred WCJs from the Defined Contribution Retirement Program (DCRP) and the regular part of PERS into the WCJ Part of PERS.

(1) Service Retirement:

Mandatory retirement age 70. Voluntary retirement prior to that age.

- a. Age 70 and 10 Years of WCJ Service; or
Age 65 and 15 Years of WCJ Service; or
Age 60 and 20 Years of WCJ Service.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 75% of contractual Compensation at the date of retirement.

- b. Age 65, 5 consecutive Years of WCJ Service and 15 Years of Aggregate PERS Service; or
Age 60, 5 consecutive Years of WCJ Service and 20 Years of Aggregate PERS Service.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 50% of contractual Compensation at the date of retirement.

- c. Age 60, 5 consecutive Years of WCJ Service and 15 Years of Aggregate PERS Service.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 2% of contractual Compensation at the date of retirement for each Year of Aggregate PERS Service up to 25 years plus 1% of contractual Compensation at the date of retirement for each Year of Aggregate PERS Service over 25 years.

- d. Age 60.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 2% of contractual Compensation at the date of retirement for each Year of WCJ Service up to 25 years plus 1% of contractual Compensation at the date of retirement for each Year of Aggregate PERS Service over 25 years.

- (2) Early Retirement: Prior to eligibility for Service Retirement and 5 consecutive Years of WCJ Service and 25 Years of Aggregate PERS Service.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 2% of contractual Compensation at the date of retirement for each Year of Aggregate PERS Service up to 25 years plus 1% of contractual Compensation at the date of retirement for each Year of Aggregate PERS Service over 25 years, actuarially reduced for commencement prior to age 60.

- (3) Deferred Retirement: Termination of service prior to eligibility for Service Retirement with 5 consecutive Years of WCJ Service and 10 Years of Aggregate PERS Service.

Benefit is either:

- a. A refund of Accumulated Deductions plus, if the Member has completed three years of service, interest accumulated at 2.0% per annum; or
- b. A deferred life annuity, commencing at age 60, comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 2% of contractual Compensation at the date of retirement for each Year of Aggregate PERS Service up to 25 years plus 1% of contractual Compensation at the date of retirement for each Year of Aggregate PERS Service over 25 years.

- (4) Death Benefits

- a. Before Retirement: Death of an active WCJ Member. Benefit is equal to:
 - i. Lump sum equal to 150% of contractual Compensation at the date of death, also known as the non-contributory group life insurance benefit, plus
 - ii. Spousal life annuity of 25% of contractual Compensation at the date of death payable until spouse's remarriage plus 10% (15%) to one (two or more) dependent child(ren). If there is no surviving spouse, or upon death or remarriage, a total of 15% (20%, 30%) of contractual Compensation at the date of death payable to one (two, three or more) dependent child(ren). If there is no surviving spouse or dependent child(ren), 20% (30%) of contractual Compensation at the date of death to one (two) dependent parent(s). If there is no surviving spouse, dependent child(ren) or parent(s), the benefit is a refund of Accumulated Deductions with interest.

b. After Retirement: Death of a retired WCJ Member. Benefit is equal to:

- i. Lump sum equal to 25% of contractual Compensation at the date of death for a Member retired under Service or Early WCJ Retirement with 10 Years of Aggregate PERS Service. For a Member receiving a Disability benefit, lump sum payment of 150% of contractual Compensation at the date of death if death occurs prior to age 60 and 25% of contractual Compensation at the date of death if death occurs after age 60. This benefit is known as the non-contributory group life insurance benefit, plus
- ii. Any survivor benefit due under the Member's optional form of payment election. Previously granted COLAs also apply to life annuities.

12. Optional Forms of Payment

The member may elect the following forms of payment.

- a) Maximum Option: Single life annuity with a return of the balance of the Accumulated Deductions with credited interest.
- b) Option 1: Single life annuity with a return of the balance of the initial reserve.
- c) Option 2: 100% joint and survivor annuity.
- d) Option 3: 50% joint and survivor annuity.
- e) Option 4: Other percentage joint and survivor annuity.
- f) Option A: 100% pop-up joint and survivor annuity.
- g) Option B: 75% pop-up joint and survivor annuity.
- h) Option C: 50% pop-up joint and survivor annuity.
- i) Option D: 25% pop-up joint and survivor annuity.

13. Cost-of-Living Adjustments

Also known as Pension Adjustments. Provided annually to retirees and survivors after 24 months of retirement prior to July 1, 2011. Chapter 78, P.L. 2011 eliminated future adjustments effective July 1, 2011. Adjustments may be reinstated in the future subject to certain conditions outlined in Chapter 78, P.L. 2011.

14. Changes in Plan Provisions Since Last Valuation

None.

The information on the following tables for State and Local employers is based on the final actuarial valuation reports for the given years. The amounts do not reflect differences between the discounted State appropriations receivable and the actual State contribution amounts that became known after the issuance of the reports.

**Table D-1
Historical Summary of Assets and Liabilities
State**

Valuation Date July 1,	Market Value of Assets	Actuarial Value of Assets with Special Asset Value ¹		Funded Ratio	
		Actuarial Liability	Market Value	Actuarial Value	Actuarial Value
2023	\$ 9,222,531,715	\$ 12,502,517,768	\$ 28,762,696,821	32.1%	43.5%
2022	8,485,901,686	11,979,875,759	28,185,048,883	30.1%	42.5%
2021	9,116,415,984	11,533,493,169	27,489,997,258	33.2%	42.0%
2020	7,249,876,062	10,687,660,452	26,285,137,008	27.6%	40.7%
2019	7,454,643,131	10,669,315,506	25,666,760,996	29.0%	41.6%
2018	7,533,286,615	10,710,534,806	23,745,716,631	31.7%	45.1%
2017	7,520,536,539	10,861,669,626	23,324,861,385	32.2%	46.6%
2016	7,370,865,995	11,109,798,893	22,411,751,124	32.9%	49.6%
2015	8,218,735,979	8,868,254,006	21,635,507,298	38.0%	41.0%
2014	8,778,291,546	9,128,235,998	20,842,690,918	42.1%	43.8%

¹ Includes Special Asset Value beginning with July 1, 2016 valuation

**Table D-2
Historical Summary of Employer Contributions¹
State**

Fiscal Year Ending June 30,	Statutory Contribution /		Lottery Revenue	Contribution Deficiency/ (Excess)	Percentage of Contribution Covered
	Actuarially Determined Contribution	Actual State Appropriation			
2024 ²	\$ 1,821,307,122	\$ 1,691,228,219	\$ 234,510,384	\$ (104,431,481)	105.7%
2023	1,757,720,407	1,628,706,270	245,934,000	(116,919,863)	106.7%
2022	1,718,462,218	1,624,706,855	233,550,067	(139,794,704)	108.1%
2021	1,622,539,084	1,037,865,734	232,271,000	352,402,350	78.3%
2020	1,432,190,871	776,970,874	213,353,000	441,866,997	69.1%
2019	1,406,859,836	627,377,884	232,271,000	547,210,952	61.1%
2018	1,324,313,829	451,752,000	205,155,662	667,406,167	49.6%
2017	1,263,740,460	506,499,652	0	757,240,808	40.1%
2016	1,182,038,756	355,290,348	0	826,748,408	30.1%
2015	1,058,157,699	195,153,000	0	863,004,699	18.4%

¹ Excludes contributions from NCGI and contributions payable from the Second Injury Fund for Chapter 259, P.L. 2001 and Chapter 140, P.L. 2021

² Reflects the State's planned contribution of 100% of the Statutory contribution and expected lottery revenue

**Table D-3
Historical Summary of Assets and Liabilities
Local Employers**

Valuation Date July 1,	Market Value of Assets	Actuarial Value of Assets	Actuarial Liability	Funded Ratio	
				Market Value	Actuarial Value
2023	\$ 27,347,606,002	\$ 27,638,369,472	\$ 40,366,610,080	67.7%	68.5%
2022	25,757,807,667	26,694,121,356	39,317,139,093	65.5%	67.9%
2021	28,329,219,469	25,965,285,547	38,393,126,094	73.8%	67.6%
2020	22,891,936,466	24,424,654,983	36,410,100,750	62.9%	67.1%
2019	23,249,120,186	23,928,515,595	35,526,210,970	65.4%	67.4%
2018	22,645,367,115	23,264,877,618	33,103,627,533	68.4%	70.3%
2017	21,470,284,400	22,522,697,150	32,238,416,280	66.6%	69.9%
2016	19,756,262,137	21,900,421,798	30,673,935,604	64.4%	71.4%
2015	20,557,496,076	21,495,828,937	29,431,895,200	69.8%	73.0%
2014	20,250,197,472	20,766,663,796	28,255,077,220	71.7%	73.5%

**Table D-4
Historical Summary of Employer Contributions¹
Local Employers**

Fiscal Year Ending June 30,	Statutory Contribution /		Contribution Deficiency/ (Excess)	Percentage of Contribution Covered
	Actuarially Determined Contribution	Actual Local Appropriation		
2024	\$ 1,290,896,136	\$ 1,290,896,136	\$ 0	100.0%
2023	1,218,309,080	1,218,309,080	0	100.0%
2022	1,167,822,171	1,129,430,662	38,391,509	96.7%
2021	1,136,379,268	1,059,596,249	76,783,019	93.2%
2020	943,133,465	943,131,078	2,387	100.0%
2019	970,120,667	970,150,173	(29,506)	100.0%
2018	901,781,034	901,868,890	(87,856)	100.0%
2017	866,468,492	866,468,492	0	100.0%
2016	836,545,013	836,545,013	0	100.0%
2015	789,965,173	789,965,173	0	100.0%

¹ Excludes contributions from NCGI and includes ERIs and Chapter 19, P.L. 2009 payments

In accordance with the Government Finance Officers Association (GFOA) and their recommended checklist for Annual Comprehensive Financial Reports, we prepared the following schedules for the System. The GFOA checklist uses the term Actuarial Accrued Liability, which is the same as the Actuarial Liability used elsewhere in this report.

Table D-5 Schedule Retirees and Beneficiaries Added to and Removed From Rolls State								
Valuation Date July 1,	Added to Rolls		Removed from Rolls		Rolls at End of Year		Average Annual Allowance ¹	% Increase in Average Annual Allowance ¹
	Number	Annual Allowance	Number ¹	Annual Allowance	Number ¹	Annual Allowance		
2023	3,155	\$ 109,670,177	2,220	\$ 48,912,378	63,777	\$ 1,918,915,717	\$ 30,088	1.79%
2022	3,680	130,517,862	2,373	50,234,719	62,842	1,857,631,695	29,560	2.37%
2021	2,975	98,190,097	2,223	48,208,424	61,535	1,776,844,453	28,875	1.66%
2020	3,127	99,862,605	2,193	45,081,368	60,783	1,726,418,877	28,403	1.72%
2019	3,232	103,191,557	1,939	40,171,452	59,849	1,671,166,694	27,923	1.70%
2018	3,217	102,255,260	2,281	45,351,461	58,556	1,607,733,796	27,456	1.25%
2017	3,267	104,489,121	1,479	29,655,761	57,174	1,550,464,743	27,118	1.83%
2016	3,515	109,122,538	2,203	40,303,068	55,386	1,474,917,885	26,630	2.45%
2015	4,114	124,446,887	1,754	32,905,541	54,074	1,405,596,194	25,994	2.33%
2014	3,183	93,940,693	1,696	30,809,304	51,714	1,313,713,988	25,403	2.06%

¹ Beginning with the 2018 valuation, multiple members with benefits in receipt from both State and Local employers are included in State headcounts. This change resulted in 446 more records on the rolls as of July 1, 2018. The annual allowance for these records was included for all years.

Table D-6 Schedule Retirees and Beneficiaries Added to and Removed From Rolls Local Employers								
Valuation Date July 1,	Added to Rolls		Removed from Rolls		Rolls at End of Year		Average Annual Allowance	% Increase in Average Annual Allowance
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance		
2023	7,467	\$ 177,184,037	5,528	\$ 83,648,671	130,138	\$ 2,612,310,525	\$ 20,073	2.23%
2022	7,956	185,974,696	5,594	84,197,549	128,199	2,517,340,724	19,636	2.35%
2021	7,336	167,060,350	5,491	81,935,010	125,837	2,414,370,737	19,186	2.17%
2020	7,078	157,358,396	5,729	81,347,000	123,992	2,328,399,284	18,779	2.30%
2019	7,199	158,384,725	4,748	65,855,298	122,643	2,251,384,758	18,357	2.24%
2018	7,272	151,992,839	5,537	76,519,975	120,192	2,157,906,233	17,954	2.17%
2017	7,444	155,525,527	3,725	50,460,932	118,457	2,081,607,680	17,573	2.04%
2016	7,856	159,065,854	5,681	72,658,490	114,738	1,975,865,848	17,221	2.65%
2015	7,870	149,903,333	4,309	54,707,095	112,563	1,888,507,678	16,777	2.02%
2014	7,003	137,416,194	4,288	52,540,322	109,002	1,792,563,653	16,445	2.40%

Table D-7 Schedule Retirees and Beneficiaries Added to and Removed From Rolls Total								
Valuation Date July 1,	Added to Rolls		Removed from Rolls		Rolls at End of Year		Average Annual Allowance ¹	% Increase in Average Annual Allowance ¹
	Number	Annual Allowance	Number ¹	Annual Allowance	Number ¹	Annual Allowance		
2023	10,622	\$ 286,854,214	7,748	\$ 132,561,048	193,915	\$ 4,531,226,242	\$ 23,367	2.04%
2022	11,636	316,492,558	7,967	134,432,267	191,041	4,374,972,419	22,901	2.38%
2021	10,311	265,250,447	7,714	130,143,433	187,372	4,191,215,190	22,368	1.93%
2020	10,205	257,221,002	7,922	126,428,368	184,775	4,054,818,161	21,945	2.09%
2019	10,431	261,576,282	6,687	106,026,750	182,492	3,922,551,452	21,494	2.03%
2018	10,489	254,248,099	7,818	121,871,436	178,748	3,765,640,029	21,067	1.87%
2017	10,711	260,014,648	5,204	80,116,693	175,631	3,632,072,423	20,680	1.95%
2016	11,371	268,188,392	7,884	112,961,558	170,124	3,450,783,733	20,284	2.61%
2015	11,984	274,350,220	6,063	87,612,636	166,637	3,294,103,872	19,768	2.28%
2014	10,186	231,356,887	5,984	83,349,626	160,716	3,106,277,641	19,328	2.30%

¹ Beginning with the 2018 valuation, multiple members with benefits in receipt from both State and Local employers are included in State headcounts. This change resulted in 446 more records on the rolls as of July 1, 2018. The annual allowance for these records was included for all years.

Table D-8 Schedule of Active Member Valuation Data State						
Valuation Date July 1,	Number of Contributing Active Members ¹	Annual Compensation ²	Annual Average Compensation	% Increase in Average Annual Compensation	Number of Participating Employers ³	
2023	64,048	\$ 4,769,262,833	\$ 74,464	2.73%	278	
2022	64,357	4,664,968,264	72,486	3.78%	281	
2021	65,555	4,578,674,071	69,845	2.07%	282	
2020	67,774	4,637,529,278	68,426	2.37%	283	
2019	67,906	4,539,069,588	66,843	5.80%	286	
2018	68,593	4,333,772,974	63,181	-0.45%	283	
2017	68,156	4,325,784,579	63,469	-0.49%	N/A	
2016	68,502	4,369,066,658	63,780	0.02%	N/A	
2015	69,687	4,443,605,376	63,765	2.39%	N/A	
2014	72,952	4,543,384,095	62,279	1.64%	N/A	

¹ Beginning with the 2018 valuation, reflects all records for multiple members

² Limited annual compensation

³ Number of locations reporting contributing active members. For GASB reporting purposes, the State may be considered the participating employer for multiple locations.

Table D-9 Schedule of Active Member Valuation Data Local Employers						
Valuation Date July 1,	Number of Contributing Active Members ¹	Annual Compensation ²	Annual Average Compensation	% Increase in Average Annual Compensation	Number of Participating Employers ³	
2023	140,550	\$ 7,952,897,088	\$ 56,584	3.66%	1,646	
2022	139,073	7,591,465,466	54,586	2.71%	1,651	
2021	138,672	7,369,908,268	53,146	3.53%	1,659	
2020	142,757	7,328,393,274	51,335	3.07%	1,663	
2019	145,287	7,236,080,086	49,805	2.76%	1,664	
2018	146,615	7,106,248,788	48,469	1.66%	1,670	
2017	147,283	7,022,322,604	47,679	2.61%	N/A	
2016	149,077	6,927,278,654	46,468	2.76%	N/A	
2015	152,070	6,876,593,371	45,220	2.33%	N/A	
2014	156,101	6,898,049,131	44,190	2.75%	N/A	

¹ Beginning with the 2018 valuation, reflects all records for multiple members

² Limited annual compensation

³ Number of locations reporting contributing active members

Table D-10 Schedule of Active Member Valuation Data Total						
Valuation Date July 1,	Number of Contributing Active Members ¹	Annual Compensation ²	Annual Average Compensation	% Increase in Average Annual Compensation	Number of Participating Employers ³	
2023	204,598	\$ 12,722,159,921	\$ 62,181	3.21%	1,924	
2022	203,430	12,256,433,730	60,249	2.98%	1,932	
2021	204,227	11,948,582,339	58,506	2.94%	1,941	
2020	210,531	11,965,922,552	56,837	2.91%	1,946	
2019	213,193	11,775,149,674	55,232	3.90%	1,950	
2018	215,208	11,440,021,762	53,158	0.92%	1,953	
2017	215,439	11,348,107,183	52,674	1.46%	N/A	
2016	217,579	11,296,345,312	51,918	1.70%	N/A	
2015	221,757	11,320,198,747	51,048	2.20%	N/A	
2014	229,053	11,441,433,226	49,951	2.37%	N/A	

¹ Beginning with the 2018 valuation, reflects all records for multiple members

² Limited annual compensation

³ Number of locations reporting contributing active members. For GASB reporting purposes, the State may be considered the participating employer for multiple locations.

Table D-11 Schedule of Funding Progress State						
Valuation Date July 1,	Actuarial Value of Assets ¹ (a)	Actuarial Accrued Liability (b)	(Surplus)/Unfunded		Covered Payroll ² (d)	(Surplus)/Unfunded Actuarial Accrued Liability as % of Covered Payroll (c) / (d)
			Actuarial Accrued Liability (c) = (b) - (a)	Funded Ratio (a) / (b)		
2023	\$ 9,900,003,769	\$ 28,762,696,821	\$ 18,862,693,052	34.42%	\$ 4,769,262,833	395.51%
2022	9,354,810,560	28,185,048,883	18,830,238,323	33.19%	4,664,968,264	403.65%
2021	8,889,754,699	27,489,997,258	18,600,242,559	32.34%	4,578,674,071	406.24%
2020	8,045,759,732	26,285,137,008	18,239,377,276	30.61%	4,637,529,278	393.30%
2019	8,017,468,579	25,666,760,996	17,649,292,417	31.24%	4,539,069,588	388.83%
2018	8,057,092,909	23,745,716,631	15,688,623,722	33.93%	4,333,772,974	362.01%
2017	8,208,333,488	23,324,861,385	15,116,527,897	35.19%	4,325,784,579	349.45%
2016	8,466,901,791	22,411,751,124	13,944,849,333	37.78%	4,369,066,658	319.17%
2015	8,868,254,006	21,635,507,298	12,767,253,292	40.99%	4,443,605,376	287.32%
2014	9,128,235,998	20,842,690,918	11,714,454,920	43.80%	4,543,384,095	257.84%

¹ Includes receivable amounts. Excludes Special Asset Value.

² Limited annual compensation for contributing actives

Table D-12 Schedule of Funding Progress Local Employers						
Valuation Date July 1,	Actuarial Value of Assets ¹ (a)	Actuarial Accrued Liability (b)	(Surplus)/Unfunded		Covered Payroll ² (d)	(Surplus)/Unfunded Actuarial Accrued Liability as % of Covered Payroll (c) / (d)
			Actuarial Accrued Liability (c) = (b) - (a)	Funded Ratio (a) / (b)		
2023	\$ 27,638,369,472	\$ 40,366,610,080	\$ 12,728,240,608	68.47%	\$ 7,952,897,088	160.05%
2022	26,694,121,356	39,317,139,093	12,623,017,737	67.89%	7,591,465,466	166.28%
2021	25,965,285,547	38,393,126,094	12,427,840,547	67.63%	7,369,908,268	168.63%
2020	24,424,654,983	36,410,100,750	11,985,445,767	67.08%	7,328,393,274	163.55%
2019	23,928,515,595	35,526,210,970	11,597,695,375	67.35%	7,236,080,086	160.28%
2018	23,264,877,618	33,103,627,533	9,838,749,915	70.28%	7,106,248,788	138.45%
2017	22,522,697,150	32,238,416,280	9,715,719,130	69.86%	7,022,322,604	138.35%
2016	21,900,421,798	30,673,935,604	8,773,513,806	71.40%	6,927,278,654	126.65%
2015	21,495,828,937	29,431,895,200	7,936,066,263	73.04%	6,876,593,371	115.41%
2014	20,766,663,796	28,255,077,220	7,488,413,424	73.50%	6,898,049,131	108.56%

¹ Includes receivable amounts. Excludes Special Asset Value.

² Limited annual compensation for contributing actives

Valuation Date July 1,	Actuarial Value of Assets ¹ (a)	Actuarial Accrued Liability (b)	(Surplus)/Unfunded		Covered Payroll ² (d)	(Surplus)/Unfunded Actuarial Accrued Liability as % of Covered Payroll
			Actuarial Accrued Liability (c) = (b) - (a)	Funded Ratio (a) / (b)		(c) / (d)
2023	\$ 37,538,373,241	\$ 69,129,306,901	\$ 31,590,933,660	54.30%	\$ 12,722,159,921	248.31%
2022	36,048,931,916	67,502,187,976	31,453,256,060	53.40%	12,256,433,730	256.63%
2021	34,855,040,246	65,883,123,352	31,028,083,106	52.90%	11,948,582,339	259.68%
2020	32,470,414,715	62,695,237,758	30,224,823,043	51.79%	11,965,922,552	252.59%
2019	31,945,984,174	61,192,971,966	29,246,987,792	52.21%	11,775,149,674	248.38%
2018	31,321,970,527	56,849,344,164	25,527,373,637	55.10%	11,440,021,762	223.14%
2017	30,731,030,638	55,563,277,665	24,832,247,027	55.31%	11,348,107,183	218.82%
2016	30,367,323,589	53,085,686,728	22,718,363,139	57.20%	11,296,345,312	201.11%
2015	30,364,082,943	51,067,402,498	20,703,319,555	59.46%	11,320,198,747	182.89%
2014	29,894,899,794	49,097,768,138	19,202,868,344	60.89%	11,441,433,226	167.84%

¹ Includes receivable amounts. Excludes Special Asset Value.

² Limited annual compensation for contributing actives

Valuation Date July 1,	Actuarial Accrued Liability for			Actuarial Value of Assets ³	Portion of Actuarial Accrued Liabilities Covered by Actuarial Value of Assets		
	Contributing Active & Non-Contributing Member Contributions ¹ (1)	Retirees, Beneficiaries & Deferred Vested ² (2)	Contributing Active & Non-Contributing Member Benefits Financed by Employer ^{1,2} (3)		(1)	(2)	(3)
2023	\$ 6,758,381,603	\$ 18,461,762,575	\$ 3,542,552,643	\$ 9,900,003,769	100.00%	17.02%	0.00%
2022	6,623,312,348	17,965,645,572	3,596,090,963	9,354,810,560	100.00%	15.20%	0.00%
2021	6,592,343,771	17,328,578,369	3,569,075,118	8,889,754,699	100.00%	13.26%	0.00%
2020	6,381,123,395	16,544,875,478	3,359,138,135	8,045,759,732	100.00%	10.06%	0.00%
2019	6,152,782,465	16,087,603,025	3,426,375,506	8,017,468,579	100.00%	11.59%	0.00%
2018	5,953,378,763	15,070,236,164	2,722,101,704	8,057,092,909	100.00%	13.96%	0.00%
2017	5,727,517,176	14,487,785,677	3,109,558,532	8,208,333,488	100.00%	17.12%	0.00%
2016	5,504,706,131	13,686,116,692	3,220,928,301	8,466,901,791	100.00%	21.64%	0.00%
2015	5,302,732,138	12,797,013,628	3,535,761,532	8,868,254,006	100.00%	27.86%	0.00%
2014	5,169,631,309	11,857,858,226	3,815,201,383	9,128,235,998	100.00%	33.38%	0.00%

¹ Includes deferred beneficiaries

² Prior to July 1, 2018, actuarial accrued liability for deferred vesteds included under (3) instead of (2)

³ Includes receivable amounts. Excludes Special Asset Value.

Table D-15
Schedule of Funded Liabilities by Type (Solvency Test)
Local Employers

Actuarial Accrued Liability for

Valuation Date	Actuarial Accrued Liability for				Actuarial Value of Assets ³	Portion of Actuarial Accrued Liabilities Covered by Actuarial Value of Assets		
	Contributing Active & Non-Contributing Member Contributions ¹	Retirees, Beneficiaries & Deferred Vested ²	Contributing Active & Non-Contributing Member Benefits Financed by Employer ^{1,2}			(1)	(2)	(3)
July 1, 2023	\$ 10,231,450,653	\$ 24,581,821,568	\$ 5,553,337,859	\$ 27,638,369,472	100.00%	70.81%	0.00%	
2022	10,018,520,222	23,735,979,687	5,562,639,184	26,694,121,356	100.00%	70.25%	0.00%	
2021	9,867,154,217	22,934,745,828	5,591,226,049	25,965,285,547	100.00%	70.19%	0.00%	
2020	9,574,866,049	21,680,763,400	5,154,471,301	24,424,654,983	100.00%	68.49%	0.00%	
2019	9,234,762,976	20,983,426,083	5,308,021,911	23,928,515,595	100.00%	70.03%	0.00%	
2018	8,934,728,567	19,552,684,545	4,616,214,421	23,264,877,618	100.00%	73.29%	0.00%	
2017	8,542,088,646	18,737,855,865	4,958,471,769	22,522,697,150	100.00%	74.61%	0.00%	
2016	8,168,141,804	17,622,616,344	4,883,177,456	21,900,421,798	100.00%	77.92%	0.00%	
2015	7,829,248,004	16,502,540,582	5,100,106,614	21,495,828,937	100.00%	82.82%	0.00%	
2014	7,477,372,802	15,523,266,419	5,254,437,999	20,766,663,796	100.00%	85.61%	0.00%	

¹ Includes deferred beneficiaries

² Prior to July 1, 2018, actuarial accrued liability for deferred vesteds included under (3) instead of (2)

³ Includes receivable amounts. Excludes Special Asset Value.

Table D-16
Schedule of Funded Liabilities by Type (Solvency Test)
Total

Actuarial Accrued Liability for

Valuation Date	Actuarial Accrued Liability for				Actuarial Value of Assets ³	Portion of Actuarial Accrued Liabilities Covered by Actuarial Value of Assets		
	Contributing Active & Non-Contributing Member Contributions ¹	Retirees, Beneficiaries & Deferred Vested ²	Contributing Active & Non-Contributing Member Benefits Financed by Employer ^{1,2}			(1)	(2)	(3)
July 1, 2023	\$ 16,989,832,256	\$ 43,043,584,143	\$ 9,095,890,502	\$ 37,538,373,241	100.00%	47.74%	0.00%	
2022	16,641,832,570	41,701,625,259	9,158,730,147	36,048,931,916	100.00%	46.54%	0.00%	
2021	16,459,497,988	40,263,324,197	9,160,301,167	34,855,040,246	100.00%	45.69%	0.00%	
2020	15,955,989,444	38,225,638,878	8,513,609,436	32,470,414,715	100.00%	43.20%	0.00%	
2019	15,387,545,441	37,071,029,108	8,734,397,417	31,945,984,174	100.00%	44.67%	0.00%	
2018	14,888,107,330	34,622,920,709	7,338,316,125	31,321,970,527	100.00%	47.47%	0.00%	
2017	14,269,605,822	33,225,641,542	8,068,030,301	30,731,030,638	100.00%	49.54%	0.00%	
2016	13,672,847,935	31,308,733,036	8,104,105,757	30,367,323,589	100.00%	53.32%	0.00%	
2015	13,131,980,142	29,299,554,210	8,635,868,146	30,364,082,943	100.00%	58.81%	0.00%	
2014	12,647,004,111	27,381,124,645	9,069,639,382	29,894,899,794	100.00%	62.99%	0.00%	

¹ Includes deferred beneficiaries

² Prior to July 1, 2018, actuarial accrued liability for deferred vesteds included under (3) instead of (2)

³ Includes receivable amounts. Excludes Special Asset Value.

Table D-17
Analysis of Financial Experience
Change in Unfunded Actuarial Accrued Liability
State

Valuation Date July 1,	Actuarial Value Of Assets Investment (Gain)/Loss	Actuarial Accrued Liability (Gain)/Loss	Assumption & Method Changes	Plan/Policy Changes	Contributions ¹	Change in Unfunded Actuarial Accrued Liability
2023	\$ 169,368,014	\$ 179,396,467	\$ 0	\$ 0	\$ (316,309,752)	\$ 32,454,729
2022	217,227,219	377,528,001	(100,572,196)	2,886,789	(267,074,049)	229,995,764
2021	(56,665,321)	(70,592,801)	798,443,571	4,799,089	(315,119,255)	360,865,283
2020	198,970,917	138,357,335	0	0	252,756,607	590,084,859
2019	140,706,362	461,324,998	1,081,742,399	(6,603,404)	283,498,340	1,960,668,695
2018	130,951,573	93,268,738	(112,274,899)	0	460,150,413	572,095,825
2017	171,949,238	103,170,590	328,696,298	0	567,862,438	1,171,678,564
2016	274,008,949	21,165,025	199,010,114	0	683,411,953	1,177,596,041
2015	162,379,506	164,489,294	53,217,646	0	672,711,926	1,052,798,372
2014	87,486,113	95,327,747	10,733,967	0	1,141,647,711	1,335,195,538

¹ Change due to contributions (greater)/less than normal cost plus interest on the Unfunded Actuarial Accrued Liability.

Table D-18
Analysis of Financial Experience
Change in Unfunded Actuarial Accrued Liability
Local Employers

Valuation Date July 1,	Actuarial Value Of Assets Investment (Gain)/Loss	Actuarial Accrued Liability (Gain)/Loss	Assumption & Method Changes	Plan/Policy Changes	Contributions ¹	Change in Unfunded Actuarial Accrued Liability
2023	\$ 72,690,868	\$ 200,717,054	\$ 0	\$ 0	\$ (168,185,051)	\$ 105,222,871
2022	234,078,422	202,540,254	(150,132,560)	8,219,652	(99,528,578)	195,177,190
2021	(590,983,481)	(26,972,346)	1,086,372,117	0	(26,021,510)	442,394,780
2020	383,179,629	(53,231,151)	0	0	57,801,914	387,750,392
2019	169,848,852	207,179,448	1,392,592,722	(6,437,745)	(4,237,817)	1,758,945,460
2018	154,877,626	161,064,936	(176,743,018)	0	(16,168,759)	123,030,785
2017	263,103,187	249,175,903	439,168,994	0	(9,242,760)	942,205,324
2016	536,039,915	28,949,988	251,983,145	0	20,474,495	837,447,543
2015	234,583,215	90,076,858	152,550,941	0	(29,558,175)	447,652,839
2014	129,116,581	303,918,905	12,554,678	0	15,639,375	461,229,539

¹ Change due to contributions (greater)/less than normal cost plus interest on the Unfunded Actuarial Accrued Liability.

Table D-19
Analysis of Financial Experience
Change in Unfunded Actuarial Accrued Liability
Total

Valuation Date July 1,	Actuarial Value Of Assets Investment (Gain)/Loss	Actuarial Accrued Liability (Gain)/Loss	Assumption & Method Changes	Plan/Policy Changes	Contributions ¹	Change in Unfunded Actuarial Accrued Liability
2023	\$ 242,058,882	\$ 380,113,521	\$ 0	\$ 0	\$ (484,494,803)	\$ 137,677,600
2022	451,305,641	580,068,255	(250,704,756)	11,106,441	(366,602,627)	425,172,954
2021	(647,648,802)	(97,565,147)	1,884,815,688	4,799,089	(341,140,765)	803,260,063
2020	582,150,546	85,126,184	0	0	310,558,521	977,835,251
2019	310,555,214	668,504,446	2,474,335,121	(13,041,149)	279,260,523	3,719,614,155
2018	285,829,199	254,333,674	(289,017,917)	0	443,981,654	695,126,610
2017	435,052,425	352,346,493	767,865,292	0	558,619,678	2,113,883,888
2016	810,048,864	50,115,013	450,993,259	0	703,886,448	2,015,043,584
2015	396,962,721	254,566,152	205,768,587	0	643,153,751	1,500,451,211
2014	216,602,694	399,246,652	23,288,645	0	1,157,287,086	1,796,425,077

¹ Change due to contributions (greater)/less than normal cost plus interest on the Unfunded Actuarial Accrued Liability.

Table E-1			
State ERI Contribution Schedule			
Location Number	Location Name	Fiscal Year 2025 Payment	Present Value as of 7/1/2023
Chapter 23, P.L. 2002			
410	ROWAN UNIVERSITY	\$ 785,800	\$ 9,292,697
411	NEW JERSEY CITY UNIVERSITY	544,199	6,435,582
412	KEAN UNIVERSITY	479,714	5,672,989
413	WILLIAM PATTERSON UNIVERSITY OF NJ	335,181	3,963,778
414	MONCLAIR STATE UNIVERSITY	213,100	2,520,078
415	THE COLLEGE OF NEW JERSEY	599,150	7,085,421
420	RAMAPO COLLEGE OF NEW JERSEY	175,459	2,074,934
421	STOCKTON UNIVERSITY	461,069	5,452,500
430	THOMAS EDISON STATE UNIVERSITY	139,164	1,645,717
498	RUTGERS UNIVERSITY	5,102,607	60,342,307
32700	NEW JERSEY INSTITUTE OF TECHNOLOGY	264,473	3,127,605
	ALL OTHER STATE LOCATIONS	<u>106,047,767</u>	<u>1,254,097,417</u>
	Sub-Total	\$ 115,147,683	\$ 1,361,711,025
	Chapter 21, P.L. 2008	\$ 25,753,933	\$ 304,560,308
	Total	\$ 140,901,616	\$ 1,666,271,333

Consistent with established methodology, payment amounts calculated using a payment date 12 months after the valuation date.

Present values as of July 1, 2023 exclude expected payments for fiscal year ending 2024.

State ERI amounts are not used in determining the Statutory contribution. They are used only in allocating the Statutory contribution to State locations.

Table E-2
Local Employers ERI 2 Contribution Schedule

Location Number	Location Name	Fiscal Year 2025 Payment	Present Value as of 7/1/2023
10071	BURLINGTON CO BD OF SOCIAL SERV	\$ 52,601	\$ 384,738
10171	MERCER CO BD OF SOCIAL SERVICE	113,655	831,307
20100	LAVALLETTE BOROUGH	15,676	114,659
20114	LINDEN CTY FREE PUBLIC LIBRARY	15,576	113,928
20264	MONTCLAIR PUBLIC LIBRARY	39,447	288,528
20320	PALMYRA BOROUGH	24,239	177,288
20720	WASHINGTON BOROUGH	10,134	74,121
21303	WEST NEW YORK BD OF ED	3,461	22,937
21480	EATONTOWN BOROUGH	24,571	179,722
21663	BEVERLY CITY BD OF ED	894	5,923
22030	VERONA TOWNSHIP	16,880	123,465
22540	BOUND BROOK BOROUGH	9,759	71,379
30130	TRENTON HOUSING AUTHORITY	107,582	786,887
30160	ATLANTIC CITY HOUSING AUTHORITY	58,027	424,427
30230	ASBURY PK HOUSING AUTHORITY	1,842	13,471
30250	NEW BRUNSWICK HOUSING AUTHORITY	3,495	25,562
30420	BURLINGTON COUNTY BRIDGE COMM	21,231	155,288
30510	PATERSON HOUSING AUTHORITY	5,288	38,676
30560	MIDDLESEX CO UTILITIES AUTH	170,022	1,243,591
30770	PATERSON PARKING AUTHORITY	3,438	25,149
30900	GLOUCESTER TWP M U A	14,127	103,326
31190	BRIDGETON CITY HOUSING AUTH	1,738	12,714
31250	JERSEY CITY MUNICIPAL UT. AUTH	3,646	26,667
31260	LINDEN CITY HOUSING AUTHORITY	19,369	154,451
31370	MERCER CO IMPROVEMENT AUTHORITY	15,505	113,409
31580	MOUNT LAUREL TWP MUN UTIL AUTH	1,842	13,471
31680	OCEAN GROVE BD OF FIRE COMM	15,459	113,074
31720	NJ SPORTS & EXPOSITION AUTH	1,789	13,085
32080	OCEAN TWP MUN UTIL AUTHORITY	3,651	26,707
32260	HUDSON CO COMMUNITY COLLEGE	5,502	40,246
32700	NJ INSTITUTE OF TECHNOLOGY	91,423	668,692
39990	COMPENSATION RATING & INS BUR	95,470	698,298
50050	ALLENTOWN BOROUGH	1,815	13,272
50130	AUDUBON BOROUGH	3,902	28,542
50830	EAST HANOVER TOWNSHIP	22,080	161,500
51750	LEBANON BOROUGH	1,755	12,834

Consistent with established methodology, payment amounts calculated using a payment date 9 months after the valuation date.

Present values as of July 1, 2023 exclude expected payments for fiscal year ending 2024.

Table E-2 (cont.)			
Local Employers ERI 2 Contribution Schedule			
Location Number	Location Name	Fiscal Year 2025 Payment	Present Value as of 7/1/2023
51800	LINWOOD CITY	\$ 39,365	\$ 287,930
52630	PENNSAUKEN TOWNSHIP	9,077	66,392
53490	WALLINGTON BOROUGH	18,891	138,176
53670	WEST LONG BRANCH BOROUGH	9,752	71,332
55640	FLORHAM PARK SEW AUTHORITY	5,639	41,242
55880	WRIGHTSTOWN MUN UTIL AUTH	1,812	13,253
60023	HUDSON CO SCHOOLS OF TECHNOLOGY	9,701	64,284
Total		\$ 1,091,128	\$ 7,983,943

Consistent with established methodology, payment amounts calculated using a payment date 9 months after the valuation date.

Present values as of July 1, 2023 exclude expected payments for fiscal year ending 2024.

**Table E-3
Local Employer ERI Contribution Schedules due to Recent ERI Legislation**

Location Number	Location Name	Years and Form of Payment	Fiscal Year 2025 Payment	Present Value as of 7/1/2023
Chapter 59, P.L. 1999				
21960	WOODBRIIDGE TOWNSHIP	15 Year - Level	\$ 404,657	\$ 1,080,064
Chapter 23, P.L. 2002				
30440	SOUTH JERSEY PORT CORPORATION	30 Year - Increasing	\$ 123,273	\$ 983,018
31210	NJ HOUSING & MTG FINANCE AGENCY	30 Year - Increasing	149,558	1,192,617
34920	SOUTH JERSEY TRANS AUTHORITY	30 Year - Increasing	129,714	1,034,377
39990	COMPENSATION RATING & INS BUR	30 Year - Increasing	158,913	1,267,218
	Sub-Total		\$ 561,458	\$ 4,477,230
	Total		\$ 966,115	\$ 5,557,294

Consistent with established methodology, payment amounts calculated using a payment date 9 months after the valuation date.

Present values as of July 1, 2023 exclude expected payments for fiscal year ending 2024.

**Table F-1
Local Employer Chapter 19, P.L. 2009 Deferral and Payment Schedule**

Location Number	Location Name	Fiscal Year 2025 Payment	Present Value as of 7/1/2023
10042	MIDDLESEX CO MOSQ EXTERM COMM	\$ 5,282	\$ 9,077
10100	UNION COUNTY	487,021	836,975
10101	UNION CO BD OF SOCIAL SERVICES	156,912	269,662
10152	SALEM CO MOSQUITO COMMISSION	1,716	2,949
20080	POINT PLEASANT BEACH BOROUGH	15,296	26,287
20090	LAKEWOOD TOWNSHIP	59,619	102,458
20093	LAKEWOOD TWP BD OF ED	31,306	53,801
20110	LINDEN CITY	103,804	178,393
20114	LINDEN CTY FREE PUBLIC LIBRARY	5,504	9,459
20130	PLAINFIELD CITY	68,060	116,965
20150	SEASIDE HEIGHTS BOROUGH	14,373	24,700
20160	ASBURY PARK CITY	39,821	68,435
20170	EAST ORANGE CITY	151,266	259,961
20180	EGG HARBOR CITY	6,587	11,321
20200	PERTH AMBOY CITY	71,853	123,484
20210	WILDWOOD CITY	35,894	61,686
20220	BELLEVILLE TOWNSHIP	35,775	61,482
20230	BLOOMFIELD TOWNSHIP	45,646	78,446
20243	DOVER BD OF ED	114	195
20250	IRVINGTON TOWNSHIP	62,033	106,608
20270	MORRISTOWN TOWN	35,998	61,865
20283	WEST ORANGE TOWNSHIP BD OF ED	73,823	126,870
20350	ORANGE CITY	42,108	72,365
20353	ORANGE CITY BD OF ED	25,776	44,297
20413	WESTFIELD TOWN BD OF ED	43,354	74,507
20440	GLEN RIDGE BOROUGH	11,203	19,253
20483	RIDGEFIELD BORO BD OF ED	25,902	44,515
20533	SOUTH HACKENSACK BD OF ED	2,844	4,888
20570	SOUTH ORANGE VILLAGE	31,247	53,699
20590	HACKENSACK CITY	62,498	107,407
20650	FAIRVIEW BOROUGH	17,014	29,239
20680	NEW MILFORD BOROUGH	15,400	26,466
20700	RUTHERFORD BOROUGH	33,252	57,145
20703	RUTHERFORD BORO BD OF ED	19,243	33,070
20710	SOMERVILLE BOROUGH	22,197	38,146

Consistent with established methodology, payment amounts calculated using a payment date 21 months after the valuation date.

Present values as of July 1, 2023 exclude expected payments for fiscal year ending 2024.

**Table F-1 (cont.)
Local Employer Chapter 19, P.L. 2009 Deferral and Payment Schedule**

Location Number	Location Name	Fiscal Year 2025 Payment	Present Value as of 7/1/2023
20720	WASHINGTON BOROUGH	\$ 8,213	\$ 14,114
20760	MAPLEWOOD TOWNSHIP	38,578	66,299
20780	ATLANTIC CITY	167,208	287,357
20790	BRIDGETON CITY	24,194	41,580
20800	CLIFTON CITY	79,112	135,958
20830	PASSAIC CITY	67,487	115,980
20840	RAHWAY CITY	34,622	59,500
20844	RAHWAY PUBLIC LIBRARY	4,564	7,843
20849	RAHWAY WATER COMM	1,273	2,187
20850	BRIELLE BOROUGH	7,359	12,646
20860	COLLINGSWOOD BOROUGH	15,823	27,193
20900	GARWOOD BOROUGH	6,035	10,371
20920	KEANSBURG BOROUGH	13,654	23,465
20950	MATAWAN BOROUGH	10,128	17,406
20960	MIDDLESEX BOROUGH	18,800	32,309
20980	PALISADES PARK BOROUGH	16,051	27,585
21003	ROCKAWAY BOROUGH BD OF ED	4,875	8,378
21010	ROSELLE BOROUGH	19,244	33,072
21080	HILLSIDE TOWNSHIP	27,711	47,624
21093	MILLBURN TWP PUBLIC SCHOOLS	37,758	64,889
21110	WEEHAWKEN TOWNSHIP	27,339	46,983
21120	HOBOKEN CITY	75,074	129,019
21130	LONG BRANCH CITY	47,358	81,388
21160	HARRISON TOWN (HUDSON)	39,817	68,428
21180	OCEANPORT BOROUGH	5,577	9,584
21190	ORADELL BOROUGH	10,522	18,082
21210	FAIRFIELD TOWNSHIP (ESSEX)	19,208	33,010
21250	UNION TOWNSHIP (UNION)	56,453	97,017
21254	UNION TOWNSHIP LIBRARY	5,728	9,844
21270	BAYONNE CITY	91,387	157,054
21280	ELIZABETH CITY	155,585	267,382
21284	ELIZABETH PUBLIC LIBRARY	8,577	14,740
21290	UNION CITY	67,156	115,411
21300	WEST NEW YORK TOWN	47,356	81,383
21373	MONMOUTH BEACH BD OF ED	1,279	2,198

Consistent with established methodology, payment amounts calculated using a payment date 21 months after the valuation date.

Present values as of July 1, 2023 exclude expected payments for fiscal year ending 2024.

**Table F-1 (cont.)
Local Employer Chapter 19, P.L. 2009 Deferral and Payment Schedule**

Location Number	Location Name	Fiscal Year 2025 Payment	Present Value as of 7/1/2023
21470	BOGOTA BOROUGH	\$ 5,178	\$ 8,899
21500	MOUNTAINSIDE BOROUGH	8,299	14,262
21560	GLOUCESTER CITY	18,529	31,843
21650	SECAUCUS TOWN	42,621	73,246
21653	SECAUCUS TOWN BD OF ED	22,205	38,160
21690	FREEHOLD BOROUGH	17,879	30,726
21700	MANVILLE BOROUGH	13,939	23,956
21740	EWING TOWNSHIP	38,216	65,676
21760	SALEM CITY	11,687	20,085
21780	TRENTON CITY	237,360	407,918
21800	MAYWOOD BOROUGH	11,041	18,974
21850	CAMDEN CITY	145,789	250,548
21853	CAMDEN CITY BD OF ED	241,634	415,263
21910	PATERSON CITY	131,027	225,179
22030	VERONA TOWNSHIP	25,041	43,034
22050	CINNAMINSON TOWNSHIP	13,008	22,355
22113	HAWTHORNE BD OF ED	20,619	35,435
22150	HAWORTH BOROUGH	7,095	12,193
22180	CEDAR GROVE TOWNSHIP	16,564	28,467
22190	EMERSON BOROUGH	9,024	15,508
22220	HOWELL TOWNSHIP	54,685	93,979
22230	MILLTOWN BOROUGH	13,963	23,996
22310	FANWOOD BOROUGH	8,223	14,133
22350	MIDDLETOWN TOWNSHIP	72,582	124,736
22380	WALL TOWNSHIP	48,354	83,099
22440	SOMERDALE BOROUGH	5,745	9,874
22500	WILLINGBORO TOWNSHIP	37,091	63,744
22520	JEFFERSON TOWNSHIP	28,920	49,701
22533	PENNSVILLE TWP BD OF ED	15,549	26,722
22540	BOUND BROOK BOROUGH	10,169	17,475
22580	LYNDHURST TOWNSHIP	30,034	51,616
22583	LYNDHURST TWP BD OF ED	14,449	24,832
22710	WEST MILFORD TOWNSHIP	60,053	103,205
22720	RINGWOOD BOROUGH	15,877	27,286
22730	BLOOMINGDALE BOROUGH	10,607	18,230

Consistent with established methodology, payment amounts calculated using a payment date 21 months after the valuation date.

Present values as of July 1, 2023 exclude expected payments for fiscal year ending 2024.

Table F-1 (cont.)
Local Employer Chapter 19, P.L. 2009 Deferral and Payment Schedule

Location Number	Location Name	Fiscal Year 2025 Payment	Present Value as of 7/1/2023
22770	PARAMUS BOROUGH	\$ 65,898	\$ 113,250
22780	METUCHEN BOROUGH	15,063	25,886
22810	MOUNT ARLINGTON BOROUGH	7,125	12,244
22850	WINFIELD TOWNSHIP	1,436	2,469
22930	LITTLE FALLS TWP	11,515	19,789
22990	BERLIN BOROUGH	9,450	16,240
23020	GLOUCESTER TOWNSHIP	36,806	63,254
23030	SOUTH BRUNSWICK TOWNSHIP	79,396	136,446
23040	BARNEGAT TOWNSHIP	19,268	33,114
23070	PLEASANTVILLE CITY	21,992	37,795
23120	HOLMDEL TOWNSHIP	20,671	35,524
23130	NORTH HALEDON BOROUGH	10,162	17,465
23170	RUNNEMEDE BOROUGH	7,905	13,585
23273	LITTLE FERRY BD OF ED	5,550	9,538
23300	BUENA VISTA TOWNSHIP	5,517	9,481
23323	MINE HILL TWP BD OF ED	2,348	4,036
23340	WEST PATERSON BOROUGH	12,459	21,411
23343	WOODLAND PARK BD OF ED	7,970	13,697
23350	NORWOOD BOROUGH	6,309	10,842
23360	MARLBORO TOWNSHIP	43,730	75,153
23400	WINSLOW TOWNSHIP	32,165	55,278
23490	PINE HILL BOROUGH	5,077	8,725
23510	LEBANON TOWNSHIP	5,155	8,859
23560	WEST AMWELL TOWNSHIP	3,483	5,986
23570	EGG HARBOR TOWNSHIP	34,272	58,898
23630	SOUTH AMBOY CITY	16,327	28,059
23660	WEST DEPTFORD TOWNSHIP	35,278	60,627
23700	LAMBERTVILLE CITY	4,600	7,905
23823	MILLSTONE TOWNSHIP BD OF ED	16,933	29,100
30070	NEWARK HOUSING AUTHORITY	161,582	277,689
30130	TRENTON HOUSING AUTHORITY	17,833	30,648
30160	ATLANTIC CITY HOUSING AUTHORITY	20,570	35,351
30200	ORANGE CITY HOUSING AUTHORITY	5,517	9,481
30220	HOBOKEN HOUSING AUTHORITY	15,258	26,222
30250	NEW BRUNSWICK HOUSING AUTHORITY	8,865	15,235
30360	IRVINGTON HOUSING AUTH	9,734	16,728

Consistent with established methodology, payment amounts calculated using a payment date 21 months after the valuation date.

Present values as of July 1, 2023 exclude expected payments for fiscal year ending 2024.

**Table F-1 (cont.)
Local Employer Chapter 19, P.L. 2009 Deferral and Payment Schedule**

Location Number	Location Name	Fiscal Year 2025 Payment	Present Value as of 7/1/2023
30400	UNION CITY HOUSING AUTHORITY	\$ 9,793	\$ 16,830
30430	NEW BRUNSWICK PARKING AUTHORITY	13,802	23,720
30450	MORRISTOWN HOUSING AUTHORITY	5,780	9,933
30460	PASSAIC CITY HOUSING AUTHORITY	9,420	16,188
30480	WEST NEW YORK HOUSING AUTHORITY	7,482	12,858
30490	NORTH BERGEN HOUSING AUTHORITY	8,215	14,118
30510	PATERSON HOUSING AUTHORITY	16,263	27,949
30520	HACKENSACK HOUSING AUTHORITY	4,711	8,095
30550	GARFIELD HOUSING AUTHORITY	5,786	9,944
30570	CAMDEN CITY HOUSING AUTHORITY	20,504	35,238
30580	TRENTON PARKING AUTHORITY	1,475	2,535
30590	PLAINFIELD HOUSING AUTHORITY	9,533	16,384
30600	EDISON TWP HOUSING AUTHORITY	2,495	4,288
30660	UNION CITY PARKING AUTHORITY	3,999	6,873
30710	HADDON TWP FIRE DISTRICT 1	114	195
30770	PATERSON PARKING AUTHORITY	7,346	12,625
30790	FRANKLIN TWP SEWERAGE AUTH	6,102	10,486
30830	HAMILTON TWP FIRE DISTRICT 2	126	216
30900	GLOUCESTER TWP M U A	9,882	16,982
30970	GUTTENBERG HOUSING AUTHORITY	3,499	6,014
31000	OCEAN CITY HOUSING AUTHORITY	1,132	1,945
31030	FRANKLIN TWP HOUSING AUTHORITY	617	1,060
31050	JERSEY CITY INCINERATOR AUTH	41,452	71,238
31070	MILLVILLE HOUSING AUTHORITY	8,956	15,392
31170	RARITAN VALL COMMUNITY COLLEGE	37,408	64,287
31190	BRIDGETON CITY HOUSING AUTH	5,006	8,604
31250	JERSEY CITY MUNICIPAL UT. AUTH	26,523	45,581
31350	CLEMENTON HOUSING AUTHORITY	972	1,671
31360	BERGEN CO HOUSING AUTHORITY	17,078	29,349
31370	MERCER CO IMPROVEMENT AUTHORITY	10,269	17,648
31520	CARLSTADT SEWERAGE AUTHORITY	586	1,007
31560	WOODBINE MUNICIPAL UTIL AUTH	398	683
31600	WILDWOOD CITY HOUSING AUTHORITY	2,357	4,051
31640	RARITAN TWP MUN UTIL AUTHORITY	8,323	14,304
31680	OCEAN GROVE BD OF FIRE COMM	146	251
31710	WEYMOUTH TWP MUN UTIL AUTHORITY	79	136

Consistent with established methodology, payment amounts calculated using a payment date 21 months after the valuation date.

Present values as of July 1, 2023 exclude expected payments for fiscal year ending 2024.

**Table F-1 (cont.)
Local Employer Chapter 19, P.L. 2009 Deferral and Payment Schedule**

Location Number	Location Name	Fiscal Year 2025 Payment	Present Value as of 7/1/2023
31720	NJ SPORTS & EXPOSITION AUTH	\$ 106,824	\$ 183,583
31730	EDGEWATER HOUSING AUTHORITY	1,459	2,507
31870	DOVER TOWN HOUSING AUTHORITY	713	1,225
31890	BURLINGTON CO AVA COMM	1,430	2,457
31970	NEPTUNE TWP SEWERAGE AUTHORITY	7,441	12,788
32250	NEWTON TOWN HOUSING AUTHORITY	752	1,292
32300	DOVER TWP PARKING AUTHORITY	1,390	2,390
32350	GLOUCESTER TWP FIRE DISTRICT 2	467	803
32360	HUNTERDON CO SOIL CONSERV DIST	3,106	5,337
32420	CAPE ATL SOIL CONSRVTN DIST	2,192	3,767
32440	TOMS RIVER FIRE DISTRICT # 2	726	1,248
32460	BERGEN COUNTY SOIL CONSER DIST	1,747	3,003
32530	COLLINGSWOOD BORO HOUSING AUTH	791	1,360
32660	MID BERGEN REG HEALTH COMM	1,198	2,059
32720	BURLINGTON CO SOIL CON DIST	1,739	2,989
32870	MADISON BORO HOUSING AUTHORITY	3,245	5,576
32900	NJ TRANSIT CORPORATION	19,303	33,173
32950	NEPTUNE CITY HOUSING AUTHORITY	329	565
33000	CAMDEN CO SOIL CONSERVATN DIST	1,572	2,702
33020	MONMOUTH OCEAN ED SERV COMM	23,928	41,122
34120	GLOUCESTER TWP FIRE DISTRICT 3	139	238
34240	WARREN CO AUDIO VISUAL AIDS	182	313
34260	OCEAN TWP FIRE DISTRICT 2	834	1,433
34270	CAMDEN CO IMPROVEMENT AUTHORITY	4,820	8,284
34380	SALEM CITY MUNICIPAL PORT AUTH	146	251
34400	BRICK TWP JOINT BD OF FIRE COMM	2,908	4,997
34420	UNION CO UTILITIES AUTHORITY	6,132	10,538
34500	SOUTH TOMS RIVER SEWERAGE AUTH	173	297
34560	LAKESWOOD TWP FIRE DISTRICT 1	630	1,083
34630	CAMDEN CO HEALTH SERVICES CTR	122,420	210,386
34640	NJ SCHOOL BD ASSOC INS GROUP	15,852	27,242
34680	DELAWARE RIVER JT TOLL BRG COM	1,713	2,943
34690	DELRAN TWP FIRE DISTRICT #1	772	1,326
34710	NORTH BERGEN M.U.A.	16,428	28,233
34770	HOWELL TWP FIRE DISTRICT 3	227	390
34840	EAST BRUNSWICK TWP FIRE DIST #2	1,217	2,091

Consistent with established methodology, payment amounts calculated using a payment date 21 months after the valuation date.

Present values as of July 1, 2023 exclude expected payments for fiscal year ending 2024.

**Table F-1 (cont.)
Local Employer Chapter 19, P.L. 2009 Deferral and Payment Schedule**

Location Number	Location Name	Fiscal Year 2025 Payment	Present Value as of 7/1/2023
34880	BURLINGTON TWP FIRE DISTRICT 1	\$ 679	\$ 1,167
34940	WILDWOODS JOINT CONSTRUCTION	317	545
34990	TRENTON DOWNTOWN ASSOCIATION	1,198	2,059
35130	WESTVILLE FIRE DISTRICT # 1	487	837
35200	VINELAND-MILLVILLE URB. ENT.ZON	570	979
35210	NORTH HUDSON REG. COMM CENTER	3,840	6,599
35250	NJ REDEVELOPMENT AUTHORITY	5,050	8,679
35290	HAZLET TWP FIRE DIST	598	1,028
35370	OLD BRIDGE TWP DISTRICT 1	33	56
35400	SOARING HEIGHTS CHARTER SCHOOL	1,431	2,459
35420	JERSEY CITY COMM CHARTER SCHOOL	8,370	14,384
35530	EMILY FISHER CHARTER SCHOOL	8,525	14,651
35620	EAST ORANGE COMMUNITY CHART SCH	8,185	14,066
35670	RED BANK CHARTER SCHOOL	1,241	2,133
35690	INTERNATIONAL CHARTER SCHOOL	622	1,069
35900	CLASSICAL ACAD. CHARTER SCHOOL	284	488
36500	CAMDEN CITY REDEVELOPMENT AGENCY	6,801	11,689
37800	ENGLEWOOD ON THE PALISADES CHAR	1,138	1,955
38400	HUDSON CO ECONOMIC DEVELOP CORP	975	1,675
38500	HOWELL TWP FIRE DISTRICT 4	131	226
39100	BRICK TWP FIRE DISTRICT 1	137	236
39200	QUEEN CITY ACADEMY CHARTER SCH	2,366	4,067
39800	WALL TOWNSHIP FIRE DISTRICT 3	1,021	1,755
40150	BORDENTOWN REG SCH DISTRICT	21,882	37,606
40340	TOMS RIVER SCHOOL DIST	152,691	262,409
40380	WOODSTOWN-PILESGROVE REG SCH	12,593	21,642
41000	RAHWAY CITY REDEVELOPMENT AG	944	1,622
41100	UNIVERSITY ACADEMY CHARTER HS	1,145	1,969
41400	BAYSHORE JOINTURE COMMISSION	2,733	4,697
41600	TEAM ACADEMY CHARTER SCHOOL	3,949	6,787
42000	CARTERET REDEVELOPMENT AGENCY	208	358
42400	PATERSON CHART SCH-SCIENCE/TECH	2,861	4,916
43800	SECAUCUS MUNICIPAL UTIL. AUTH.	5,435	9,341
43900	MONTCLAIR PARKING AUTHORITY	759	1,305

Consistent with established methodology, payment amounts calculated using a payment date 21 months after the valuation date.

Present values as of July 1, 2023 exclude expected payments for fiscal year ending 2024.

**Table F-1 (cont.)
Local Employer Chapter 19, P.L. 2009 Deferral and Payment Schedule**

Location Number	Location Name	Fiscal Year 2025 Payment	Present Value as of 7/1/2023
44600	MIDDLE TOWNSHIP FIRE DIST #1	\$ 972	\$ 1,671
45000	CUMBERLAND-SALEM CONSERV. DIST.	1,372	2,358
45100	BRICK TOWNSHIP FIRE DIST 2	143	246
45300	FREEDOM ACADEMY CHARTER SCHOOL	952	1,636
45800	BLOOMFIELD PARKING AUTHORITY	596	1,024
50033	ALLAMUCHY BD OF ED	3,350	5,757
50050	ALLENTOWN BOROUGH	1,839	3,161
50130	AUDUBON BOROUGH	8,922	15,334
50250	BERKELEY TOWNSHIP MUNICIPAL BLD	42,704	73,390
50410	BROOKLAWN BOROUGH	3,476	5,973
50413	BROOKLAWN BORO BD OF ED	2,220	3,815
50420	BUENA BOROUGH	4,534	7,792
50530	CHESILHURST BOROUGH	1,555	2,672
50733	DENNIS TWP BD OF ED	6,912	11,878
50770	DUNELLEN BOROUGH	6,713	11,536
50790	EASTAMPTON TOWNSHIP	2,955	5,078
50830	EAST HANOVER TOWNSHIP	27,643	47,507
50840	EAST NEWARK BOROUGH	869	1,494
50930	ENGLEWOOD CLIFFS BOROUGH	8,286	14,240
50940	ENGLISHTOWN BOROUGH	2,696	4,633
50973	FAIRFIELD TWP BD ED (CUMBERLND)	2,325	3,995
51080	FRANKLIN TOWNSHIP (GLOUCESTER)	12,632	21,709
51093	FRANKLIN TWP BD OF ED (HUNTRDN)	2,089	3,591
51140	FRELINGHUYSEN TWP	1,232	2,117
51260	GUTTENBERG TOWN	6,711	11,532
51283	HAINESPORT TOWNSHIP BD OF ED	4,269	7,336
51290	HALEDON BOROUGH	9,440	16,223
51333	HAMPTON BOROUGH BD OF ED	1,173	2,016
51360	HARDWICK TOWNSHIP	1,555	2,672
51400	HARRISON TOWNSHIP (GLOUCESTER)	7,146	12,280
51470	HIGHTSTOWN BOROUGH	11,719	20,140
51520	HOPATCONG BOROUGH	21,433	36,834
51640	JERSEY CITY	111,179	191,067
51670	KNOWLTON TOWNSHIP	3,005	5,165
51730	LAWNSIDE BOROUGH	5,564	9,562
51790	LINDENWOLD BOROUGH	13,103	22,518

Consistent with established methodology, payment amounts calculated using a payment date 21 months after the valuation date.

Present values as of July 1, 2023 exclude expected payments for fiscal year ending 2024.

**Table F-1 (cont.)
Local Employer Chapter 19, P.L. 2009 Deferral and Payment Schedule**

Location Number	Location Name	Fiscal Year 2025 Payment	Present Value as of 7/1/2023
51970	MANCHESTER TOWNSHIP	\$ 28,633	\$ 49,207
52000	MANSFIELD TOWNSHIP (WARREN)	5,050	8,679
52050	ABERDEEN TOWNSHIP	16,713	28,723
52060	MAURICE RIVER TOWNSHIP	4,092	7,033
52203	MONROE TWP BD OF ED (GLOUCESTR)	25,855	44,433
52340	NATIONAL PARK BOROUGH	2,475	4,253
52360	NEWARK CITY	528,079	907,536
52363	NEWARK PUBLIC SCHOOLS	598,394	1,028,377
52620	PENNS GROVE BOROUGH	4,554	7,827
52720	PLAINSBORO TOWNSHIP	27,220	46,780
52770	PROSPECT PARK BOROUGH	3,418	5,875
52920	ROSELAND BOROUGH	14,550	25,006
52960	SADDLE BROOK TOWNSHIP	17,921	30,798
53100	LAKE COMO BOROUGH	4,526	7,778
53110	SOUTH BOUND BROOK BOROUGH	4,400	7,562
53140	SOUTH TOMS RIVER BOROUGH	2,376	4,083
53260	SUSSEX BOROUGH	2,147	3,689
53360	UNION BEACH BOROUGH	6,689	11,495
53420	UPPER SADDLE RIVER BORO	9,669	16,617
53510	WANAQUE BOROUGH	12,806	22,009
53800	WOODBURY HEIGHTS BOROUGH	4,875	8,378
53823	WOODLAND TWP BD OF ED	1,736	2,984
55130	CAPE MAY CO BRIDGE COMM	6,231	10,708
55450	BERKELEY TWP SEWERAGE AUTHORITY	4,805	8,257
55510	HADDON TOWNSHIP HOUSING AUTH	922	1,585
55520	PRINCETON HOUSING AUTHORITY	2,102	3,613
55950	HIGHLANDS HOUSING AUTH	1,030	1,770
55970	PLEASANTVILLE HOUSING AUTH	3,886	6,678
56120	RED BANK BORO HOUSING AUTH	2,348	4,036
56140	CARTERET HOUSING AUTHORITY	4,716	8,104
56170	EDGEWATER PARK SEWERAGE AUTH	316	544
56300	KEANSBURG BORO HOUSING AUTH	1,269	2,181
56320	NEWARK PARKING AUTHORITY	732	1,259
56370	BEVERLY CITY HOUSING AUTHORITY	656	1,127
56400	HIGHLAND PARK HOUSING AUTHORITY	1,477	2,539
56440	FLORENCE TWP HOUSING AUTHORITY	365	627

Consistent with established methodology, payment amounts calculated using a payment date 21 months after the valuation date.

Present values as of July 1, 2023 exclude expected payments for fiscal year ending 2024.

**Table F-1 (cont.)
Local Employer Chapter 19, P.L. 2009 Deferral and Payment Schedule**

Location Number	Location Name	Fiscal Year 2025 Payment	Present Value as of 7/1/2023
56480	BOONTON HOUSING AUTHORITY	\$ 1,321	\$ 2,271
57270	SHORE REGIONAL H S DISTRICT	5,709	9,811
57530	NEW HANOVER TWP BD OF ED	1,460	2,509
60023	HUDSON CO SCHOOLS OF TECHNOLOGY	60,789	104,470
60030	PASSAIC COUNTY	472,743	812,438
60031	PASSAIC CO BD OF SOCIAL SERVICE	187,175	321,671
60050	WATERFRONT COMM OF NY HARBOR	1,543	2,653
70023	GUTTENBERG BORO BD OF ED	3,994	6,863
79100	NJ FIREMENS HOME	14,035	24,120
	Total	\$ 8,737,980	\$ 15,016,751

Consistent with established methodology, payment amounts calculated using a payment date 21 months after the valuation date.

Present values as of July 1, 2023 exclude expected payments for fiscal year ending 2024.

1. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disability, and retirement; changes in compensation; inflation; rates of investment earnings, and asset appreciation or depreciation; and other relevant items.

2. Actuarial Cost Method

A procedure for determining the Actuarial Present Value of pension plan benefits and expenses and for developing an allocation of such value to each year of service, usually in the form of a Normal Cost and an Actuarial Liability.

3. Actuarial Gain/(Loss)

A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions during the period between two Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.

4. Actuarial Liability

The portion of the Actuarial Present Value of Projected Benefits which will not be paid by future Normal Costs. It represents the value of the past Normal Costs with interest to the valuation date.

5. Actuarial Present Value (Present Value)

The value as of a given date of a future amount or series of payments. The Actuarial Present Value discounts the payments to the given date at the assumed investment return and includes the probability of the payment being made. As a simple example: assume you owe \$100 to a friend one year from now. Also, assume there is a 1% probability of your friend dying over the next year, in which case you won't be obligated to pay him. If the assumed investment return is 10%, the actuarial present value is:

$$\frac{\text{Amount}}{\text{Payment}} \times \frac{\text{Probability of}}{(1 - .01)} \times \frac{1}{(1 + \text{Investment Return})} = \$90$$

6. Actuarial Valuation

The determination, as of a specified date, of the Normal Cost, Actuarial Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.

7. Actuarial Value of Assets

The value of cash, investments and other property belonging to a pension plan as used by the actuary for the purpose of an Actuarial Valuation. The purpose of an Actuarial Value of Assets is to smooth out fluctuations in market values. This way long-term costs are not distorted by short-term fluctuations in the market.

8. Actuarially Equivalent

Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.

9. Amortization Payment

The portion of the pension plan contribution which is designed to pay interest and principal on the Unfunded Actuarial Liability in order to pay for that liability in a given number of years.

10. Funded Ratio

The ratio of the Actuarial Value of Assets to the Actuarial Liabilities.

11. Investment Return Assumption

The assumed interest rate used for projecting dollar related values in the future.

12. Mortality Table

A set of percentages which estimate the probability of death at a particular point in time. Typically, the rates are annual and based on age and sex.

13. Normal Cost

That portion of the Actuarial Present Value of pension plan benefits and expenses, which is allocated to a valuation year by the Actuarial Cost Method.

14. Projected Benefits

Those pension plan benefit amounts which are expected to be paid in the future under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and increases in future compensation and service credits.

15. Projected Unit Credit Cost Method

A method under which the Actuarial Liability is calculated as the Actuarial Present Value of the Projected Benefits allocated to periods prior to the valuation year.

16. Unfunded Actuarial Liability

The excess of the Actuarial Liability over the Actuarial Value of Assets.