Public Employees' Retirement System of Mississippi

Annual Valuation Report

Prepared as of June 30, 2024

CavMac
Actuarial Consulting Services

November 17, 2024

Board of Trustees
Public Employees' Retirement System of Mississippi
429 Mississippi Street
Jackson, MS 39201-1005

Ladies and Gentlemen:

Presented in this report are the results of the annual actuarial valuation of the Public Employees' Retirement System (PERS) of Mississippi. The purpose of the valuation is to:

- Measure the System's funding progress as of the valuation date,
- To determine the unfunded actuarial accrued liability amortization period beginning July 1, 2024 using the phased-in Fixed Contribution Rate (FCR) of 19.90% of payroll as adopted by the Legislature during the 2024 Legislative session,
- To determine the actuarially determined contribution (ADC) for the fiscal year beginning July 1, 2026 using the assumptions and methods in the Board's Funding Policy,
- To project the System's funding progress for the next thirty years and provide clear reporting and risk analysis of the funding metrics as outlined in the Board's Funding Policy using a "Signal Light" approach, and
- To assist the Board in determining whether an increase or decrease is needed in the Fixed Contribution Rate.

The results may not be applicable for other purposes. The date of the valuation was June 30, 2024.

The valuation was based upon data, furnished by the Executive Director and the PERS staff, concerning active, inactive, and retired members along with pertinent financial information. While not verifying data at the source, the actuary performed tests for consistency and reasonableness. The valuation results depend on the integrity of the data. If any of the information is inaccurate or incomplete, our results may be different and our calculations may need to be revised. The complete cooperation of the PERS staff in furnishing materials requested is hereby acknowledged with appreciation.

Your attention is directed particularly to the presentation of the valuation results on page 1 and the projection results on pages 6 and 7. Since two of the three funding metrics are in a "Red Light" status as of this valuation, we recommend to the PERS Board and Legislature that the Fixed Contribution Rate (FCR) be increased.

In the 2024 legislative session, the Legislature canceled the Board-adopted phased-in Fixed Contribution Rate approach and instituted a phased-in Statutory Contribution Rate approach beginning July 1, 2024 of increasing the current contribution of 17.40% of annual compensation to 19.90% of annual compensation by 0.50% each year for the next 5 fiscal years. For consistency and since the statutory rate is not recognized in the Board's Funding Policy, we will still refer to this contribution as the Fixed Contribution Rate (FCR) for this valuation. The Legislature also required a one-time payment of $110 Million to be made from the State to PERS. This supplemental contribution is included in the assets as of June 30, 2024 and is incorporated in this valuation.

Based on the results of this valuation, we recommend that the Board and Legislature consider increasing the Fixed Contribution Rate to the Actuarially Determined Contribution (ADC). This recommendation would remove the phase-in approach altogether and the contribution rate for the fiscal year beginning July 1, 2026 would be equal to the ADC of 25.92% of annual compensation. Alternatives to this ADC recommendation would be to keep the phase-in approach of the FCR, however, we would recommend an acceleration in the FCR as a percentage of annual compensation (with or without the supplemental $110M made each year) based on one of the Scenarios shown in the following table:

Fiscal Year Beginning	Current Legislature Phased-In Fixed Contribution Rate	Scenario 1	Scenario 2
		Recommended Fixed Contribution Rate	Recommended Fixed Contribution Rate with Supplemental $110M Each Year
July 1, 2024	17.90%	17.90%	17.90%
July 1, 2025	18.40%	19.90%	19.70%
July 1, 2026	18.90%	21.90%	21.50%
July 1, 2027	19.40%	23.90%	23.30%
July 1, 2028	19.90%	25.90%	25.10%
July 1, 2029	19.90%	27.90%	26.90%

No changes were made to the actuarial assumptions or plan provisions since the previous valuation.

The valuation was prepared in accordance with the principles of practice prescribed by the Actuarial Standards Board. We have reviewed the actuarial methods, including the asset valuation method, and continue to believe they are appropriate for the purpose of determining employer contribution levels.

In order to prepare the results in this report, we have utilized actuarial models that were developed to measure liabilities and develop actuarial costs. These models include tools that we have produced and tested, along with commercially available valuation software that we have reviewed to confirm the appropriateness and accuracy of the output. In utilizing these models, we develop and use input parameters and assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. An analysis of the potential range of future measurements is provided in Section XI of this report.

This actuarial valuation was performed to determine the adequacy of the Board approved contribution rate to fund the plan. The asset values used to determine unfunded liabilities and funded ratios are not market values but less volatile market related values. A smoothing technique is applied to market values to determine the market related values. The unfunded liability amounts and funded ratios using the market value of assets would be different. The interest rate used for determining liabilities is based on the expected return on assets. Therefore, liability amounts in this report cannot be used to assess a settlement of the obligation.

To the best of our knowledge, this report is complete and accurate. The valuation was performed by, and under the supervision of, independent actuaries who are members of the American Academy of Actuaries with experience in performing valuations for public retirement systems. The undersigned meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. The actuarial calculations were performed by qualified actuaries according to generally accepted actuarial procedures and methods. The calculations are based on the current provisions of the system, and on actuarial assumptions that are, in the aggregate, internally consistent and reasonably based on the actual experience of the system.

Respectfully submitted,

Edward J. Koebel

Edward J. Koebel, EA, FCA, MAAA
Chief Executive Officer

Ben Mobley

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Consulting Actuary

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1. This report, prepared as of June 30, 2024, presents the results of the annual actuarial valuation of the System. For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results are summarized below. The current valuation and reported benefit amounts reflect any benefit increases granted to retirees as of July 1, 2024.

VALUATION DATE	June 30, 2024	June 30, 2023
Investment Return Assumption	**7.00%**	**7.00%**
Active members included in valuation		
Number	145,836	145,985
Annual compensation	$ 7,245,823,966	$ 7,065,419,204
Retirees		
Number	118,321	115,890
Annual allowances	$ 3,258,663,013	$ 3,118,511,891
Assets		
Market related actuarial value	$ 33,535,621,000	$ 32,605,990,000
Market value of assets (MVA)	$ 33,449,843,000	$ 31,621,983,000
Unfunded actuarial accrued liability (UAAL)	$ 26,498,099,546	$ 25,542,291,981
Funded Ratio based on actuarial value	55.9%	56.1%
Employer Fixed Contribution Rate (FCR)		
Normal Cost*	2.57%	2.62%
Accrued liability	17.33	19.78
Total**	19.90%	22.40%
Payment period based on the FCR	44.9 years	32.2 years
For Fiscal Year Ending	**June 30, 2027**	**June 30, 2026**
Actuarially Determined Contribution (ADC) Rate		
Normal Cost*	2.57%	2.62%
Accrued liability	23.35	22.55
Total	25.92%	25.17%
Amortization period for ADC	23.8 years	24.7 years
ADC Ratio to Fixed Contribution Rate	130.25%	112.37%
Unfunded actuarial accrued liability based on MVA	$ 26,583,877,546	$ 26,526,298,981
Funded Ratio based on market value	55.7%	54.4%

* Includes load for administrative expenses. See Section VI for more contribution rate detail.

** The FCR of 19.90% will be phased-in over the next five fiscal years beginning July 1, 2024.

2. The valuation balance sheet showing the results and liabilities of the System is provided in Section III.

3. Comments on the valuation results are given in Section IV, comments on the experience and actuarial gains and losses during the valuation year are provided in Section V and the rates of contribution payable by employers are provided in Section VI and Section VII.

4. Schedule A of this report presents the development of the assets. The estimated net investment return for the plan year ending June 30, 2024 on a market value of assets basis was 10.41% and on an actuarial value of assets basis was 7.28%. These can be compared to the assumed rate of return for the same period of 7.00%. The market value of assets basis return may be slightly different than what PERS reports as this estimated return is assuming cash flow as of the middle of the year.

5. Schedule B details the actuarial assumptions and methods employed. There have been no changes since the previous valuation.

6. Schedule C provides a summary of the benefit and contribution provisions of the plan. There have been no changes since the previous valuation.

7. The funded ratio shown in the Summary of Principal Results is the ratio of actuarial value of assets to the actuarial accrued liability. The funded status is different based on the market value of assets. The funded ratio is an indication of progress in funding the promised benefits. Since the ratio is less than 100%, there is a need for additional contributions toward the payment of the unfunded accrued liability. In addition, this funded ratio does not have any relationship to measuring the sufficiency if the plan had to settle its liabilities.

8. The employer contribution rate, or Fixed Contribution Rate (FCR), of 19.90% of annual compensation is the current final phased-in contribution rate approved by the Legislature beginning July 1, 2024 based on the following table:

Fiscal Year Beginning	Current Legislature Phased-In Fixed Contribution Rate
July 1, 2024	17.90%
July 1, 2025	18.40%
July 1, 2026	18.90%
July 1, 2027	19.40%
July 1, 2028	19.90%
July 1, 2029	19.90%

As shown on page 1 of the report, the amortization period to pay off the Unfunded Actuarial Accrued Liability (UAAL) using the FCR of 19.90% is over 45 years, which is a snapshot view of the UAAL as of the valuation date of June 30, 2024.

9. In addition, as shown on page 1 of the report, the Actuarially Determined Contribution (ADC) Rate for the 2024 valuation year calculated based on the actuarial methods outlined in the Board's Funding Policy provided in Schedule F is 25.92% of annual compensation and the ratio of the ADC to the FCR (25.92% to 19.90%) is calculated at 130.25% as of June 30, 2024. Per the Board's Funding Policy, this actuarial metric is in the Red Status as the ratio exceeds 110%.

10. The projection results, shown beginning in Section IX, allow the Board to see a forecast of the System's funding progress over time, allow the Board to review the funding goals and benchmarks outlined in the Funding Policy, and provide the status of the metrics/targets in the Funding Policy that determines whether or not a contribution rate increase should be recommended. The objective of the current Funding Policy is to accumulate sufficient assets during a member's employment to fully finance the benefit the member receives throughout retirement. In order to reach that objective, some goals and benchmarks were established as follows:

    - Preservation of the defined benefit structure for providing lifetime benefits to the PERS' membership,
    - Maintain an increasing trend in the funded ratio over the projection period with an ultimate goal of being 100% funded,
    - Ensure benefit improvements are funded through increases in contribution requirements in accordance with Article 14, S 272A, of the Mississippi Constitution,
    - Contribution rate stability as a percentage of payroll (Fixed Contribution Rate – FCR),
    - Require clear reporting and risk analysis of the metrics by the actuary as outlined in Section II of the policy using a "Signal Light" approach to assist the Board in determining whether increases or decreases are needed in the employer contribution rate.

11. For PERS, if any one of the following metrics are in the Red Signal Light status in conjunction with the annual valuation report and the projection report, the actuary shall determine and recommend to the Board an employer contribution rate increase to consider that is sufficient to get all three metrics back into the Green Signal Light status.

- Funded Ratio – defined as the actuarial value of assets divided by the actuarial accrued liability. One of the funding goals is to have an increasing funded ratio over the projection period with an ultimate goal of having a 100% funded ratio. The Board sets the Signal Light definition as follows:

Status	Definition
Green	Funded Ratio above 80% in 2047
Yellow	Funded Ratio between 65% and 80% in 2047
Red	Funded Ratio below 65% in 2047

- Cash flow as a percentage of assets – defined as the difference between total contributions coming into the trust and the benefit payments made to retirees and beneficiaries going out of the trust as a percentage of beginning year market value of assets. Over the projection period, this percentage will fluctuate from year to year so for Signal Light testing, the net cash flow percentage over the entire projection period will be tested. The Board sets the Signal Light definition as follows:

Status	Definition
Green	Net Cash Flow Percentage above negative 5.25% (-5.25%) during the projection period
Yellow	Net Cash Flow Percentage between negative 5.25% (-5.25%) and negative 7.00% (-7.00%) during the projection period
Red	Net Cash Flow Percentage below negative 7.00% (-7.00%) during the projection period

- Actuarially Determined Contribution (ADC) – defined as the contribution requirement determined by the actuary using a contribution allocation procedure based on the principal elements disclosed in Section III of the Funding Policy:
    1. Actuarial Cost Method
    2. Asset Smoothing Method
    3. Amortization Method

The calculation of the ADC will be determined during the actuarial valuation. The ratio of the ADC to the fixed contribution rate (ADC/FCR) as set by the Funding Policy will be tested. The Board sets the Signal Light definition as follows:

Status	Definition
Green	ADC ratio at or below 100% of fixed contribution rate
Yellow	ADC ratio between 100% and 110% of fixed contribution rate
Red	ADC ratio above 110% of fixed contribution rate

12. A summary of the estimated metrics from the projection results for the next five years and in the long-term are shown in the following two tables below. Please note that the projections shown below include the phase-in of the employer contribution rate to 19.90% of annual compensation over the next four fiscal years based on the Legislature-approved schedule. More details will be shown beginning in Section IX but as you can see from the first table below, the funded ratio and cash flow percentage remain relatively stable while the ADC/FCR ratio increases over the next five years.

Valuation Year	UAAL ($ in Millions)	Funded Ratio	Cash Flow %	ADC/FCR Ratio*
2024	$26,498	55.9%	(4.7)%	130.3%
2025	$26,611	56.6%	(4.8)%	133.1%
2026	$28,059	55.1%	(4.9)%	141.0%
2027	$28,368	55.5%	(5.0)%	144.2%
2028	$28,643	55.8%	(5.1)%	147.3%
2029	$29,096	55.8%	(5.3)%	151.3%

Metrics	2024 Baseline Projection	2024 Status
Funding Ratio in 2047	53.7%	Red
Cash Flow as a Percentage of Assets	(6.3)%	Yellow
ADC/FCR Ratio from 2024 Valuation*	130.3%	Red
ADC/FCR Ratio from 2025 Valuation*	133.1%	Red

* These ratios are based on the ultimate FCR of 19.90% of annual compensation.

13. As shown on the previous page, two of the three metrics are in the "Red Status" for the 2024 valuation and projections, and per the Funding Policy, the actuary should recommend an increase in the Fixed Contribution Rate (FCR). We recommend that the Board and Legislature consider increasing the Fixed Contribution Rate to the Actuarially Determined Contribution (ADC). This recommendation would remove the phase-in approach altogether and the contribution rate for the fiscal year beginning July 1, 2026 would be equal to the ADC of 25.92% of annual compensation. Alternatives to this ADC recommendation would be to keep the phase-in approach of the FCR, however, we would recommend an acceleration in the FCR as a percentage of annual compensation (with or without the supplemental $110M made each year) based on one of the Scenarios shown in the following table:

Fiscal Year Beginning	Current Legislature Phased-In Fixed Contribution Rate	Scenario 1	Scenario 2
		Recommended Fixed Contribution Rate	Recommended Fixed Contribution Rate with Supplemental $110M Each Year
July 1, 2024	17.90%	17.90%	17.90%
July 1, 2025	18.40%	19.90%	19.70%
July 1, 2026	18.90%	21.90%	21.50%
July 1, 2027	19.40%	23.90%	23.30%
July 1, 2028	19.90%	25.90%	25.10%
July 1, 2029	19.90%	27.90%	26.90%

The table below shows the metrics with Scenario 1 from above.

Metrics	2024 Projection	2024 Status
Funding Ratio in 2047	93.3%	Green
Cash Flow as a Percentage of Assets	(4.7)%	Green
ADC/FCR Ratio from 2024 Valuation*	92.9%	Green
ADC/FCR Ratio from 2025 Valuation*	94.9%	Green

* This ratio is based on the ultimate FCR of 27.90% of annual compensation.

14. The Board should continue to review the Sensitivity Analysis section of this report during the fiscal year to understand the volatility that may occur in the projections if investment experience is more or less than expected going forward.

15. The table on the following page provides a ten-year history of some pertinent figures.

Comparative Schedule

Valuation Date June 30	Active Members				Retired Lives				Valuation Results ($ millions)		
	Number	Payroll ($ millions)	Average Salary	% increase from previous year	Number	Active/ Retired Ratio	Annual Benefits ($ millions)	Benefits as % of Payroll	Actuarial Accrued Liability	Valuation Assets	UAAL
2015	157,215	$5,905	$37,559	3.9%	96,338	1.6	$2,116.3	35.8%	$40,364	$24,387	$15,977
2016	154,104	6,023	39,081	4.1	99,483	1.5	2,249.0	37.3	41,997	25,185	16,812
2017	152,382	6,038	39,626	1.4	102,260	1.5	2,374.7	39.3	43,166	26,364	16,802
2018	150,687	5,999	39,813	0.5	104,973	1.4	2,500.8	41.7	44,396	27,456	16,940
2019	150,651	6,145	40,789	2.5	107,844	1.4	2,635.0	42.9	46,007	28,025	17,982
2020	149,855	6,287	41,957	2.9	109,881	1.4	2,755.6	43.8	47,354	28,629	18,725
2021	145,673	6,246	42,877	2.2	112,158	1.3	2,875.5	46.0	50,204	30,768	19,436
2022	144,416	6,455	44,696	4.2	114,462	1.3	3,005.5	46.6	52,000	31,873	20,127
2023	145,985	7,065	48,398	8.3	115,890	1.3	3,118.5	44.1	58,148	32,606	25,542
2024	145,836	7,246	49,685	2.7	118,321	1.2	3,258.7	45.0	60,034	33,536	26,498

The active membership decreased slightly this year while the number of retirees increased by 2.1% for the 2024 fiscal year. The ratio of actives to retirees decreased from 1.3 to 1.2 for the 2024 fiscal year. The Unfunded Actuarial Accrued Liability (UAAL) increased by $956 million for this valuation, mostly due to experience losses for this year.

SECTION II – MEMBERSHIP DATA

Data regarding the membership of the System for use as a basis for the valuation were furnished by the System's office. The following tables summarize the membership of the System as of June 30, 2024 upon which the valuation was based. Detailed tabulations of the data are given in Schedule D.

Active Members

Employers	Number of Employers	Number	Payroll	Group Averages		
				Salary	Age	Benefit Service
State Agencies	108	25,333	$1,257,104,118	$49,623	46.2	10.3
State Universities	9	17,318	1,151,309,947	66,481	43.3	9.5
Public Schools	140	60,549	2,826,796,488	46,686	44.8	10.7
Community/Junior Colleges	15	5,836	322,834,135	55,318	46.5	11.3
Counties*	88	14,795	661,563,420	44,715	47.0	9.1
Municipalities	244	15,410	704,159,526	45,695	44.1	9.4
Other Political Subdivisions	254	6,595	322,056,332	48,833	45.4	8.6
Total in PERS	858	145,836	$7,245,823,966	$49,685	45.1	10.0

*There are 82 counties; however, 3 counties have multiple agencies.

The total number of active members includes 73,402 vested members and 72,434 non-vested members.

Retired Lives

Type of Benefit Payment	No.	Annual Benefits	Group Averages	
			Benefit	Age
Retirement	99,750	$2,870,028,502	$28,772	71.8
Disability	6,089	133,072,542	21,855	65.7
Survivor	12,482	255,561,969	20,474	69.2
Total in PERS	118,321	$3,258,663,013	$27,541	71.2

Deferred Vested/Inactive Lives

Type of Member	No.	Annual Deferred Benefits	Outstanding Refunds
Deferred Vested - Benefit Provided	15,145	$ 132,960,352	N/A
Deferred Vested – Missing Benefit	898	N/A	$ 40,944,362
Vested – Pending Retirements	1,112	37,340,723	N/A
Inactive	83,811	N/A	408,891,524
Total in PERS	100,966	$ 170,301,075	$ 449,835,886

For the liability in this valuation, deferred vested participants with benefits provided are valued assuming a retirement age of 60 for Tiers 1, 2, and 3 and age 65 for Tier 4. There are 1,112 records determined to be possible "pending retirements" based on the provided member status; these records are valued by assuming benefits are payable in the upcoming plan year.

SECTION III – VALUATION BALANCE SHEET

The following valuation balance sheet shows the assets and liabilities of the retirement system as of the current valuation date of June 30, 2024 and, for comparison purposes, as of the immediately preceding valuation date of June 30, 2023. The items shown in the balance sheet are present values actuarially determined as of the relevant valuation date. The development of the actuarial value of assets is presented in Schedule A.

VALUATION BALANCE SHEET
SHOWING THE ASSETS AND LIABILITIES OF THE
PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF MISSISSIPPI

	JUNE 30, 2024	June 30, 2023
ASSETS		
Current actuarial value of assets:		
Annuity Savings Account	$ 5,982,197,171	$ 5,895,176,003
Annuity Reserve	8,129,521,087	7,747,062,024
Employers' Accumulation Account	19,423,902,742	18,963,751,973
Total current assets	$ 33,535,621,000	$ 32,605,990,000
Future member contributions to Annuity Savings Account	$ 4,603,240,466	$ 4,474,706,118
Prospective contributions to Employer's Accumulation Account		
Normal contributions	$ 1,024,857,746	$ 1,022,157,145
Unfunded actuarial accrued liability contributions	26,498,099,546	25,542,291,981
Total prospective contributions	$ 27,522,957,292	$ 26,564,449,126
Total assets	$ 65,661,818,758	$ 63,645,145,244
LIABILITIES		
Present value of benefits payable on account of present retired members and beneficiaries	$ 37,160,657,745	$ 35,734,821,291
Present value of benefits payable on account of active members	26,111,640,379	25,647,175,043
Present value of benefits payable on account of inactive members for service rendered before the valuation date	2,389,520,634	2,263,148,910
Total liabilities	$ 65,661,818,758	$ 63,645,145,244

BREAKDOWN OF TOTAL AND ACTUARIAL ACCRUED LIABILITIES
AS OF JUNE 30, 2024

	Total Liability	Actuarial Accrued Liability
Active Members		
Retirement	$ 22,835,730,590	$ 19,476,693,684
Death	350,589,119	242,127,570
Disability	482,828,268	315,419,726
Termination	2,442,492,402	449,301,187
Total	$ 26,111,640,379	$ 20,483,542,167
Retirees		
Retirement	$ 33,523,315,064	$ 33,523,315,064
Survivor	2,270,780,924	2,270,780,924
Disability	1,366,561,757	1,366,561,757
Total	$ 37,160,657,745	$ 37,160,657,745
Deferred Vested Members	1,796,627,924	1,796,627,924
Inactive Members	592,892,710	592,892,710
Total Actuarial Values	$ 65,661,818,758	$ 60,033,720,546
Actuarial Value of Assets		33,535,621,000
Unfunded Actuarial Accrued Liability		$ 26,498,099,546

The total liability is the present value of future benefits for all current members as of the valuation date. The accrued liability is the present value of benefits that have been accrued as of the valuation date. Since all inactive members and retirees have accrued their full benefits, the total liability and accrued liability are the same. For actives, the difference between the total liability and the accrued liability is the present value of all future accruals.

SECTION IV – COMMENTS ON VALUATION

The valuation balance sheet gives the following information with respect to the funds of the System as of June 30, 2024.

Total Assets

The Annuity Savings Account is the fund to which are credited contributions made by members together with interest thereon. When a member retires, the amount of his or her accumulated contributions is transferred from the Annuity Savings Account to the Annuity Reserve. The Employer's Accumulation Account is the fund to which are credited employer contributions and investment income, and from which are paid all employer-provided benefits under the plan. The assets credited to the Annuity Savings Account as of the valuation date, which represent the accumulated contributions of members to that date, amounted to $5,982,197,171. The assets credited to the Annuity Reserve were $8,129,521,087 and the assets credited to the Employer's Accumulation Account totaled $19,423,902,742. Current actuarial assets as of the valuation date equaled the sum of these three funds, $33,535,621,000. Future member contributions to the Annuity Savings Account were valued to be $4,603,240,466. Prospective contributions to the Employer's Accumulation Account were calculated to be $27,522,957,292 of which $1,024,857,746 is attributable to service rendered after the valuation date (normal contributions) and $26,498,099,546 is attributable to service rendered before the valuation date (unfunded actuarial accrued liability contributions).

Therefore, the balance sheet shows the present value of current and future assets of the System to be $65,661,818,758 as of June 30, 2024.

Total Liabilities

The present value of benefits payable on account of presently retired members and beneficiaries totaled $37,160,657,745 as of the valuation date. The present value of future benefit payments on behalf of active members amounted to $26,111,640,379. In addition, the present value of benefits for inactive members, due to service rendered before the valuation date, was calculated to be $2,389,520,634.

Therefore, the balance sheet shows the present value for all prospective benefit payments under the System to be $65,661,818,758 as of June 30, 2024.

Section 25-11-123(a)(1) of State law requires that active members contribute 9.00% of annual compensation to the System.

Section 25-11-123(c) requires that the State contribute a certain percentage of the annual compensation of members to cover the normal contributions and a certain percentage to cover the accrued liability contributions of the System. These individual contribution percentages are established in accordance with an actuarial valuation. The PERS Board of Trustees increased the employer contribution rate from 15.75% to 17.40% of annual compensation effective for the fiscal year beginning July 1, 2019. The employer contribution rate of 17.40% of annual compensation will continue through the fiscal year ending June 30, 2024. Beginning July 1, 2024, the employer contribution rate will increase to 17.90% of annual compensation and then is scheduled to increase 0.50% each year over the next four fiscal years to 19.90% of annual compensation. This phase-in was adopted by the Legislature during the 2024 legislative session. Since the amortization period is calculated on an open basis, the amortization period for the June 30, 2024 valuation is 44.9 years, compared to 32.2 years for the previous valuation. The primary reason for the increase in the amortization period was due to the change in the ultimate Fixed Contribution Rate from 22.40% of annual compensation to 19.90% of annual compensation.

There was a loss on the unfunded actuarial accrued liability for the fiscal year ending June 30, 2024 of approximately $547.2 million (shown on the next page) which was primarily due to the greater than expected salary increases and demographic losses due to retirements and withdrawals of service of active members, offset by positive investment experience (actuarial value of assets basis more than expected).

See Section VI for a reconciliation of the amortization periods from last year to this year and see Schedule E for a complete analysis of the Financial Experience.

SECTION V – DERIVATION OF EXPERIENCE GAINS & LOSSES

Actual experience will never (except by coincidence) match exactly with assumed experience. It is assumed that gains and losses will be in balance over a period of years, but sizable year to year fluctuations are common. Details on the derivation of the experience gain/(loss) for the years ended June 30, 2024 and June 30, 2023 are shown below.

		2024 Valuation $ Millions	2023 Valuation $ Millions
(1)	UAAL* as of beginning of year	$ 25,542.3	$ 20,126.9
(2)	Total Normal cost from last valuation	779.6	646.0
(3)	Total Employee and Employer Contributions	2,138.7	1,965.5
(4)	Interest Rate (Beginning of Year)	7.00%	7.55%
(5)	Interest accrual: [[(1) + (2)] x (4)] - [(3) x ((4) / 2)]	1,767.7	1,494.2
(6)	Expected UAAL before changes: (1) + (2) – (3) + (5)	$ 25,950.9	$ 20,301.6
(7)	Change due to plan amendments	0.0	0.0
(8)	Change due to new actuarial assumptions or methods	0.0	3,769.2
(9)	Expected UAAL after changes: (6) + (7) + (8)	$ 25,950.9	$ 24,070.8
(10)	Actual UAAL as of end of year	$ 26,498.1	$ 25,542.3
(11)	Gain/(loss): (9) – (10)	$ (547.2)	$ (1,471.5)
(12)	Gain/(loss) as percent of actuarial accrued liabilities at start of year	(0.9)%	(2.8)%

*Unfunded actuarial accrued liability.

Valuation Date June 30	Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities
2019	(0.9)%
2020	(1.0)
2021	2.2
2022	(0.8)
2023	(2.8)
2024	(0.9)

Section VI – Fixed Contribution Rate (FCR)

1. The valuation balance sheet gives the basis for determining the percentage rates for contributions to be made by employers to the Retirement System. The following table shows the rates of contribution payable by employers as determined from the present valuation and a comparison to the previous valuation results.

Contribution for	2024 Valuation	2023 Valuation
Investment Return Assumption	**7.00%**	**7.00%**
Total Normal Cost:		
Service retirement benefits	10.76%	10.81%
Disability benefits	0.33%	0.33%
Survivor benefits	0.22%	0.22%
Total	11.31%	11.36%
Less Member Contributions:	9.00%	9.00%
Employer Normal Cost	2.31%	2.36%
Administrative Expense Load	0.26%	0.26%
Total Employer Normal Cost Rate	2.57%	2.62%
Unfunded Actuarial Accrued Liability Rate (44.9 years level % of payroll amortization*)	17.33%	19.78%
Total Employer Fixed Contribution Rate	19.90%	22.40%

* Amortization period a year ago was 32.2 years.

2. The Legislature adopted a new Fixed Contribution Rate (FCR) of 19.90% of annual compensation to be phased-in over the next five fiscal years beginning July 1, 2024 and kept the amortization period open-ended. Thirty-year projections are completed to determine if an increase or decrease in the employer contribution rate is warranted according to the metrics set forth in the Funding Policy. Please see Schedule F for the current Funding Policy.

3. The components of the change in the computed unfunded actuarial accrued liability amortization period from 32.2 years to 44.9 years are as follows:

Previously Reported Period	32.2 years
Change due to:	
Normal amortization	(1.0)
Actuarial experience	1.6
Net Assumption/FCR changes	11.5
Plan amendments	0.0
Contribution Shortfall/(Excess)	0.6
Computed Period	44.9 years

1. One of the metrics in the Funding Policy, as shown in Schedule F, is to calculate the Actuarially Determined Contribution (ADC) based on the principal elements of the Amortization Method disclosed in the Funding Policy. The ratio of the ADC to the Fixed Contribution Rate (ADC/FCR) as set by this Funding Policy will be tested with each valuation. The Funding Policy provides that the unfunded actuarial accrued liability as of June 30, 2018 (Transitional UAAL) will be amortized as a level percentage of payroll over a closed 30-year period. In each subsequent valuation, all benefit changes, assumption and method changes, and experience gains and/or losses that have occurred since the previous valuation will combine to determine a New Incremental UAAL. Each New Incremental UAAL will be amortized as a level percentage of payroll over a closed 25-year period from the date it is established.

2. The following table shows the components of the total Unfunded Actuarial Accrued Liability (UAAL) and the derivation of the UAAL Contribution Rate in accordance with the Funding Policy as of the valuation date:

TOTAL UAAL AND UAAL CONTRIBUTION RATE
($ in Thousands)

Date Established	Original UAAL Balance	Remaining UAAL Balance	Remaining Amortization Period	Amortization Payment
June 30, 2018	$16,940,459	$17,879,676	24 years	$1,192,200
June 30, 2019	784,879	791,331	20 years	59,005
June 30, 2020	524,319	528,690	21 years	38,220
June 30, 2021	506,599	509,805	22 years	35,808
June 30, 2022	561,966	564,969	23 years	38,630
June 30, 2023	5,309,730	5,323,698	24 years	354,979
June 30, 2024	899,931	899,931	25 years	58,611
Total		$26,498,100		$1,777,453
Estimated Payroll				$7,611,848
UAAL Amortization Contribution Rate				23.35%

3. The calculation of Actuarial Determined Contribution (ADC) for the past two valuations is shown below:

Funding Policy ADC Metric Test		
Valuation Date June 30	**2024**	**2023**
Actuarially Determined Contribution (ADC) rate		
Normal Cost*	2.57%	2.62%
Accrued liability	23.35	22.55
Total	25.92%	25.17%
Fixed Contribution Rate (FCR)	19.90%	22.40%
Ratio of ADC to FCR	130.25%	112.37%
Funding Policy Metric Status	**Red**	**Red**
Anticipated accrued liability payment period	23.8 years	24.7 years

* Estimated budgeted administrative expenses are included in the normal cost rate

Since the Ratio of ADC to FCR is above 110% and the Metric Status is in the "Red Status" for the 2024 valuation, per the Funding Policy, the actuary should recommend an increase to the FCR. The anticipated smoothing in of the negative experience due to the phase-in of needed contributions will worsen this ratio over the next few years. Therefore, we recommend an increase in the Fixed Contribution Rate to either the ADC as shown above or continuation of the phased-in approach based on one of the scenarios shown in the table on page 7. More details can be found in the Projection section of this report beginning in Section IX. The Board should continue to review the Sensitivity Analysis section of this report during the fiscal year to understand the volatility that may occur in the projections if investment experience is less than expected going forward.

1. The following supplemental disclosure information is provided for informational purposes only. One such item is a distribution of the number of employees by type of membership, as follows:

NUMBER OF ACTIVE AND RETIRED PARTICIPANTS
AS OF JUNE 30, 2024

GROUP	NUMBER
Retired participants and beneficiaries currently receiving benefits	118,321
Terminated participants and beneficiaries entitled to benefits but not yet receiving benefits	100,966
Active Participants	145,836
Total	365,123

2. Another such item is the schedule of funding progress as shown below. As can be seen in column 3 of the table below, the funded ratio has remained in a narrow range since 2015 with a decrease last year due to the change in the investment return assumption from 7.55% to 7.00%. However, the unfunded actuarial accrued liability as a percentage of payroll, shown in column 6, has steadily increased over the last 10 years. This is mainly due to the annual covered payroll not growing as anticipated over most years during this period.

SCHEDULE OF FUNDING PROGRESS
($ Thousands)

Plan Year Ended	(1) Actuarial Value of Assets	(2) Actuarial Accrued Liability (AAL) Entry Age	(3) Funded Ratio (1)/(2)	(4) Unfunded AAL (2) – (1)	(5) Annual Covered Payroll	(6) Unfunded AAL as a Percentage of Covered Payroll (4)/(5)
06/30/15#	$24,387,161	$40,364,584	60.4%	$15,977,423	$5,904,827	270.6%
06/30/16*#	25,185,078	41,997,513	60.0	16,812,435	6,022,533	279.2
06/30/17#	26,364,446	43,166,491	61.1	16,802,045	6,038,229	278.3
06/30/18	27,455,702	44,396,161	61.8	16,940,459	5,999,231	282.4
06/30/19#	28,024,611	46,006,859	60.9	17,982,248	6,144,916	292.6
06/30/20	28,629,205	47,354,464	60.5	18,725,259	6,287,441	297.8
06/30/21#	30,768,251	50,204,296	61.3	19,436,045	6,246,077	311.2
06/30/22	31,873,200	52,000,143	61.3	20,126,943	6,454,760	311.8
06/30/23#	32,605,990	58,148,282	56.1	25,542,292	7,065,419	361.5
06/30/24	33,535,621	60,033,721	55.9	26,498,100	7,245,824	365.7

* After change in benefit provisions.

\# After change in actuarial assumptions.

3. Additional information as of the latest valuation that went into the calculation of the Actuarially Determined Contribution (ADC) are as follows:

Valuation date	6/30/2024
Actuarial cost method	Entry age
Amortization method	Level percentage of payroll, closed
Remaining amortization period on ADC Basis	23.8 years
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment rate of return (discount rate)*	7.00%
Projected salary increases*	2.65% – 17.90%
Cost-of-living adjustments	3.00% per annum

** Includes price inflation at 2.40%*

Solvency Tests
($ in Thousands)

	Actuarial Accrued Liabilities for				Portions of Accrued Liabilities Covered by Assets		
Valuation Date	(1) Accumulated Employee Contributions Including Allocated Investment Earnings	(2) Retirees and Beneficiaries Currently Receiving Benefits	(3) Active and Inactive Members Employer Financed Portion	Net Assets Available for Benefits	(1)	(2)	(3)
6/30/15	$5,379,226	$24,012,624	$10,972,734	$24,387,161	100.0%	79.2%	0.0%
6/30/16	5,468,859	25,390,774	11,137,880	25,185,078	100.0	77.7	0.0
6/30/17	5,534,403	26,686,958	10,945,130	26,364,446	100.0	78.1	0.0
6/30/18	5,570,524	27,874,365	10,951,272	27,455,702	100.0	78.5	0.0
6/30/19	5,626,602	29,109,623	11,270,634	28,024,611	100.0	76.9	0.0
6/30/20	5,710,182	30,220,083	11,424,199	28,629,205	100.0	75.8	0.0
6/30/21	5,728,172	31,821,655	12,654,469	30,768,251	100.0	78.7	0.0
6/30/22	5,749,289	33,106,303	13,144,551	31,873,200	100.0	78.9	0.0
6/30/23	5,895,176	35,734,821	16,518,285	32,605,990	100.0	74.7	0.0
6/30/24	5,982,197	37,160,658	16,890,866	33,535,621	100.0	74.1	0.0

As can be seen from the table above, the PERS plan assets currently cover 100% of the active member contribution account balances as of the valuation date but only cover about 74% of the retiree liability. This ratio has remained stable throughout the last 10 years. No assets remain to cover any employer-financed active liabilities.

Schedule of Active Member Valuation Data

		Active Members			
Valuation Date	Number of Employers	Number	Annual Payroll	Annual Average Pay	% Increase in Average Pay
2015	868	157,215	$5,904,827,181	$37,559	3.9%
2016	862	154,104	6,022,532,933	39,081	4.1
2017	861	152,382	6,038,228,708	39,626	1.4
2018	858	150,687	5,999,230,701	39,813	0.5
2019	854	150,651	6,144,915,630	40,789	2.5
2020	853	149,855	6,287,441,467	41,957	2.9
2021	855	145,763	6,246,076,841	42,877	2.2
2022	859	144,416	6,454,760,163	44,696	4.2
2023	861	145,985	7,065,419,204	48,398	8.3
2024	858	145,836	7,245,823,966	49,685	2.7

Schedule of Number of Retirants Added to and Removed From Rolls*
Last Ten Fiscal Years

	Fiscal Year Ended June 30									
Item	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Beginning of Year	93,504	96,338	99,483	102,260	104,973	107,844	109,881	112,158	114,462	115,890
Added	5,907	6,548	6,219	5,985	6,101	5,645	6,502	6,634	5,577	6,560
Removed	(3,073)	(3,403)	(3,442)	(3,272)	(3,230)	(3,608)	(4,225)	(4,330)	(4,149)	(4,129)
End of Year	96,338	99,483	102,260	104,973	107,844	109,881	112,158	114,462	115,890	118,321

* See Schedule D for a breakdown by type of retirement.

Schedule of Annual Benefit Payments Added to and Removed From Rolls
Last Seven Fiscal Years

Year Ending	2018	2019	2020	2021	2022	2023	2024
Beginning of Year	$2,374,747,017	$2,500,750,392	$2,635,004,675	$2,755,593,924	$2,875,483,858	$3,005,526,105	$3,118,511,891
Added	121,870,115	129,095,132	121,134,338	133,897,944	140,675,196	123,571,787	150,405,951
Removed	(64,186,324)	(67,416,138)	(76,727,172)	(93,663,207)	(94,287,872)	(97,250,520)	(102,690,643)
Benefit increase due to annual COLA	68,319,584	72,575,289	76,182,083	79,655,197	83,654,923	86,664,519	92,435,814
Benefit increase due to plan amendments	0	0	0	0	0	0	0
End of Year	$2,500,750,392	$2,635,004,675	$2,755,593,924	$2,875,483,858	$3,005,526,105	$3,118,511,891	$3,258,663,013

Schedule of Average Benefit Payments

	Years of Credited Service								
	0-9	10-14	15-19	20-24	25	26-29	30	31+	TOTAL
July 1, 2023 to June 30, 2024									
Average Monthly Benefit	$523.04	$881.27	$1,201.68	$1,985.67	$2,187.80	$2,603.43	$2,757.15	$3,429.19	$1,880.64
Average Final Salary	$38,406	$44,590	$44,800	$55,254	$56,311	$62,486	$61,949	$66,720	$53,288
Number of Active Retirants	731	914	897	1,410	445	1,188	206	769	6,560
July 1, 2022 to June 30, 2023									
Average Monthly Benefit	$544.01	$825.25	$1,247.91	$1,901.04	$2,155.60	$2,350.72	$2,734.55	$3,346.65	$1,803.94
Average Final Salary	$37,882	$41,639	$48,250	$52,843	$54,179	$57,900	$61,359	$66,322	$51,684
Number of Active Retirants	636	783	803	1,129	350	1,014	168	694	5,577
July 1, 2021 to June 30, 2022									
Average Monthly Benefit	$475.58	$863.97	$1,133.43	$1,885.21	$2,040.43	$2,379.10	$2,552.70	$3,086.65	$1,735.15
Average Final Salary	$35,214	$42,232	$42,668	$51,950	$51,494	$57,956	$58,253	$61,825	$49,732
Number of Active Retirants	740	1,008	918	1,339	424	1,209	173	823	6,634
July 1, 2020 to June 30, 2021									
Average Monthly Benefit	$484.13	$797.70	$1,170.70	$1,723.73	$2,080.55	$2,202.62	$2,731.08	$3,198.31	$1,678.95
Average Final Salary	$34,676	$39,370	$43,511	$49,033	$52,995	$54,445	$62,496	$62,914	$48,259
Number of Active Retirants	775	1,026	971	1,186	365	1,098	200	881	6,502
July 1, 2019 to June 30, 2020									
Average Monthly Benefit	$495.24	$780.45	$1,218.15	$1,881.34	$1,994.68	$2,307.13	$2,634.63	$3,166.16	$1,762.99
Average Final Salary	$34,969	$38,904	$45,180	$52,942	$51,515	$56,787	$60,150	$61,884	$49,926
Number of Active Retirants	641	844	787	1,037	339	1,062	192	838	5,645

Schedule of Average Benefit Payments

	Years of Credited Service								
	0-9	10-14	15-19	20-24	25	26-29	30	31+	TOTAL
July 1, 2018 to June 30, 2019									
Average Monthly Benefit	$476.23	$730.46	$1,156.10	$1,852.18	$2,090.55	$2,315.68	$2,469.25	$3,355.92	$1,734.50
Average Final Salary	$33,243	$36,871	$42,708	$51,686	$52,874	$55,298	$55,458	$65,639	$48,544
Number of Active Retirants	730	930	870	1,127	359	1,062	204	819	6,101
July 1, 2017 to June 30, 2018									
Average Monthly Benefit	$485.22	$722.11	$1,057.13	$1,767.43	$2,023.90	$2,173.95	$2,533.72	$3,178.78	$1,676.34
Average Final Salary	$32,660	$37,608	$39,878	$49,009	$52,289	$52,205	$57,261	$60,427	$46,987
Number of Active Retirants	672	933	849	1,047	348	1,080	192	864	5,985
July 1, 2016 to June 30, 2017									
Average Monthly Benefit	$475.88	$727.37	$1,013.30	$1,655.71	$1,947.82	$2,105.82	$2,446.29	$3,092.75	$1,632.44
Average Final Salary	$31,990	$37,033	$39,332	$47,400	$49,568	$50,461	$55,156	$59,849	$45,739
Number of Active Retirants	732	938	859	1,014	369	1,174	190	943	6,219
July 1, 2015 to June 30, 2016									
Average Monthly Benefit	$512.05	$701.11	$1,053.82	$1,638.19	$1,878.66	$2,117.88	$2,400.11	$3,196.32	$1,665.54
Average Final Salary	$31,771	$34,459	$39,422	$45,571	$46,533	$50,536	$52,472	$59,306	$44,872
Number of Active Retirants	751	997	874	1,048	402	1,204	234	1,038	6,548
July 1, 2014 to June 30, 2015									
Average Monthly Benefit	$458.27	$688.17	$977.30	$1,346.27	$1,833.91	$1,989.13	$2,217.36	$2,898.93	$1,600.68
Average Final Salary	$29,781	$33,585	$37,938	$40,770	$46,461	$48,614	$50,908	$57,019	$43,642
Number of Active Retirants	599	898	774	693	494	1,072	230	1,147	5,907

SECTION IX – PROJECTION RESULTS

Annual actuarial valuations are performed for PERS which re-measure the assets and liabilities and the adequacy of the contribution rate. Actuarial projections are also performed every year with sensitivity testing of several factors. PERS also has experience studies performed every two years to analyze the discrepancies between actuarial assumptions and actual experience and determine if the actuarial assumptions need to be changed. Annual actuarial valuations and projections and periodic experience studies are practical ways to monitor and reassess risk.

As mentioned earlier in the report, the intended purpose of the projection results is to help assess the System's funding progress and to provide information to decision makers to help ensure that the applicable pension liabilities and funding mechanisms are managed in a manner that promotes sustainability.

The projection process should be viewed as an enhancement to the actuarial valuation control cycle by providing additional evaluation metrics to assess the need for further, in-depth analysis of the risks to the System's sustainability. The actuarial valuation control cycle is a key component of managing a long-term liability whose ultimate value is based upon uncertain future events. As the ultimate value of future cash flows cannot be predicted with certainty, pension liabilities are managed in the short-term through the continuous monitoring of economic and demographic assumptions, with a keen eye on the identification, measurement, and management of risks.

The projection process, like other actuarial modeling, is not intended to provide absolute results. The intended purpose of the projection process is to identify anticipated trends and to compare various outcomes, under a given methodology, rather than predicting certain future events. The results produced by the projection process do not predict the financial condition of the System or the System's ability to pay benefits in the future and do not provide any guarantee of future financial soundness of the System. Because actual experience will not unfold exactly as expected, actual results can be expected to differ from the results presented herein. To the extent actual experience deviates significantly from the assumptions, results could be significantly better or significantly worse than the expected outcome indicated in this report.

SPECIAL ASSUMPTIONS

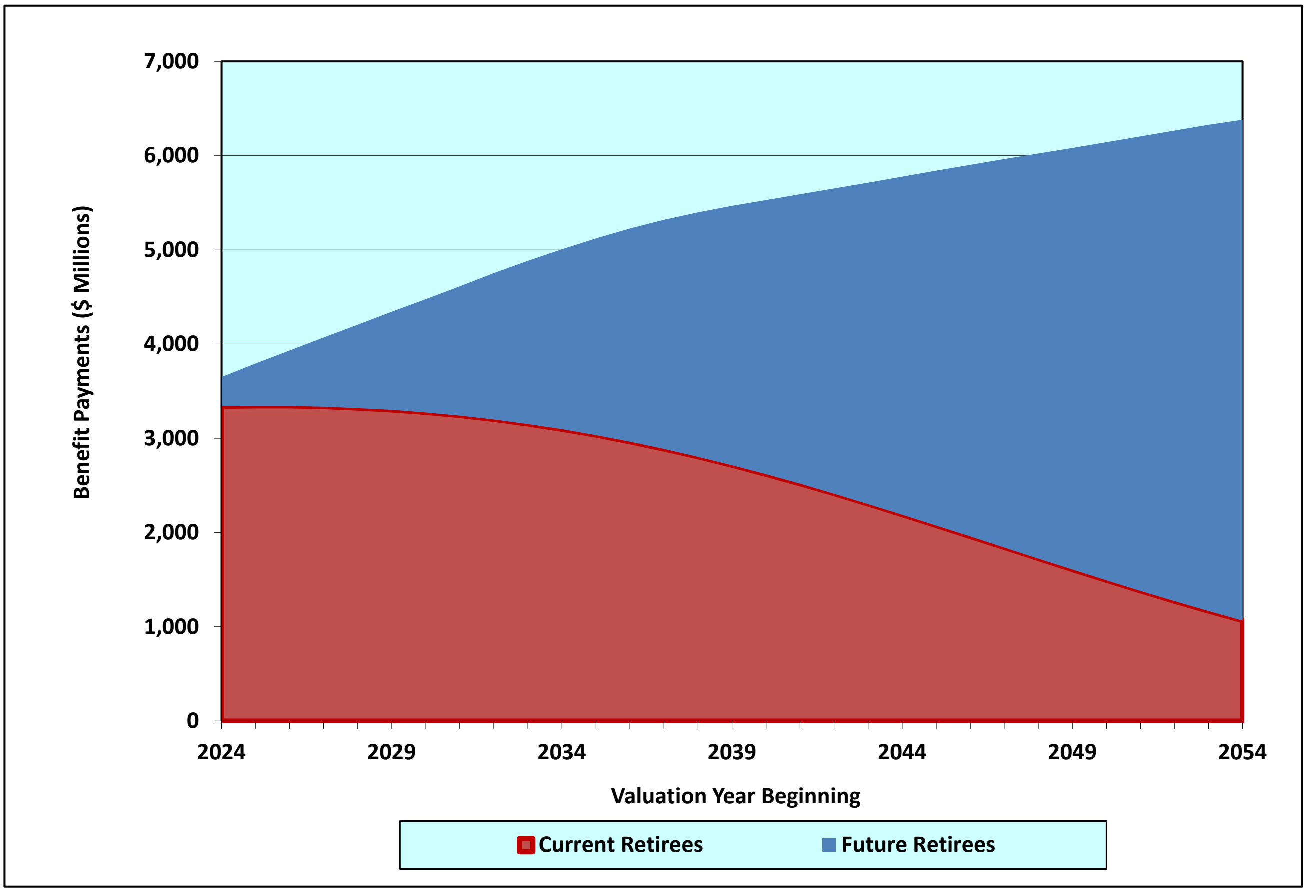
In addition to the regular valuation assumptions used in performing the annual actuarial valuations of PERS, additional assumptions must be made that are unique to projections. The first of these is what, if any, change in the overall active membership will be anticipated. For this projection study, it was assumed that the number of active members would remain static over the 30-year projection period.

But since we assume active members will leave the system through termination, death, disability, or retirement, we need to make some assumptions as to the composition of new hires that will replace departing members in order to maintain the membership at a constant number. The new entrant profile we developed was based on the new hires over the 3-year period prior to the projection start date of June 30, 2024. The new entrant profile is summarized in the table below.

Age	Average Pay	Percent Male	Weight
19	$30,800	66%	1.2%
23	$33,300	39	19.3
27	$37,400	37	18.2
32	$36,800	35	12.9
37	$37,400	33	10.5
42	$37,400	34	9.3
47	$37,900	33	7.8
52	$38,900	38	7.6
57	$37,700	42	6.1
62	$37,700	45	4.0
69	$32,300	52	3.1

SECTION IX – PROJECTION RESULTS

For the projection results presented in this section of the report, it was further assumed that the benefit structure as it exists on June 30, 2024 would remain in place for the following 30 years. The following graph shows the projection of benefit payments of PERS members. The red area of the graph represents the benefit payments for current retirees and the blue area represents the benefit payments for any future retirees. PERS currently pays approximately $3.4 billion in benefit payments to its retirees but over the 30-year period, that amount is expected to nearly double.



FUTURE MEMBERSHIP

The following chart and graph show the headcounts of active participants and retired members over the projection period. The actives are broken down into those existing as of June 30, 2024 and those who are hired after June 30, 2024. For baseline projection purposes, we have continued the active membership at its current population of 145,836 active members over the projected period. In Section XI of this report, we provide some sensitivity analysis around this static assumption.

By the end of the projection period, we estimate that about 97.8% of those active employees will have been hired after June 30, 2024 and be included in the Tier 4 benefit structure.

Member	2024	2029	2034	2044	2047	2054
Active – Existing Employees	145,836	81,596	48,571	17,552	12,107	3,259
Active – New Entrants	0	64,240	97,265	128,284	133,729	142,577
Retired/Deferred Vesteds	135,476	147,109	153,821	150,626	148,561	143,578
Total	281,312	292,945	299,657	296,462	294,397	289,414

PROJECTION RESULTS

The baseline projection results shown below use the same actuarial assumptions as used in the June 30, 2024 actuarial valuation report. In addition, the projection results using different long-term investment return assumption for future valuations (6.50% and 7.55%) is included below.

Baseline Projection Results (7.00%)
($ in Thousands)

	2024	2029	2034	2044	2047	2054
Total Payroll	$7,245,824	$8,011,634	$8,777,303	$10,971,519	$11,794,080	$14,052,147
UAAL	$26,498,100	$29,096,171	$31,425,966	$35,787,973	$36,758,119	$37,698,010
Normal Cost Rate	2.57%	2.70%	2.84%	3.05%	3.12%	3.26%
UAAL Rate	15.33%	17.20%	17.06%	16.85%	16.78%	16.64%
FCR Rate	17.90%	19.90%	19.90%	19.90%	19.90%	19.90%
Funded Ratio	55.9%	55.8%	55.4%	53.6%	53.7%	55.8%
Amortization Period	45 years	52 years	50 years	39 years	36 years	27 years
ADC	25.92%	30.11%	34.80%	47.84%	51.92%	27.80%
ADC/FCR Ratio	130.3%	151.3%	174.9%	240.4%	260.9%	139.7%
Cash Flow Percentage	(4.7)%	(5.3)%	(6.1)%	(6.0)%	(5.6)%	(4.5)%

Projection Results Assuming 6.50% Long-Term Investment Return
($ in Thousands)

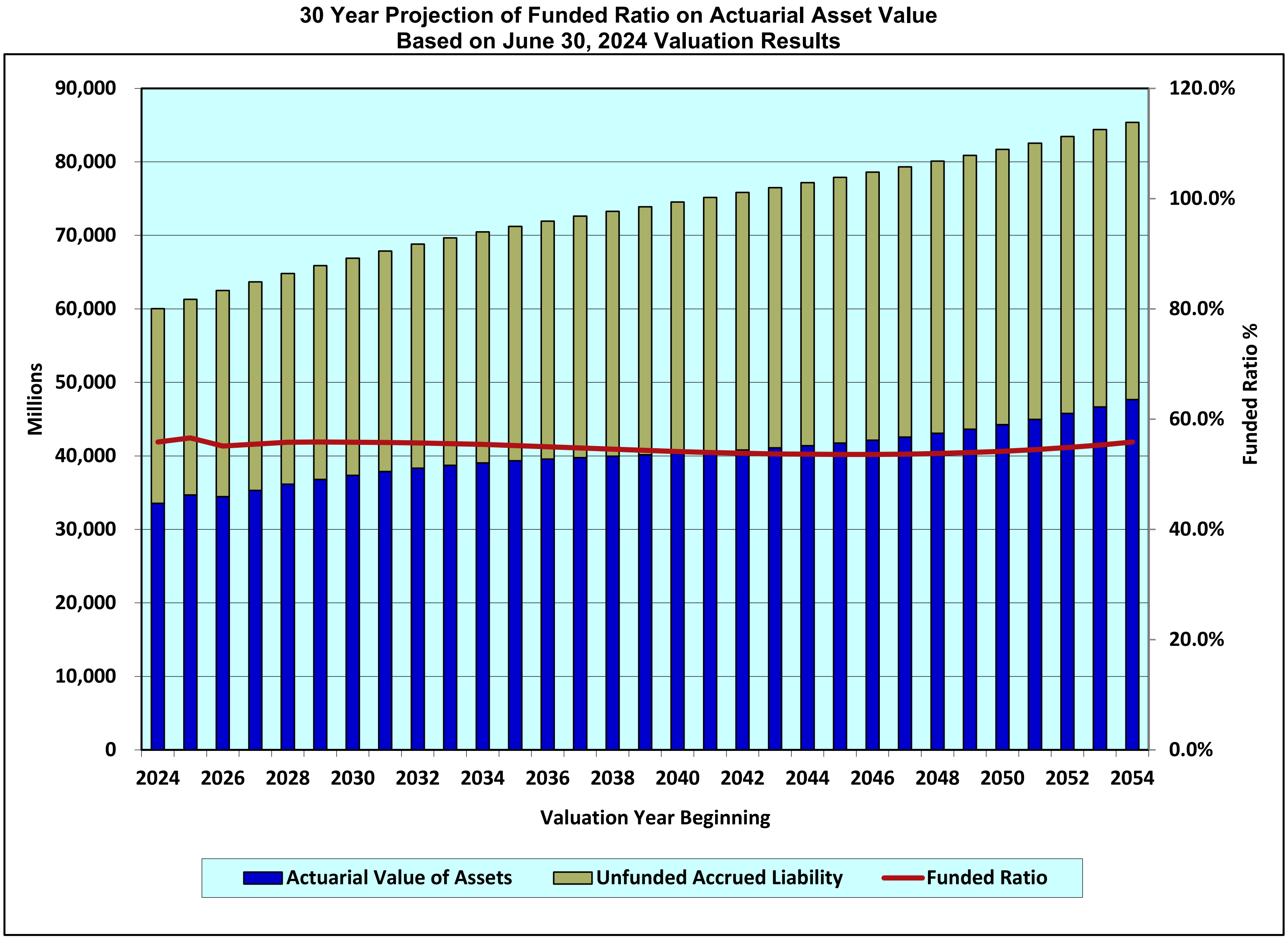
	2024	2029	2034	2044	2047	2054
Total Payroll	$7,245,824	$8,011,634	$8,777,303	$10,971,519	$11,794,080	$14,052,147
UAAL	$30,222,657	$33,979,381	$37,914,965	$47,504,341	$50,833,695	$59,495,930
Normal Cost Rate	3.86%	3.97%	4.08%	4.30%	4.38%	4.54%
UAAL Rate	14.04%	15.93%	15.82%	15.60%	15.52%	15.36%
FCR Rate	17.90%	19.90%	19.90%	19.90%	19.90%	19.90%
Funded Ratio	52.6%	51.3%	49.2%	41.8%	39.5%	34.3%
Amortization Period	97 years	Infinite	Infinite	Infinite	Infinite	Infinite
ADC	27.88%	34.49%	40.67%	58.14%	64.14%	38.14%
ADC/FCR Ratio	140.10%	173.3%	204.4%	292.1%	322.3%	191.7%
Cash Flow Percentage	(4.7)%	(5.4)%	(6.5)%	(7.2)%	(7.3)%	(6.9)%

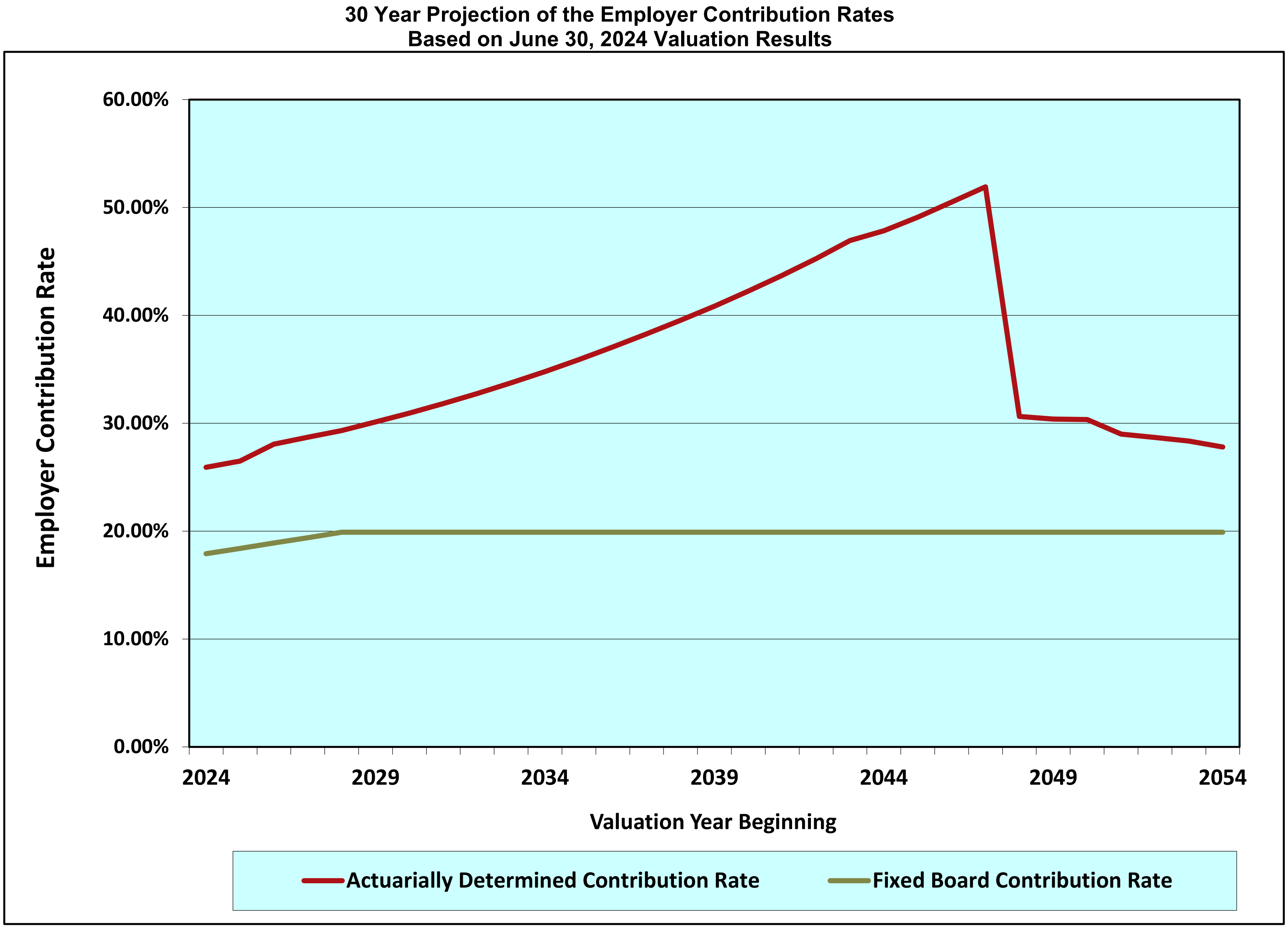
Projection Results Assuming 7.55% Long-Term Investment Return
($ in Thousands)

	2024	2029	2034	2044	2047	2054
Total Payroll	$7,245,824	$8,011,634	$8,777,303	$10,971,519	$11,794,080	$14,052,147
UAAL	$22,925,045	$24,117,821	$24,574,416	$22,387,108	$20,243,110	$10,519,082
Normal Cost Rate	1.37%	1.52%	1.68%	1.89%	1.95%	2.07%
UAAL Rate	16.53%	18.38%	18.22%	18.01%	17.95%	17.83%
FCR Rate	17.90%	19.90%	19.90%	19.90%	19.90%	19.90%
Funded Ratio	59.4%	61.1%	63.0%	69.2%	72.9%	86.9%
Amortization Period	31 years	32 years	28 years	17 years	13 years	5 years
ADC	22.71%	25.49%	28.36%	35.71%	37.23%	14.79%
ADC/FCR Ratio	114.1%	128.1%	142.5%	179.4%	187.1%	74.3%
Cash Flow Percentage	(4.7)%	(5.1)%	(5.7)%	(4.9)%	(4.4)%	(3.0)%

The first graph that follows shows the projection of the Unfunded Accrued Liability (UAL), Actuarial Value of Assets and the Funded Ratio under the baseline valuation (assuming 7.00%) from the amounts shown in the baseline table on the previous page. As you can see from the graph, under the current assumptions, the funded ratio is expected to be stable at or around 55% funded for the entire projection period.

The second graph shows the projection of the calculated Actuarially Determined Contribution (ADC) based on the Board's Funding Policy and the current Fixed Contribution Rate (FCR) of 19.90% under the baseline valuation. As you can see from the graph, the ADC is expected to increase even further for the remaining projection period, as the valuation results continue to include contribution deficiency shortfalls due to the difference between the ADC and FCR. The drop in the ADC near the end of the projection period is a result of the initial 2018 UAL base of $16.9 Billion being paid off, based on the closed amortization period per the Board's Funding Policy. However, the ADC remains above the current FCR for the entire projection period.


30 Year Projection of Funded Ratio on Actuarial Asset Value
Based on June 30, 2024 Valuation Results
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
Millions
120.0%
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
Funded Ratio %
2024
2026
2028
2030
2032
2034
2036
2038
2040
2042
2044
2046
2048
2050
2052
2054
Valuation Year Beginning
Actuarial Value of Assets
Unfunded Accrued Liability
Funded Ratio


30 Year Projection of the Employer Contribution Rates
Based on June 30, 2024 Valuation Results
Employer Contribution Rate
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
2024
2029
2034
2039
2044
2049
2054
Valuation Year Beginning
Actuarially Determined Contribution Rate
Fixed Board Contribution Rate

The funded ratio is the primary measure of funded status of a pension plan and, thereby, the most common measurement used for drawing conclusions on funding progress. The funded ratio is the ratio of the actuarial value of assets to the actuarial or accrued liability of the system as calculated by the funding method used in developing system contribution levels. When using the funded ratio in assessing trends over several valuations, we recommend that the basis for determining both the assets and liabilities in the ratio are taken into consideration and reasonable efforts are made to adjust the ratio to reflect these differences when they are known. On a consistent basis, an increasing funded ratio would typically indicate progress in meeting the obligations of the system. In most cases, other measures should also be considered in a trend assessment. These may include the trend in the length of the amortization period, the required contribution rate, percentage of required contributions funded, and the unfunded actuarial liability as a percentage of payroll. Focusing solely on any one measure as the indication of funding progress is an over-simplification of a complex and dynamic system.

Another of those additional metrics is an outlook on the cash flow as a percentage of assets for the System. Most retirement systems are funded with an advance-funding mechanism, meaning contributions and investment earnings are earned during a member's active lifetime in order to pay for the benefit payments during his retirement years. Many mature retirement systems, like PERS, have negative cash flow, where benefit payments paid out of the trust are more than the contributions being collected by employers and employees.

SECTION X – CASH FLOW PROJECTIONS

For the fiscal year ending June 30, 2025, we are projecting PERS to have a negative cash flow of approximately $1.56 Billion (benefit payments of $3.65 Billion and contributions of $2.09 Billion). With a market value of assets of $33.4 Billion as of June 30, 2024, the cash flow as a percentage of assets is estimated to be negative 4.67% for the 2025 fiscal year. While the market value of assets is assumed to earn 7.00% each year, the difference between the investment return assumption and the negative cash flow percentage is positive, meaning assets are projected to grow for the 2025 fiscal year. When assets do not earn a positive return enough to cover this negative cash flow percentage, assets are expected to decline for the year. If the negative cash flow percentage does not grow more than the assumed investment return assumption, the System's assets will continue to increase, and sustainability of the plan may be achieved.

The tables on the following two pages demonstrate the open group projection of cash flow on the baseline assumption and then a sensitivity analysis, using a one-year investment return of negative 5.00% for the fiscal year ending June 30, 2025. These results demonstrate the projection of this metric if PERS experiences one significant bad investment year in one of the next five years without a correction in the market. As can be seen from the table on page 40, the cash flow as a percentage of market value of assets worsens through the first half of projection period yet, the assets continue to grow on the baseline assumption.

However, if there is a significant negative investment experience in one of the next five years (as seen on the table on page 41), the negative cash flow will overcome the investment experience of the Plan in the next ten years and PERS' assets will decrease for the remainder of the projection period.

This metric will continue to be monitored as part of the Funding Policy under the baseline assumptions to ensure the continued growth of PERS' assets during the projection period.

SECTION X – CASH FLOW PROJECTIONS

Mississippi PERS
30-year Open Group Projection of Cash Flow
PERS Plan
Based on June 30, 2024 Valuation Results

Projection of Cash Flow

Contribution Methodology: Employee and Employer Contributions

Investment Return Methodology: As Programmed

Valuation Year Beginning July 1	Expected Short-term Investment Return	Valuation Annual Payroll	Market Value of Assets July 1	Total Contributions	Projected Benefit Payments	Ratio of Cash Flow to MVA	Expected Investment Return	Net Cash Flow	Market Value of Assets June 30	Valuation Year Ending June 30
2024	7.00%	7,611,848,275	33,449,843,000	2,088,538,930	(3,649,482,001)	-4.67%	2,287,780,013	726,836,942	34,176,679,942	2025
2025	7.00%	7,663,421,707	34,176,679,942	2,141,773,099	(3,793,483,882)	-4.83%	2,335,535,460	683,824,676	34,860,504,618	2026
2026	7.00%	7,765,313,272	34,860,504,618	2,209,852,851	(3,930,544,207)	-4.94%	2,381,029,701	660,338,345	35,520,842,963	2027
2027	7.00%	7,883,261,131	35,520,842,963	2,283,623,084	(4,069,343,152)	-5.03%	2,425,015,874	639,295,807	36,160,138,770	2028
2028	7.00%	8,011,633,809	36,160,138,770	2,361,669,414	(4,206,658,053)	-5.10%	2,467,727,265	622,738,626	36,782,877,396	2029
2029	7.00%	8,150,006,915	36,782,877,396	2,402,459,038	(4,342,981,072)	-5.28%	2,508,031,852	567,509,819	37,350,387,214	2030
2030	7.00%	8,296,818,770	37,350,387,214	2,445,736,237	(4,477,875,368)	-5.44%	2,544,605,174	512,466,043	37,862,853,257	2031
2031	7.00%	8,450,593,001	37,862,853,257	2,491,065,805	(4,612,174,322)	-5.60%	2,577,416,534	456,308,017	38,319,161,274	2032
2032	7.00%	8,609,939,079	38,319,161,274	2,538,037,842	(4,751,929,603)	-5.78%	2,606,165,606	392,273,845	38,711,435,119	2033
2033	7.00%	8,777,302,892	38,711,435,119	2,587,373,347	(4,882,547,492)	-5.93%	2,630,828,007	335,653,862	39,047,088,981	2034
2034	7.00%	8,949,603,083	39,047,088,981	2,638,163,997	(5,005,690,651)	-6.06%	2,651,834,269	284,307,615	39,331,396,596	2035
2035	7.00%	9,130,728,543	39,331,396,596	2,691,556,160	(5,122,028,451)	-6.18%	2,669,569,966	239,097,675	39,570,494,271	2036
2036	7.00%	9,320,339,074	39,570,494,271	2,747,449,552	(5,227,336,130)	-6.27%	2,684,606,554	204,719,976	39,775,214,247	2037
2037	7.00%	9,522,270,054	39,775,214,247	2,806,974,767	(5,318,413,732)	-6.31%	2,697,851,297	186,412,331	39,961,626,578	2038
2038	7.00%	9,738,544,920	39,961,626,578	2,870,728,272	(5,397,659,135)	-6.32%	2,710,367,114	183,436,250	40,145,062,828	2039
2039	7.00%	9,966,557,451	40,145,062,828	2,937,941,805	(5,467,043,675)	-6.30%	2,723,132,951	194,031,081	40,339,093,909	2040
2040	7.00%	10,205,811,198	40,339,093,909	3,008,469,025	(5,529,113,042)	-6.25%	2,737,006,145	216,362,128	40,555,456,037	2041
2041	7.00%	10,454,976,438	40,555,456,037	3,081,917,954	(5,589,075,966)	-6.18%	2,752,615,521	245,457,510	40,800,913,547	2042
2042	7.00%	10,710,650,477	40,800,913,547	3,157,285,548	(5,651,079,795)	-6.11%	2,770,257,368	276,463,121	41,077,376,668	2043
2043	7.00%	10,971,518,837	41,077,376,668	3,234,184,323	(5,712,994,949)	-6.03%	2,790,125,343	311,314,717	41,388,691,385	2044
2044	7.00%	11,238,160,980	41,388,691,385	3,312,785,094	(5,776,153,594)	-5.95%	2,812,448,707	349,080,207	41,737,771,591	2045
2045	7.00%	11,512,022,822	41,737,771,591	3,393,514,087	(5,840,829,897)	-5.86%	2,837,436,663	390,120,853	42,127,892,445	2046
2046	7.00%	11,794,079,520	42,127,892,445	3,476,658,761	(5,903,518,970)	-5.76%	2,865,448,960	438,588,751	42,566,481,195	2047
2047	7.00%	12,085,505,363	42,566,481,195	3,562,565,271	(5,963,354,220)	-5.64%	2,897,047,234	496,258,285	43,062,739,480	2048
2048	7.00%	12,387,209,199	43,062,739,480	3,651,501,528	(6,023,154,381)	-5.51%	2,932,787,830	561,134,977	43,623,874,457	2049
2049	7.00%	12,698,316,485	43,623,874,457	3,743,209,733	(6,082,233,005)	-5.36%	2,973,189,998	634,166,727	44,258,041,184	2050
2050	7.00%	13,019,958,451	44,258,041,184	3,838,023,352	(6,143,280,344)	-5.21%	3,018,743,501	713,486,509	44,971,527,693	2051
2051	7.00%	13,352,559,724	44,971,527,693	3,936,067,555	(6,205,533,300)	-5.05%	3,069,919,063	800,453,319	45,771,981,012	2052
2052	7.00%	13,696,437,952	45,771,981,012	4,037,435,979	(6,267,025,529)	-4.87%	3,127,322,857	897,733,308	46,669,714,320	2053
2053	7.00%	14,052,147,278	46,669,714,320	4,142,291,975	(6,328,173,590)	-4.68%	3,191,668,093	1,005,786,477	47,675,500,797	2054
2054	7.00%	14,418,455,452	47,675,500,797	4,250,272,298	(6,379,903,360)	-4.47%	3,264,008,618	1,134,377,556	48,809,878,353	2055

Mississippi PERS
30-year Open Group Projection of Cash Flow
PERS Plan
Based on June 30, 2024 Valuation Results

Projection of Cash Flow

Contribution Methodology:	Employee and Employer Contributions
Investment Return Methodology:	As Programmed

Valuation Year Beginning July 1	Expected Short-term Investment Return	Valuation Annual Payroll	Market Value of Assets July 1	Total Contributions	Projected Benefit Payments	Ratio of Cash Flow to MVA	Expected Investment Return	Net Cash Flow	Market Value of Assets June 30	Valuation Year Ending June 30
2024	-5.00%	7,611,848,275	33,449,843,000	2,088,538,930	(3,649,482,001)	-4.67%	(1,632,968,189)	(3,193,911,260)	30,255,931,740	2025
2025	7.00%	7,663,421,707	30,255,931,740	2,141,773,099	(3,793,483,882)	-5.46%	2,061,083,086	409,372,302	30,665,304,042	2026
2026	7.00%	7,765,313,272	30,665,304,042	2,209,852,851	(3,930,544,207)	-5.61%	2,087,365,660	366,674,304	31,031,978,346	2027
2027	7.00%	7,883,261,131	31,031,978,346	2,283,623,084	(4,069,343,152)	-5.75%	2,110,795,351	325,075,284	31,357,053,630	2028
2028	7.00%	8,011,633,809	31,357,053,630	2,361,669,414	(4,206,658,053)	-5.88%	2,131,511,305	286,522,666	31,643,576,296	2029
2029	7.00%	8,150,006,915	31,643,576,296	2,402,459,038	(4,342,981,072)	-6.13%	2,148,280,775	207,758,742	31,851,335,037	2030
2030	7.00%	8,296,818,770	31,851,335,037	2,445,736,237	(4,477,875,368)	-6.38%	2,159,671,521	127,532,390	31,978,867,427	2031
2031	7.00%	8,450,593,001	31,978,867,427	2,491,065,805	(4,612,174,322)	-6.63%	2,165,537,526	44,429,009	32,023,296,436	2032
2032	7.00%	8,609,939,079	32,023,296,436	2,538,037,842	(4,751,929,603)	-6.91%	2,165,455,067	(48,436,694)	31,974,859,742	2033
2033	7.00%	8,777,302,892	31,974,859,742	2,587,373,347	(4,882,547,492)	**-7.18%**	2,159,267,731	(135,906,414)	31,838,953,328	2034
2034	7.00%	8,949,603,083	31,838,953,328	2,638,163,997	(5,005,690,651)	**-7.44%**	2,147,264,773	(220,261,881)	31,618,691,447	2035
2035	7.00%	9,130,728,543	31,618,691,447	2,691,556,160	(5,122,028,451)	**-7.69%**	2,129,680,605	(300,791,686)	31,317,899,761	2036
2036	7.00%	9,320,339,074	31,317,899,761	2,747,449,552	(5,227,336,130)	**-7.92%**	2,106,924,939	(372,961,639)	30,944,938,122	2037
2037	7.00%	9,522,270,054	30,944,938,122	2,806,974,767	(5,318,413,732)	**-8.12%**	2,079,731,968	(431,706,998)	30,513,231,124	2038
2038	7.00%	9,738,544,920	30,513,231,124	2,870,728,272	(5,397,659,135)	**-8.28%**	2,048,979,432	(477,951,432)	30,035,279,692	2039
2039	7.00%	9,966,557,451	30,035,279,692	2,937,941,805	(5,467,043,675)	**-8.42%**	2,015,448,132	(513,653,738)	29,521,625,954	2040
2040	7.00%	10,205,811,198	29,521,625,954	3,008,469,025	(5,529,113,042)	**-8.54%**	1,979,783,388	(540,860,629)	28,980,765,325	2041
2041	7.00%	10,454,976,438	28,980,765,325	3,081,917,954	(5,589,075,966)	**-8.65%**	1,942,387,171	(564,770,840)	28,415,994,485	2042
2042	7.00%	10,710,650,477	28,415,994,485	3,157,285,548	(5,651,079,795)	**-8.78%**	1,903,313,034	(590,481,213)	27,825,513,272	2043
2043	7.00%	10,971,518,837	27,825,513,272	3,234,184,323	(5,712,994,949)	**-8.91%**	1,862,494,906	(616,315,720)	27,209,197,552	2044
2044	7.00%	11,238,160,980	27,209,197,552	3,312,785,094	(5,776,153,594)	**-9.05%**	1,819,884,139	(643,484,361)	26,565,713,190	2045
2045	7.00%	11,512,022,822	26,565,713,190	3,393,514,087	(5,840,829,897)	**-9.21%**	1,775,392,575	(671,923,235)	25,893,789,956	2046
2046	7.00%	11,794,079,520	25,893,789,956	3,476,658,761	(5,903,518,970)	**-9.37%**	1,729,061,786	(697,798,423)	25,195,991,532	2047
2047	7.00%	12,085,505,363	25,195,991,532	3,562,565,271	(5,963,354,220)	**-9.53%**	1,681,112,957	(719,675,992)	24,476,315,540	2048
2048	7.00%	12,387,209,199	24,476,315,540	3,651,501,528	(6,023,154,381)	**-9.69%**	1,631,738,154	(739,914,699)	23,736,400,841	2049
2049	7.00%	12,698,316,485	23,736,400,841	3,743,209,733	(6,082,233,005)	**-9.85%**	1,581,066,845	(757,956,426)	22,978,444,415	2050
2050	7.00%	13,019,958,451	22,978,444,415	3,838,023,352	(6,143,280,344)	**-10.03%**	1,529,171,727	(776,085,265)	22,202,359,150	2051
2051	7.00%	13,352,559,724	22,202,359,150	3,936,067,555	(6,205,533,300)	**-10.22%**	1,476,077,265	(793,388,479)	21,408,970,671	2052
2052	7.00%	13,696,437,952	21,408,970,671	4,037,435,979	(6,267,025,529)	**-10.41%**	1,421,912,133	(807,677,416)	20,601,293,255	2053
2053	7.00%	14,052,147,278	20,601,293,255	4,142,291,975	(6,328,173,590)	**-10.61%**	1,366,878,619	(819,002,997)	19,782,290,258	2054
2054	7.00%	14,418,455,452	19,782,290,258	4,250,272,298	(6,379,903,360)	**-10.77%**	1,311,483,880	(818,147,182)	18,964,143,076	2055

SENSITIVITY ANALYSIS

Measuring pension obligations and actuarially determined contributions requires the use of assumptions regarding future economic and demographic experience. Whenever assumptions are made about future events, there is risk that actual experience will differ from expected. Actuarial valuations include the risk that actual future measurements will deviate from expected future measurements due to actual experience that is different than the actuarial assumptions. The primary areas of risk in this actuarial valuation are.

- Investment Risk – the potential that actual investment returns will be different than expected.
- Longevity and Other Demographic Risks – the potential that mortality or other demographic experience will be different than expected.
- Interest Rate Risk – to the extent market rates of interest affect the expected return on assets, there is a risk of changing to the discount rate which determines the present value of liabilities and actuarial valuation results.
- Contribution Risk – the potential that actual contributions are different than the fixed contribution rates.
- Liquidation Risk – the potential that the plan (or all covered employment) ended on the valuation date and all of the accrued benefits had to be paid with cash-flow matched bonds.

Investment Risk

In this section of the report, we will demonstrate the variability in achieving funding goals based on sensitivity around the three key variables listed above. Earlier in this section, we reviewed the projections if the long-term investment return assumption was lowered to rates below 7.00% (6.50%). In this section, we keep the long-term investment return assumption at 7.00% but review the sensitivity of short-term investment returns as a single year event (and then 7.00% for all years thereafter) and simulate the next 10-year periods of returns (and then 7.00% for all years thereafter).

Projected Funded Ratio in 2047

Single Year Event	2024 Valuation	2023 Valuation*
• 1.00% for the next fiscal year	42.7%	54.2%
• 3.00% for the next fiscal year	46.4%	57.9%
• 5.00% for the next fiscal year	50.0%	61.7%
• **7.00% for the next fiscal year (Baseline)**	**53.7%**	**65.5%**
• 9.00% for the next fiscal year	57.3%	69.2%
• 11.00% for the next fiscal year	61.0%	73.0%
• 13.00% for the next fiscal year	64.6%	76.7%
• Negative 5% for the next fiscal year	31.8%	43.0%
• Simulate 2008 loss using -15% for the next fiscal year	13.5%	24.2%
Average Returns over next 10-Year Period (Simulated returns using mean and standard deviations from PERS' Investment Consultant's Capital Market Assumptions)**	**2024 Valuation**	**2023 Valuation***
• 6.00%	39.3%	50.4%
• 7.00%	53.9%	65.6%
• 8.00%	73.5%	85.7%

** Based on 22.40% FCR*

*** 6.00% Average Returns over the next 10-Year Period: 7.04%, 10.32%, 2.25%, 5.45%, 8.52%, 0.00%, 5.44%, 11.49%,-7.04%, 18.53%*
7.00% Average Returns over the next 10-Year Period: 3.61%, 20.67%,-0.02%, 11.58%,-4.84%, 8.13%, 18.10%, 2.04%, 0.83%, 12.67%
8.00% Average Returns over the next 10 Year Period: 9.00%, 9.01%, 16.24%, 4.84%, 16.62%, 6.78%,-3.74%, 6.19%, 18.57%,-1.19%

As can be seen from the projected funded ratios on the table above, the sensitivity of short-term investment returns does have a significant impact to the funding of PERS in the long-term, especially another repeat of the Great Recession of 2008. We believe it demonstrates the importance of these continued projection reports and the continued monitoring of this sensitivity analysis because short-term differences in investment returns can have a major impact on the projection of funded ratios.

Demographic Risk

While actual investment returns compared to that assumed is the most critical driver of funding, many other assumptions are used in the actuarial projections to review sensitivity, such as population growth and wage inflation. Variances in these other assumptions over the long-term may also have an impact on the funding of the System.

For PERS, there has been a significant decline in active membership since 2008, however, there was an increase in this year's valuation. In the baseline projections we assume a static population, meaning the active membership will be the same in each of the projection years than it is in 2024. For sensitivity analysis, we have performed the projections assuming both a 0.25% and 0.50% increase and decrease each year around this static assumption. For PERS, a 0.50% decrease in active population each year of the projection results in the active population dropping to 126,000 at the end of the projection period (it is currently near 146,000). In the table below, we review these alternatives to the static active membership growth:

Projected Funded Ratio in 2047

Active Membership Growth	2024 Valuation	2023 Valuation*
• Increase 0.50% each year	59.1%	72.1%
• Increase 0.25% each year	56.4%	68.8%
• **Static Population (Baseline Assumption)**	**53.7%**	**65.5%**
• Decrease 0.25% each year	51.0%	62.2%
• Decrease 0.50% each year	48.4%	58.9%

* *Based on 22.40% FCR*

Assumption Risk

We also performed a sensitivity analysis for the wage inflation assumption. As a result of the experience study presented in April 2023, the Board kept the wage inflation assumption at 2.65%, which is 0.25% above the price inflation of 2.40%. Wage inflation is major component of the underlying salary increase assumptions, as well as the amortization of the Unfunded Accrued Liability which is based on the level percent of payroll amortization methodology.

In the table below, the second scenario lowers the discount rate to 6.75% but does not change the price inflation or wage inflation. The third scenario lowers the price and wage inflation by 0.30% and lowers the discount rate to 6.75%.

Projected Funded Ratio in 2047

Scenario	Price Inflation	Discount Rate	Wage Inflation	2024 Valuation	2023 Valuation*
1 - Baseline	2.40%	7.00%	2.65%	**53.7%**	**65.5%**
2	2.40%	6.75%	2.65%	46.2%	56.9%
3	2.10%	6.75%	2.35%	45.0%	55.5%

* *Based on 22.40% FCR*

Contribution Risk

To demonstrate the contribution risk of making the Fixed Contribution Rates (FCR) for PERS, we have calculated the projected funded ratios if the FCRs were 1% higher or 1% lower than the current phased-in rate of 19.90% of compensation for all future years.

Projected Funded Ratio in 2047

Change in Fixed Contribution Rate (FCR)	2024 Valuation	2023 Valuation*
• Baseline	**53.7%**	**65.5%**
• 1.00% increase in FCR	58.9%	70.9%
• 1.00% decrease in FCR	48.5%	60.0%

* *Based on 22.40% FCR*

Over a long projection period, gains and losses due to population growth and wage inflation assumptions will be relatively concentrated around the expected value of these assumptions. So, the impact of the sensitivity around these baseline assumptions is small when compared to the investment return assumption.

Liquidation Risk

Under the revised Actuarial Standards of Practice (ASOP) No. 4 effective for valuations after February 15, 2023, we must now include a low-default-risk obligation measure of the Fund's liability in our funding valuation report. This is an informational disclosure as described below and would not be appropriate for assessing the funding progress or health of this plan.

This measure uses the unit credit cost method and reflects all the assumptions and provisions of the funding valuation except that the discount rate is derived from considering low-default-risk fixed income securities. We considered the FTSE Pension Discount Curve based on market bond rates published by the Society of Actuaries as of June 30, 2024 and with the 30-year spot rate used for all durations beyond 30. Using these assumptions, we calculate a low-default-risk obligation measure liability of approximately $64,932,726,000.

This amount approximates the termination liability if the plan (or all covered employment) ended on the valuation date and all of the accrued benefits had to be paid with cash-flow matched bonds. This assurance of funded status and benefit security is typically more relevant for corporate plans than for governmental plans since governments rarely have the need or option to completely terminate a plan.

Utilizing the Funding Policy for PERS and with a fixed contribution rate as a percentage of annual compensation of 19.90% of payroll, the projection results for 2024 show that the Plan will have a "Red" light status for two of the three metrics.

Metrics	2024 Baseline Projection	2024 Status
Funding Ratio in 2047	53.7%	Red
Cash Flow as a Percentage of Assets	(6.3)%	Yellow
ADC/FCR Ratio from 2024 Valuation	130.3%	Red
ADC/FCR Ratio from 2025 Valuation	133.1%	Red

As shown above, two of the three metrics are in the "Red Status" for the 2024 valuation and projections, and per the Funding Policy, the actuary should recommend an increase in the Fixed Contribution Rate (FCR). **Our recommendation to the PERS Board and Legislature is to either change to an ADC contribution approach and contribute 25.92% beginning July 1, 2026 or to continue the phased-in approach for the next five consecutive fiscal years until the FCR reaches one of the scenarios listed below.** Although the Actuarially Determined Contribution (ADC) for the 2024 valuation is 25.92% (shown on page 1), since a phase-in of contributions will result in contribution losses over the next few valuations, our recommendation is for a higher contribution rate than the current ADC.

Fiscal Year Beginning	Current Legislature Phased-In Fixed Contribution Rate	Scenario 1	Scenario 2
		Recommended Fixed Contribution Rate	Recommended Fixed Contribution Rate with Supplemental $110M Each Year
July 1, 2024	17.90%	17.90%	17.90%
July 1, 2025	18.40%	19.90%	19.70%
July 1, 2026	18.90%	21.90%	21.50%
July 1, 2027	19.40%	23.90%	23.30%
July 1, 2028	19.90%	25.90%	25.10%
July 1, 2029	19.90%	27.90%	26.90%

The tables below show the metrics with Scenario 1 from above implemented (Scenario 2 shows similar results).

Metrics	2024 Projection	2024 Status
Funding Ratio in 2047	**93.3%**	Green
Cash Flow as a Percentage of Assets	(4.7)%	Green
ADC/FCR Ratio from 2024 Valuation*	92.9%	Green
ADC/FCR Ratio from 2025 Valuation*	94.9%	Green

* This ratio is based on the ultimate FCR of 27.90% of annual compensation.

Projection Results with Actuarially Recommended FCR from Scenario 1
($ in Thousands)

	2024	2029	2034	2044	2047	2054
Total Payroll	$7,245,824	$8,011,634	$8,777,303	$10,971,519	$11,794,080	$14,052,147
UAAL	$26,498,100	$27,758,507	$25,455,039	$12,645,032	$5,285,750	$0
Normal Cost Rate	2.57%	2.70%	2.84%	3.05%	3.12%	3.26%
UAAL Rate	15.33%	25.20%	25.06%	24.85%	24.78%	24.64%
FCR Rate	17.90%	27.90%	27.90%	27.90%	27.90%	27.90%
Funded Ratio	55.9%	57.9%	63.9%	83.6%	**93.3%**	100.0%
Amortization Period	45 years	21 years	16 years	6 years	2 years	0 years
ADC	25.92%	29.02%	30.09%	31.21%	29.95%	3.26%
ADC/FCR Ratio*	92.9%	104.0%	107.9%	111.9%	107.4%	11.7%
Cash Flow Percentage	(4.7)%	(3.4)%	(3.6)%	(2.4)%	(1.9)%	(0.9)%

($ thousands)

	Valuation Date June 30:	2023	2024	2025	2026	2027	2028
A.	Actuarial Value Beginning of Year	$31,873,200	$32,605,990				
B.	Market Value End of Year	31,621,983	33,449,843				
C.	Market Value Beginning of Year	30,791,115	31,621,983				
D.	Cash Flow						
	D1. Contributions	1,965,549	2,028,748				
	D2. Other Revenue	0	110,000				
	D3. Benefit Payments	(3,237,085)	(3,394,102)				
	D4. Refunds	(115,517)	(118,413)				
	D5. Administrative Expenses	(16,446)	(18,251)				
	D6. Net	(1,403,499)	(1,392,018)				
E.	Investment Income						
	E1. Market Total: B.-C.-D6.	2,234,367	3,219,878				
	E2. Assumed Rate	7.55%	7.00%				
	E3. Amount for Immediate Recognition	2,271,747	2,164,818				
	E4. Amount for Phased-In Recognition	(37,380)	1,055,060				
F.	Phased-In Recognition of Investment Income						
	F1. Current Year: 0.20*E4.	(7,476)	211,012				
	F2. First Prior Year	(1,116,922)	(7,476)	211,012			
	F3. Second Prior Year	1,326,446	(1,116,922)	(7,476)	211,012		
	F4. Third Prior Year	(256,231)	1,326,446	(1,116,922)	(7,476)	211,012	
	F5. Fourth Prior Year	(81,275)	(256,229)	1,326,447	(1,116,923)	(7,476)	211,012
	F6. Total Recognized Investment Gain	(135,458)	156,831	413,061	(913,387)	203,536	211,012
G.	Actuarial Value End of Year:						
	A.+D6.+E3.+F6.	$32,605,990	$33,535,621				
H.	Difference Between Market & Actuarial Values	$984,007	$85,778	$498,839	$(414,548)	$(211,012)	$0

The Actuarial Valuation of Assets recognizes assumed investment income (line E3) fully each year. Differences between actual and assumed investment income (line E4) are phased in over a closed 5 year period. During periods when investment performance exceeds the assumed rate, Actuarial Value of Assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, Actuarial Value of Assets will tend to be greater than market value. If assumed rates are exactly realized for 4 consecutive years, actuarial value will become equal to market value.

	Asset Summary June 30, 2024 ($ in Thousands)	
	Market Value	**Actuarial Value**
(1) Assets at June 30, 2023	$31,621,983	$32,605,990
(2) Contributions and Misc. Revenue	2,138,748	2,138,748
(3) Investment Increment	3,219,878	2,321,649
(4) Benefit Payments	(3,394,102)	(3,394,102)
(5) Refunds	(118,413)	(118,413)
(6) Administrative Expenses	(18,251)	(18,251)
(7) Assets at June 30, 2024 (1) + (2) + (3) + (4) + (5) + (6)	$33,449,843	$33,535,621
(8) Net Investment Return* [2 x (3)] / [(7) + (1) – (3)]	10.41%	7.28%

* Calculated assuming middle of year cash flow experience.

The net investment returns for the past five valuations are summarized in the table below:

Period Ending June 30	Market Value	Actuarial Value
2020	3.1%	6.7%
2021	32.2%	12.5%
2022	(8.6)%	8.5%
2023	7.4%	6.9%
2024	10.4%	7.3%

Since 1986, PERS' assets have experienced better than assumed investment returns overall. As you can see from the table below, for the period ending June 30, 2024, the annualized returns for all but the 25-year period is above the current assumption of 7.00%. The historical rolling returns are as follows (these returns are gross returns).

Period Ending June 30	10-Year Annualized Rate of Return	20-Year Annualized Rate of Return	25-Year Annualized Rate of Return	30-Year Annualized Rate of Return
2021	10.1	7.7	8.1	8.7
2022	9.0	7.6	7.0	8.0
2023	8.5	7.8	6.6	7.8
2024	7.7	7.6	6.5	8.1

SCHEDULE B – ACTUARIAL ASSUMPTIONS AND METHODS

The assumptions and methods used in the valuation are based on the results of the experience investigation for the four-year period ending June 30, 2022, dated April 21, 2023, and adopted by the Board on August 22, 2023. The combined effect of the assumptions is expected to have no significant bias.

INTEREST RATE: 7.00% per annum, compounded annually (net of investment expense only). The expected return on assets consists of 2.40% price inflation and 4.60% real rate of return.

SEPARATIONS FROM ACTIVE SERVICE: Representative values of the assumed rates of separation from active service are as follows:

	Annual Rates of			
	Death*		Disability	
Age	Male	Female	Male	Female
20	0.0483%	0.0126%	0.006%	0.006%
25	0.0567	0.0189	0.011	0.011
30	0.0630	0.0259	0.016	0.016
35	0.0714	0.0350	0.020	0.020
40	0.0893	0.0483	0.065	0.050
45	0.1218	0.0665	0.150	0.070
50	0.1764	0.0917	0.230	0.145
55	0.2594	0.1274	0.360	0.275
60	0.3980	0.1757	0.270	0.250
65	0.6353	0.2429	0.240	0.220
70	1.1655	0.4739	0.240	0.150
75	2.1389	0.9247	0.240	0.150
79	3.4755	1.5785	0.240	0.150

* Adjusted Base Rates

AGE	Annual Rates of Withdrawal* Years of Service											
	0		5		10		15		20		24	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
20	42.00%	45.00%	13.00%	12.50%								
25	35.00	37.00	13.00	12.50	6.50%	7.00%						
30	35.00	35.00	12.50	12.50	6.50	7.00	3.75%	4.00%				
35	35.00	30.00	12.50	12.00	6.50	6.00	3.75	4.00	3.25%	3.50%		
40	35.00	28.00	10.00	9.50	6.00	6.00	3.75	4.00	3.25	3.50	3.25%	3.50%
45	32.00	27.50	9.50	9.50	6.00	6.00	3.75	4.00	3.25	3.50	3.25	3.50
50	27.00	27.50	9.00	9.50	5.75	6.00	3.75	4.00	3.25	3.50	3.25	3.50
53+	25.00	25.00	9.00	9.50	5.75	6.00	3.75	4.00	3.25	3.50	3.25	3.50

* Rates stop at eligibility for retirement. For Tier 4, rates at 24 years of service are extended out to 29 years of service.

Annual Rates of Service Retirements				
	Male		Female	
Age	Under 25 Years of Service*	25 Years of Service and Over*	Under 25 Years of Service*	25 Years of Service and Over*
45		28.00%		21.00%
50		20.00		16.50
55		20.00		20.75
60	11.50%	19.50	13.25%	21.50
62	20.00	29.00	18.75	32.25
65	26.50	33.00	30.00	40.00
70	21.25	26.00	24.25	30.00
75	22.00	22.00	24.00	25.00
80	100.00	100.00	100.00	100.00

* For Tier 4 members, 30 years of service.

SALARY INCREASES: Representative values of the assumed annual rates of salary increases are as follows:

		Annual Rates of	
Service	Merit & Seniority	Base (Economy)	Increase Next Year
0	15.25%	2.65%	17.90%
1	5.25	2.65	7.90
2	2.75	2.65	5.40
3	1.75	2.65	4.40
4	1.25	2.65	3.90
5-7	0.75	2.65	3.40
8-27	0.25	2.65	2.90
28 and Over	0.00	2.65	2.65

DEATH AFTER RETIREMENT:

Service Retirees*

Membership Table	Adjustment to Rates	Projection Scale
PubS.H-2010(B) Retiree	Male: 95% up to age 60, 110% for ages 61 to 75, and 101% for ages above 77 Female: 84% up to age 72, 100% for ages above 76	MP-2020

Contingent Annuitants*

Membership Table	Adjustment to Rates	Projection Scale
PubS.H-2010(B) Contingent Annuitant	Male: 97% for all ages Female: 110% for all ages	MP-2020

Disabled Retirees*

Membership Table	Adjustment to Rates	Projection Scale
PubG.H-2010 Disabled	Male: 134% for all ages Female: 121% for all ages	MP-2020

* Please note that none of the recommended tables have any setbacks or setforwards.

Representative values of the assumed rates of death after retirement are as follows:

	Rates of Death After Retirement*					
	Service Retirees		Contingent Annuitants		Disabled Retirees	
AGE	Male	Female	Male	Female	Male	Female
45	0.2983%	0.0983%	0.7692%	0.5104%	1.4660%	1.1919%
50	0.4190%	0.1638%	0.8837%	0.6556%	2.2780%	1.7956%
55	0.5197%	0.2738%	1.0156%	0.7843%	2.9855%	2.1078%
60	0.7771%	0.4578%	1.2397%	1.0131%	3.6475%	2.4684%
65	1.3211%	0.7652%	1.6286%	1.4157%	4.5426%	2.9730%
70	2.1758%	1.2785%	2.4153%	1.9998%	5.8129%	3.8127%
75	3.8566%	2.3659%	3.7209%	3.0052%	7.6661%	5.2683%
80	6.2640%	4.2530%	5.7734%	4.7289%	10.8125%	7.7779%
85	11.0605%	7.3240%	9.2228%	7.8562%	15.7785%	11.9947%
90	17.6902%	12.6470%	14.6577%	13.4530%	22.7224%	17.5353%

** Adjusted Base Rates*

SCHEDULE B – ACTUARIAL ASSUMPTIONS AND METHODS

PAYROLL GROWTH: 2.65% per annum, compounded annually.

ADMINISTRATIVE EXPENSES: 0.26% of payroll.

TIMING OF DECREMENTS AND PAY INCREASES: Middle of Year.

ASSUMED INTEREST RATE ON EMPLOYEE CONTRIBUTIONS: 2.00%.

ACTIVE MEMBER DISABILITY ASSUMPTION: 12% of active member disabilities are assumed to be in the line of duty and 88% of active member disabilities are assumed to not be in the line of duty.

ACTIVE MEMBER DEATH ASSUMPTION: 4% of active deaths are assumed to be in the line of duty and 96% of active member deaths are assumed to not be in the line of duty.

ACTIVE MEMBER WITHDRAWAL ASSUMPTION: 65% of vested participants who terminate before retirement elect to receive a deferred benefit upon attaining the eligibility requirements for retirement. They are assumed to commence their benefit at age 60 for Tiers 1, 2 and 3 and age 62 for Tier 4. The remaining 35% elect to withdraw their contributions.

FINAL AVERAGE COMPENSATION: 0.25% load on the final average compensation produced by our valuation software.

MARRIAGE ASSUMPTION: 85% married with the husband two years older than his wife.

UNUSED SICK LEAVE: Assumed 0.55 years at retirement.

MILITARY SERVICE: Assumed that participants will have on average 0.20 years of military service at retirement.

MAXIMUM COVERED EARNINGS ASSUMPTION GROWTH: 2.65%

AGE-LIMITED DISABILITY DECREMENTS: Assumed to turn off at age 60.

DEFERRED VESTEDS: Deferred vested benefits are assumed to commence at age 60 for Tiers 1, 2 and 3 and at age 65 for Tier 4.

ASSET VALUATION METHOD: Actuarial value, as developed in Schedule A. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected market value of assets, based on the assumed valuation rate of return. The amount recognized each year is 20% of the difference between market value and expected market value.

AMORTIZATION METHOD FOR ACTUARIALLY DETERMINED CONTRIBUTION (ADC): Level Percentage of Payroll Method using closed amortization periods as follows:

a. Existing UAAL on June 30, 2018 – 30 years.

b. Annual future actuarial experience gains and losses, assumption changes or benefit enhancements or reductions – 25 years from the date of the valuation.

VALUATION METHOD: The valuation is prepared on the projected benefit basis, which is used to determine the present value of each member's expected benefit payable at retirement, disability, or death. The calculations are based on the member's age, years of service, sex, compensation, expected future salary increases, and an assumed future interest earnings rate (currently 7.00%). The calculations consider the probability of a member's death or termination of employment prior to becoming eligible for a benefit and the probability of the member terminating with a service, disability, or survivor's benefit. The present value of the expected benefits payable to active members is added to the present value of the expected future payments to current benefit recipients to obtain the present value of all expected benefits payable to the present group of members and survivors.

The employer contributions required to support the benefits of PERS are determined following a level funding approach and consist of a normal contribution and an accrued liability contribution.

Under the entry age normal cost method, the actuarial present value of each member's projected benefits is allocated on a level basis over the member's compensation between the entry age of the member and the assumed exit ages. The portion of the actuarial present value allocated to the valuation year is called the normal cost. The actuarial present value of benefits allocated to prior years of service is called the actuarial liability. The unfunded actuarial liability represents the difference between the actuarial liability and the actuarial value of assets as of the valuation date. The unfunded actuarial liability is calculated each year and reflects experience gains/losses. The accrued liability contribution amortizes the balance of the unfunded actuarial accrued liability over a period of years from the valuation date.

The following summary presents the main benefit and contribution provisions of the System in effect June 30, 2024, as interpreted in preparing the actuarial valuation.

DEFINITIONS

Average Compensation Average annual covered earnings of an employee during the four highest years of service. To determine the four highest years, PERS considers these scenarios:

- Four highest fiscal years of earned compensation;
- Four highest calendar years of earned compensation;
- Combination of four highest fiscal and calendar years of earned compensation that do not overlap; or
- Final 48 months of earned compensation prior to termination of employment.

Covered Earnings Gross salary not in excess of the maximum amount on which contributions were required.

Fiscal Year Year commencing on July 1 and ending June 30.

Credited Service Service while a contributing member plus additional service as described below.

Unused Sick and Vacation Leave Service credit is provided at no charge to members for unused sick and vacation time that has accrued at the time of retirement. A payment of up to 240 hours of leave may be used in the Average Compensation definition.

Additional Service Additional service credit may be granted for service prior to February 1, 1953, active duty military service, out-of-state service, professional leave and non-covered and retroactive service

The maximum covered earnings for employers and employees over the last ten years are as follows:

EMPLOYER AND EMPLOYEE RATES OF CONTRIBUTION
AND MAXIMUM COVERED EARNINGS

Fiscal Date From	Fiscal Date To	Employer Rate	Maximum Covered Earnings	Employee Rate	Maximum Covered Earnings
7/1/14	6/30/15	15.75%	$260,000	9.00%	$260,000
7/1/15	6/30/17	15.75	265,000	9.00	265,000
7/1/17	6/30/18	15.75	270,000	9.00	270,000
7/1/18	6/30/19	15.75	275,000	9.00	275,000
7/1/19	6/30/20	17.40	280,000	9.00	280,000
7/1/20	6/30/21	17.40	285,000	9.00	285,000
7/1/21	6/30/22	17.40	290,000	9.00	290,000
7/1/22	6/30/23	17.40	305,000	9.00	305,000
7/1/23	6/30/24	17.40	330,000	9.00	330,000
7/1/24	6/30/25	17.90	345,000	9.00	345,000

BENEFITS

Superannuation Retirement

Condition for Retirement

A retirement allowance is paid upon the request of any member who retires and has attained age 60 and completed at least eight years (4 years if hired prior to July 1, 2007) of membership service.

A retirement allowance may also be paid upon the completion of 25 years of creditable service for members hired prior to July 1, 2011 or upon the completion of 30 years of creditable service for members hired on or after July 1, 2011.

Amount of Allowance

The annual retirement allowance payable to a member who retires is equal to:

1. A member's annuity which is the actuarial equivalent of the member's accumulated contributions at the time of his or her retirement, plus
2. For a member hired prior to July 1, 2011, an employer's annuity which, together with the member's annuity, is equal to 2% of his or her average compensation for each of the first 25 years of creditable service plus 2-1/2% for each year of creditable service over 25 years.
3. For a member hired on or after July 1, 2011, an employer's annuity which, together with the member's annuity, is equal to 2% of his or her average compensation for each of the first 30 years of creditable service plus 2-1/2% for each year of creditable service over 30 years. There will be an actuarial reduction for each year of creditable service below 30 or for each year of age below age 65, whichever is less.

For members hired prior to July 1, 2011, the minimum allowance is $120 for each year of creditable service.

Early Retirement

Condition for Retirement

For members hired on or after July 1, 2011, an actuarially reduced retirement allowance is paid upon the request of any member who retires with less than 30 years of creditable service.

Amount of Allowance

The annual actuarially reduced retirement allowance is equal to the benefit in the section above reduced for each year of creditable service below 30 or for each year in age below age 65, whichever is less.

Deferred Vested

Condition for Termination

Any member who withdraws from service prior to his or her attainment of age 60 and who has completed at least eight years (4 years if hired prior to July 1, 2007) of membership service is entitled to receive, in lieu of a refund of his or her accumulated contributions, a retirement allowance.

Amount of Allowance

The annual retirement allowance payable to a member who terminates as a deferred vested payable at age 60 is equal to:

1. A member's annuity which is the actuarial equivalent of the member's accumulated contributions at the time of his or her retirement, plus
2. For a member hired prior to July 1, 2011, an employer's annuity which, together with the member's annuity, is equal to 2% of his or her average compensation for each of the first 25 years of creditable service plus 2-1/2% for each year of creditable service over 25 years.
3. For a member hired on or after July 1, 2011, an employer's annuity which, together with the member's annuity, is equal to 2% of his or her average compensation for each of the first 30 years of creditable service plus 2-1/2% for each year of creditable service over 30 years. There will be an actuarial reduction for each year of creditable service below 30 or for each year of age below age 65, whichever is less.

For members hired prior to July 1, 2011, the minimum allowance is $120 for each year of creditable service.

Ordinary Disability Retirement

Condition for Retirement

A retirement allowance is paid to a member who is totally and permanently disabled, as determined by the Board of Trustees, and has accumulated eight or more years* of membership service.

* four years for those who entered the system before July 1, 2007

Amount of Allowance

For those who were active members prior to July 1, 1992, and did not elect the benefit structure outlined below, the annual disability retirement allowance payable is equal to a superannuation retirement allowance if the member has attained age 60, otherwise it is equal to a superannuation retirement allowance calculated as follows:

1. A member's annuity equal to the actuarial equivalent of his or her accumulated contributions at the time of retirement, plus
2. An employer's annuity equal to the amount that would have been payable had the member continued in service to age 60.

For those who become active members after June 30, 1992, and for those who were active members prior to July 1, 1992, who so elected, the following benefits are payable:

1. A temporary allowance equal to the greater of (a) 40% of average compensation plus 10% for each dependent child up to a maximum of 2, or (b) the member's accrued allowance. This temporary allowance is paid for a period of time based on the member's age at disability, as follows:

Age at Disability	Duration
60 and earlier	to age 65
61	to age 66
62	to age 66
63	to age 67
64	to age 67
65	to age 68
66	to age 68
67	to age 69
68	to age 70
69 and later	one year

The minimum allowance is $120 per year of creditable service.

2. A deferred allowance commencing when the temporary allowance ceases equal to the greater of (a) the allowance the member would have received based on service to the termination age of the temporary allowance, but not more than 40% of average compensation, or (b) the member's accrued allowance.

The minimum allowance is $120 per year of creditable service.

Effective July 1, 2004, a temporary benefit can be paid out of a member's accumulated contribution balance while the member is awaiting a determination for eligibility for disability benefits. Future disability payments, if any, would be offset by advanced payments made from the member's accumulated contributions.

Accidental Disability Retirement

Condition for Retirement: A retirement allowance is paid to a member who is totally and permanently disabled in the line of performance of duty.

Amount of Allowance: The annual accidental disability retirement allowance is equal to the allowance payable on disability retirement but not less than 50% of average compensation. There is no minimum benefit.

Accidental Death Benefit

Condition for Benefit: A retirement allowance is paid to a spouse and/or dependent children upon the death of an active member in the line of performance of duty.

Amount of Allowance: The annual retirement allowance is equal to 50% of average compensation payable to the spouse and 25% of average compensation payable to one dependent child or 50% to two or more children until age 19 (23 if a full time student). There is no minimum benefit.

Ordinary Death Benefit

Condition for Benefit: Upon the death of a member who has completed at least eight years* of membership service, a benefit is payable, in lieu of a refund of the member's accumulated contributions, to his or her spouse, if said spouse has been married to the member for not less than one year.

*four years for those who entered the system before July 1, 2007.

Amount of Allowance: The annual retirement allowance payable to the lawful spouse of a vested member who dies is equal to the greater of (i) the allowance that would have been payable had the member retired and elected Option 2, reduced by an actuarially determined factor based on the number of years the member lacked in qualifying for unreduced retirement benefits, or (ii) a lifetime benefit equal to 20% of the deceased member's average compensation, but not less than $50 per month.

In addition, a benefit is payable to dependent children until age 19 (23 if a full time student). The benefit is equal to the greater of 10% of average compensation or $50 per month for each dependent child up to 3.

Return of Contributions

Upon the withdrawal of a member without a retirement benefit, his or her contributions are returned to him or her, together with accumulated regular interest thereon.

Upon the death of a member before retirement, his or her contributions, together with the full accumulated regular interest thereon, are paid to his or her designated beneficiary, if any, otherwise, to his or her estate provided no other survivor benefits are payable.

Effective July 1, 2016, the interest rate on employee contributions shall be calculated based on the money market rate as published by the Wall Street Journal on December 31 of each preceding year with a minimum rate of one percent and a maximum rate of five percent.

Normal Form of Benefit

The normal form of benefit (modified cash refund) is an allowance payable during the life of the member with the provision that upon his or her death the excess of his or her total contributions with interest at the time of retirement over the total retirement annuity paid to him or her will be paid to his or her designated beneficiary.

Optional Benefits

A member upon retirement may elect to receive his or her allowance in one of the following forms which are computed to be actuarially equivalent to the applicable retirement allowance.

Option 1. Reduced allowance with the provision that if the pensioner dies before he receives the value of the member's annuity as it was at the time of retirement, the balance shall be paid to his or her beneficiary.

Option 2. Upon his or her death, his or her reduced retirement allowance shall be continued throughout the life of, and paid to, his or her beneficiary.

Option 3. Upon his or her death, 50% of his or her reduced retirement allowance shall be continued throughout the life of, and paid to, a designated beneficiary and the other 50% of his or her reduced retirement allowance to some other designated beneficiary.

Option 4. Upon his or her death, 75% of his or her reduced retirement allowance shall be continued throughout the life of, and paid to, a designated beneficiary.

Option 4A. Upon his or her death, 50% of his or her reduced retirement allowance shall be continued throughout the life of, and paid to, a designated beneficiary.

Option 4B. A reduced retirement allowance shall be continued throughout the life of the pensioner, but with the further guarantee of payment to the pensioner or his or her beneficiary for a specified number of years certain.

Option 4C. A member may elect any option with the added provision that the member shall receive, so far as possible, the same total amount annually (considering both PERS and Social Security benefits) before and after the earliest age at

which the member becomes eligible for a Social Security benefit. This option was only available to those who retired prior to July 1, 2004.

A member who elects Option 2, Option 4, or Option 4A at retirement may revert to the normal form of benefit if the designated beneficiary predeceases the retired member or if the retired member divorces the designated beneficiary. A member who elects the normal form of benefit or Option 1 at retirement may select Option 2, Option 4, or Option 4A to provide beneficiary protection to a new spouse if married after retirement.

A member hired prior to July 1, 2011 and who has at least 28 years of creditable service* or a member hired on or after July 1, 2011 who has at least 33 years of creditable service can select a partial lump-sum option at retirement. Under this option, the retiree has the option of taking a partial lump-sum distribution equal to 12, 24, or 36 times the base maximum monthly benefit. With each lump-sum amount, the base maximum monthly benefit will be actuarially reduced. A member selecting the partial lump-sum option may also select any of the regular options except Option 1, the prorated single-life annuity, and Option 4-C, the Social Security leveling provision. The benefit is then calculated using the new reduced maximum benefit as a starting point in applying the appropriate option factors for the reduction.

* or at least age 63 with four years of membership service for those who entered the system before July 1, 2007.

Post-Retirement Adjustments In Allowances

The allowances of retired members are adjusted annually by an amount equal to (a) 3% of the annual retirement allowance for each full fiscal year of retirement prior to the year in which the member reaches age 55*, plus (b) 3% compounded for each year thereafter beginning with the fiscal year in which the member turns age 55*.

*Age 60 for members hired on or after July 1, 2011

A prorated portion of the annual adjustment will be paid to the member, beneficiary, or estate of any member or beneficiary who is receiving the annual adjustment in a lump sum, but whose benefits are terminated between July 1 and December 1.

RECONCILIATION OF DATA RECEIVED FROM PERS

Reconciliation of Data received from PERS	Active File			Pensioner File			Total
	Active	Inactive NonVested	Inactive Vested	Retirees	Disableds	Survivors	
From PERS	148,437	81,752	15,675	99,735	6,085	12,628	364,312
Return to Active Status	26		(26)	(1)			(1)
Deceased			(19)	(4)		(2)	(25)
Certain Period Ended						(153)	(153)
Added Back			34	20	4	9	67
Pay less than $100	(347)	163	17				(167)
Not Contributing	(2,275)	1,898	377				
Balance = 0							
Status Change			19				19
In Retiree Status	(4)		(8)				(12)
In Disabled Status	(1)		(4)				(5)
Pending Retirees			1,037				1,037
Suspended Beneficiaries			55				55
For Valuation	145,836	83,813	17,157	99,750	6,089	12,482	365,127

STATUS RECONCILIATION FROM 2023 TO 2024

Reconciliation of Data from Last Year to This Year	Actives	Retirees	Disableds	Survivors	Inactives		Total
					Vested	Non-Vested	
As of June 30, 2023	145,985	97,395	6,153	12,342	17,191	78,809	357,875
Retirement	(3,751)	5,463			(1,708)	(4)	
Disabled	(146)	(7)	186		(32)	(1)	
Death with Survivor	(89)	(610)	(38)	908	(23)		148
Terminated Vested	(3,056)				3,123	(67)	
Terminated Non-Vested	(8,336)				(47)	7,959	(424)
Return to Active Service	4,494	(104)	(4)		(872)	(3,514)	
Refunded	(3,927)				(455)	(3,327)	(7,709)
Death No Survivor	(207)	(2,358)	(208)	(583)	(42)	(57)	(3,455)
Benefit Ended		(3)		(188)			(191)
Removed/Cleanup		(28)					(28)
New	14,869						14,869
Pickups		2		3	20	4,013	4,037
As of June 30, 2024	145,836	99,750	6,089	12,482	17,155	83,811	365,123

Retirants & Beneficiaries as of June 30, 2024
Tabulated by Year of Retirement

Year of Retirement Ending June 30	No.	Total Annual Benefits, excluding COLA	COLA	Total Annual Benefits	Average Monthly Total Benefit
2024	5,216	$126,846,933	$135,278	$126,982,211	$2,029
2023	5,075	114,233,877	1,344,579	115,578,456	1,898
2022	5,700	125,232,007	5,224,993	130,457,000	1,907
2021	5,314	113,892,524	8,347,463	122,239,987	1,917
2020	4,969	110,785,699	11,693,939	122,479,638	2,054
2019	5,093	111,373,583	15,343,600	126,717,183	2,073
2018	5,172	108,938,587	18,571,847	127,510,434	2,054
2017	5,044	104,146,512	21,172,025	125,318,537	2,070
2016	5,152	108,806,685	25,965,534	134,772,219	2,180
2015	4,790	97,773,497	27,010,866	124,784,363	2,171
2014	5,178	104,626,158	32,901,606	137,527,764	2,213
2013	4,908	98,758,833	34,958,308	133,717,141	2,270
2012	5,114	102,874,740	40,450,223	143,324,963	2,335
2011	5,010	103,650,663	45,189,537	148,840,200	2,476
2010	4,186	82,241,761	39,090,746	121,332,507	2,415
2009	3,478	67,196,526	34,819,841	102,016,367	2,444
2008	3,696	72,066,303	40,187,759	112,254,062	2,531
2007	3,417	65,056,484	39,368,834	104,425,318	2,547
2006	3,399	60,946,565	39,538,639	100,485,204	2,464
2005	3,038	55,536,687	38,677,115	94,213,802	2,584
2004	3,087	55,982,776	42,224,128	98,206,904	2,651
2003	2,791	50,149,260	40,265,192	90,414,452	2,700
2002	2,725	46,407,305	39,617,858	86,025,163	2,631
2001	2,552	43,858,695	39,857,098	83,715,793	2,734
2000	1,907	32,220,334	31,112,663	63,332,997	2,768
1999	1,599	25,151,222	25,781,878	50,933,100	2,654
1998	1,581	24,723,312	26,648,049	51,371,361	2,708
1997	1,527	22,692,397	26,007,852	48,700,249	2,658
1996	1,428	21,117,211	25,631,661	46,748,872	2,728
1995	1,093	14,489,999	18,263,565	32,753,564	2,497
1994	936	12,313,279	16,408,407	28,721,686	2,557
1993	947	12,978,792	18,434,187	31,412,979	2,764
1992	938	12,675,743	18,689,776	31,365,519	2,787
1991	465	5,772,000	9,082,187	14,854,187	2,662
1990	441	4,773,974	7,733,241	12,507,215	2,363
1989 & Prior	1,355	10,879,921	21,741,695	32,621,616	2,006
Totals	118,321	$2,331,170,844	$927,492,169	$3,258,663,013	$2,295

Schedule of Retired Members by Type of Retirement

Benefits Payable June 30, 2024

Amount of Monthly Benefit**	Number of Rets.	Ret. Type 1*	Ret. Type 2*	Ret. Type 3*
$1-$500	20,451	15,328	688	4,435
501-1,000	22,793	17,380	1,963	3,450
1,001-1,500	20,334	16,743	1,588	2,003
1,501-2,000	17,629	15,609	947	1,073
2,001-2,500	13,973	12,873	474	626
2,501-3,000	8,877	8,337	203	337
3,001-3,500	5,622	5,281	108	233
3,501-4,000	3,120	2,952	55	113
4,001-4,500	2,017	1,904	36	77
4,501-5,000	1,072	1,024	10	38
Over 5,000	2,433	2,319	17	97
Totals	118,321	99,750	6,089	12,482

*Type of Retirement
1 – Retirement for Age & Service
2 – Disability Retirement
3 – Survivor Payment

**Reflects reduced benefit

Schedule of Retired Members by Type of Option

Benefits Payable June 30, 2024

Amount of Monthly Benefit**	Number of Rets.	Life	Option 1	Option 2	Option 3	Option 4	Option 4A	Option 4B	Option 4C*	Option 5	PLSO 1 Year*	PLSO 2 Years*	PLSO 3 Years*
$1-$500	20,451	14,783	632	2,482	234	220	410	1,670	131	20	568	457	2,058
501-1,000	22,793	16,063	639	2,977	250	323	876	1,637	592	28	948	656	2,226
1,001-1,500	20,334	13,392	610	3,056	260	418	1,056	1,508	749	34	947	792	3,158
1,501-2,000	17,629	11,080	470	2,832	191	470	1,195	1,372	335	19	835	875	3,764
2,001-2,500	13,973	8,443	331	2,356	127	368	1,188	1,150	97	10	881	752	3,229
2,501-3,000	8,877	5,452	194	1,360	61	279	771	751	36	9	651	506	1,865
3,001-3,500	5,622	3,393	132	896	36	182	520	459	12	4	516	373	1,022
3,501-4,000	3,120	1,902	64	517	18	78	286	255	8	0	291	198	516
4,001-4,500	2,017	1,146	33	344	6	75	247	166	3	0	189	127	348
4,501-5,000	1,072	630	17	185	6	33	121	80	1	0	95	49	190
Over 5,000	2,433	1,210	28	546	11	125	328	185	2	0	191	105	352
Totals	118,321	77,494	3,150	17,551	1,200	2,571	6,998	9,233	1,966	124	6,112	4,890	18,728

Option Selected

Life	-	Return of Contributions
Opt. 1	-	Return of Value of Member's Annuity
Opt. 2	-	100% Survivorship
Opt. 3	-	50%/50% Dual Survivorship
Opt. 4	-	75% Survivorship
Opt. 4A	-	50% Survivorship
Opt. 4B	-	Years Certain & Life
Opt. 4C	-	Social Security Leveling *
Opt. 5	-	Pop-Up
PLSO	-	Partial Lump Sum Option*

*Included in other options
** Reflects reduced benefit

Retirant and Beneficiary Information June 30, 2024
Tabulated by Attained Ages

Attained Age	Service Retirement		Disability Retirement		Survivors and Beneficiaries		Total	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits
Under 20					417	$2,389,076	417	$2,389,076
20 – 24					146	982,181	146	982,181
25 – 29					78	795,345	78	795,345
30 – 34			1	23,061	115	1,320,390	116	1,343,451
35 – 39			29	596,694	178	2,035,700	207	2,632,394
40 – 44	24	747,968	104	2,065,365	314	3,738,775	442	6,552,108
45 – 49	594	18,685,011	230	4,720,504	354	4,478,465	1,178	27,883,980
50 – 54	3,024	101,333,747	487	10,183,484	531	7,590,257	4,042	119,107,488
55 – 59	5,445	183,388,648	774	17,304,064	649	10,112,116	6,868	210,804,828
60 – 64	12,914	353,473,694	1,178	25,717,761	1,016	17,163,456	15,108	396,354,911
65 – 69	20,518	539,706,420	1,230	27,555,965	1,401	26,519,867	23,149	593,782,252
70 – 74	21,604	620,517,326	1,008	22,096,064	1,761	37,852,304	24,373	680,465,694
75 – 79	17,716	525,867,451	641	14,249,329	1,886	43,590,526	20,243	583,707,306
80 – 84	10,290	306,420,262	271	6,200,892	1,676	42,523,167	12,237	355,144,321
85 – 89	5,022	146,113,488	112	1,943,535	1,210	33,929,355	6,344	181,986,378
90 – 94	1,949	56,090,951	22	388,695	563	15,647,715	2,534	72,127,361
95	193	5,816,579			54	1,590,383	247	7,406,962
96	151	4,003,332	1	14,610	37	863,396	189	4,881,338
97	103	2,903,935	1	12,519	28	636,122	132	3,552,576
98	77	1,863,885			22	602,682	99	2,466,567
99	49	1,268,684			16	499,131	65	1,767,815
100 & Over	77	1,827,121			30	701,560	107	2,528,681
Totals	99,750	$2,870,028,502	6,089	$133,072,542	12,482	$255,561,969	118,321	$3,258,663,013

Average Age:	71.2 years
Average Age at Retirement:	59.3 years
Average Age at Death:	81.1 years
Average Years Since Retirement:	12.8 years

Total Active Members as of June 30, 2024
Tabulated by Attained Ages and Years of Service

Attained Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Over	Total No.	Total Payroll
Under 20	366							366	$ 8,916,577
20 to 24	6,612	65						6,677	231,946,846
25 to 29	10,913	2,298	17					13,228	560,161,495
30 to 34	7,572	5,965	1,603	26				15,166	704,966,110
35 to 39	6,255	4,294	4,884	1,609	38			17,080	862,964,947
40 to 44	5,663	3,719	3,499	5,128	1,704	29		19,742	1,055,370,332
45 to 49	4,792	3,291	2,872	3,352	4,376	1,017	13	19,713	1,100,145,986
50 to 54	4,548	2,999	2,618	3,094	3,148	2,276	416	19,099	1,039,738,256
55 to 59	3,749	2,694	2,191	2,520	2,465	1,473	962	16,054	807,538,301
60 to 64	2,598	2,164	1,679	1,679	1,602	1,123	898	11,743	564,196,958
65 to 69	1,184	924	677	555	457	284	377	4,458	202,087,821
70 & Over	698	506	370	302	225	160	249	2,510	107,790,337
Total Count	54,950	28,919	20,410	18,265	14,015	6,362	2,915	145,836	$ 7,245,823,966

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age:	45.1 years
Service:	10.0 years
Entry Age:	35 years
Annual Payroll:	$49,685

Gains & Losses in Accrued Liabilities
Resulting from Difference Between
Assumed Experience & Actual Experience
($ Millions)

Type of Activity	$ Gain (or Loss) For Year Ending 6/30/2024	$ Gain (or Loss) For Year Ending 6/30/2023
Age & Service Retirements. If members retire at older ages, there is a gain. If younger ages, a loss.	$ (63.2)	$ 26.3
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	(3.3)	(1.6)
Death-in Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	0.8	(1.7)
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	(112.0)	(122.5)
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	(212.9)	(935.3)
New Members. Additional unfunded accrued liability will produce a loss.	(120.9)	(132.0)
Investment Income. If there is a greater investment income than assumed, there is a gain. If less income, a loss.	88.0	(217.2)
Death After Retirement. If retirants live longer than assumed, there is a loss. If not as long, a gain.	9.0	16.5
Other. Miscellaneous gains and losses resulting from data adjustments, timing of financial transactions, etc.	(132.7)	(104.0)
Gain (or Loss) During Year From Financial Experience	$ (547.2)	$ (1,471.5)
Non-Recurring Items. Adjustments for plan amendments, software changes, assumption changes, or method changes.	0.0	(3,769.2)
Composite Gain (or Loss) During Year	$ (547.2)	$ (5,240.7)

The purpose of the Funding Policy is to state the overall funding goals and objectives for the Public Employees' Retirement System of Mississippi (PERS), and to document both the metrics that will be used to measure progress toward achieving those goals, and the methods and assumptions employed to develop the metrics.

The employer contribution rate for PERS will be set based on the metrics, assumptions and methods outlined in Section II and III of this policy.

I. Funding Goals and Objectives

The objective in requiring employer and member contributions to PERS is to accumulate sufficient assets during a member's employment to fully finance the benefits the member will receive in retirement. In meeting this objective, PERS will strive to meet the following goals:

- Preservation of the defined benefit structure for providing lifetime benefits to the PERS membership,
- Contribution rate stability as a percentage of payroll (Fixed Contribution Rate – FCR),
- Maintain an increasing trend in the funded ratio over the projection period with an ultimate goal of being 100% funded,
- Require clear reporting and risk analysis of the metrics by the actuary as outlined in Section II of this policy using a "Signal Light" approach to assist the Board in determining whether increases or decreases are needed in the employer contribution rate, and
- Ensure benefit improvements are funded through increases in contribution requirements in accordance with Article 14, S 272A, of the Mississippi Constitution.

II. Metrics

To track progress in achieving the outlined funding goals and objectives and to assist the Board in making a determination whether an increase or decrease in the employer contribution rate for PERS should be considered, certain metrics will be measured annually in conjunction with information provided in the actuarial valuation and projection report. As part of the annual valuation and projection reports, each metric will be calculated and assigned a "Signal Light" with the following definitions:

Status	Definition
Green	Plan passes metric and PERS' funding goals, and objectives are achieved
Yellow	Plan passes metric but a warning is issued that negative experience may lead to failing status
Red	Plan fails metric and PERS must consider contribution increases

If any one of the metrics are in the Red Signal Light status in conjunction with the annual valuation report and the projection report, the actuary will determine and recommend to the Board an employer contribution rate increase to consider that is sufficient enough to get all three metrics back into the Green Signal Light status. The employer contribution rate increase would be effective for the July 1st, 18 months following the completion of the projection report (e.g., if the projection report in 2024 deems an increase to be considered, then it would be effective for July 1, 2026).

The following metrics will be measured:

- **Funded Ratio** – Funded Ratio is defined as the actuarial value of assets divided by the actuarial accrued liability. One of the funding goals is to have an increasing funded ratio over the projection period with an ultimate goal of having a 100 percent funded ratio. The Board sets the Signal Light definition as follows:

Status	Definition
Green	Funded Ratio above 80% in 2047
Yellow	Funded Ratio between 65% and 80% in 2047
Red	Funded Ratio below 65% in 2047

- **Cash flow as a percentage of assets** – Cash flow as a percentage of assets is defined as the difference between total contributions coming into the trust and the benefit payments made to retirees and beneficiaries going out of the trust as a percentage of beginning year market value of assets. Over the projection period, this percentage will fluctuate from year to year so for Signal Light testing, the net cash flow percentage over the entire projection period will be tested. The Board sets the Signal Light definition as follows:

Status	Definition
Green	Net Cash Flow Percentage above negative 5.25% (-5.25%) during the projection period
Yellow	Net Cash Flow Percentage between negative 5.25% (-5.25%) and negative 7.00% (-7.00%) during the projection period
Red	Net Cash Flow Percentage below negative 7.00% (-7.00%) during the projection period

- **Actuarially Determined Contribution (ADC)** – ADC is defined as the contribution requirement determined by the actuary using a contribution allocation procedure based on the principal elements disclosed in Section III of this Funding Policy:

    1. Actuarial Cost Method
    2. Asset Smoothing Method
    3. Amortization Method

    The calculation of the ADC will be determined during the actuarial valuation and not during the projection report. The ratio of the ADC to the fixed contribution rate (ADC/FCR) as set by this Funding Policy will be tested. The Board sets the Signal Light definition as follows:

Status	Definition
Green	ADC ratio at or below 100% of fixed contribution rate at valuation date
Yellow	ADC ratio between 100% and 110% of fixed contribution rate at valuation date
Red	ADC ratio above 110% of fixed contribution rate at valuation date

III. Assumptions and Methods

Each year, the actuary will perform an actuarial valuation and projection report for funding purposes. During the process, the actuary shall calculate all the metrics listed in Section II of this Funding Policy and PERS' Signal Light status for each metric. The following three major components of a funding valuation will be used:

- **Actuarial Cost Method** – This component determines the attribution method upon which the cost/liability of the retirement benefits are allocated to a given period, defining the normal cost or annual accrual rate associated with projected benefits. The Entry Age Normal Cost Method (EAN) is to be used for determination of the normal cost rate and the actuarial accrued liability for purposes of calculating the Actuarial Determined Contribution (ADC).
- **Asset Valuation Method** – This component dictates the method by which the asset value, used in the determination of the Unfunded Actuarial Accrued Liability (UAAL) and Funded Ratio, is determined. The asset valuation method to be used shall be a five-year smoothed market value of assets. The difference between the actual market value investment returns and the expected market investment returns is recognized equally over a five-year period.

- **Amortization Method** – This component prescribes, in terms of duration and pattern, the systematic manner in which the difference between the accrued liability and the actuarial value of assets is reduced. For purposes of calculating the ADC metric, the following amortization method assumptions are used:

I. Once established for any component of the UAAL, the amortization period for that component will be closed and will decrease by one year annually.

II. The amortization payment will be determined on a level percentage of pay basis.

III. The length of the amortization periods will be as follows:

  a. Existing UAAL on June 30, 2018 – 30 years.

  b. Annual future actuarial experience gains and losses, assumption changes or benefit enhancements or reductions – 25 years from the date of the valuation.

IV. If any future annual actuarial valuation indicates that PERS has a negative UAAL, the ADC shall be set equal to the Normal Cost.

- **Actuarial Assumptions** – The actuarial assumptions are used to develop the annual and projected actuarial metrics, as well as the ADC rates. The actuarial assumptions are derived and proposed by the actuary and adopted by the PERS' Board in conformity with the *Actuarial Standards of Practice*. The actuarial assumptions for this Funding Policy were developed using the experience for the four-year period ending June 30, 2022 (State of Mississippi Retirement Systems Experience Investigation for the Four-Year Period Ending June 30, 2022). The long-term investment return assumption adopted by the PERS' Board in conjunction with the experience investigation is 7.00 percent.

IV. Governance Policy/Process

Below is a list of specific actuarial and funding related studies, the frequency at which they should be commissioned by the Board and additional responsibilities related to each:

- **Actuarial Valuation (performed annually)** – The Board is responsible for the review of PERS' annual actuarial valuation report, which provides the annual funded ratio and the calculation of the ADC.
- **Projection Report (performed annually)** – The Board is responsible for the review of PERS' 30-year projection report, which will include the actuarial metrics and Signal Light status for each metric over a 30-year period.
- **Experience Analysis (performed every two years on a rolling four-year)** – The Board is responsible for ensuring that an experience analysis is performed as prescribed, review of the results of the study, and approving the actuarial assumptions and methodologies to be used for all actuarial purposes relating to the defined benefit pension plan.
- **Actuarial Audit (performed at least every five years)** – The Board is responsible for the review of an audit report performed by a new actuarial firm to provide a critique of the reasonableness of the actuarial methods and assumptions in use and the resulting actuarially computed liabilities and contribution rates.
- **Funding Policy Review (performed at least annually)** – The Board is responsible for the periodic review of this policy, but at least annually following the Projection Report and biennially following the Experience Analysis.

V. Glossary of Funding Policy Terms

- **Actuarial Accrued Liability (AAL):** The AAL is the value at a particular point in time of all past normal costs. This is the amount of assets the plan would have today if the current plan provisions, actuarial assumptions, and participant data had always been in effect, contributions equal to the normal cost had been made, and all actuarial assumptions had been met.
- **Actuarial Cost Method:** The actuarial cost method allocates a portion of the total cost (present value of benefits) to each year of service, both past service and future service.
- **Actuarial Determined Contribution (ADC):** The potential payment to the plan as determined by the actuary using a contribution allocation procedure that, if contributed consistently and combined with investment earnings, would be sufficient to pay promised benefits in full over the long term. The ADC may or may not be the amount actually paid by the plan sponsor or other contributing entity.
- **Asset Values**:
  - **Actuarial Value of Assets (AVA):** The AVA is the market value of assets less the deferred investment gains or losses not yet recognized by the asset smoothing method.

  - **Market Value of Assets (MVA):** The MVA is the fair value of assets of the plan as reported in the plan's audited financial statements.

- **Entry Age Normal Actuarial Cost Method (EAN):** The EAN actuarial cost method is a funding method that calculates the normal cost as a level percentage of pay or level dollar amount over the working lifetime of the plan's members.
- **Funded Ratio:** The funded ratio is the ratio of the plan assets to the plan's actuarial accrued liabilities.
  - **Actuarial Value Funded Ratio:** is the ratio of the AVA to the AAL.
- **Normal Cost**: The normal cost is the cost allocated under the actuarial cost method to each year of active member service.
- **Present Value of Benefits (PVB) or total cost:** The PVB is the value at a particular point in time of all projected future benefit payments for current plan members. The future benefit payments and the value of those payments are determined using actuarial assumptions regarding future events. Examples of these assumptions are estimates of retirement and termination patterns, salary increases, investment returns, etc.
- **Surplus:** A surplus refers to the positive difference, if any, between the AVA and the AAL.
- **Unfunded Actuarial Accrued Liability (UAAL):** The UAAL is the portion of the AAL that is not currently covered by the AVA. It is the positive difference between the AAL and the AVA.
- **Valuation Date:** The valuation date is the annual date upon which an actuarial valuation is performed; meaning that the trust assets and liabilities of the plan are valued as of that date. PERS' annual valuation date is June 30.

SCHEDULE G – HISTORY OF PERS PLAN PROVISIONS

Since 1985, the benefit structure of the Public Employees Retirement System (PERS) of Mississippi has undergone significant changes as noted in the table below.

Fiscal Year Beginning	Benefit Modifications
July 1, 1985	• Final average compensation calculated using the highest four consecutive years (reduced from highest five consecutive years) • Liberalized survivor benefit provision to reduce the marriage requirement from 5 years to 1 year and to allow a member to designate a child as beneficiary • Minimum benefit increased from $5.00 to $7.50 per month for each year of creditable service for current and future retirees • Eligibility for service retirement reduced from 10 years to 4 years at age 60 • Established "discretionary" COLA provision in addition to the base COLA provision to be paid to eligible retirees based on sufficient actuarial gains • 3% ad hoc increase for all retirees
July 1, 1986	• Eligibility for non-duty related disability retirement reduced from 10 years to 4 years • Permanent exemption from 3% penalty for those required to retire at age 60 • Retirement incentive granted – one additional year of credit to any member with 30 years of service credit or age 60
July 1, 1987	• Established service retirement eligibility based on 25 & out with reduced benefits • Benefit accrual increased from 1-5/8% to 1-3/4% for the first 20 years • Minimum benefit increased from $7.50 to $10.00 per month for each year of service for current and future retirees • 5% ad hoc increase for all retirees • Provided elected official leave credit
July 1, 1989	• Unreduced retirement at age 55 with 25 years of service • Benefit accrual increased from 1-3/4% to 1-7/8% for the first 30 years of service • Unreduced retirement lowered from age 65 to age 60 • 5% ad hoc increase for all retirees
July 1, 1990	• Provided that base COLA percentage granted shall be cumulative from year to year
July 1, 1991	• Unreduced retirement at any age with 25 years of service • Benefit accrual increased to 2% for all years of service over 25

Fiscal Year Beginning	Benefit Modifications
July 1, 1992	• Ad hoc increase for those retired prior to July 1, 1991, with more than 25 years of service • Tiered disability benefit • Expanded survivor benefits to include automatic spousal and dependent child benefits • Liberalized definition of average compensation to provide that the highest four years did not have to be consecutive years • Expanded military service credit to include all active duty military • Removed reference to "Governor's Salary" and established maximum compensation cap at $125,000
July 1, 1994	• Benefits for all retirees under Options 2(5) and 4A(5) were recalculated to remove the reduction imposed for the right to revert to the Maximum
July 1, 1999	• Benefit accrual increased from 2% to 2-1/4% for all years of service over 25 for current and future retirees • Base COLA increased to 3% simple up to age 55 and 3% compounded after age 55 • Reemployed retiree COLA will be based on all fiscal years in retirement, not just the fiscal years in retirement since the last retirement. • Provided that the COLA will be prorated and paid to the beneficiary of a retiree or beneficiary who is receiving the COLA in a lump sum and who dies between July 1 and December 1
July 1, 2000	• Benefit accrual increased from 1-7/8% to 2% for all years of service over 10 and less than 25 for current and future retirees
July 1, 2001	• Benefit accrual increased from 1-7/8% to 2% for all years of service over 5 and less than 25 for current and future retirees
July 1, 2002	• Benefit accrual increased from 1-7/8% to 2% for all years of service up to and including 25 and from 2-1/4% to 2-1/2% for all years of service over 25 for current and future retirees • Increased maximum compensation cap to $150,000 • Provided for free active duty military service for pre-1972 service in the Commissioned Corps of the U.S. Public Health Service for those retiring on or after July 1, 2002 • Reemployed retiree who has previously been retired for at least one full fiscal year no longer has to wait another full fiscal year for his or her COLA to resume • A local county or municipal elected official who is receiving retirement benefits may receive a salary for the elected position that does not exceed 25% of the retiree's average compensation

Fiscal Year Beginning	Benefit Modifications
July 1, 2004	• Removed remarriage penalty on certain spouse / survivor benefits and provided upon application for the reinstatement of spouse survivor benefits previously terminated due to remarriage
July 1, 2008	• Maximum reportable earned compensation was increased from \$150,000 to \$230,000 to coincide with the compensation limit set pursuant to Section 401(a)(17) of the Internal Revenue Code • Vesting requirement for those employees hired on or after July 1, 2007 was increased from 4 to 8 years of service.
July 1, 2010	• Members who retire on or after July 1, 2010 receive additional credit toward retirement for one-half day of leave for each full fiscal year of membership service accrued after June 30, 2010 • Option 4, a 75% joint and survivor annuity, made available to members who retire on or after January 1, 2011
July 1, 2011	• For members hired on or after July 1, 2011, 30 years of creditable service will be required for retirement regardless of age. • For members hired on or after July 1, 2011, 33 years of creditable service will be required to select a partial lump sum option at retirement. • For members hired on or after July 1, 2011, the retirement formula will be 2% of average compensation for the first 30 years of creditable service plus 2.5% of average compensation for each year beyond 30 years of creditable service. • For members hired on or after July 1, 2011, the actuarial reduction for early retirement will be the lesser of the number of years below 30 years of creditable service or the number of years in age a member is below age 65. • For members hired on or after July 1, 2011, the COLA will be a simple 3% of the annual retirement allowance at retirement up to the fiscal year in which the retired member reaches age 60. Thereafter, the COLA will be a compounded 3% for all future years.
July 1, 2016	• The interest rate on employee contributions shall be calculated based on the money market rate as published by the Wall Street Journal on December 31 of each preceding year with a minimum rate of one percent and a maximum rate of five percent.