Game Wardens' and Peace Officers' Retirement System of the State of Montana

Actuarial Valuation Report

Prepared as of June 30, 2024

CavMac
Actuarial Consulting Services

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September 26, 2024

Public Employees' Retirement Board
100 North Park, Suite 200
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Members of the Board:

In this report are submitted the results of the annual valuation of the assets and liabilities of the Game Wardens' and Peace Officers' Retirement System of the State of Montana (GWPORS), prepared as of June 30, 2024.

The purpose of this report is to provide a summary of the funded status of the System as of June 30, 2024 and to determine the actuarial determined contribution rate for the fiscal year ended 2026. While not verifying the data at source, the actuary performed tests for consistency and reasonability.

The promised benefits of the System are included in the actuarially calculated contribution rates, which are developed using the Entry Age Normal Cost Method. The asset values used to determine unfunded liabilities are not market values but less volatile market related values. A smoothing technique is applied to market values to determine the market related values. Four-year market related value of assets is used for actuarial valuation purposes. The unfunded liability amounts 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 the report cannot be used to assess a settlement of the obligation. Gains and losses are reflected in the unfunded accrued liability that is being amortized by regular annual contributions as a level percentage of payroll, on the assumption that payroll will increase by 3.25% annually. The assumptions recommended by the actuary and adopted by the Board are, in the aggregate, reasonably related to the experience under the Fund and to reasonable expectations of anticipated experience under the Fund.

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.

This is to certify that the undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. This also certifies that the undersigned have experience in performing valuations for public retirement systems, that the valuation. was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the 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. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

The Table of Contents, which immediately follows, outlines the material contained in the report.

Respectfully submitted,

Todd B. Green, ASA, EA, FCA, MAAA
President

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SECTION 1 – SUMMARY OF RESULTS

For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results are summarized below:

VALUATION DATE	**June 30, 2024**	**June 30, 2023**
Participant Counts		
Active Members	1,045	1,017
Retirees and Beneficiaries	527	488
Disabled Members*	2	2
Terminated Vested Members	188	184
Terminated Non-Vested Members	678	593
Total**	2,440	2,284
Annual Covered Payroll of Active Members	$ 66,456,451	$ 58,393,246
Average Salaries from Covered Payroll	$ 63,595	$ 57,417
Annual Retirement Allowances for Retired Members and Beneficiaries	$ 13,744,269	$ 12,393,010
Assets		
Actuarial value	$ 353,845,517	$ 284,542,535
Market value	351,433,384	281,080,955
Actuarial Accrued Liability (AAL)	$ 377,092,368	$ 348,304,075
Unfunded Actuarial Accrued Liability (UAAL)	$ 23,246,851	$ 63,761,540
Funded Ratio	93.84%	81.69%
Market Value Rate of Return	9.08%	8.40%
Annual Cost		
Fiscal Year Ended	2026	2025
Statutory Funding Rate	19.74%	20.18%
Total Normal Rate	17.34%	17.92%
Employee Contribution Rate	10.56%	10.56%
Employer Normal Rate	6.78%	7.36%
Employer Contribution Rate		
Normal Rate	6.78%	7.36%
UAAL Rate	2.40%	2.26%
Total Rate***	9.18%	9.62%

* Based on PERB categorization for the annual report. For actuarial purposes, 18 members in 2023 and 19 members in 2024 were valued as disabled members with offsetting reductions to the number of retired members.

** A reconciliation between participant counts used for the annual report and counts for the valuation appears at the beginning of Appendix D.

*** Contribution rates will be effective July 1 of the following year.

SECTION 1 – SUMMARY OF RESULTS

As a result of this actuarial valuation of the benefits in effect under the Game Wardens' and Peace Officers' Retirement System as of June 30, 2024, the statutory employer contributions are sufficient to amortize the Unfunded Actuarial Accrued Liability (UAAL) of the Retirement System within 24 years. The Funded Ratio is 93.84%.

Calculations based on the Market Value of Assets

MCA 19-2-407 requires this report to show how market performance is affecting the actuarial funding of the Retirement System. The June 30, 2024, market value of assets is $2,412,133 less than the actuarial value of assets. This is due to the smoothing of investment gains and losses over a four-year period. If the market value of assets was used, the employer contribution rate would be 9.64% and the Funded Ratio would be 93.20%.

Additional Details

House Bill 569, passed in the 2023 Legislature sets the employer contribution for fiscal year 2024 (July 1, 2023 – June 30, 2024) at 10.56%. Beginning fiscal year 2025 (July 1, 2024 – June 30, 2025), an actuarial determined contribution rate will be contributed. Beginning fiscal year 2026, the statutory contribution rate will be the actuarial determined employer contribution rate, limited to a 0.50% increase from the prior statutory rate.

The actuarial costs are calculated using the entry age actuarial cost method. This is the method used by most public plans. It is designed to provide a stable contribution rate as a percent of member pay. This actuarial valuation measures the adequacy of the contribution rates set in Montana State Law.

In our professional judgement, the funding policy required by HB 569 produces a reasonable actuarial required contribution as defined in Actuarial Standard of Practice Number 4. Contributions are developed with the intent of being level as a percentage of covered payroll, assuming the number of active members remains stable. Furthermore, the funding policy is expected to accumulate sufficient assets to make all future benefit payments as they become due, if all assumptions are met.

Investment Experience

The market assets earned 9.08% net of investment and administrative expenses. As a result of prior years' unrecognized gains, the actuarial assets earned 8.66%, which is 1.36% greater than the actuarial assumption of 7.30%. The return on the actuarial assets differs from the return on market assets because the actuarial value of assets spreads gains and losses over four years. The chart below shows the annual returns for the past ten years.

Year	Market Return	Actuarial Return	Assumed Investment Return	Market Return over Assumption	Actuarial Return over Assumption
7/1/2014 to 6/30/2015	4.58	9.47	7.75	(3.17)	1.72
7/1/2015 to 6/30/2016	2.11	8.42	7.75	(5.64)	0.67
7/1/2016 to 6/30/2017	11.92	8.15	7.75	4.17	0.40
7/1/2017 to 6/30/2018	8.81	7.01	7.65	1.16	(0.64)
7/1/2018 to 6/30/2019	5.72	7.28	7.65	(1.93)	(0.37)
7/1/2019 to 6/30/2020	2.70	6.99	7.65	(4.95)	(0.66)
7/1/2020 to 6/30/2021	27.66	10.80	7.65	20.01	3.15
7/1/2021 to 6/30/2022	(4.30)	8.07	7.65	(11.95)	0.42
7/1/2022 to 6/30/2023	8.40	7.41	7.30	1.10	0.11
7/1/2023 to 6/30/2024	9.08	8.66	7.30	1.78	1.36

Asset gains or losses result when the return on the actuarial value of assets differs from the actuarial investment return.

Amortization of the UAAL

The UAAL is amortized in accordance with MCA 19-8-504 as layered amortization bases. Layered amortization breaks down the amortization process into separate "layers", each with its own amortization schedule. The legacy UAAL was established in the June 30, 2023 valuation. The legacy UAAL is amortized over a closed 25-year period. In each subsequent valuation, changes in the UAAL due to actuarial experience, assumption changes or plan provision changes will be amortized over closed 10-year periods. The final UAAL amortization payment is equal to the sum of the individual "layered" amortization payments. The amortization period as of June 30, 2024 ranges from 24 to 10 years.

Funding and Benefits Policy

The Montana Public Employees' Retirement Board has adopted a Funding and Benefits Policy to provide general guidelines to help ensure decisions are made based on sound, consistent, and thoroughly examined criteria. The Funding and Benefits Policy includes guidance on the following topics:

1) Funding Requirement
   a) The Funding and Benefits Policy states:
      1. The Entry Age Normal Cost Method shall be applied to the projected benefits in determining the Normal Cost and Actuarial Accrued Liability.
      2. Asset smoothing can be used in the valuation process to spread the recognition of investment gains and losses over a four-year period.
      3. The unfunded actuarial accrued liability should be amortized in accordance with MCA 19-8-504 .
   b) Analysis: The liabilities of the System are determined using the Entry Age Normal Cost Method and are compared to the actuarial value of assets, which are developed using assets smoothing that recognizes gains and losses over a four-year period. The contributions provided for in statute are sufficient to fully amortize the unfunded actuarially accrued liability in accordance with MCA 19-8-504.
2) Funding Objectives
   a) The Funding and Benefits Policy states: "The primary objectives are to: 1) ensure that the systems are financially sound and pay all benefits promised using assets accumulated from required employer and member contributions and investment income; and 2) achieve a well-funded status with a range of safety to absorb market volatility without creating a UAAL."
   b) Analysis: The statutory funding policy noted above will ensure that the System will be financially sound and will be able to pay all promised benefits and achieve a well-funded status with a range of safety to absorb market volatility without creating a UAAL.
3) Benefit Enhancements
   a) The Funding and Benefits Policy states: "Proposals must provide funding from sources sufficient to cover future costs. Unfunded liabilities created by the proposal must be amortized over a period of time appropriate to the retirement system, but not more than 30 years."
   b) Analysis: Benefit enhancements will be amortized over 10 years in accordance with MCA 19-8-504. This would require additional funding.

Sensitivity to Future Experience

The valuation results are projections based on the actuarial assumptions. Actual experience will differ from these assumptions, either increasing or decreasing the ultimate cost. The following illustrations provide simple analyses on how the costs are sensitive to changes in the assumed rate of return.

Investment Return – The investment return generally has the largest impact on the funding of the System.

Impact of Assuming 1.0% Higher Investment Return			
	Funded Ratio	Actuarially Determined Employer Contribution Rate (%)	Actuarially Determined Employer Contribution (Millions $)*
Current Assumption 7.30%	93.84%	9.18%	$6.4
Higher Assumption 8.30%	106.88%	3.45%	$2.4
Increase / (Decrease)	13.04%	(5.73)%	($4.0)
Impact of Assuming 0.5% Higher Investment Return			
	Funded Ratio	Actuarially Determined Employer Contribution Rate (%)	Actuarially Determined Employer Contribution (Millions $)*
Current Assumption 7.30%	93.84%	9.18%	$6.4
Higher Assumption 7.80%	100.26%	5.00%	$3.5
Increase / (Decrease)	13.04%	(4.18)%	($2.9)
Impact of Assuming 0.5% Lower Investment Return			
	Funded Ratio	Actuarially Determined Employer Contribution Rate (%)	Actuarially Determined Employer Contribution (Millions $)*
Current Assumption 7.30%	93.84%	9.18%	$6.4
Lower Assumption 6.80%	87.62%	16.05%	$11.2
Increase / (Decrease)	13.04%	6.87%	$4.8
Impact of Assuming 1.0% Lower Investment Return			
	Funded Ratio	Actuarially Determined Employer Contribution Rate (%)	Actuarially Determined Employer Contribution (Millions $)*
Current Assumption 7.30%	93.84%	9.18%	$6.4
Lower Assumption 6.30%	81.62%	23.51%	$16.3
Increase / (Decrease)	13.04%	14.33%	$9.9

* Amounts reflect estimated increase/(decrease) in FY2026 employer contributions.

The future funding status of the System will be determined by the System's experience. The System's actual asset returns and retirement rates, as well as member longevity, salary increases, withdrawal rates, disability rates and future legislation will all impact the funding status of the System. The entry age normal cost method and four-year smoothing of asset gains and losses will help to provide a more orderly funding of the System's liabilities, but will not change the actual experience.

Assumption Changes

There have been no benefit changes since the previous valuation.

Benefit Changes

There have been no benefit changes since the previous valuation.

Contribution Changes

There have been no contribution changes since the previous valuation.

Method Changes

There have been no method changes since the previous valuation.

Impact of Changes

The following table summarizes how experience has changed the UAAL since the June 30, 2023 Actuarial Valuation. Further detail can be found in Tables11 and 12.

Changes in the Unfunded Actuarial Accrued Liability (UAAL)

June 30, 2023 Valuation UAAL	$63,761,540
Normal Cost	9,642,521
Contributions	(55,503,667)
Interest	1,828,813
Expected June 30, 2024 UAAL	19,729,207
Experience (Gain)/Loss on Actuarial Liabilities	$7,953,401
Experience (Gain)/Loss on Actuarial Assets	(4,435,757)
Assumption & Method Changes	0
Plan Changes	0
Total (Gain) / Loss	3,517,644
June 30, 2024 Valuation UAAL	23,246,851

Summary

- The System's return on actuarial value of assets of 8.66% for the year ended June 30, 2024, is 1.36% greater than the actuarial assumption of 7.30%. This represents an asset gain of $4,435,757 due to investment return being more than anticipated. As of June 30, 2024, the market value of assets was $351,433,384. As of June 30, 2024, the actuarial value of assets was $353,845,517. The June 30, 2024 deferred asset experience will be recognized in future actuarial valuations unless it is offset by returns greater than 7.30% on an actuarial basis.

- The funding of the retirement system will be impacted by future experience, which will sometimes be more favorable than the actuarial assumptions and sometimes less favorable. In particular, investment returns larger and smaller than the 7.30% assumption are expected to have significant impacts on the System's funding progress. In the long term, the favorable experience is needed to offset the less favorable experience. This is the reason for using an actuarial value of assets that allows gains and losses to be smoothed over four years.

- The unfunded actuarial accrued liability is amortized using a level percentage of payroll method over the amortization period. Under the level percentage of payroll method, if the amortization period is too long, the amortization payments will not be large enough to cover interest on the UAAL in the beginning of the amortization schedule, which means that as a dollar amount the UAAL is expected to grow. After a period of time, amortization payments will be large enough that the amortization payments will cover both interest and principal, and the UAAL as a dollar amount will be projected to decrease in each subsequent year. The payroll growth assumption is used to determine the percentage of payroll required over the remaining amortization period to fully amortize the unfunded liability. The payroll growth assumption is 3.25%.

SECTION 2 – ASSETS

In many respects, an actuarial valuation can be regarded as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is June 30, 2024. On that date, the assets available for the payment of benefits are appraised. These assets are compared with the actuarial liabilities. The actuarial process thus leads to a method of determining what contributions by members and their employers are needed to strike a balance.

The asset valuation method being used is a four-year smoothing method. The expected return is determined each year based on the beginning of year market value and actual cash flows during the year. Any difference between the expected market value return and the actual market value return is recognized evenly over a period of four years.

Table 1 lists the assets held and their market value for the past two years. Table 2 summarizes the fund's activity during the past two years. Table 3 summarizes the determination of the actuarial value of assets. Table 4 summarizes historical asset returns for the last 10 years including the amount recognized by the actuarial asset valuation method which was greater or lesser than the actuarial investment return assumption. Table 5 summarizes the historical asset values on a market value and actuarial value basis, to the extent it was available. Additional data can be included in this table for future reports, if provided by the System.

Table 1:
Statement of Fiduciary Net Position
Fiscal Year Ending June 30,

	2024	2023
ASSETS		
Cash and Short Term Investments	$ 4,079,731	$ 3,268,052
Securities Lending Collateral	$ 12,131,924	$ 2,856,719
Receivables:		
Interest Receivable	$ 17,574	$ 14,596
Accounts Receivable	45,036	70,435
Due from Other Funds	-	-
Due from Primary Government	-	-
Notes Receivable	-	-
Def Outflow of Resources	5,367	-
Total Receivables	$ 67,977	$ 85,031
Investments, at fair value:		
Investment Pools	347,373,714	277,706,916
Other Investments	-	-
Total Investments	$ 347,373,714	$ 277,706,916
Capital Assets		
Property and Equipment, at cost, net of Accumulated Depreciation	$ 366	$ 366
Intangible Assets, at cost, net of Amortization Expense	171,040	221,168
Total Capital Assets	$ 171,406	$ 221,534
TOTAL ASSETS	$ 363,824,752	$ 284,138,252
LIABILITIES		
Securities Lending Liability	$ 12,131,924	$ 2,856,719
Accounts Payable	29,572	-
Unearned Revenue	-	-
Payable to Other Systems	147,742	131,155
Contributions Received in Advance	-	155
Compensated Absences	9,312	1,707
Def Inflow of Resources	7,348	-
Leasing Liabilites	63,276	67,561
OPEB Implicit Rate Subsidy LT	2,194	-
TOTAL LIABILITIES	$ 12,391,368	$ 3,057,297
NET POSITION-RESTRICTED FOR PENSION BENEFITS	$ 351,433,384	$ 281,080,955

Table 2:
Statement of Changes in Fiduciary Net Position
Fiscal Year Ending June 30,

	2024	2023
ADDITIONS		
Contributions:		
Employer	$ 7,053,311	$ 5,278,875
Plan Member	7,250,356	6,475,715
Other	41,200,000	-
Total Contributions	$ 55,503,667	$ 11,754,590
Misc Income	$ -	$ -
Investment Income:		
Net Appreciation/(Depreciation) in Fair Value of Investments	$ 31,229,768	$ 23,341,237
Investment Earnings	239,644	122,618
Security Lending Income	423,847	150,041
Investment Income/(Loss)	$ 31,893,259	$ 23,613,896
Investment Expense	(2,081,252)	(1,551,931)
Security Lending Expense	(340,363)	(91,208)
Net Investment Income/(Loss)	$ 29,471,644	$ 21,970,757
Total Additions	$ 84,975,311	$ 33,725,347
DEDUCTIONS		
Benefit Payments	$ 13,149,708	$ 11,833,285
Refunds/Distributions	1,251,532	1,104,377
Refunds to Other Plans	10,464	4,609
Transfers to DCRP	-	-
Transfers to MUS-RP	-	-
OPEB Expense	-	-
Administrative Expense	210,645	184,140
Total Deductions	$ 14,622,349	$ 13,126,411
NET INCREASE (DECREASE) IN PLAN NET ASSETS	$ 70,352,962	$ 20,598,936
NET POSITION-RESTRICTED FOR PENSION BENEFITS BEGINNING OF YEAR	$ 281,080,955	$ 260,437,413
ADJUSTMENT	(533)	44,606
END OF YEAR	$ 351,433,384	$ 281,080,955

Table 3:
Determination of Actuarial Value of Assets

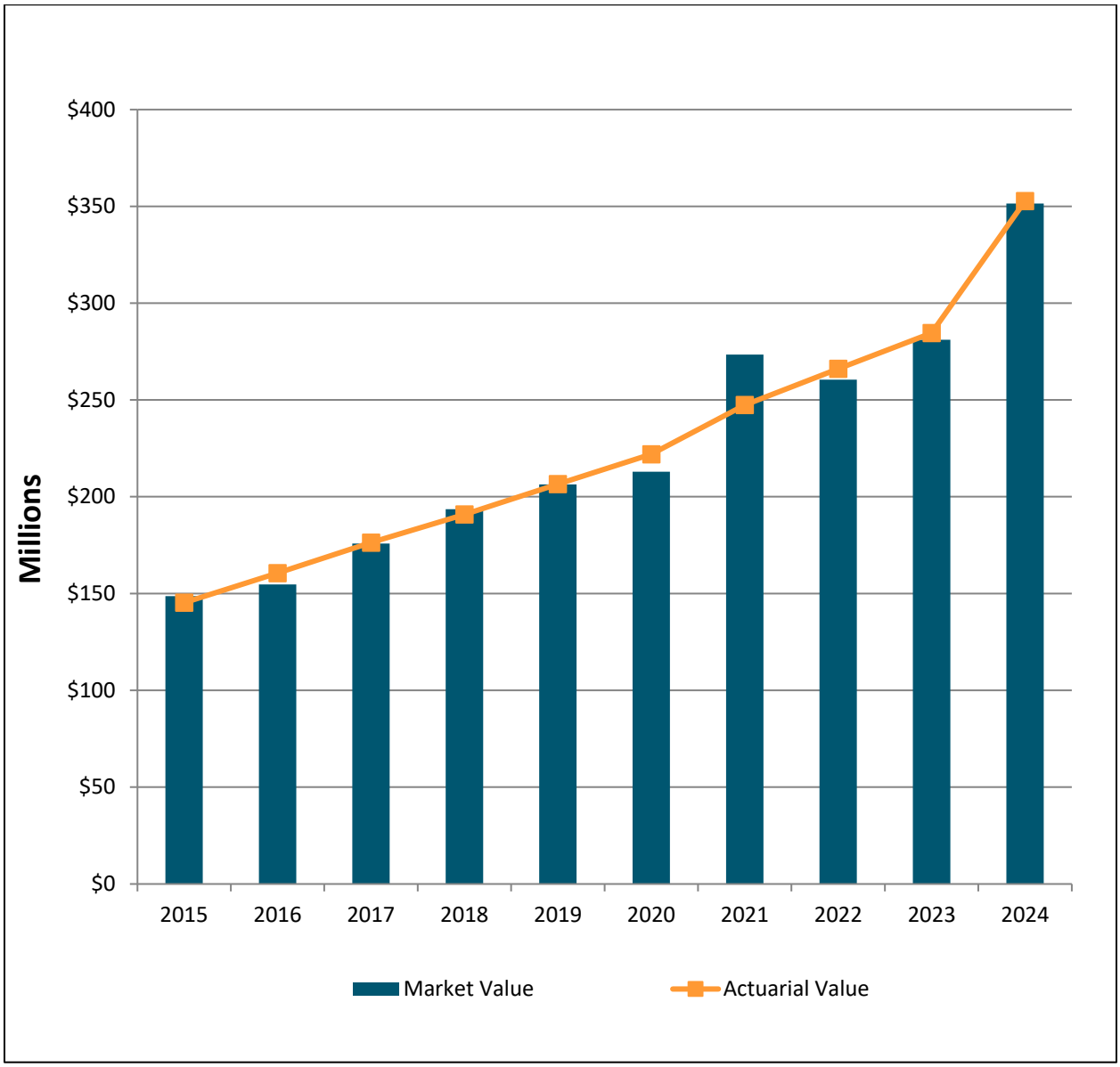
Valuation Date June 30:	2023	2024	2025	2026	2027
A. Actuarial Value Beginning of Year	$ 266,067,351	$ 284,542,535			
B. Market Value End of Year	281,080,955	$ 351,433,384			
C. Market Value of Beginning of Year	260,437,413	$ 281,080,955			
D. Cash Flow					
D1. Contributions	11,754,590	$ 55,503,667			
D2. Benefit Payments	(12,942,271)	$ (14,411,704)			
D3. Administrative Expenses	(184,140)	$ (210,645)			
D4. Investment Expenses	(1,643,139)	$ (2,421,615)			
D5. Net	$ (3,014,960)	$ 38,459,703			
E. Investment Income					
E1. Market Total: B. - C. - D5.	$ 23,658,502	$ 31,892,726			
E2. Assumed Rate	7.30%	7.30%			
E3. Amount for Immediate Recognition C.*E2. + ((D1.+D2.)*E2.*0.5) - D3 - D4	20,795,860	26,154,826			
E4. Amount for Phased-in Recognition E1. - E3.	2,862,642	5,737,900			
F. Phased-in Recognition of Investment Income					
F1. Current Year: 0.25 * E4.	$ 715,661	$ 1,434,475	$ -	$ -	$ -
F2. First Prior Year	(8,146,877)	$ 715,661	1,434,475	-	-
F3. Second Prior Year	10,685,194	$ (8,146,877)	715,661	1,434,475	-
F4. Third Prior Year	(2,559,694)	$ 10,685,194	(8,146,877)	715,659	1,434,475
F5. Total Excluded Investment Gain/(Loss)	$ 694,284	$ 4,688,453	$ (5,996,741)	$ 2,150,134	$ 1,434,475
G. Actuarial Value End of Year A. + D5. + E3. + F5.	$ 284,542,535	$ 353,845,517			

Table 4:
Historical Investment Returns*

Fiscal Year Ending	Market Returns	Actuarial Returns	Assumed Rate of Return	Actuarial Return Over Assumption
June 30, 2015	4.58%	9.47%	7.75%	1.72%
June 30, 2016	2.11%	8.42%	7.75%	0.67%
June 30, 2017	11.92%	8.15%	7.75%	0.40%
June 30, 2018	8.81%	7.01%	7.65%	(0.64)%
June 30, 2019	5.72%	7.28%	7.65%	(0.37)%
June 30, 2020	2.70%	6.99%	7.65%	(0.66)%
June 30, 2021	27.66%	10.80%	7.65%	3.15%
June 30, 2022	(4.30)%	8.07%	7.65%	0.42%
June 30, 2023	8.40%	7.41%	7.30%	0.11%
June 30, 2024	9.08%	8.66%	7.30%	1.36%
10 Year Average	7.39%	8.22%		0.61%

* Returns reflect all investment returns, including investment income and realized and unrealized investment gains and losses, and are net of investment expenses and administrative expenses paid by the System.

Table 5:
Market Value of Assets vs. Actuarial Value of Assets



SECTION 3 – ACTUARIAL PRESENT VALUE OF FUTURE BENEFITS

In the previous section, an actuarial valuation was related to an inventory process, and an analysis was given of the inventory of assets of the System as of the valuation date. In this section, the discussion will focus on the commitments of the System, which will be referred to as its actuarial liabilities.

Table 6 contains an analysis of the actuarial present value for active members, for retirees, and for beneficiaries. The analysis is given by type of benefit.

The actuarial liabilities summarized in Table 6 include the actuarial present value of all future benefits expected to be paid with respect to each member covered as of the valuation date. For an active member, this value includes a measure of both benefits already earned and future benefits to be earned. Thus, for all members, active and retired, the value extends over benefits earnable and payable for the rest of their lives and, if an optional benefit is chosen, for the lives of their surviving beneficiaries.

The actuarial valuation does not recognize liabilities for employees who become members and participate in the System after the valuation date.

Table 6:
Actuarial Present Value of for Actives, Retirees, and Beneficiaries

	June 30, 2024 Total	June 30, 2023 Total
A. Active Members Liability Due to Probability of		
Retirement	$ 202,707,373	$ 188,261,438
Disability	$ 8,158,279	$ 7,195,822
In-Service Death	$ 2,519,195	$ 2,337,003
Termination	$ 29,245,710	$ 25,983,064
Total	$ 242,630,557	$ 223,777,327
B. Inactive Members and Annuitants		
Service Retirement	$ 172,975,917	$ 158,899,781
Disability Retirement	$ 6,377,539	$ 5,936,162
Beneficiaries*	$ 7,991,794	$ 6,342,230
Vested Terminated Members	$ 22,151,500	$ 21,788,900
Refund of Member Contributions	$ 2,826,322	$ 2,562,698
Total	$ 212,323,072	$ 195,529,771
C. Grand Total	$ 454,953,629	$ 419,307,098

* Includes survivors of active and retired members.

SECTION 4 – EMPLOYER CONTRIBUTIONS

In the previous two sections, attention has been focused on the assets and the present value of all future benefits of the System. A comparison of Tables 3 and 6 indicates that there is a shortfall in current actuarial assets to meet the present value of all future benefits for current members and beneficiaries.

In an active system, there will always be a difference between the assets and the present value of all future benefits. An actuarial valuation sets a schedule of future contributions that will deal with this funding in an orderly fashion.

The method used to determine the incidence of the contributions in various years is called the actuarial cost method. For this valuation, the entry age actuarial cost method has been used. A description of the entry age actuarial cost method is provided in Appendix A. Under this method, or essentially any actuarial cost method, the contributions required to meet the difference between current assets and the present value of all future benefits are allocated each year between two elements:

- A normal cost amount, which ideally is relatively stable as a percentage of salary over the years;
- An amount which is used to amortize the UAAL.

The two items described above, normal cost and UAAL, are the keys to understanding the actuarial cost method. Let us first discuss the normal cost.

The normal cost is the theoretical contribution rate, which will meet the ongoing costs of a group of average new employees. Suppose that a group of new employees were covered under a separate fund from which all benefits and to which all contributions and associated investment return were to be paid. Under the entry age actuarial cost method, the normal cost contribution rate is that level percentage of pay which would be exactly right to maintain this fund on a stable basis. If experience were to follow the actuarial assumptions exactly, the fund would be completely liquidated with the last payment to the last survivor of the group.

The assumed investment rate of return is 7.30%, net of investment and administrative expenses.

We have determined the normal cost rates separately by type of benefit under the System. These are summarized in Table 7. In Table 7 we also provide a summary of the member and employer statutory contributions.

The term "fully funded" is often applied to a system where contributions for everyone at the normal cost rate will fully pay for the benefits of existing as well as new employees. Often, systems are not fully funded, either because of benefit improvements in the past that have not been completely paid for or actuarial deficiencies that have occurred because experience has not been as anticipated. Under these circumstances, a UAAL exists.

SECTION 4 – EMPLOYER CONTRIBUTIONS

Table 8 shows how the UAAL was derived for the System. Lines A and B show, respectively, the total present value of future benefits and the portion of the future liability that is expected to be paid from future normal cost contributions, both employer and employee. The future normal cost contributions are the portion of the present value of future benefits that are attributed to future years of service that have not been earned yet by the active membership. Line C shows the actuarial accrued liability. Line D shows the amount of assets available for benefits. Line E shows the UAAL.

The UAAL at any date after establishment of a system is affected by any actuarial gains or losses arising when the actual experience of the system varies from the experience anticipated by the actuarial assumptions used in the valuations. To the extent actual experience as it develops differs from the assumptions used, so also will the actual emerging costs differ from the estimated costs. The impact of these differences in actual experience from the assumptions is included in Section 1, the Summary of Findings.

Table 9 shows the development of the actuarial contribution rate. An exhibit showing the layered base approach for the UAAL amortization payment is shown, along with the UAAL rate development. Below that is a table showing the development of the actuarial determined employer contribution rate for fiscal year ending 2026. This rate is limited to a 0.50% increase from the prior year's statutory rate.

Table 7:
Normal Cost Contribution Rates
As Percentages of Salary

	June 30, 2024 Total	June 30, 2023 Total
Service retirements	11.14%	11.40%
Disability retirements	0.83%	0.90%
In Service Death	0.22%	0.23%
Terminations	5.15%	5.39%
Total Normal Rate	17.34%	17.92%
Employee Normal Rate	10.56%	10.56%
Employer Normal Rate	6.78%	7.36%

Note: The normal cost rate for members hired on or after July 1, 2011 is 16.7%.

Table 8:
Unfunded Actuarial Accrued Liability

	June 30, 2024	June 30, 2023
A. Actuarial present value of all future benefits for present members and former members and their survivors (Table 6)	$ 454,953,629	$ 419,307,098
B. Less actuarial present value of total future normal costs for present members	$ 77,861,261	$ 71,003,023
C. Actuarial accrued liability	$ 377,092,368	$ 348,304,075
D. Less assets available for benefits	$ 353,845,517	$ 284,542,535
E. Unfunded actuarial accrued liability	$ 23,246,851	$ 63,761,540

Table 9:
Development of the Actuarial Contribution Rate

Amortization Base	Original Amount	Remaining Payments	June 30, 2024 Balance	Annual Payment*
2023 Legacy UAAL	$ 22,211,268	24	$ 22,376,693	$ 1,557,222
2024 Experience Loss / (Gain)	$ 870,158	10	$ 870,158	$ 114,299
Total			**$ 23,246,851**	**$ 1,671,520**

* Payment amount reflects mid-year timing.

1.	Total UAAL Amortization Payments	$ 1,671,520
2.	Expected Payroll for FYE 2026	$ 69,509,267
3.	UAAL Amortization Payment Rate (1) / (2)	2.40%

The contribution rate developed in this exhibit is based on statutory requirements, the June 30, 2024 actuarial valuation and applies to the year beginning July 1, 2025 and ending June 30, 2026.

A.	Employer Normal Cost Rate	6.78%
B.	UAAL Contribution Rate for FY 2026	2.40%
C.	Actuarial Determined Employer Contribution Rate for FY 2026 [(A) + (B)]	9.18%
D.	Statutory Employer Contribution Rate for FY 2025	9.62%
E.	Statutory Employer Contribution Rate for FY 2026*	9.18%

* The rate in this valuation may not exceed last year's statutory rate by more than the statutory rate increase limit of 0.50%.

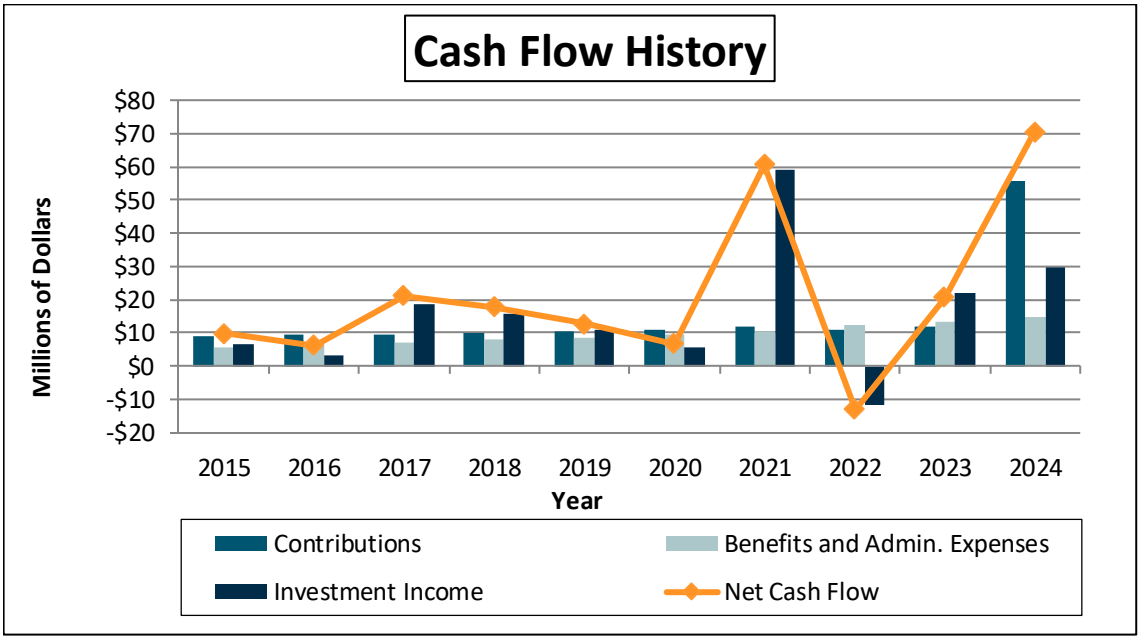
SECTION 5 – CASH FLOW HISTORY

The fundamental equation for funding a retirement system is that benefits and administrative expenses must be provided for by contributions (past and future) and investment income. When a retirement system matures, benefits and administrative expenses often exceed contributions. In this case we say the system has a "negative cash flow." Mature systems are characterized by negative cash flows and large pools of assets. This is natural. Actuarial funding is designed to accumulate large pools of assets which will in turn provide investment income and finance negative cash flows when systems mature. If the fund is looked at as a whole, investment income is usually larger than the difference between contributions and benefit payments. The retirement system's investment strategy should maximize potential returns at a prudent level of risk while providing for needed cash flows.

Table 10 shows the System had a positive cash flow for the year ended June 30, 2024. The System's total cash flow including benefit payments, administrative expenses and investment earnings was $70.4 million. Of the $70.4 million, $29.5 million was due to investment returns.

As long as the System had a positive cash flow, there was no need to plan where the funds would come from to pay benefits since benefits could be paid by incoming contributions. A negative cash flow, as defined above, requires planning what funds will be used to pay the difference between benefits and contributions.

Table 10:
Cash Flow History
(Dollar amounts in millions)



Year Ended June 30	Historical Cash Flows: Contributions	Benefits & Administrative Expenses	Investment Income	Net Cash Flow
2015	$9.0	$5.6	$6.4	$9.8
2016	9.3	6.4	3.2	6.1
2017	9.7	7.2	18.7	21.2
2018	10.1	8.0	15.6	17.7
2019	10.3	8.6	11.1	12.8
2020	10.7	9.7	5.6	6.6
2021	11.8	10.4	59.1	60.5
2022	11.0	12.3	(11.7)	(13.0)
2023	11.8	13.1	22.0	20.7
2024	55.5	14.6	29.5	70.4

SECTION 6 – ACTUARIAL GAINS OR LOSSES

An analysis of actuarial gains or losses is performed in conjunction with all regularly scheduled valuations.

The developments of the gains or losses related to the actuarial liability and the assets are shown in Table 11. The results of our analysis of the financial experience of the System in the three most recent regular actuarial valuations are presented in Table 12. Each gain or loss shown represents our estimate of how much the given type of experience caused the Unfunded Actuarial Accrued Liability or Funding Reserve to change in the period since the previous actuarial valuation.

Gains and losses shown due to demographic sources are approximate. Demographic experience is analyzed in greater detail in our periodic experience studies.

Non-recurring gains and losses result from changes in the actuarial assumptions and benefit improvements.

Table 11:
Analysis of Actuarial (Gains) or Losses*

A.	ACTUARIAL ACCRUED LIABILITY (GAIN) / LOSS ANALYSIS	
1.	Actual Actuarial Accrued Liability as of June 30, 2023:	$ 348,304,075
2.	Normal Cost for this Plan Year:	9,642,521
3.	Interest on items 1 and 2 [(1+2) x 7.30%]:	26,130,102
4.	Benefit Payments for this Plan Year:	(14,411,704)
5.	Interest on item [4 x 7.30% x .5]:	(526,027)
6.	Expected Actuarial Accrued Liability as of June 30, 2024:	369,138,967
7.	Changes due to:	
	a. Assumption Changes:	-
	b. Plan Amendments:	-
	c. Funding Method:	-
	d. Actuarial (Gain) / Loss:	$ 7,953,401
8.	**Actual Actuarial Accrued Liability as of June 30, 2024:**	**$ 377,092,368**
9.	Items Affecting Calculation of Accrued Actuarial Liability:	
	a. Benefit provisions reflected in the unfunded accrued liability (see Appendix C)	
	b. Actuarial assumptions and methods used to determine actuarial accrued liability (see Appendix B)	
B.	ASSET (GAIN) / LOSS ANALYSIS	
1.	Actuarial Value of Assets as of June 30, 2023:	$ 284,542,535
2.	Interest on item [1 x 7.30%]:	20,771,605
3.	Contributions for this Plan Year:	55,503,667
4.	Interest on item 3:	3,529,684
5.	Benefit Payments for this Plan Year:	(14,411,704)
6.	Interest on item [5. x 7.30% x .5]:	(526,027)
7.	Expected Actuarial Value of Assets as of June 30, 2024:	$ 349,409,760
8.	Actuarial Value of Assets as of June 30, 2024:	$ 353,845,517
9.	**(Gain) / Loss**	**$ (4,435,757)**
C.	UNFUNDED ACTUARIAL ACCRUED LIABILITY (GAIN) / LOSS ANALYSIS	
1.	Actual Unfunded Actuarial Accrued Liability as of June 30, 2023:	$ 63,761,540
2.	Normal Cost for this Plan Year:	9,642,521
3.	Contributions for this Plan Year:	(55,503,667)
4.	Interest on items 1 - 3:	1,828,813
5.	Expected Unfunded Actuarial Accrued Liability as of June 30, 2024:	$ 19,729,207
6.	Changes due to:	
	a. Assumption Changes:	-
	b. Plan Amendments:	-
	c. Funding Method:	-
	d. Actuarial (Gain) / Loss:	$ 3,517,644
7.	**Actual Unfunded Actuarial Accrued Liability as of June 30, 2024:**	**$ 23,246,851**

* Effects related to gains are shown in parentheses. Numerical results are expressed as a (decrease) increase in the Unfunded Actuarial Accrued Liability (UAAL). Gains decrease the UAAL and losses increase the UAAL.

Table 12:
Historical Actuarial (Gains) or Losses*
(Dollar amounts in thousands)

	UAAL (Gain)/Loss		
	June 30, 2024	June 30, 2023	June 30, 2022
Investment Income Investment income was (greater) less than expected based on actuarial value of assets.	$ (4,435.8)	$ (283.3)	$ (1,031.4)
Pay Increases Pay increases were (less) greater than expected.	$ 4,352.3	$ 7,044.6	$ (9,294.3)
Age & Service Retirements Members retired at (older) younger ages or with (less) greater final average pay than expected	$ 787.5	$ 835.3	$ 49.7
Disability Retirements Disability claims were (less) greater than expected	$ 101.1	$ (220.5)	$ (102.0)
Death-in-Service Benefits Survivor claims were (less) greater than expected	$ (3.3)	$ (11.2)	$ (88.6)
Withdrawal From Employment (More) less reserves were released by withdrawals than expected	$ (55.4)	$ (856.7)	$ (2,027.8)
Death After Retirement Retirees (died younger) lived longer than expected	$ 1,208.6	$ 352.1	$ (673.0)
Data Adjustments and Benefit Payment Timing Service purchases, data corrections, etc.	$ 1,562.6	$ 1,118.1	$ 2,106.5
Other Miscellaneous (gains) and losses	$ -	$ (18.1)	$ (6.5)
Total (Gain) or Loss During Period From Financial Experience	$ 3,517.6	$ 7,960.3	$ (11,067.4)
Non-Recurring Items. Changes in actuarial assumptions and methods	$ -	$ -	$ 20,907.3
Changes in benefits caused a (gain) loss	$ -	$ -	$ -
Composite (Gain) Loss During Period	$ 3,517.6	$ 7,960.3	$ 9,839.9

* Effects related to gains are shown in parentheses. Numerical results are expressed as a (decrease) increase in the Unfunded Actuarial Accrued Liability (UAAL). Gains decrease the UAAL and losses increase the UAAL.

SECTION 7 – RISK CONSIDERATIONS

A typical retirement plan faces many different risks, but the greatest risk is the inability to make benefit payments when due. If plan assets are depleted, benefits may not be paid which could create legal and litigation risk or the plan could become "pay as you go". The term "risk" is most commonly associated with an outcome with undesirable results. However, in the actuarial world, risk can be translated as uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. ASOP 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions.

The various risk factors for a given plan can have a significant impact – positive or negative – on the actuarial projection of liability and contribution rates.

There are a number of risks inherent in the funding of a defined benefit plan. These include:

- economic risks, such as investment return and price inflation;
- demographic risks such as mortality, payroll growth, aging population including impact of baby boomers, and retirement ages;
- contribution risk, i.e., the potential for contribution rates to be too high for the plan sponsor/employer to pay and
- external risks such as the regulatory and political environment.

There is a direct correlation between healthy, well-funded retirement plans and consistent contributions equal to the full actuarial contribution rate each year. The System is primarily funded by member and employer contributions to the trust fund, together with the earnings on these accumulated contributions. These contributions fund benefit accruals for current active members. The remainder of the contributions amortizes the unfunded actuarial accrued liability. For many years GWPORS was funded by fixed contribution rates for both the member and the employers. In the 2023 Legislative Session HB 569 was passed that required an actuarial determined contribution rate be contributed. This change should reduce some of the contribution risk the System has faced in the past, however, the statutory contribution is limited to a 0.50% increase in any given year.

Generally, the largest source of actuarial gains and losses are caused by investment volatility. In addition, the unfunded liability is amortized as a level percentage of pay assuming payroll will grow by 3.25% per year. A key risk factor to the System's funding is that actuarial losses occur, or payroll does not grow as expected, increasing the contribution rate. If the contribution rate is limited by the 0.50% statutory limit, this could put pressure on the System to accumulate enough funds, with investment income, to fund the promised benefits.

The other significant risk factor for the System is investment return because of the volatility of returns and the size of plan assets compared to payroll. This is to be expected, given the underlying capital market assumptions and the System's asset allocation. To the extent market rates of interest affect the expected return on assets, there is a risk of change to the discount rate which determines the present value of liabilities and actuarial valuation results. Please see the summary of results of this report which demonstrates the sensitivity of valuation results to differing discount rates.

Under the revised Actuarial Standards of Practice (ASOP) No. 4 effective for valuations after February 15, 2023, we are required to include a low-default-risk obligation measure of the System'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 the 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 liability of $ 412 million. 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.

A key demographic risk for the Retirement System is improvements in mortality (longevity) greater than anticipated. While the actuarial assumptions reflect a margin for improvement in mortality experience these assumptions are refined every experience study, the risk arises because there is a possibility of some sudden shift, perhaps from a significant medical breakthrough that could quickly increase liabilities. Likewise, there is some possibility of a significant public health crisis that could result in a significant number of additional deaths in a short time period, which would also be significant, although more easily absorbed. While either of these events could happen, it represents a small probability and thus represents much less risk than the volatility associated with investment returns.

The exhibits on the following pages summarize some historical information that helps indicate how certain key risk metrics have changed over time. Many are due to the maturing of the retirement system.

Historical Asset Volatility Ratios
(in 1,000's)

As a retirement system matures, the size of the market value of assets increases relative to the covered payroll of active members, on which the System is funded. The size of the plan assets relative to covered payroll, sometimes referred to as the asset volatility ratio, is an important indicator of the contribution risk for the System. The higher this ratio, the more sensitive a plan's contribution rate is to investment return volatility. In other words, it will be harder to recover from investment losses with increased contributions.

Actuarial Valuation Date	Market Value of Assets	Plan Year Payroll	Asset Volatility Ratio
6/30/2015	$ 148,638	$ 44,713	3.32
6/30/2016	154,685	47,108	3.28
6/30/2017	175,841	49,381	3.56
6/30/2018	193,523	50,823	3.81
6/30/2019	206,347	51,677	3.99
6/30/2020	212,910	53,825	3.96
6/30/2021	273,392	60,023	4.55
6/30/2022	260,437	54,287	4.80
6/30/2023	281,081	58,393	4.81
6/30/2024	351,433	66,456	5.29

The assets at June 30, 2024 are 529% of payroll, so underperforming the investment return assumption by 1.00% (i.e., earn 6.30% for one year) is equivalent to 5.29% of payroll. While the actual impact in the first year is mitigated by the asset smoothing method and amortization of the UAAL, this illustrates the risk associated with volatile investment returns.

Historical Cash Flows
(in 1,000's)

Plans with negative cash flows will experience increased sensitivity to investment return volatility. Cash flows, for this purpose, are measured as contributions less benefit payments. If the System has negative cash flows and then experiences returns below the assumed rate, there are fewer assets to be reinvested to earn the higher returns that typically follow. While any negative cash flow will produce such a result, it is typically a negative cash flow of more than 5% of MVA that may cause significant concerns. The System currently has positive cash flow. It appears that the System's net cash flow is trending from positive to negative. While there are no immediate concerns, this should be continued to be monitored going forward.

Year End	Market Value of Assets (MVA)	Contributions	Benefit Payments	Net Cash Flow	Net Cash Flow as a Percent of MVA
6/30/2015	$ 148,638	$ 9,012	$ 5,553	$ 3,459	2.33%
6/30/2016	154,685	9,314	6,431	2,883	1.86%
6/30/2017	175,841	9,742	7,175	2,567	1.46%
6/30/2018	193,523	10,125	8,028	2,097	1.08%
6/30/2019	206,347	10,252	8,552	1,700	0.82%
6/30/2020	212,910	10,672	9,693	979	0.46%
6/30/2021	273,392	11,804	10,404	1,400	0.51%
6/30/2022	260,437	11,016	12,250	(1,234)	(0.47%)
6/30/2023	281,081	11,755	12,942	(1,188)	(0.42%)
6/30/2024	351,433	55,504	14,412	41,092	11.69%

Liability Maturity Measurement

Most public sector retirement systems have been in operation for many years. As a result, they have aging plan populations, and in some cases declining active populations, resulting in an increasing ratio of retirees to active members and a growing percentage of retiree liability. The retirement of the remaining baby boomers over the next decade is expected to further exacerbate the aging of the retirement system population. Retiree liability as a percentage of the total actuarial accrued liability has been growing over the last five years. As more of the total liability begins to reside with retirees, investment volatility has a greater impact on the funding of the system since it is more difficult to restore the system financially after losses occur when there is comparatively less payroll over which to spread costs. Below are two tables which demonstrate the ratio of the System's retiree liability compared to the total accrued liability and the ratio of the number of retirees and beneficiaries to the number of active members.

Year End	Retiree Liability (a)	Total Actuarial Accrued Liability (b)	Retiree Percentage (a) / (b)
6/30/2015	$67,112,776	$172,159,908	39.0%
6/30/2016	77,744,132	191,007,338	40.7%
6/30/2017	90,203,382	217,642,368	41.4%
6/30/2018	101,651,278	230,077,307	44.2%
6/30/2019	115,460,624	245,129,744	47.1%
6/30/2020	129,547,563	264,744,609	48.9%
6/30/2021	147,946,717	290,855,880	50.9%
6/30/2022	169,265,874	320,475,204	52.8%
6/30/2023	195,529,771	348,304,075	56.1%
6/30/2024	212,323,072	377,092,368	56.3%

Historical Member Statistics

Valuation Date June 30,	Number of Active	Number of Retired	Active/ Retired
2015	993	231	4.30
2016	989	250	3.96
2017	1,012	276	3.67
2018	1,010	312	3.24
2019	1,021	346	2.95
2020	1,033	384	2.69
2021	1,023	420	2.44
2022	977	445	2.20
2023	1,017	490	2.08
2024	1,045	529	1.98

The assumptions and methods utilized in the valuation were developed in the five-year experience study for the period ending June 30, 2021.

Tables B-3 through B-5 give rates of decrement for service retirement, disablement, mortality, and other terminations of employment.

Actuarial Cost Method

The actuarial valuation was prepared using the entry age actuarial cost method. Under this method, the actuarial present value of the projected benefits of each individual included in the valuation is allocated as a level percentage of the individual's projected compensation between entry age and assumed exit. The portion of this actuarial present value allocated to a valuation year is called the normal cost. The normal cost was first calculated for each individual member. The normal cost rate is defined to equal the total of the individual normal costs, divided by the total pay rate.

The portion of this actuarial present value not provided for at a valuation date by the sum of (a) the actuarial value of the assets and (b) the actuarial present value of future normal costs is called the UAAL. The UAAL is amortized as a level percentage of the projected salaries of present and future members of the System.

Records and Data

The data used in the valuation consist of financial information; records of age, sex, service, salary, contribution rates, and account balances of contributing members; and records of age, sex, and amount of benefit for retired members and beneficiaries. All of the data has been supplied by the System and was accepted for valuation purposes without audit.

Replacement of Terminated Members

The ages at entry and distribution by sex of future members are assumed to average the same as those of the present members they replace. If the number of active members should increase, it is further assumed that the average entry age of the larger group will be the same, from an actuarial standpoint, as that of the present group. Under these assumptions, the normal cost rates for active members will not vary with the termination of present members.

Administrative and Investment Expenses

The administrative and investment expenses of the System are assumed to be funded by investment earnings in excess of 7.30% per year.

Valuation of Assets

The actuarial asset valuation method spreads asset gains and losses over four years. The expected return is determined each year based on the beginning of year market value and actual cash flows during the year. Any difference between the expected market value return and the actual market value return is recognized evenly over a period of four years.

Investment Earnings

The annual rate of investment earnings of the assets of the System is assumed to be 7.30% per year net of administrative and investment expenses, compounded annually.

Interest on Member Contributions

Interest on member contributions is assumed to accrue at the most recent actual rate granted, or a rate of 3.71% per annum, compounded annually.

Future Salaries

The rates of annual salary increase assumed for the purpose of the valuation are illustrated in Table B-2. In addition to increases in salary due to merit and longevity, this scale includes an assumed 3.50% annual rate of increase in the general wage level of the membership.

Service Retirement

Table B-3 shows the annual assumed rates of retirement for actives members meeting the service retirement eligibilities.

Disablement

The rates of disablement used in this valuation are illustrated in Table B-4.

Mortality

The mortality rates used in this valuation are described in Table B-1 10% of all member deaths are assumed to be duty-related.

Other Terminations of Employment

The rates of assumed future withdrawal from active service for reasons other than death, disability or retirement are shown for representative ages in Table B-5.

Probability of Marriage & Dependent Children

If death occurs in active status, all members are assumed to have an eligible surviving spouse with no dependent children.

Records with no Birth Date

New records with no birth date are assumed to be 37 years old. Records that are not new and have no birth date used the same birth date as the prior year's valuation.

Active Records with a Salary Less than $1,000

These members are included in the active headcounts, however the pay of these members is not included in the Valuation Projected Salaries summarized in Appendix D. The liability for these members is their accumulated member contributions payable on the valuation date.

Table B-1

Summary of Valuation Assumptions

I.	Economic assumptions	
	A. General wage increases	3.50%
	B. Investment return	7.30%
	C. Price inflation assumption	2.75%
	D. Payroll growth	3.25%
	E. Growth in membership	0.00%
	F. Interest on member accounts	3.71%
II.	Demographic assumptions	
	A. Individual salary increase due to promotion and longevity	Table B-2
	B. Retirement	Table B-3
	C. Disablement	Table B-4
	D. Mortality among contributing members For Males and Females: PUB 2010 Safety Amount Weighted Employee Mortality Table projected to 2021. Projected generationally using MP-2021.	
	E. Mortality among service retired members For Males and Females: PUB 2010 Safety Amount Weighted Healthy Retiree Mortality Table projected to 2021, set forward one year for males, adjusted 105% for males and 100% for females. Projected generationally using MP-2021.	
	F. Mortality among beneficiaries For Males and Females: PUB 2010 Amount Weighted Contingent Survivor Mortality Table projected to 2021, set forward one year for males. Projected generationally using MP-2021.	
	G. Mortality among disabled members For Males and Females: PUB 2010 Safety Amount Weighted Disabled Retiree Mortality Table projected to 2021, set forward one year for males.	
	H. Other terminations of employment	Table B-5

Table B-2

Future Salaries

Years of Service	(a) Individual Merit & Longevity	(b) General Wage Increase	(1+(a))*(1+(b)) Total Salary Increase
0-1	6.40%	3.50%	10.12%
1-2	4.70	3.50	8.36
2-3	3.60	3.50	7.23
3-4	2.70	3.50	6.29
4-5	2.00	3.50	5.57
5-6	1.40	3.50	4.95
6 & Up	1.00	3.50	4.54

Table B-3

Retirement
Annual Rates

Age	Age 55 with 5 Years of Service	Age 50 with 20 Years of Service
Less than 50	N/A	0%
50	N/A	15.0
51	N/A	15.0
52	N/A	15.0
53	N/A	15.0
54	N/A	15.0
55	15.0	18.0
56	5.0	18.0
57	5.0	18.0
58	5.0	18.0
59	5.0	18.0
60	15.0	18.0
61	15.0	41.0
62	40.0	50.0
63	15.0	35.0
64	15.0	20.0
65 & Over	100.0	100.0

Table B-4

Disablement
Annual Rates

Age	All Members
22	0.00%
27	0.11
32	0.11
37	0.11
42	0.37
47	0.37
52	0.37
57	0.36
62	0.00

75% of disabilities are assumed to be duty-related. All disabilities are assumed to be permanent and without recovery.

Table B-5

Other Terminations of Employment
Among Members Not Eligible to Retire
Annual Rates

Years of Service	All Members
0	30.00%
1	23.00
2	17.00
3	13.00
4	13.00
5	9.25
6	8.75
7	8.75
8	8.75
9	8.75
10	7.50
11	5.00
12	5.00
13	4.00
14 & Over	3.00

Family Composition

100% of active members are assumed to be married. Female spouses are assumed to be three years younger than males. Actual marital characteristics are used for pensioners.

Vested Benefits for Termination Members

Vested benefits for members who terminated during years ending June 30, 2009 and later were estimated based upon compensation and service information in the census data. For members who terminated prior to June 30, 2008, vested benefits valued were the same as had been calculated by the prior actuary for the June 30, 2008 actuarial valuation.

Service credit	• Service credit is used to determine the amount of a member's retirement benefit. • One month of service credit is earned for each month where the member is paid for 160 hours (240 hours in 3-paycheck months). This includes certain transferred and purchased service.
Membership service	• Membership service is used to determine eligibility for vesting, retirement or other benefits. • One month of membership service is earned for any month member contributions are made, regardless of the number of hours worked. • Eligible members in all systems may purchase service that counts toward membership service. • Additionally, eligible active and inactive Sheriffs' Retirement System (SRS) members may purchase 1 for 5 (additional) service that will count as membership service.
Contributions	• Member contributions are made through an "employer pick-up" arrangement which results in deferral of taxes on the contributions.
Compensation	• Compensation generally means all remuneration paid, excluding certain allowances, benefits, and lump sum payments. Compensation is specifically defined in law and differs amongst the systems. • Bonuses paid **on or after** July 1, 2013 to any member will not be treated as compensation for retirement purposes. No member or employer contributions will be paid on bonuses.
Withdrawal of employee contributions	• A member is eligible for a withdrawal of their contributions when they terminate service and are either not eligible for or have not taken a retirement benefit. • The member receives the accumulated member contributions, which consists of member contributions and regular interest. • Upon receipt of a refund of accumulated contributions a member's vested right to a monthly benefit is forfeited.
Member contributions interest credited (regular interest)	• Interest is credited to member accounts at the rates determined by the Board. • The current interest rate credited to member accounts is 3.71%.

Working Retiree Limitations

Applies to retirement system members who return **on or after** July 1, 2017 to covered employment in the system from which they retired. These limits already applied to SRS members before July 1, 2017.

- Members who return for **less than 480 hours** in a **calendar** year:
  - may not become an active member in the system; and
  - are subject to a $1 reduction in their retirement benefit for each $3 earned in excess of $5,000 in the calendar year.
- Members who return for **480 or more hours** in a **calendar** year;
  - must become an active member of the system;
  - will stop receiving a retirement benefit from the system; **and**
  - will be eligible for a second retirement benefit if they earn 5 or more years of service credit through their second employment.
- Employee, employer and state contributions apply as follows:
  - Employer contributions and state contributions (if any) must be paid on all working retirees;
  - Employee contributions must be paid on working retirees who return to covered employment for 480 or more hours in a calendar year.

NOTE: PERS has its own limits.

Second Retirement Benefit -

Applies to retirement system members who return on or after July 1, 2017 to active service covered by the system from which they retired.

- If the member works more than 480 hours in a calendar year and accumulates less than 5 years of service credit before terminating again, the member:
  - is not awarded service credit for the period of reemployment;
  - is refunded the accumulated contributions associated with the period of reemployment;
  - starting the first month following termination of service, receives the same retirement benefit previously paid to the member; and
  - does not accrue post-retirement benefit adjustments during the term of reemployment but receives a GABA in January immediately following second retirement.

- If the member works more than 480 hours in a calendar year and accumulates at least 5 years of service credit before terminating again, the member:
  - is awarded service credit for the period of reemployment;
  - starting the first month following termination of service, receives:
    - the same retirement benefit previously paid to the member; **and**
    - a second retirement benefit for the period of reemployment calculated based on the laws in effect as of the member's rehire date; **and**
  - does not accrue post-retirement benefit adjustments during the term of reemployment but receives a GABA:
    - on the initial retirement benefit in January immediately following second retirement; **and**
    - on the second retirement benefit starting in January after receiving that benefit for at least 12 months.
- A member who returns to covered service is **not** eligible for a disability benefit.

Refunds

- Terminating members eligible to retire may, in lieu of receiving a monthly retirement benefit, refund their accumulated contributions in a lump sum.
- Terminating members with accumulated contributions between $200 and $1,000 who wish to rollover their refund must do so within 90 days of termination of service.
- Trusts, estates, and charitable organizations listed as beneficiaries are entitled to receive only a lump sum payment.

Lump-sum payouts

- Effective July 1, 2017, lump sum payouts in all systems are limited to the member's accumulated contributions rather than the present value of the member's benefit.

Type of plan

- Multiple-employer cost sharing

Membership eligibility

- Game wardens
- Warden supervisor
- State peace officers

Member contributions

- 10.56% of member's compensation

Employer contributions

- For July 1, 2024 and after, contribution rates are actuarially determined

APPENDIX C – SUMMARY OF BENEFIT PROVISIONS

Compensation period used in benefit calculation	• HAC = Highest Average Compensation • Hired **prior to** July 1, 2011: HAC is average of the highest 36 consecutive months (or shorter period of total service) of compensation paid to member. • Hired **on or after** July 1, 2011: HAC is average of the highest 60 consecutive months (or shorter period of total service) of compensation paid to member. • Hired **on or after** July 1, 2013: 110% annual cap on compensation considered as part of a member's HAC.
Service retirement eligibility and benefit formula	• Age 50 with 20 years of membership service • 2.5% of HAC x years of service credit
Early retirement eligibility and benefit	• Age 55 with 5 years of membership service • A reduced retirement benefit calculated using the HAC and service credit at early retirement.
Disability retirement eligibility and benefit formula	**Duty-related** disability: • Vested active member • 5 years of membership service • **Less than 20 years** of membership: 50% or HAC, or • **20 years or more** of membership service: 2.5% of HAC x years of service credit **Regular** disability: • Vested member • The actuarial equivalent of the accrued normal retirement benefit at the time of disability.
Survivor's eligibility and benefit formula	**Duty-related** deaths: **(active member)**, a monthly survivor benefit to the designated beneficiary equal to: • **25 years or less** of membership service: 50% of HAC, or • **More than 25 years** of membership service: 2.5% of HAC x years of service credit. **Non-duty-related** deaths: • Active or inactive member • Lump-sum refund of the member's accumulated contributions; **or** • Actuarial equivalent of the service benefit.

	• Effective July 1, 2017, beneficiaries of GWPORS members who die prior to retirement are eligible for either a lump-sum benefit or a monthly survivor benefit. The monthly survivor benefit may be paid out as an option 1, 2, 3 or 4, at the survivor's discretion. Previously, statute provided for lump-sum payments only.
Vested eligibility and benefit	• 5 years of membership service • Accrued normal retirement benefit, payable when eligible for retirement. • In lieu of a pension, a member may receive a refund of accumulated contributions. • Upon receipt of a refund of accumulated contributions, a member's vested right to a monthly benefit is forfeited.

Retirement benefits - Form of payment	• Option 1, the normal form of payment is a single life annuity with a refund of any remaining accumulated contributions (account balance) to a designated beneficiary.
	• Optional Benefits:
	  • Option 2, a life annuity and joint 100% survivor benefit,
	  • Option 3, a life annuity and joint 50 % survivor benefit, and
	  • Option 4, a life annuity with a period certain.
	• If a retiring member selects Option 2 or 3 and the contingent annuitant predeceases or is divorced from the member, the retiree may, within 18 months of the death or divorce, choose to revert to the higher Option 1 benefit available at retirement or the retiree may select a different contingent annuitant and/or a different option.

Post retirement benefit increases	For retired members who have been retired at least 12 months, a Guaranteed Annual Benefit Adjustment (GABA) will be made each year in January equal to: • 3% for members hired **before** July 1, 2007, and • 1.5% for members hired **on or after** July 1, 2007
Changes since last valuation	• None

APPENDIX D – VALUATION DATA

Valuation Data

This chart is presented for informational purposes only. The counts shown in the valuation line were used for preparation of the liabilities disclosed within this report. The counts disclosed for the Annual Financial Report and the Board Summary (page 1) match the ACFR at the request of the Board. The differences between counts, if any, have no material effect upon the liability calculation.

	Active	Disabled	Retirees and Beneficiaries	Terminated Vested Members	Terminated Non-Vested Members	Total
Participant Counts Used for Valuation	1,045	21	508	187	677	2,438
Disabled Members having attained normal retirement age		(19)	19			
Beneficiaries of Disabled Members						
Beneficiaries with less than one year of certain payments remaining						
Other Adjustments				1	1	2
Participant Counts shown in the Annual Financial Report	1,045	2	527	188	678	2,440

APPENDIX D – VALUATION DATA

This valuation is based upon the membership of the System as of June 30, 2024. Membership data were supplied by the System and has been accepted for valuation purposes without audit. However, tests were performed to ensure that the data are sufficiently accurate for valuation purposes.

The salaries used in the tables and charts which follow are different than the salaries used for the Summary of Results on page 1. The valuation salaries are anticipated to be paid for the following fiscal year, whereas the Summary of Results salaries are applicable in the year ending on the valuation date.

Active Members	Number	Valuation Projected Salaries
Full-Time Members	926	$ 65,065,265
Part-Time Members	119	$ 2,256,059
Total Active Members	1,045	$ 67,321,324

Table D-1 contains summaries of the data for contributing members. For full-time members, values shown in the tables are the numbers of members and their total and average annual salaries. For part-time members, only the numbers of members are shown.

Table D-2 presents distributions of the following:

- Members receiving service retirement benefits.
- Members receiving disability retirement benefits.
- Survivors of deceased retired members receiving benefits.
- Survivors of deceased active members.
- Terminated vested members.

Table D-3 is a reconciliation of membership data from June 30, 2023 to June 30, 2024.

APPENDIX D – VALUATION DATA

The following is a summary of retired members and beneficiaries currently receiving benefits. The chart reflects the counts and benefits used for valuation purposes as a result of data processing. Please refer to the chart on page 44 for an explanation of the number of annuitants used for valuation purposes.

Type of Annuitant	Number	Annual Benefits	Average Annual Benefits
Service Retirement	470	$ 12,449,936	$ 26,489
Survivors of Deceased Retired Members	25	607,838	24,314
Survivors of Deceased Active Members	13	174,650	13,435
Total Retirees and Beneficiaries	508	$ 13,232,424	$ 26,048
Disability Retirement	21	511,845	24,374
Total Annuitants	529	$ 13,744,269	$ 25,982

Terminated Members with Contributions Not Withdrawn	Number
Vested Terminated Members	187
Non-Vested Terminated Members	677
Total Terminated Members	864

Table D-1:
Active Members Distribution of
Full-Time Employees and Salaries
as of June 30, 2024

Number of Employees

	Completed Years of Service												
Age	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+	Totals
<25	27	35	10	7	2								81
25 to 29	10	32	18	22	22								104
30 to 34	16	17	15	27	63	5	1						144
35 to 39	10	11	13	13	34	27	13						121
40 to 44	9	12	4	13	32	25	28	6					129
45 to 49	3	4	9	3	20	17	24	21	2				103
50 to 54	1	5	6	7	25	13	21	16	7	3			104
55 to 59	3	8	3	9	16	9	20	9	4	1			82
60 to 64	2	4	2	5	15	10	5	2	3	1			49
65 to 69				1	4	1							6
70 and up	1					1	1						3
Totals	82	128	80	107	233	108	113	54	16	5	-	-	926

Table D-1:
Active Members Distribution of
Full-Time Employees and Salaries
as of June 30, 2024

Annual Salaries in Thousands

	Completed Years of Service												
Age	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+	Totals
<25	1,490	2,084	624	436	139								4,773
25 to 29	568	1,906	1,112	1,466	1,603								6,656
30 to 34	1,024	1,131	973	1,799	4,423	356	65						9,771
35 to 39	619	699	899	845	2,273	1,946	1,012						8,291
40 to 44	508	780	255	921	2,273	1,925	2,229	498					9,389
45 to 49	184	246	560	194	1,411	1,245	1,916	1,809	176				7,741
50 to 54	68	345	411	465	1,669	992	1,748	1,412	668	293			8,072
55 to 59	177	516	211	607	1,194	650	1,492	755	335	72			6,009
60 to 64	110	255	136	360	1,247	749	361	158	281	79			3,734
65 to 69				66	252	70							388
70 and up	59					119	63						241
Totals	4,808	7,961	5,180	7,159	16,484	8,050	8,887	4,632	1,461	444	-	-	65,065

Table D-1:
Active Members Distribution of
Full-Time Employees and Salaries
as of June 30, 2024

Average Annual Salary

	Completed Years of Service												
Age	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+	Totals
<25	55,194	59,529	62,417	62,313	69,256								58,922
25 to 29	56,827	59,566	61,766	66,642	72,886								63,998
30 to 34	64,009	66,544	64,849	66,615	70,202	71,159	65,461						67,853
35 to 39	61,861	63,522	69,158	64,977	66,846	72,066	77,816						68,523
40 to 44	56,496	65,009	63,633	70,839	71,024	77,004	79,610	83,032					72,784
45 to 49	61,274	61,411	62,199	64,765	70,564	73,260	79,835	86,124	88,062				75,156
50 to 54	67,520	68,989	68,504	66,491	66,770	76,288	83,251	88,275	95,472	97,638			77,614
55 to 59	59,034	64,444	70,372	67,396	74,627	72,171	74,624	83,925	83,824	71,843			73,279
60 to 64	55,077	63,698	67,874	71,997	83,118	74,852	72,138	78,761	93,626	79,403			76,213
65 to 69				66,091	63,071	69,867							64,707
70 and up	59,430					118,576	63,276						80,427
Totals	58,631	62,193	64,750	66,906	70,746	74,540	78,645	85,779	91,287	88,832			70,265

The salary shown in the above chart was used for valuation purposes and assumes pay increases for the year.

Table D-1:
Active Members Distribution of
Part-Time Employees
as of June 30, 2024

Number of Employees

	Completed Years of Service												
Age	0	1	2	3 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40+	Totals
<25	23	3	1										27
25 to 29	19	3	1	1	2								26
30 to 34	14	3	1	1		1							20
35 to 39	7	1	1		2	1							12
40 to 44	11	2											13
45 to 49	5	1			2								8
50 to 54	4			1									5
55 to 59	3				1								4
60 to 64	2	2											4
65 to 69													
70 and up													
Totals	88	15	4	3	7	2	-	-	-	-	-	-	119

Table D-2:
Distribution of Inactive Lives

The charts reflects the counts and benefits used for valuation purposes as a result of data processing. Please refer to the chart on page 44 for an explanation of the number of annuitants used for valuation purposes.

Members Receiving Service Retirement Benefits as of June 30, 2024

Age	Number of Persons	Annual Benefits	Average Annual Benefits
<50	-	$ -	$ -
50 to 54	38	1,308,957	34,446
55 to 59	78	2,138,390	27,415
60 to 64	103	2,593,598	25,181
65 to 69	123	3,283,409	26,694
70 to 74	66	1,467,269	22,231
75 to 79	37	864,679	23,370
80 to 84	15	428,729	28,582
85 to 89	6	225,823	37,637
90 and up	4	139,082	34,771
Totals	470	$ 12,449,936	$ 26,489

Members Receiving Disability Retirement Benefits as of June 30, 2024

Age	Number of Persons	Annual Benefits	Average Annual Benefits
<50	2	$ 61,344	$ 30,672
50 to 54	2	29,233	14,617
55 to 59	1	28,800	28,800
60 to 64	4	79,572	19,893
65 to 69	3	62,335	20,778
70 to 74	4	107,135	26,784
75 to 79	3	84,927	28,309
80 to 84	-	-	-
85 to 89	2	58,499	29,250
90 and up	-	-	-
Totals	21	$ 511,845	$ 24,374

Table D-2:
Distribution of Inactive Lives

The charts reflects the counts and benefits used for valuation purposes as a result of data processing. Please refer to the chart on page 44 for an explanation of the number of annuitants used for valuation purposes.

Survivors of Deceased Retired Members as of June 30, 2024

Age	Number of Persons	Annual Benefits	Average Annual Benefits
<50	2	$ 12,450	$ 6,225
50 to 54	1	5,660	5,660
55 to 59	-	-	-
60 to 64	1	7,956	7,956
65 to 69	5	126,555	25,311
70 to 74	2	56,593	28,297
75 to 79	3	58,422	19,474
80 to 84	3	65,552	21,851
85 to 89	4	120,626	30,157
90 and up	4	154,024	38,506
Totals	25	$ 607,838	$ 24,314

Survivors of Deceased Active Members as of June 30, 2024

Age	Number of Persons	Annual Benefits	Average Annual Benefits
<50	5	$ 71,590	$ 14,318
50 to 54	-	-	-
55 to 59	1	4,315	4,315
60 to 64	1	6,543	6,543
65 to 69	2	53,927	26,964
70 to 74	2	17,539	8,770
75 to 79	2	20,736	10,368
80 to 84	-	-	-
85 to 89	-	-	-
90 and up	-	-	-
Totals	13	$ 174,650	$ 13,435

Table D-2:
Distribution of Inactive Lives

The chart reflects the counts and benefits used for valuation purposes as a result of data processing. Please refer to the chart on page 44 for an explanation of the number of annuitants used for valuation purposes.

Terminated Vested Members as of June 30, 2024
Number of Persons

Age	Number
<25	
25 to 29	3
30 to 34	14
35 to 39	21
40 to 44	41
45 to 49	35
50 to 54	50
55 to 59	16
60 to 64	5
65 to 69	2
70 and above	
Total	187

Table D-3:
Data Reconciliation

The following table shows a reconciliation of the participants used in the previous valuation to this valuation. This chart reflects the counts used for valuation purposes as a result of data processing.

	Active Members	Terminated Vested Members	Service Retired Members	Disabled Members	Survivors and Beneficiaries
June 30, 2023 Valuation	1,017	183	439	20	31
Refunds and Non-Vested Terminations	(98)	(7)			
Vested Terminations	(21)	21			
Service Retirements	(28)	(10)	38		
Disability Retirements	(1)			1	
Deaths			(8)		7
New Entrants	164				
Rehires	12				
Other			1		
June 30, 2024 Valuation	1,045	187	470	21	38

Comparative Schedules

This section contains tables that summarize the experience of the System shown in present and past valuation reports.

Table E-1 shows a summary of the active members covered as of the various valuation dates.

Table E-2 shows a summary of the retired and inactive members as of the various valuation dates.

Table E-3 summarizes the contribution rates determined by each annual actuarial valuation.

Table E-1:
Active Membership Data

Valuation Date June 30,	Actives	Annual Salaries in Thousands	Average Annual Salary	Average Age	Average Years of Service	Average Hire Age
2024	1,045	66,456	63,595	40.6	7.6	33.0
2023	1,017	58,393	57,417	41.1	7.7	33.4
2022	977	54,287	55,565	42.1	8.5	33.6
2021	1,023	60,023	58,673	41.4	8.1	33.3
2020	1,033	53,825	52,106	41.4	7.9	33.4
2019	1,021	51,677	50,614	41.7	8.0	33.8
2018	1,010	50,823	50,320	42.0	8.1	34.0
2017	1,012	49,381	48,795	42.0	8.1	33.9
2016	989	47,108	47,632	40.2	7.9	32.3
2015	993	44,713	45,029	42.2	7.6	34.6
2014	955	40,458	42,365			
2013	971	39,155	40,324			
2012	972	38,317	39,421			

Table E-2:
Members in Receipt of Annuities and Inactive Membership Data

		All Annuitants					Terminated Members	
Valuation Date June 30,	Number	Annual Benefits in Thousands	Average Annual Benefit	Average Current Age	Average Age at Retirement	Average Service at Retirement	Number Vested Terminated	Number Non-Vested Terminated
2024	529	13,744	25,982	65.5	57.8	19.0	187	677
2023	490	12,393	25,292	65.2	57.8	19.1	183	591
2022	445	10,806	24,284	65.1	57.7	19.0	169	588
2021	420	9,920	23,618	64.8	57.8	18.9	148	523
2020	384	8,615	22,434	64.7	57.8	18.8	135	494
2019	346	7,624	22,034	64.4	57.7	18.5	138	447
2018	312	6,792	21,768	66.0	56.4	17.0	123	381
2017	276	5,958	21,586	66.3	56.3	17.8	114	304
2016	250	5,286	21,144	66.3	57.8	18.3	105	278
2015	231	4,721	20,437	66.3	56.4	18.5	95	235
2014	203	4,106	20,227				87	175
2013	180	3,606	20,033				69	148
2012	163	3,317	20,350				64	146

Table E-3:
Contribution Rates

Valuation Date June 30,	Contribution Rates			Normal Cost Rate*	UAAL Rate**
	Employee	Employer/State	Total***		
2024	10.56 %	9.18 %	19.74 %	17.34 %	2.40 %
2023	10.56	9.62	20.18	17.92	2.26
2022	10.56	9.00	19.56	18.50	1.06
2021	10.56	9.00	19.56	15.70	3.86
2020	10.56	9.00	19.56	15.61	3.95
2019	10.56	9.00	19.56	16.16	3.40
2018	10.56	9.00	19.56	16.32	3.24
2017	10.56	9.00	19.56	16.19	3.37
2016	10.56	9.00	19.56	18.23	1.33
2015	10.56	9.00	19.56	18.41	1.15
2014	10.56	9.00	19.56	18.58	0.98
2013	10.56	9.00	19.56	18.82	0.74
2012	10.56	9.00	19.56	18.98	0.58

* Includes administrative expenses for the 2014 through 2021 Valuation Dates.
** Prior to 2023, the UAAL rate was the amount available to amortize the UAAL. It is equal to the total contribution rate, minus the normal cost rate.
*** Beginning in 2023, the total contribution rate is effective one year later.

APPENDIX F – FINANCIAL STATEMENT INFORMATION

The information presented in the required supplementary schedules was determined as part of the actuarial valuation as of June 30, 2024. Additional information as of the latest actuarial valuation follows.

Valuation date	June 30, 2024
Actuarial cost method	Entry Age Normal
Amortization method	Legacy Base as of June 30, 2023 over a closed 25-year period Contemporary Bases over a closed 10-year period
Remaining amortization period	24 Years
Asset valuation method	
Actuarial assumptions:	
Investment rate of return*	7.30%
General wage growth*	3.50%
Merit salary increases	1.0% - 6.4%
*Includes inflation	2.75%

Gain and Loss in Accrued Liability During Years Ended June 30 Resulting from Differences Between Assumed Experience and Actual Experience						
	Gain or (Loss) for Year Ending June 30, (expressed in thousands)					
Type of Activity	2019	2020	2021	2022	2023	2024
Investment Income on Actuarial Value of Assets	$ (710)	$ (1,369)	$ 7,011	$ 1,031	$ 283	$ 4,436
Combined Liability Experience	1,891	(2,638)	(8,280)	10,036	(8,243)	(7,954)
(Loss)/Gain During Year from Financial Experience	$ 1,181	$ (4,007)	$ (1,269)	$ 11,067	$ (7,960)	$ (3,518)
Non-Recurring Items	0	0	0	(20,907)	0	0
Composite Gain or (Loss) During Year	$ 1,181	$ (4,007)	$ (1,269)	$ (9,840)	$ (7,960)	$ (3,518)

Schedule of Funding Progress (expressed in thousands)						
Valuation Date June 30,	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Funded Ratio	Unfunded AAL (UAAL)	Covered Payroll	UAAL as a Percentage of Covered Payroll
2024	$ 353,846	$ 377,092	94%	$ 23,247	$ 66,456	35%
2023	284,543	348,304	82%	63,762	58,393	109%
2022	266,067	320,475	83%	54,408	54,287	100%
2021	247,392	290,856	85%	43,464	60,023	72%
2020	221,949	264,745	84%	42,796	53,825	80%
2019	206,504	245,130	84%	38,626	51,677	75%

Solvency Test Aggregate Accrued Liabilities for (expressed in thousands)							
Valuation Date June 30,	Active Member Contributions (1)	Retirees & Beneficiaries (2)	Active Member Employer Financed Contributions (3)	Actuarial Value of Reported Assets	Portion of Accrued Liability Covered by Reported Assets (1)	(2)	(3)
2024	$ 48,596	$ 187,345	$ 141,151	$ 353,846	100%	100%	84%
2023	44,794	171,178	132,332	284,543	100%	100%	52%
2022	45,643	148,131	126,701	266,067	100%	100%	57%
2021	44,689	131,732	114,435	247,392	100%	100%	62%
2020	43,619	113,801	107,325	221,949	100%	100%	60%
2019	41,429	100,024	103,677	206,504	100%	100%	63%

The following definitions are largely excerpts from a list adopted in 1981 by the major actuarial organizations in the United States. In some cases the definitions have been modified for specific applicability to the Game Wardens' and Peace Officers' Retirement System. Defined terms are capitalized throughout this Appendix.

Accrued Benefit

The amount of an individual's benefit (whether or not vested) as of a specific date, determined in accordance with the terms of a pension plan and based on compensation and service to that date.

Actuarial Accrued Liability

That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement, and retirement; changes in compensation, rates of investment earnings, and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; and other relevant items.

Actuarial Cost Method

A procedure for determining the Actuarial Present Value of pension plan benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal Cost and an Actuarial Accrued Liability.

Actuarial Gain (Loss)

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

Actuarial Present Value

The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions.

Actuarial Valuation

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

Actuarial Value of Assets

The value of cash, investments and other property belonging to a pension plan, as used by the actuary for the purpose of an Actuarial Valuation.

Actuarially Equivalent

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

Amortization Payment

That portion of the pension plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Entry Age Actuarial Cost Method

A method under which the Actuarial Present Value of the Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. The portion of this Actuarial Present Value not provided for at a valuation date by the Actuarial Present Value of future Normal Costs is called the Actuarial Accrued Liability.

Market Value of Assets

The fair value of cash, investments and other property belonging to a pension plan that could be acquired by exchanging them on the open market.

Normal Cost

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

Projected Benefits

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

Unaccrued Benefit

The excess of an individual's Projected Benefits over the Accrued Benefits as of a specified date.

Unfunded Actuarial Accrued Liability

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