NEBRASKA PUBLIC EMPLOYEES RETIREMENT SYSTEM

STATE PATROL RETIREMENT SYSTEM

SIXTY-NINTH ACTUARIAL REPORT FOR SYSTEM PLAN YEAR BEGINNING JULY 1, 2024 AND STATE FISCAL YEAR ENDING JUNE 30, 2026

SUBMITTED: November 12, 2024

CavMac
Actuarial Consulting Services

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November 12, 2024

Public Employees Retirement Board
Nebraska Public Employees Retirement System
Post Office Box 94816
Lincoln, NE 68509

Dear Members of the Board:

At your request, we performed an actuarial valuation of the State Patrol Retirement System as of July 1, 2024 for purposes of determining the actuarial required contribution rate for the plan year ending June 30, 2025. It is our understanding that any additional required State contributions for this plan year will be made on July 1, 2025 (State fiscal year end 2026). The major findings of the valuation are contained in this report, which reflects the benefit and funding provisions in place on July 1, 2024. There have been no changes to the actuarial methods or benefit provisions from the prior valuation, but the set of economic assumptions has changed since the last valuation.

At their December 21, 2020 meeting, the Board adopted a plan to phase-in a change in the set of economic assumptions over a four-year period, with the ultimate set of economic assumptions going into effect with the July 1, 2024 valuation. The scheduled economic assumption changes include price inflation, cost-of-living adjustments for Tier 1 members, general wage inflation, covered payroll growth and the investment return assumption. Over the course of this four-year period, the investment return assumption decreased from 7.50% to 7.00%. The phase-in of the new set of economic assumptions is now complete and the impact on the current valuation results is discussed in further detail in the Executive Summary of this report.

In preparing our report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, statutory provisions, member data and financial information. We found this information to be reasonably consistent and comparable with the information received in prior years. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete, our results may be different, and our calculations may need to be revised.

The State of Nebraska and the State Law Enforcement Bargaining Council (SLEBC) negotiated a new labor contract for the period July 1, 2023 to June 30, 2025 which included significant pay increases effective July 1 of 2023 and 2024. These were reflected in last year's valuation and the 5% pay rate increase, effective July 1, 2024, is also reflected in the current valuation.

We further certify that all costs, liabilities, rates of interest and other factors for the State Patrol Retirement System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer the best estimate of anticipated experience affecting the System. Nevertheless, the emerging costs will vary from those

presented in this report to the extent actual experience differs from that projected by the actuarial assumptions. The Public Employees Retirement Board has the final decision regarding the appropriateness of the assumptions and adopted the set of assumptions indicated in Appendix C.

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. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

Actuarial computations presented in this report are for purposes of determining the funding amounts for the System as specified in the Nebraska state statutes. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes. For example, actuarial computations for purposes of fulfilling financial accounting requirements for the System under Governmental Accounting Standards No. 67 and No. 68 are provided in separate reports.

The consultants who worked on this assignment are pension actuaries. CavMac's advice is not intended to be a substitute for qualified legal or accounting counsel.

Based on the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein. We are available to answer any questions on the material contained in the report, or to provide explanations or further details as may be appropriate.

We respectfully submit the following report and look forward to discussing it with you.

Sincerely,

Patrice Beckham

Patrice A. Beckham, FSA, EA, FCA, MAAA
Consulting Actuary

Brent A. Banister

Brent A. Banister Ph.D., FSA, EA, MAAA, FCA
Chief Actuary

SECTION 1 – BOARD SUMMARY

This report presents the results of the July 1, 2024 actuarial valuation of the State Patrol Retirement System (System). The primary purposes of performing this actuarial valuation are to:

- Determine the level of State contributions for the plan year ending June 30, 2025 which are sufficient to meet the funding policy set out in the Nebraska state statutes.
- Disclose asset and liability measurements as well as the current funded status of the System as of the valuation date.
- Assess and disclose the key risks associated with funding the System.
- Compare actual and expected experience under the System during the plan year ended June 30, 2024.
- Analyze and report on trends in System contributions, assets and liabilities over the past several years.

The actuarial valuation results provide a "snapshot" view of the System's financial condition on July 1, 2024. As the result of various factors, the System's unfunded actuarial accrued liability (UAAL) decreased from $100.0 million last year to $99.3 million this year and the funded ratio increased from 84% to 85%. In addition, the actuarial required contribution rate decreased from 50.58% of pay last year to 49.93% of pay in this year's valuation, a decrease of 0.65% of pay.

The Nebraska statutes require the State to make an additional contribution if the regular, payroll-related contributions by members and the State are insufficient to meet the actuarial required contribution for the plan year. **Based on the results of the July 1, 2024 actuarial valuation, an additional State contribution of $6,834,870 is required for the plan year ending June 30, 2025 (expected to be paid July 1, 2025).** This is a $0.4 million decrease from the additional amount of $7.3 million in the July 1, 2023 actuarial valuation.

Changes Since the Prior Valuation

At their December 21, 2020 meeting, the Board adopted a plan to phase-in a change in the set of economic assumptions over a four-year period (2021 through 2024 valuation). The scheduled economic assumption changes included price inflation, COLA for Tier 1 members, general wage inflation, covered payroll growth and the investment return assumption. The final phase-in of the economic assumptions has been implemented as follows:

	2023 Valuation	(Current) 2024 Valuation
Price Inflation	2.45%	2.35%
Real Return	4.65%	4.65%
Investment Return	7.10%	7.00%
COLA (Tier 1)	2.05%	2.00%
General Wage Inflation	2.95%	2.85%
Covered Payroll Growth	2.95%	2.85%

The net impact of the scheduled change in the set of economic assumptions in this valuation was an increase of $4.5 million in the actuarial accrued liability, as well as an increase of 1.01% in the actuarial required contribution rate.

There has also been one change to the plan provisions since the prior valuation. In the 2024 session, the Legislature passed Legislative Bill 196 (LB 196) which decreased the member contribution rate to 10.00% of covered pay and increased the employer contribution rate to 24.00% of pay. The impact of LB 196 was a decrease of $0.08 million in the actuarial accrued liability and a decrease of 0.08% in the actuarial required contribution rate.

Actual Experience Impacting the July 1, 2024 Valuation

The valuation results reflect net favorable experience for the past plan year as demonstrated by a UAAL that was lower than expected. The UAAL as of July 1, 2024 is $99.3 million compared to an expected UAAL of $103.1 million. The key factors impacting the 2024 valuation include:

- There was a net actuarial experience loss of $2.7 million on System liabilities, primarily due to actual salary increases that were higher than expected based on the actuarial assumptions. There was also an actuarial experience loss due to COLAs that were larger than expected.

- As a result of the higher pay rates, the covered payroll increased by 6.9% from the prior valuation compared to the 2.95% assumed increase in the July 1, 2023 actuarial valuation. As a result, the UAAL payment was divided by larger payroll, resulting in the UAAL contribution rate decreasing by 0.75%.

- The rate of return on the market value of assets for the year ending June 30, 2024 was 13.4%, as reported by the Nebraska Investment Council, compared to the assumed return of 7.1% for that year. The asset smoothing method used in the valuation only recognizes 20% of the difference between the dollar amount of the assumed and actual return in the current valuation. The partial recognition of FY 2024 experience, coupled with the scheduled recognition of the deferred investment experience from the prior four years, resulted in a rate of return on the actuarial (smoothed) value of assets of 8.4%. Because this return is higher than the assumed rate of return (7.1% for FY 2024), there was an actuarial experience gain of $6.5 million on the actuarial value of assets.

- Tier 2 members (hired on or after July 1, 2016) have lower benefits and a lower normal cost. As a result of an increase in the number of active members covered by Tier 2, the normal cost rate decreased by 0.20%.

A summary of the key results from the July 1, 2024 actuarial valuation is shown in the following table. As the table indicates, the statutory contribution rates are not sufficient to meet the actuarial required contribution rate and an additional State appropriation of 15.93% of pay, or $6,834,870, is required. Further detail on the valuation results can be found in the following sections of this Board Summary.

SECTION 1 – BOARD SUMMARY

	Valuation Results	
	July 1, 2024	July 1, 2023
Unfunded Actuarial Accrued Liability	$99,284,719	$99,959,538
Funded Ratio (Actuarial Assets)	85.14%	84.27%
Actuarial Required Contribution	49.93%	50.58%
Member Contribution Rate	(10.00%)	(16.26%)
Employer Contribution Rate	(24.00%)	(16.26%)
Additional Required State Contribution Rate	15.93%	18.06%
Additional Required State Contribution*	$6,834,870	$7,253,460

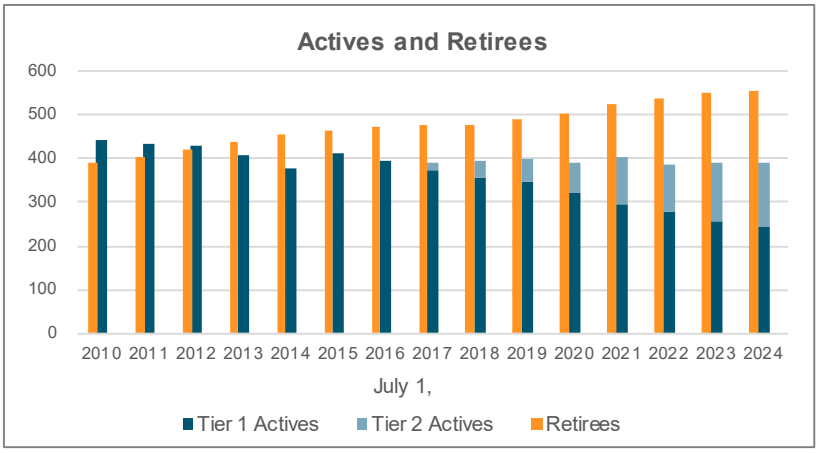
* Reflects interest to the expected contribution date, which is July 1 of the following year.

EXPERIENCE FOR THE LAST PLAN YEAR

Numerous factors contributed to the change in the System's assets, liabilities, and actuarial required contribution rate between July 1, 2023 and July 1, 2024. The components of the System's experience are examined in the following discussion.

MEMBERSHIP

The active membership count held steady with 392 active members (excluding DROP members) in the 2024 valuation compared to 389 in the 2023 valuation. The following graph compares the number of active members and members receiving benefits (retirees and beneficiaries) in each valuation since 2010. While the number of active members fluctuated at times over this period, the number of members receiving a benefit has steadily increased, reaching 556 in this valuation. This is a standard indicator of the maturity of the system and is not necessarily unexpected or problematic. However, this metric does indicate the likelihood of a higher degree of contribution rate volatility when actual experience varies from that expected by the assumptions.



ASSETS

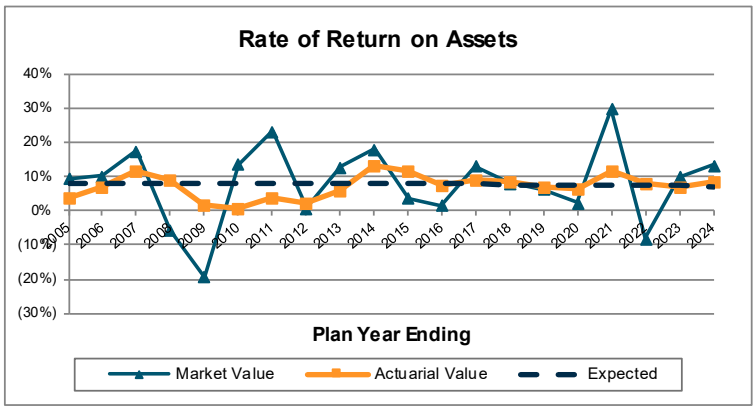
As of June 30, 2024, the System had net assets of $588.3 million, when measured on a market value basis, an increase of $59.7 million from the prior year. The rate of return on the market value of assets for FY 2024 was 13.4%.

The market value of assets is not used directly in the calculation of the unfunded actuarial accrued liability and the actuarial required contribution rate. An asset valuation method, which smooths the effect of market fluctuations, is applied to determine the value of assets used in the valuation, called the actuarial value of assets. In this year's valuation, the actuarial value of assets is $568.8 million, an increase of $33.5 million from the prior year. The components of change in the asset values are shown in the following table.

	Market Value ($M)		Actuarial Value ($M)	
Net Assets, June 30, 2023	$	528.7	$	535.3
- Employer and Member Contributions	+	20.0	+	20.0
- Benefit Payments and Admin Expenses	-	30.5	-	30.5
- Net Investment Income	+	70.1	+	44.0
Net Assets, June 30, 2024	$	588.3	$	568.8
Estimated Rate of Return*		13.4%		8.4%

* Rate of return on the market value of assets was provided by the Nebraska Investment Council.

Due to the smoothing of actual investment experience over the last five years, the rate of return on the actuarial value of assets was 8.4%, which is higher than the investment return assumption of 7.1% for FY 2024. As a result, there was an experience gain on assets of $6.5 million. As a result of the combined impact of the favorable investment experience for FY 2024 and the scheduled recognition of deferred investment gains and losses, the net deferred investment loss of $6.6 million in last year's valuation is now a net deferred investment gain of $19.5 million in the current valuation (actuarial value of assets is lower than market value). Please see Section 3 of this report for more detailed information on the market and actuarial value of assets.



The rate of return of the actuarial value of assets has been less volatile than the market value return, illustrating the benefit of using an asset smoothing method.

LIABILITIES

The actuarial accrued liability is that portion of the present value of future benefits that will not be paid by future normal costs, i.e. the portion allocated to past years of service. The difference between this liability and the actuarial value of assets as of the valuation date is called the unfunded actuarial accrued liability (UAAL). The dollar amount of unfunded actuarial accrued liability is reduced if the contributions to the System exceed the normal cost for the year plus interest on the prior year's UAAL.

The unfunded actuarial accrued liability as of July 1, 2024, using both the actuarial and market value of assets, is shown in the following table.

	Actuarial Value of Assets	Market Value of Assets
Actuarial Accrued Liability	$668,086,726	$668,086,726
Value of Assets	568,802,007	588,340,252
Unfunded Actuarial Accrued Liability	$99,284,719	$79,746,474
Funded Ratio	85.14%	88.06%

Absent investment returns lower than expected (7.0% for future plan years), the deferred investment gain will be recognized over the next four years and positively impact the plan's funded status. See Section 4 of the report for the detailed development of the unfunded actuarial accrued liability.

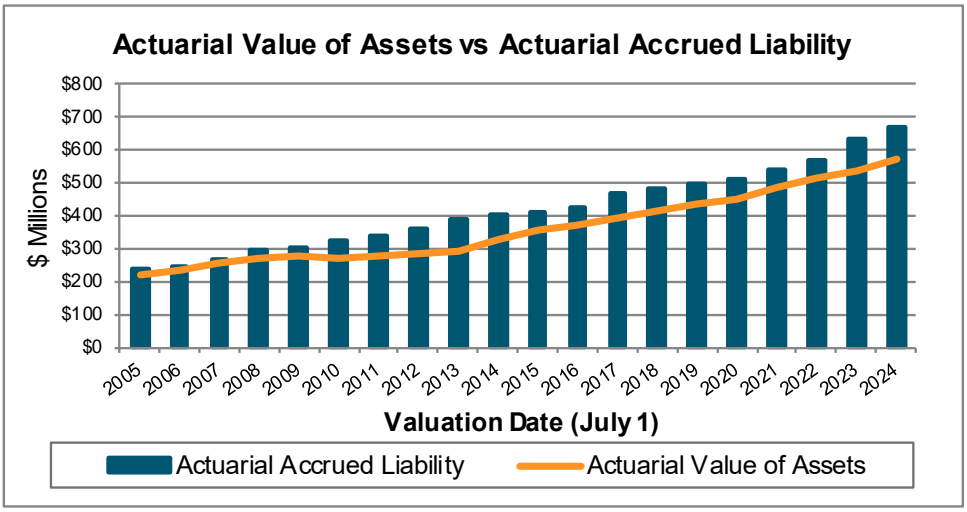
The components of the net decrease of $0.67 million in the UAAL from July 1, 2023 to July 1, 2024 are shown in the following table:

	($ Millions)
Unfunded Actuarial Accrued Liability, July 1, 2023	$99.96
- Expected change from amortization method	(1.03)
- Investment experience	(6.52)
- Liability experience	2.71
- Assumption changes	4.46
- Plan changes	(0.08)
- Other experience	(0.22)
Unfunded Actuarial Accrued Liability, July 1, 2024	$99.28

As shown above, various factors impacted the amount of the UAAL in the current valuation. Actuarial experience gains (losses), which result from actual experience that is more (less) favorable than anticipated by the actuarial assumptions, are reflected in the UAAL and are measured as the difference between the expected UAAL and the actual UAAL, taking into account any changes due to actuarial assumptions and methods or benefit provisions. Overall, the

System experienced a net actuarial experience gain of $3.8 million which may be explained by considering the separate experience of assets and liabilities. As noted earlier, there was an actuarial experience gain of $6.5 million on the actuarial value of assets. Unfavorable experience on System liabilities resulted in a net liability experience loss of $2.7 million, primarily due to salary increases that were higher than expected based on the actuarial assumptions. A breakdown of actuarial experience gains and losses by amount can be found in Table 8 of this report.

As the following graph of historical actuarial assets and actuarial accrued liabilities shows, the System's liabilities grew at a faster pace than the System's assets for the five-year period beginning after the FY 2009 market downturn as that experience was reflected in the smoothing method. As a result, the funded ratio declined over that period. Since 2013, the System's funded ratio has generally been improving. However, changes to the actuarial assumptions in the July 1, 2017 valuation, including lowering the assumed rate of return from 8.0% to 7.5%, increased the System's liabilities and lowered the funded ratio. The 2024 funded ratio remained steady as increasing liabilities due to assumption changes were offset by investment gains.

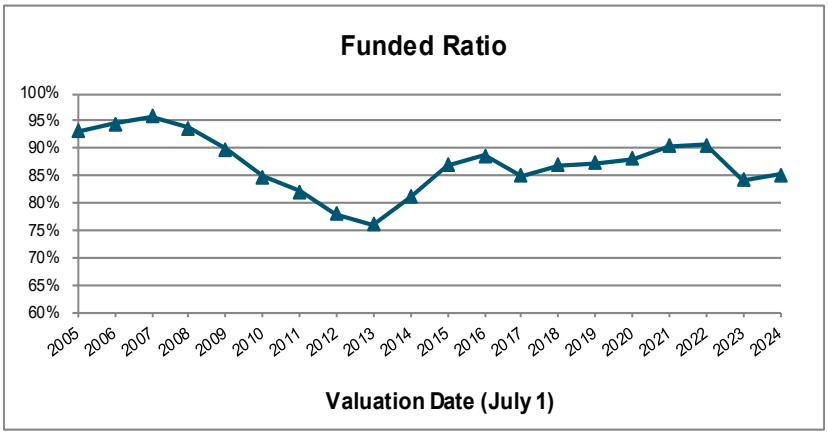


An evaluation of the UAAL purely on a dollar basis may not provide a complete analysis since only the difference between the assets and liabilities (which are both large numbers) is reflected. Another way to evaluate the UAAL and the progress made in its funding is to track the funded ratio, the ratio of the actuarial value of assets to the actuarial accrued liability. The funded status information, which is based on the actuarial value of assets, is shown below (in millions).

	7/1/2020	7/1/2021	7/1/2022	7/1/2023	7/1/2024
Funded Ratio (AVA/AAL)	88.13%	90.50%	90.67%	84.27%	85.14%
UAAL	$60.61	$51.37	$52.93	$99.96	$99.28

Note that the funded ratio does not indicate whether or not the System assets are sufficient to settle benefits earned to date. The funded ratio, by itself, also may not be indicative of future funding requirements. In addition, if the funded ratios were shown using the market value of assets, the results would be different.

The funded ratio over a longer period is shown in the following graph. Given the statutory contribution rate of 34.00% of pay (10.00% by members and 24.00% by the employer) and a combined contribution rate of 30.38% allocated to normal cost and administrative expenses, only a small portion of the total fixed contribution rate is available to fund the UAAL. As a result, additional contributions from the State will be necessary to improve the funded ratio absent actual investment experience in future years that is higher than the assumed rate of return.



ACTUARIAL REQUIRED CONTRIBUTION RATE

Effective July 1, 2024, the System is funded by statutory contribution rates of 10.00% of pay for members and 24.00% of pay by the employer. State statutes require the state of Nebraska to make an additional contribution if the regular, payroll-related contributions by employees and employers are insufficient to meet the actuarial required contribution rate for the plan year. The additional State contribution for each plan year is made on the July 1 following the plan year-end. **Based on the results of the July 1, 2024 actuarial valuation, an additional State contribution of 15.93% of pay, or $6,834,870, is necessary for the plan year ending June 30, 2025.**

Under the Entry Age Normal cost method, the actuarial required contribution rate consists of three components:

- A "normal cost" for the portion of projected liabilities allocated by the actuarial cost method to service of members during the year following the valuation date.
- An "administrative expense" load for the expenses expected to be paid from the trust for the year.
- An "unfunded actuarial accrued liability contribution" for the excess of the portion of projected liabilities allocated to service to date over the actuarial value of assets.

The UAAL contribution rate is determined by calculating the amortization payments as a level-percent of payroll. This methodology results in dollar amounts of payments that are lower in the initial years of the amortization period but increase each year in the future with the assumed payroll growth assumption (2.85% for plan year beginning July 1, 2024). Because the UAAL contribution rate is determined as a level-percent of payroll, the dollar amount of the UAAL contribution is scheduled to increase each year in the future, even if all actuarial assumptions are met. Therefore, if the actual increase in covered payroll is more/less than assumed, the UAAL

contribution rate will decrease/increase. The increase in covered payroll from the prior valuation was 6.9% compared to the 2.95% assumed increase in the July 1, 2023 valuation for plan year ending June 30, 2024, resulting in a decrease in the UAAL contribution rate of 0.75% in this valuation.

See Section 5 of the report for the detailed development of the actuarial required contribution rate and the corresponding dollar amount, which are summarized in the following table.

Contribution Rates	July 1, 2024	July 1, 2023
1. Normal Cost Rate	30.12%	30.07%
2. Administrative Expenses	0.26%	0.26%
3. UAAL Contribution Rate	19.55%	20.25%
4. Total Actuarial Required Contribution Rate	49.93%	50.58%
5. Member Contribution Rate	(10.00%)	(16.26%)
6. Employer Contribution Rate	(24.00%)	(16.26%)
7. Total Statutory Contribution Rate	(34.00%)	(32.52%)
8. Additional Required State Contribution Rate [4 + 7]	15.93%	18.06%
9. Estimated Payroll	$ 41,478,460	$ 38,809,028
10. Additional State Required Contribution* [8 * 9 with interest, but not less than $0]	$ 6,834,870	$ 7,253,460

* Reflects interest to the expected payment date, which is July 1 of the following year.

The actuarial required contribution rate for the plan year ending June 30, 2025 is 49.93%. The contribution rate of 10.00% for the member and 24.00% for the employer results in a total payroll-related statutory contribution rate of 34.00% of pay. As a result, there is a contribution shortfall this year of 15.93% of payroll, which is estimated to be $6.8 million.

The actuarial required contribution, based on the snapshot of the System taken on the valuation date of July 1 each year, will change as the deferred investment experience is recognized and other experience (both investment and demographic) impacts the System. Therefore, it is expected to change each year. To the extent the difference between the actual and expected experience is significant, the change in the actuarial required contribution rate is also expected to change significantly. This volatility in the actuarial required contribution rate can result in extreme volatility in the additional State contribution as it is the difference between the actuarial required contribution rate and the statutory contribution rate. Any material change in the actuarial required contribution rate will directly flow through and impact the additional State contribution.

The primary components of the change in the actuarial required contribution rate from the prior valuation are shown in the following table.

Total Actuarial Required Contribution Rate, July 1, 2023	50.58%
- Change in normal cost rate (before assumption changes)	(0.20%)
- Investment experience	(1.00%)
- Liability experience	0.42%
- Actual vs. expected payroll	(0.75%)
- Assumption changes	1.01%
- Plan changes	(0.08%)
- Other experience	(0.05%)
Total Actuarial Required Contribution Rate, July 1, 2024	49.93%

The historical actuarial required contributions and any resulting additional required State contributions as shown in the actuarial valuation report, whether or not actually contributed, are shown below:

History of Expected State Contributions			
Plan Year	Statutory State Contributions	Additional Appropriations	Total
2024/2025	$ 9,954,830	$ 6,834,870	$ 16,789,700
2023/2024	6,310,348	7,253,460	13,563,808
2022/2023	5,266,353	4,092,005	9,358,358
2021/2022	5,188,155	3,752,980	8,941,135
2020/2021	5,024,748	4,082,024	9,106,772
2019/2020	4,926,271	4,112,870	9,039,141
2018/2019	4,791,164	3,983,698	8,774,862
2017/2018	4,592,242	4,337,435	8,929,677
2016/2017	4,449,116	2,541,558	6,990,674
2015/2016	4,547,633	2,725,738	7,273,371
2014/2015	4,149,416	3,866,737	8,016,153
2013/2014	4,386,823	4,652,774	9,039,597
2012/2013	5,005,482	4,552,680	9,558,162
2011/2012	5,291,940	2,255,430	7,547,370
2010/2011	4,597,331	2,770,262	7,367,593
2009/2010	4,203,166	1,801,610	6,004,776
2008/2009	4,361,746	812,087	5,173,833
2007/2008	4,225,729	365,020	4,590,749
2006/2007	3,942,430	813,159	4,755,589
2005/2006	3,766,098	1,080,050	4,846,148

Note: Information before Plan Year 2013/2014 was produced by prior actuary.

RISK ASSESSMENT AND DISCLOSURE

A typical retirement plan faces many different risks. 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. Actuarial Standard of Practice Number 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. Risk evaluation is an important part of managing a defined benefit plan. Please see Section 6 of this report for an in-depth discussion of the specific risks facing the Nebraska State Patrol Retirement System.

SUMMARY OF PRINCIPAL RESULTS

	7/1/2024 Valuation	7/1/2023 Valuation	% Change
1. PARTICIPANT DATA			
Number of:			
Active Members			
- Tier 1	245	257	(4.7%)
- Tier 2	147	132	11.4%
- Total	392	389	0.8%
Retired Members and Beneficiaries	509	501	1.6%
DROP Participants	32	31	3.2%
Disabled Members	15	16	(6.3%)
Inactive Members	45	48	(6.3%)
Total Members	993	985	0.8%
Projected Annual Salaries of Active Members	$ 41,478,460	$ 38,809,028	6.9%
Annual Retirement Payments for Members in Receipt and DROP Participants	$ 30,434,076	$ 29,125,535	4.5%
2. ASSETS AND LIABILITIES			
a. Market Value of Assets	$ 588,340,252	$ 528,686,000	11.3%
b. Actuarial Value of Assets	568,802,007	535,331,442	6.3%
c. Total Actuarial Accrued Liability	668,086,726	635,290,980	5.2%
d. Unfunded Actuarial Accrued Liability [c - b]	$ 99,284,719	$ 99,959,538	(0.7%)
e. Funded Ratio (Actuarial Value of Assets) [b / c]	85.14%	84.27%	1.0%
f. Funded Ratio (Market Value of Assets) [a / c]	88.06%	83.22%	5.8%
3. EMPLOYER CONTRIBUTION RATES AS A PERCENT OF PAYROLL			
Normal Cost	30.12%	30.07%	0.2%
Administrative Expenses	0.26%	0.26%	0.0%
Amortization of Unfunded Actuarial Accrued Liability	19.55%	20.25%	(3.5%)
Actuarial Required Contribution Rate	49.93%	50.58%	(1.3%)
Member Contribution Rate	(10.00%)	(16.26%)	(38.5%)
Employer Contribution Rate	(24.00%)	(16.26%)	47.6%
Additional Required State Contribution Rate	15.93%	18.06%	(11.8%)
Additional Required State Contribution	$ 6,834,870	$ 7,253,460	(5.8%)

* Reflects interest to the expected payment date, which is July 1 of the following year.

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SECTION 2 – SCOPE OF THE REPORT

This report presents the actuarial valuation of the State Patrol Retirement System as of July 1, 2024. This valuation was prepared at the request of the Public Employees Retirement Board of the Nebraska Public Employees Retirement System.

Please pay particular attention to our actuarial certification letter, where the guidelines employed in the preparation of this report are outlined. We also comment on the sources and reliability of both the data and the actuarial assumptions upon which our findings are based. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief.

A summary of the findings which result from this valuation is presented in the previous section. Section 3 describes the assets and investment experience of the System. Sections 4 and 5 describe how the obligations (liabilities) of the System are to be met under the actuarial cost method in use. Section 6 discloses key maturity measurements and discusses the key risks facing the funding of the System. Section 7 includes some historical funding information.

This report includes several appendices:

- Appendix A Schedules of valuation data classified by various categories of members.
- Appendix B A summary of the current benefit structure, as determined by the provisions of governing law on July 1, 2024.
- Appendix C A summary of the actuarial methods and assumptions used to estimate liabilities and determine contribution rates.
- Appendix D A glossary of actuarial terms.

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SECTION 3 - ASSETS

In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is July 1, 2024. On that date, the assets available for the payment of benefits are appraised. The assets are compared with the liabilities of the System, which are generally in excess of assets. The actuarial process then leads to a method of determining the contributions needed by members and the employer in the future to balance the System's assets and liabilities.

Market Value of Assets

The current market value represents the "snapshot" or "cash-out" value of System assets as of the valuation date. In addition, the market value of assets provides a basis for measuring investment performance from time to time. Table 1 is a comparison, at market values, of System assets as of July 1, 2024 and July 1, 2023, in total and by investment category. Table 2 summarizes the change in the market value of assets from July 1, 2023 to July 1, 2024.

Actuarial Value of Assets

Due to extreme volatility, the market value of assets, which represents the "cash-out" value of System assets on a single day, may not be the best measure of the System's ongoing ability to meet its obligations. To arrive at a suitable value of assets for the actuarial valuation, a technique for determining the actuarial value of assets is used which dampens swings in the market value while still indirectly recognizing market values. Under the asset smoothing methodology, the difference between the dollar amount of the actual and expected investment return on the market value of assets is recognized evenly over a five-year period.

Table 3 shows the development of the actuarial value of assets (AVA) as of the valuation date.

TABLE 1

STATE PATROL RETIREMENT SYSTEM

MARKET VALUE OF ASSETS BY INVESTMENT CATEGORY

	June 30, 2024	June 30, 2023
1. Cash and Equivalents	$ 381,990	$ 78,982
2. Investments*	596,076,419	531,633,814
3. Capital Assets	46	58
4. Receivables and Prepaids	42,265,806	45,938,182
5. Accounts Payable	(50,384,009)	(48,965,036)
6. Net Assets Available for Pension Benefits	$ 588,340,252	$ 528,686,000

* Includes DROP account balances.

TABLE 2

STATE PATROL RETIREMENT SYSTEM

CHANGE IN MARKET VALUE OF ASSETS

	2024	2023
1. Market Value of Assets, Beginning of Year	$ 528,686,000	$ 494,616,603
2. Contributions		
(a) Member (includes purchased service)	$ 6,349,386	$ 5,162,332
(b) State	6,349,386	5,162,332
(c) State appropriations	7,253,460	4,092,005
(d) Total	$ 19,952,232	$ 14,416,669
3. Expenditures		
(a) Benefit payments	$ 27,591,777	$ 25,860,015
(b) Refunds	250,250	128,509
(c) DROP disbursements	2,499,805	2,182,593
(d) Administrative expenses	133,981	141,776
(e) Total	$ 30,475,813	$ 28,312,893
4. Investment Return, Net of Investment Expenses		
(a) Investment income	$ 11,532,041	$ 9,517,541
(b) Securities lending income	124,222	512,650
(c) Securities lending expense	(119,202)	(438,312)
(d) Net appreciation/(depreciation) in fair value of investments	58,622,238	38,357,230
(e) Other	18,534	16,512
(f) Net investment return	$ 70,177,833	$ 47,965,621
5. Market Value of Assets, End of Year [1 + 2(d) - 3(e) + 4(f)]	$ 588,340,252	$ 528,686,000
6. Rate of Return, Net of Expenses*	13.4%	9.9%

*Annual money-weighted rate of return, net of investment expense, as reported by the Nebraska Investment Council.

TABLE 3

STATE PATROL RETIREMENT SYSTEM

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

	Year End			
	6/30/2021	6/30/2022	6/30/2023	6/30/2024
1. Actuarial Value of Assets, Beginning of Year	$ 450,151,647	$ 489,208,407	$ 514,558,364	$ 535,331,442
2. Unrecognized Return Beginning of Year	(14,368,773)	62,873,314	(19,941,761)	(6,645,442)
3. Contributions During Year				
(a) Member	$ 5,081,804	$ 5,121,375	$ 5,162,332	$ 6,349,386
(b) State	5,081,804	5,121,375	5,162,332	6,349,386
(c) State appropriations	4,082,024	3,752,980	4,092,005	7,253,460
(d) Total	$ 14,245,632	$ 13,995,730	$ 14,416,669	$ 19,952,232
4. Benefit Payments and Admin Expenses During Year	23,050,795	24,454,760	26,001,791	27,725,758
5. Refund of Contributions/DROP Disbursements	3,205,747	1,888,119	2,311,102	2,750,055
6. Assumed Rate of Return	7.50%	7.30%	7.20%	7.10%
7. Expected Investment Income on (1), (2), (3), (4) and (5)	32,173,051	39,804,653	35,060,873	37,006,453
8. Actual Return on Market Value Net of Investment Expenses*	128,309,757	(45,117,969)	47,965,621	70,177,833
9. Return to be Spread, End of Year [8 - 7]	$ 96,136,706	$ (84,922,622)	$ 12,904,748	$ 33,171,380

*Prior to 6/30/2022, the return on the market value of assets was net of all expenses.

TABLE 3
(continued)

STATE PATROL RETIREMENT SYSTEM
AS OF JULY 1, 2024

10. Return to be Spread

Plan Year Ending	Return to be Spread	Unrecognized Percent	Unrecognized Return
2024	$33,171,380	80%	$26,537,104
2023	12,904,748	60%	7,742,849
2022	(84,922,622)	40%	(33,969,049)
2021	96,136,706	20%	19,227,341
			$19,538,245

11. Total Market Value of Assets as of July 1, 2024	$588,340,252
12. Total Actuarial Value of Assets as of July 1, 2024 [11 - 10]	$568,802,007
13. Asset Ratios	
(a) Actuarial Value to Market Value [12 / 11]	96.68%
(b) Market Value to Actuarial Value [11 / 12]	103.43%

Plan Year Ended	Gain/(Loss) Deferred to Future Years	Gain/(Loss) to be Recognized in Plan Year Ending			
		2025	2026	2027	2028
6/30/2021	$19,227,341	19,227,341			
6/30/2022	(33,969,049)	(16,984,524)	(16,984,525)		
6/30/2023	7,742,849	2,580,950	2,580,950	2,580,949	
6/30/2024	26,537,104	6,634,276	6,634,276	6,634,276	6,634,276
Total	$19,538,245	$11,458,043	($7,769,299)	$9,215,225	$6,634,276

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SECTION 4 – SYSTEM LIABILITIES

In the previous section, an actuarial valuation was compared with an inventory process, and an analysis was given of the inventory of assets of the State Patrol Retirement System as of the valuation date, July 1, 2024. In this section, the discussion will focus on the commitments (future benefit payments) of the System, which are referred to as its liabilities.

Table 4 contains an analysis of the actuarial present value of all future benefits (PVFB) for contributing active members, inactive members, retirees and their beneficiaries.

The liabilities summarized in Table 4 include the actuarial present value of all future benefits expected to be paid with respect to each member. For an active member, this value includes the measurement of both benefits already earned and future benefits to be earned. For all members, active and retired, the value extends over benefits earnable and payable for the rest of their lives and for the lives of the surviving beneficiaries.

All liabilities reflect the benefit provisions in place as of July 1, 2024.

Actuarial Accrued Liability

A fundamental principle in financing the liabilities of a retirement program is that the cost of its benefits should be related to the period in which benefits are earned, rather than to the period of benefit distribution. An actuarial cost method is a mathematical technique that allocates the present value of future benefits into annual costs. In order to do this allocation, it is necessary for the funding method to "breakdown" the present value of future benefits into two components:

(1) that which is attributable to the past and

(2) that which is attributable to the future.

Actuarial terminology calls the part attributable to the past the "past service liability" or the "actuarial accrued liability." The portion allocated to the future is known as the present value of future normal costs, with the specific piece of it allocated to the current year being called the "normal cost." Table 5 contains the calculation of actuarial accrued liability for the System. The Entry Age Normal actuarial cost method is used to develop the actuarial accrued liability.

TABLE 4

STATE PATROL RETIREMENT SYSTEM

PRESENT VALUE OF FUTURE BENEFITS (PVFB)
AS OF JULY 1, 2024

1. Active Employees		
(a) Retirement	$	321,365,131
(b) Termination		4,554,975
(c) Disability		9,503,624
(d) Death		1,938,693
(e) Total	$	337,362,423
2. Inactive Vested Members		10,887,535
3. Inactive Nonvested Members		268,861
4. DROP Account Balances		5,466,688
5. Disabled Members		8,069,389
6. Retirees		363,090,946
7. Beneficiaries		34,280,657
8. Total Present Value of Future Benefits	$	759,426,499

TABLE 5

STATE PATROL RETIREMENT SYSTEM

ACTUARIAL ACCRUED LIABILITY
AS OF JULY 1, 2024

1. Present Value of Future Benefits for Active Members	$	337,362,423
2. Present Value of Future Normal Costs for Active Members		
(a) Retirement	$	79,114,937
(b) Termination		5,223,152
(c) Disability		5,661,706
(d) Death		1,339,978
(e) Total	$	91,339,773
3. Actuarial Accrued Liability for Active Members [1 - 2(e)]	$	246,022,650
4. Actuarial Accrued Liability for Inactive Members	$	422,064,076
5. Total Actuarial Accrued Liability [3 + 4]	$	668,086,726
6. Actuarial Value of Assets	$	568,802,007
7. Unfunded Actuarial Accrued Liability [5 - 6]	$	99,284,719
8. Funded Ratio [6 / 5]		85.14%

TABLE 6

STATE PATROL RETIREMENT SYSTEM

ACTUARIAL BALANCE SHEET
AS OF JULY 1, 2024

ASSETS		
Actuarial Value of Assets		$ 568,802,007
Unfunded Actuarial Accrued Liability		99,284,719
Present Value of Future Normal Costs		91,339,773
Total Assets		$ 759,426,499
LIABILITIES		
Present Value of Future Benefits		
Active members		
Retirement	$ 321,365,131	
Termination	4,554,975	
Disability	9,503,624	
Death	1,938,693	
Total		337,362,423
Inactive members		11,156,396
Retirees, disabilities and beneficiaries*		410,907,680
Total		$ 759,426,499

* Includes DROP account balances.

TABLE 7

STATE PATROL RETIREMENT SYSTEM

ACTUARIAL GAIN/(LOSS)

Liabilities		
1. Actuarial Accrued Liability as of July 1, 2023	$	635,290,980
2. Normal Cost for Plan Year Ending June 30, 2024, Including New Hires		11,116,074
3. Benefit Payments During Plan Year Ending June 30, 2024		(30,341,832)
4. Interest at 7.10%		44,925,850
5. Assumption Changes		4,456,301
6. Plan Changes		(75,480)
7. Expected Actuarial Accrued Liability as of July 1, 2024	$	665,371,893
8. Actuarial Accrued Liability as of July 1, 2024	$	668,086,726
Assets		
9. Actuarial Value of Assets as of July 1, 2023	$	535,331,442
10. Contributions During Plan Year Ending June 30, 2024		19,952,232
11. Benefit Payments and Expenses During Plan Year Ending June 30, 2024		(30,475,813)
12. Interest at 7.10%		37,478,280
13. Expected Actuarial Value of Assets as of July 1, 2024	$	562,286,141
14. Actuarial Value of Assets as of July 1, 2024	$	568,802,007
Gain / (Loss)		
15. Actuarial Gain / (Loss) on Liabilities [7 - 8]	$	(2,714,833)
16. Actuarial Gain / (Loss) on Assets [14 - 13]		6,515,866
17. Total Actuarial Gain / (Loss) for Plan Year Ending June 30, 2024 [15 + 16]	$	3,801,033

TABLE 8

STATE PATROL RETIREMENT SYSTEM

GAIN/(LOSS) ANALYSIS BY SOURCE

Liability Sources		Gain/(Loss)
Retirement	$	2,210,000
Termination		115,000
Disability		236,000
Mortality		335,000
Salary		(2,980,000)
COLA		(1,720,000)
Miscellaneous		(911,000)
Total Liability Gain/(Loss)	$	(2,715,000)
Asset Gain/(Loss)	$	6,516,000
Net Actuarial Gain/(Loss)	$	3,801,000

TABLE 9

STATE PATROL RETIREMENT SYSTEM

PROJECTED BENEFIT PAYMENTS
AS OF JULY 1, 2024

Plan Year Ending June 30	Current Active Members	Current In-Pay Members	Total
2025	$ 2,518,000	$ 30,280,000	$ 32,798,000
2026	4,354,000	30,635,000	34,989,000
2027	5,810,000	30,888,000	36,698,000
2028	9,872,000	31,204,000	41,076,000
2029	11,122,000	31,585,000	42,707,000
2030	12,535,000	31,855,000	44,390,000
2031	14,237,000	32,050,000	46,287,000
2032	15,259,000	32,303,000	47,562,000
2033	17,420,000	32,443,000	49,863,000
2034	18,798,000	32,535,000	51,333,000
2035	19,512,000	32,616,000	52,128,000
2036	20,705,000	32,592,000	53,297,000
2037	21,447,000	32,508,000	53,955,000
2038	22,924,000	32,444,000	55,368,000
2039	23,586,000	32,258,000	55,844,000
2040	25,080,000	32,045,000	57,125,000
2041	27,638,000	31,748,000	59,386,000
2042	30,288,000	31,394,000	61,682,000
2043	31,938,000	30,981,000	62,919,000
2044	34,141,000	30,508,000	64,649,000
2045	36,382,000	29,975,000	66,357,000
2046	38,974,000	29,381,000	68,355,000
2047	40,781,000	28,725,000	69,506,000
2048	42,424,000	28,009,000	70,433,000
2049	45,423,000	27,234,000	72,657,000
2050	47,504,000	26,400,000	73,904,000
2051	49,210,000	25,512,000	74,722,000
2052	50,098,000	24,572,000	74,670,000
2053	51,111,000	23,582,000	74,693,000
2054	51,793,000	22,549,000	74,342,000

Note: Cash flows are the expected future non-discounted payments to current members. These numbers exclude refund payouts to any current nonvested inactives and assume future retirees elect the normal form of payment.

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SECTION 5 – EMPLOYER CONTRIBUTIONS

The previous two sections were devoted to a discussion of the assets and liabilities of the System. A comparison of Tables 3 and 4 indicates that current assets fall short of meeting the present value of future benefits (total liability). This is expected in all but a completely closed fund, where no further contributions are anticipated. In an active system, there will almost always be a difference between the actuarial value of assets and total liabilities. This deficiency has to be made up by future contributions and investment returns. An actuarial valuation sets out a schedule of future contributions that will deal with this deficiency in an orderly fashion.

The method used to determine the incidence of the contributions in various years is called the actuarial cost method. Under an actuarial cost method, the contributions required to meet the difference between current assets and current liabilities are allocated each year between three elements: (1) the normal cost rate, (2) administrative expenses and (3) the unfunded actuarial accrued liability contribution rate.

The term "fully funded" is often applied to a system in which contributions at the normal cost rate are sufficient to pay for the benefits of existing employees as well as for those of new employees. More often than not, systems are not fully funded, either because of past benefit improvements that have not been completely funded or because of actuarial deficiencies that have occurred because experience has not been as favorable as anticipated by the actuarial assumptions. Under these circumstances, an unfunded actuarial accrued liability (UAAL) exists. Likewise, when the actuarial value of assets is greater than the actuarial accrued liability, a surplus exists.

Description of Contribution Rate Components

The Entry Age Normal (EAN) actuarial cost method is used for the valuation. Under that method, the normal cost for each year from entry age to assumed exit age is a constant percentage of the member's year by year projected compensation. The portion of the present value of future benefits not provided by the present value of future normal costs is the actuarial accrued liability. The unfunded actuarial accrued liability/(surplus) represents the difference between the actuarial accrued liability and the actuarial value of assets as of the valuation date. The unfunded actuarial accrued liability is calculated each year and reflects experience gains and losses.

In general, contributions are computed in accordance with a level-percent of payroll funding objective. The actuarial required contribution rate, based on the July 1, 2024 actuarial valuation, will be used to determine the actuarial required employer contribution rate to the State Patrol Retirement System for the plan year ending June 30, 2025. Any additional State contributions are expected to be deposited on July 1, 2025 (State fiscal year end 2026). In this context, the term "contribution rate" means the percentage, which is applied to a particular active member payroll to determine the actual employer contribution amount (i.e., in dollars) for the group.

This approach is intended to promote stable contributions, balance cost among generations of taxpayers and members, and ensure adequate prefunding of benefits. The amortization schedule will fully fund the UAAL within 25 years, and the scheduled payments currently exceed the interest on the UAAL.

Contribution Rate Summary

In Table 10 the amortization payment related to the unfunded actuarial accrued liability, as of July 1, 2024, is developed. Table 11 develops the actuarial required contribution rate for the System and the amount of the required state contribution.

SECTION 5 – EMPLOYER CONTRIBUTIONS

The actuarial required contribution rates shown in this report are based on the actuarial assumptions and cost methods described in Appendix C.

TABLE 10

STATE PATROL RETIREMENT SYSTEM

SCHEDULE OF AMORTIZATION BASES

We believe the use of the layered amortization policy, with new bases over 25 years and the remainder of the legacy base over 12 years, complies with Actuarial Standard of Practice Number 4. This policy will fully amortize the individual, as well as the total, unfunded actuarial accrued liability within a reasonable timeframe and/or reduce the amount of the UAAL by a reasonable amount within a sufficiently short period.

Amortization Bases	Original Amount	July 1, 2024 Remaining Payments	Date of Last Payment	Outstanding Balance as of July 1, 2024	Annual Contribution*
2006 UAAL Base	$ 13,632,330	12	7/1/2036	$ 11,609,045	$ 1,232,403
2007 UAAL Base	(2,328,213)	13	7/1/2037	(2,086,951)	(208,253)
2008 UAAL Base	7,528,427	14	7/1/2038	7,064,198	666,478
2009 UAAL Base	12,752,991	15	7/1/2039	12,468,082	1,117,719
2010 UAAL Base	17,735,331	16	7/1/2040	17,992,878	1,539,296
2011 UAAL Base	12,260,750	17	7/1/2041	12,862,603	1,054,104
2012 UAAL Base	19,767,597	18	7/1/2042	21,378,896	1,683,925
2013 Experience Base	13,785,867	19	7/1/2043	15,329,018	1,163,917
2014 Experience Base	(18,572,226)	20	7/1/2044	(20,557,618)	(1,508,691)
2015 Experience Base	(22,807,048)	21	7/1/2045	(25,070,884)	(1,782,581)
2016 Experience Base	(6,583,578)	22	7/1/2046	(7,171,638)	(495,087)
2017 Assumption Change Base	27,947,994	23	7/1/2047	30,110,267	2,022,108
2017 Experience Base	(6,040,886)	23	7/1/2047	(6,508,256)	(437,073)
2018 Experience Base	(7,711,191)	24	7/1/2048	(8,241,180)	(539,353)
2019 Experience Base	335,966	25	7/1/2049	355,600	22,716
2020 Experience Base	(2,126,062)	26	7/1/2050	(2,225,343)	(138,967)
2021 Assumption Change Base	6,936,227	22	7/1/2046	7,023,421	484,855
2021 Experience Base	(15,827,503)	22	7/1/2046	(16,026,469)	(1,106,371)
2022 Assumption Change Base	3,850,944	23	7/1/2047	3,886,097	260,978
2022 Experience Base	(1,523,975)	23	7/1/2047	(1,537,887)	(103,280)
2023 Assumption Change Base	4,214,934	24	7/1/2048	4,235,516	277,198
2023 Experience Base	43,821,349	24	7/1/2048	44,035,328	2,881,942
2024 Assumption Change Base	4,456,301	25	7/1/2049	4,456,301	284,678
2024 Plan Change Base	(75,480)	25	7/1/2049	(75,480)	(4,822)
2024 Experience Base	(4,020,825)	25	7/1/2049	(4,020,825)	(256,859)
Total				**$ 99,284,719**	**$ 8,110,980**

* Contribution amount reflects mid-year timing.

Note: Payments on each UAAL base are determined as a level-percent of payroll using a 2.85% payroll growth assumption.

TABLE 10
(continued)

STATE PATROL RETIREMENT SYSTEM

AMORTIZATION SCHEDULE FOR THE UNFUNDED ACTUARIAL ACCRUED LIABILITY

1. Total UAAL Amortization Payments	$	8,110,980
2. Projected Payroll for FY 2025	$	41,478,460
3. UAAL Amortization Payment Rate		19.55%

TABLE 11

STATE PATROL RETIREMENT SYSTEM

ACTUARIAL REQUIRED CONTRIBUTION FOR PLAN YEAR ENDING JUNE 30, 2025 and DEVELOPMENT OF ADDITIONAL STATE CONTRIBUTION

1. Normal Cost Rate		30.12%
2. Administrative Expenses		0.26%
3. UAAL Amortization Rate (see Table 10)		19.55%
4. Total Actuarial Required Contribution Rate [1 + 2 + 3]		49.93%
5. Statutory Member Contribution Rate		10.00%
6. Statutory Employer Contribution Rate		24.00%
7. Additional Required State Contribution Rate [4 - 5 - 6, but not less than 0%]		15.93%
8. Projected Payroll for FY 2025	$	41,478,460
9. Additional Required State Contribution as of July 1, 2025 [7 * 8 * $1.071^{/2}$]	$	6,834,870
10. Total State Contributions		
(a) State statutory amount	$	9,954,830
(b) Additional State contribution as of July 1, 2025		6,834,870
(c) Total	$	16,789,700

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SECTION 6 – RISK CONSIDERATIONS

Actuarial Standards of Practice are issued by the Actuarial Standards Board and are binding on credentialed actuaries practicing in the United States. These standards generally identify what the actuary should consider, document and disclose when performing an actuarial assignment. In September 2017, Actuarial Standard of Practice Number 51, *Assessment and Disclosure of Risk in Measuring Pension Obligations*, (ASOP 51) was issued as final with application to measurement dates on or after November 1, 2018. This ASOP, which applies to funding valuations, actuarial projections, and actuarial cost studies of proposed plan changes, was first applicable for the July 1, 2019 actuarial valuation for the Nebraska State Patrol Retirement System (System).

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.

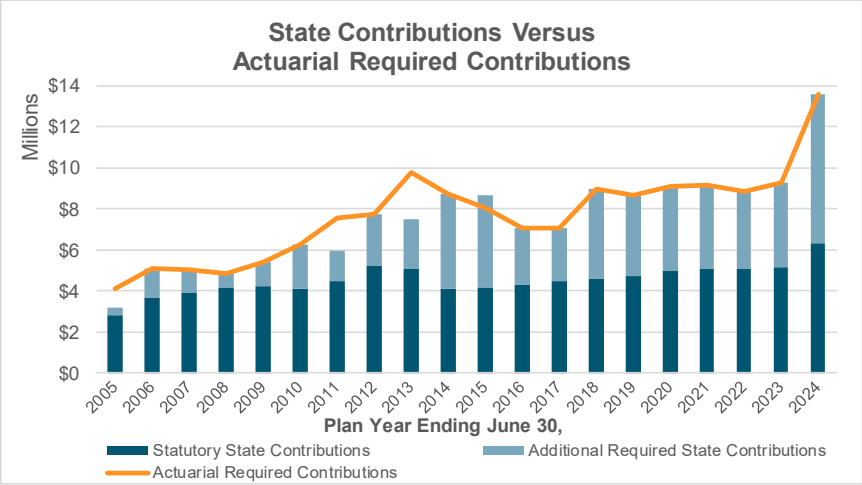
There are a number of risks inherent in the funding of a defined benefit plan. These include:

- 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.

Although the external risks do exist, ASOP 51 does not require the actuary to opine on those risks, so no discussion is included here.

Actual vs Actuarial Contributions

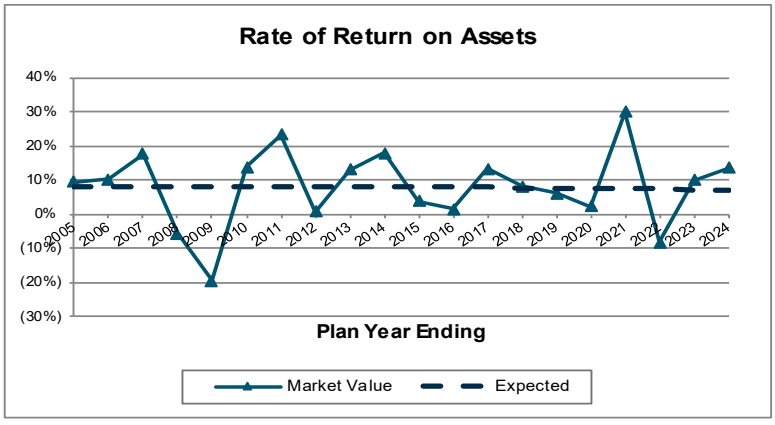
The System is funded by statutory contribution rates of 10.00% of pay for members and 24.00% of pay for the employer. State statutes require the State to make an additional contribution if the regular, payroll-related contributions by employees and the employer are insufficient to meet the actuarial required contribution amount for the plan year. The additional State contribution for each plan year is made on the July 1 following the plan year-end. There is a direct correlation between healthy, well-funded retirement systems and consistent contributions equal to the full actuarial required contribution rate each year. As the following graph shows, the State has met the full actuarial required contribution requirement in 17 of the last 20 years.



One of the positive factors regarding the funding of the State Patrol Retirement System is the State's commitment to make contributions that are at least equal to the full actuarial required contribution. As a result, the funded ratio for the System has historically been strong.

Investment Return Risk

The most significant risk factor for most public retirement systems, including the Nebraska State Patrol Retirement System, is investment return because of the volatility of returns and the size of plan assets compared to payroll (see Table 12). A perusal of historical returns over 10-20 years reveals that the actual return each year is rarely close to the assumed return.

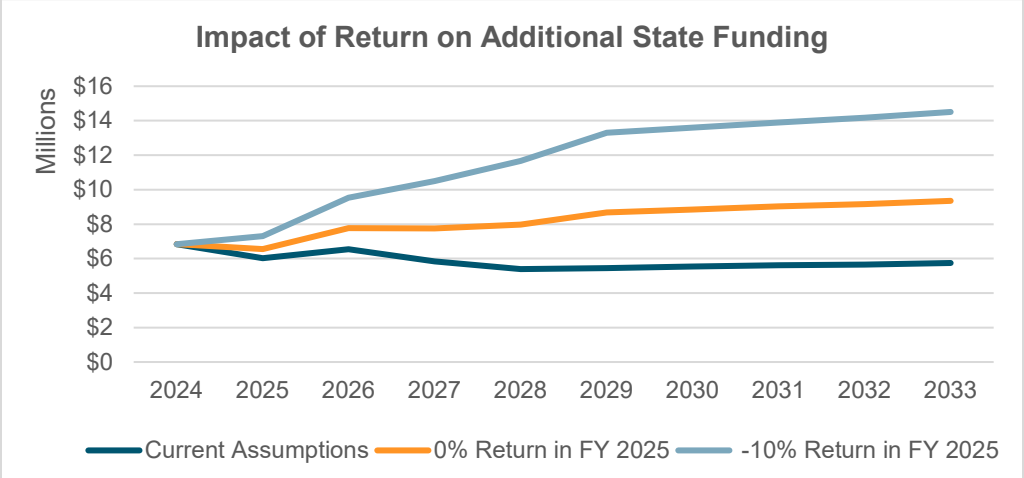


This is not unexpected, given the underlying capital market assumptions and the System's asset allocation, but it creates significant contribution risk. As Table 12 illustrates, a return that varies from the 7.00% assumption by 10.0% (-3.00% or 17.00%) equates to 142% of payroll. Even with amortizing the actuarial experience loss over 25 years, the impact on the actuarial required contribution rate is dramatic (9.06% once the experience is fully recognized).

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 approximately $773.7 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. However, this informational disclosure is required for all plans whether corporate or governmental and care should be taken to ensure the "one size fits all" metric is not misconstrued.

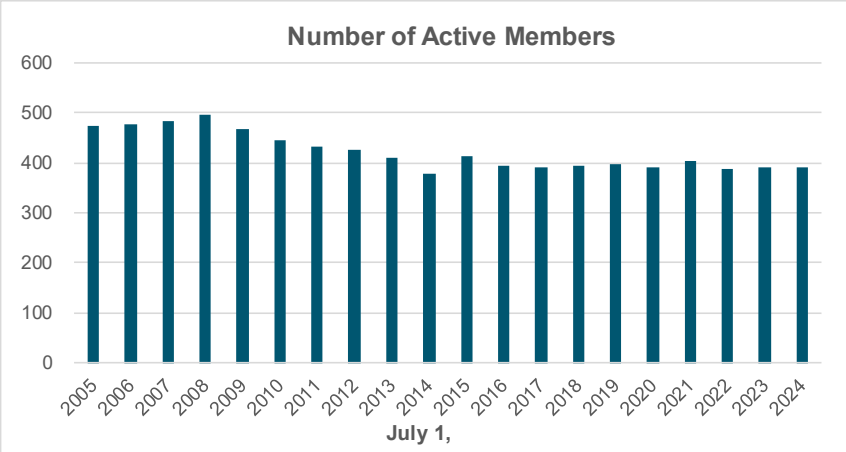
Contribution Risks

The actuarial required contribution, determined this year, based on the snapshot of the System taken on the valuation date of July 1, will change each year as the deferred investment experience is recognized and other experience (both investment and demographic) impacts the System. Therefore, the actuarial required contribution rate is expected to change each year. To the extent the difference between the actual and expected experience is significant, the change in the actuarial required contribution rate is also expected to change significantly. This volatility in the actuarial required contribution rate results in potentially extreme volatility in the additional State contribution (see graph below) due to the fact it is the difference between the actuarial required contribution rate and the statutory contribution rates. Any material difference in the actuarial required contribution rate will impact the additional State contribution.



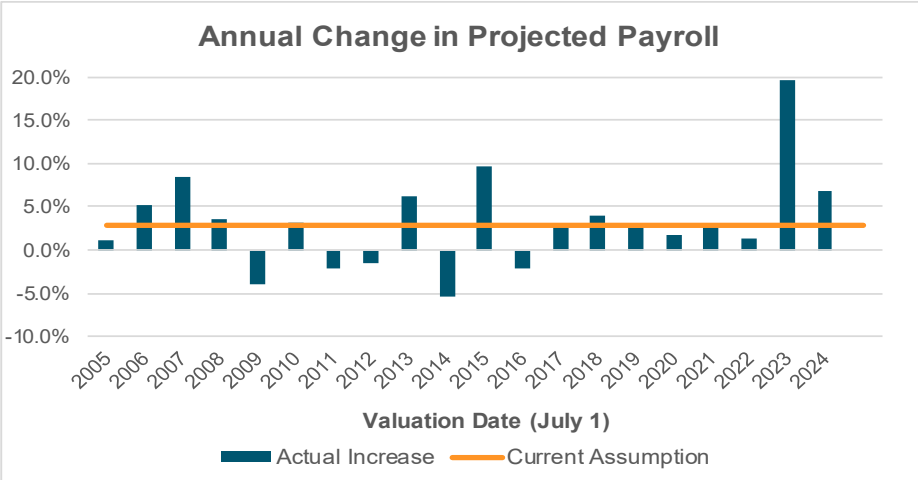
Finally, the unfunded actuarial accrued liability is amortized as a level percentage of payroll, so the UAAL payment schedule reflects an increasing dollar amount of payments over time in anticipation of increasing payroll. However, payroll generally does not grow as expected if the number of active members is not stable or increasing. When payroll does not grow as expected,

the UAAL contribution rate will be higher than expected even if the dollar amount of the payment is the same as scheduled. The following graph shows the number of active members in the last twenty valuations:



While the valuation process captures differences between actual and expected number of active members (and payroll) each year and adjusts the actuarial required contribution rate, a decline in the active member count will create pressure on the contribution rate and push more of the funding of the UAAL to the additional State contribution.

The decline in the number of active members and low salary increases over much of this period has resulted in actual payroll changes that have been below the expected increase (based on the payroll growth assumption). The following graph shows the actual versus expected increase in the projected payroll from FY 2005 through FY 2024. Actual increases in covered payroll have been low and even negative at times. Despite the spike during FY 2023, the average annual percentage change to projected payroll was 3.1% during this 20-year period. While this does not necessarily impact the amount of the UAAL payment directly, it does cause the UAAL contribution rate to be higher.



Demographic Risks

A key demographic risk for all retirement systems, including the Nebraska State Patrol Retirement System, is improvements in mortality (longevity) greater than anticipated. While the actuarial assumptions reflect small, continuous improvements in mortality experience over time and these assumptions are refined every experience study, the risk arises because there is a possibility of some sudden shift, perhaps due to 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, as experienced with the COVID-19 pandemic. This type of event is also 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 following exhibits 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.

TABLE 12

STATE PATROL RETIREMENT SYSTEM

HISTORICAL ASSET VOLATILITY RATIOS

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	Covered Payroll	Asset Volatility Ratio	Increase in ACR with a Return 10% Lower than Assumed*
July 1, 2005	$221,307,954	$22,882,413	9.67	6.18%
July 1, 2006	241,017,483	24,057,960	10.02	6.40%
July 1, 2007	279,618,100	26,072,859	10.72	6.85%
July 1, 2008	259,479,803	26,979,643	9.62	6.15%
July 1, 2009	205,033,476	25,922,439	7.91	5.05%
July 1, 2010	229,574,640	26,765,816	8.58	5.48%
July 1, 2011	278,146,750	26,195,473	10.62	6.78%
July 1, 2012	278,311,367	25,794,219	10.79	6.89%
July 1, 2013	309,589,784	27,417,644	11.29	7.21%
July 1, 2014	357,316,892	25,933,848	13.78	8.80%
July 1, 2015	363,922,631	28,422,706	12.80	8.18%
July 1, 2016	361,155,486	27,806,977	12.99	8.30%
July 1, 2017	397,137,172	28,629,936	13.87	8.86%
July 1, 2018	420,683,030	29,795,799	14.12	9.02%
July 1, 2019	436,611,997	30,578,962	14.28	9.12%
July 1, 2020	435,782,874	31,112,989	14.01	8.95%
July 1, 2021	552,081,721	32,005,893	17.25	11.02%
July 1, 2022	494,616,603	32,448,265	15.24	9.74%
July 1, 2023	528,686,000	38,809,028	13.62	8.70%
July 1, 2024	588,340,252	41,478,460	14.18	9.06%

Note: Years prior to July 1, 2013 were provided by the prior actuary.

*The impact of asset smoothing is not reflected in the impact on the Actuarial Contribution Rate (ACR). Current year assumptions are used for all years shown.

The assets at July 1, 2024 are 14 times payroll, so underperforming the investment return assumption by 10.00% (i.e., earn -3.00% for one year) creates an actuarial loss of about $59 million, or 142% 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 significant contribution risk associated with volatile investment returns.

TABLE 13

STATE PATROL RETIREMENT SYSTEM

HISTORICAL CASH FLOWS

The net cash flow of a system (contributions minus benefit payments and expenses), as a percentage of the beginning of year asset value, indicates the sensitivity of the system to short-term investment returns. Mature plans can have large amounts of benefit payments compared to contributions, particularly if they are well funded. In fact, this is one reason for prefunding retirement benefits – so a portion of investment return can help to pay plan benefits. When there is negative cash flow, investment losses in the short-term are compounded by the net withdrawal from plan assets leaving a smaller asset base to try to recover from the investment losses. Large negative cash flow can also create liquidity needs for the system.

Year End	Market Value of Assets (MVA)	Contributions	Benefit Payments	Net Cash Flow	Net Cash Flow as a Percent of MVA
6/30/2005	$221,307,954	$6,011,266	$10,269,807	($4,258,541)	(1.92%)
6/30/2006	241,017,483	8,261,575	11,313,637	(3,052,062)	(1.27%)
6/30/2007	279,618,100	8,535,103	12,180,422	(3,645,319)	(1.30%)
6/30/2008	259,479,803	8,525,981	12,936,189	(4,410,208)	(1.70%)
6/30/2009	205,033,476	9,073,382	13,450,493	(4,377,111)	(2.13%)
6/30/2010	229,574,640	10,403,865	13,756,761	(3,352,896)	(1.46%)
6/30/2011	278,146,750	10,433,680	14,951,984	(4,518,304)	(1.62%)
6/30/2012	278,311,367	12,983,827	15,159,390	(2,175,563)	(0.78%)
6/30/2013	309,589,784	12,622,461	16,928,305	(4,305,844)	(1.39%)
6/30/2014	357,316,892	12,887,225	20,010,413	(7,123,188)	(1.99%)
6/30/2015	363,922,631	12,826,689	19,458,540	(6,631,851)	(1.82%)
6/30/2016	361,155,486	11,419,059	19,576,376	(8,157,317)	(2.26%)
6/30/2017	397,137,172	11,554,062	24,139,604	(12,585,542)	(3.17%)
6/30/2018	420,683,030	13,567,863	23,828,680	(10,260,817)	(2.44%)
6/30/2019	436,611,997	13,403,910	24,953,776	(11,549,866)	(2.65%)
6/30/2020	435,782,874	14,053,288	24,953,060	(10,899,772)	(2.50%)
6/30/2021	552,081,721	14,245,632	26,256,542	(12,010,910)	(2.18%)
6/30/2022	494,616,603	13,995,730	26,231,520	(12,235,790)	(2.47%)
6/30/2023	528,686,000	14,416,669	28,171,117	(13,754,448)	(2.60%)
6/30/2024	588,340,252	19,952,232	30,341,832	(10,389,600)	(1.77%)

Note: Years prior to 6/30/2013 were provided by the prior actuary.

TABLE 14

STATE PATROL RETIREMENT SYSTEM

LIABILITY MATURITY MEASUREMENTS

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 (see Table 15) and a growing percentage of retiree liability (see table below). With more of the total liability residing with retirees, investment volatility has a greater impact on the funding of the system because it is more difficult to restore the system financially after losses occur when there is comparatively less payroll over which to spread costs.

Actuarial Valuation Date	Retiree Liability (a)	Total Actuarial Liability (b)	Retiree Percentage (a) / (b)
July 1, 2005	$137,890,496	$236,026,471	58.4%
July 1, 2006	151,774,452	245,373,102	61.9%
July 1, 2007	162,565,102	265,846,597	61.1%
July 1, 2008	171,898,267	291,996,719	58.9%
July 1, 2009	186,078,948	305,291,065	61.0%
July 1, 2010	201,734,175	321,901,446	62.7%
July 1, 2011	210,595,076	339,554,456	62.0%
July 1, 2012	232,413,652	362,298,975	64.1%
July 1, 2013	246,649,393	386,875,100	63.8%
July 1, 2014	263,401,639	401,415,518	65.6%
July 1, 2015	272,309,342	410,210,579	66.4%
July 1, 2016	279,581,643	421,923,380	66.3%
July 1, 2017	303,829,524	465,066,035	65.3%
July 1, 2018	307,996,815	480,092,201	64.2%
July 1, 2019	315,463,480	496,519,265	63.5%
July 1, 2020	327,900,484	510,757,085	64.2%
July 1, 2021	355,959,053	540,576,453	65.8%
July 1, 2022	375,264,749	567,483,653	66.1%
July 1, 2023	393,622,869	635,290,980	62.0%
July 1, 2024	410,907,680	668,086,726	61.5%

Note: Years prior to July 1, 2013 were provided by the prior actuary.

TABLE 15

STATE PATROL RETIREMENT SYSTEM

HISTORICAL MEMBER STATISTICS

Valuation Date July 1,	Number of Active Members	Number of Retired Members	Active/ Retired
2005	473	316	1.50
2006	477	331	1.44
2007	484	341	1.42
2008	496	352	1.41
2009	468	372	1.26
2010	444	390	1.14
2011	433	402	1.08
2012	427	422	1.01
2013	409	438	0.93
2014	378	453	0.83
2015	413	464	0.89
2016	393	471	0.83
2017	391	478	0.82
2018	395	478	0.83
2019	397	488	0.81
2020	392	503	0.78
2021	403	525	0.77
2022	388	537	0.72
2023	389	548	0.71
2024	392	556	0.71

Note: Years prior to July 1, 2013 were provided by the prior actuary.

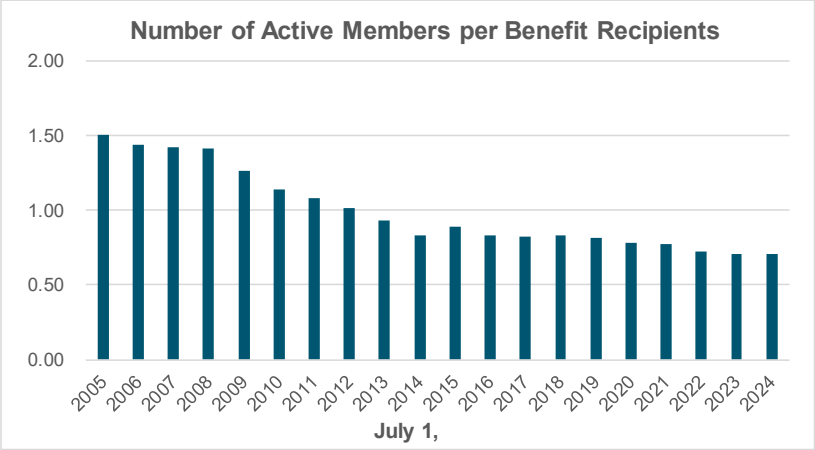


TABLE 16

STATE PATROL RETIREMENT SYSTEM

COMPARISON OF VALUATION RESULTS UNDER ALTERNATE INVESTMENT RETURN ASSUMPTIONS ($ in Thousands)

This exhibit compares the key July 1, 2024 valuation results under five (5) different investment return assumptions to illustrate the impact of different assumptions on the funding of the System. Note that only the investment return assumption is changed, as identified in the heading below. All other assumptions are unchanged for purposes of this analysis.

Investment Return Assumption	**6.50%**	**6.75%**	**7.00%**	**7.25%**	**7.50%**
Contributions					
Normal Cost Rate	34.28%	32.12%	30.12%	28.27%	26.55%
Administrative Expenses	0.26%	0.26%	0.26%	0.26%	0.26%
UAAL Amortization Rate	25.36%	22.45%	19.55%	16.68%	13.81%
Total Actuarial Required Contribution	59.90%	54.83%	49.93%	45.21%	40.62%
Member Contribution Rate	(10.00%)	(10.00%)	(10.00%)	(10.00%)	(10.00%)
Employer Contribution Rate	(24.00%)	(24.00%)	(24.00%)	(24.00%)	(24.00%)
Additional Required State Contribution Rate	25.90%	20.83%	15.93%	11.21%	6.62%
Additional Required State Contribution	**$11,087**	**$8,927**	**$6,835**	**$4,815**	**$2,847**
Actuarial Accrued Liability	$712,437	$689,666	$668,087	$647,619	$628,190
Actuarial Value of Assets	568,802	568,802	568,802	568,802	568,802
Unfunded Actuarial Accrued Liability*	$143,635	$120,864	$99,285	$78,817	$59,388
Funded Ratio	79.84%	82.48%	85.14%	87.83%	90.55%

Note: All other assumptions are unchanged for purposes of this sensitivity analysis.

*Numbers may not add due to rounding.

SECTION 7 – HISTORICAL FUNDING AND OTHER INFORMATION

This section of the report provides a historical perspective on the System's funding and contribution practices, along with other information that may be of interest.

TABLE 17

STATE PATROL RETIREMENT SYSTEM

HISTORICAL FUNDING INFORMATION

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded Actuarial Accrued Liability (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a % of Covered Payroll [(b - a) / c]
June 30, 2005	$219,831,273	$236,026,471	$16,195,198	93.1%	$22,882,413	70.8%
June 30, 2006	231,740,772	245,373,102	13,632,330	94.4%	24,057,960	56.7%
June 30, 2007	254,662,819	265,846,597	11,183,778	95.8%	26,072,859	42.9%
June 30, 2008	273,393,928	291,996,719	18,602,791	93.6%	26,979,643	69.0%
June 30, 2009	274,119,906	305,291,065	31,171,159	89.8%	25,922,439	120.2%
June 30, 2010	273,306,925	321,901,446	48,594,521	84.9%	26,765,816	181.6%
June 30, 2011	279,192,669	339,554,456	60,361,787	82.2%	26,195,473	230.4%
June 30, 2012	282,810,785	362,298,975	79,488,190	78.1%	25,794,219	308.2%
June 30, 2013	294,468,029	386,875,100	92,407,071	76.1%	27,417,644	337.0%
June 30, 2014	325,966,725	401,415,518	75,448,793	81.2%	25,933,848	290.9%
June 30, 2015	356,446,470	410,210,579	53,764,109	86.9%	28,422,706	189.2%
June 30, 2016	374,205,616	421,923,380	47,717,764	88.7%	27,806,977	171.6%
June 30, 2017	395,149,596	465,066,035	69,916,439	85.0%	28,629,936	244.2%
June 30, 2018	417,588,175	480,092,201	62,504,026	87.0%	29,795,799	209.8%
June 30, 2019	433,655,500	496,519,265	62,863,765	87.3%	30,578,962	205.6%
June 30, 2020	450,151,647	510,757,085	60,605,438	88.1%	31,112,989	194.8%
June 30, 2021	489,208,407	540,576,453	51,368,046	90.5%	32,005,893	160.5%
June 30, 2022	514,558,364	567,483,653	52,925,289	90.7%	32,448,265	163.1%
June 30, 2023	535,331,442	635,290,980	99,959,538	84.3%	38,809,028	257.6%
June 30, 2024	568,802,007	668,086,726	99,284,719	85.1%	41,478,460	239.4%

Note: Information before 2013 was produced by the prior actuary.

TABLE 18

STATE PATROL RETIREMENT SYSTEM

HISTORICAL FUNDING INFORMATION

SCHEDULE OF CONTRIBUTIONS FROM THE EMPLOYER

Plan Year Ending	Actuarial Required Contributions	Percent Contributed
June 30, 2005	$ 4,121,155	77%
June 30, 2006	5,081,930	100%
June 30, 2007	5,058,621	100%
June 30, 2008	4,855,700	100%
June 30, 2009	5,384,789	100%
June 30, 2010	6,260,122	100%
June 30, 2011	7,563,126	79%
June 30, 2012	7,774,506	100%
June 30, 2013	9,768,585	77%
June 30, 2014	8,752,627	100%
June 30, 2015	8,073,824	100%
June 30, 2016	7,053,408	100%
June 30, 2017	7,053,110	100%
June 30, 2018	8,952,649	100%
June 30, 2019	8,693,805	100%
June 30, 2020	9,083,079	100%
June 30, 2021	9,163,828	100%
June 30, 2022	8,874,355	100%
June 30, 2023	9,254,337	100%
June 30, 2024	13,602,846	100%

Note: Contribution information is consistent with that shown in the GASB 67 report prepared for the System.

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MEMBER DATA RECONCILIATION

	Active Members	Members in DROP	Inactive Vested	Inactive Non-vested	Retirees and Beneficiaries	Disabled Members	Total
As of July 1, 2023	389	31	29	19	501	16	985
Changes in status							
a) Retirement	(6)	(5)	(1)	0	12	0	0
b) DROP	(6)	6	0	0	0	0	0
c) Death	0	0	0	0	(10)	(1)	(11)
d) Non-vested terminations	(4)	0	0	4	0	0	0
e) Vested terminations	(1)	0	1	0	0	0	0
f) Contribution refund	(1)	0	0	(5)	0	0	(6)
g) Beneficiaries in receipt	0	0	0	0	6	0	6
h) Disability retirements	0	0	0	0	0	0	0
i) Return to active service	2	0	(1)	(1)	0	0	0
j) Expired benefits	0	0	0	0	0	0	0
Total changes in status	(16)	1	(1)	(2)	8	(1)	(11)
New entrants	19	0	0	0	0	0	19
Data Corrections	0	0	0	0	0	0	0
Net Change	3	1	(1)	(2)	8	(1)	8
As of July 1, 2024	392	32	28	17	509	15	993

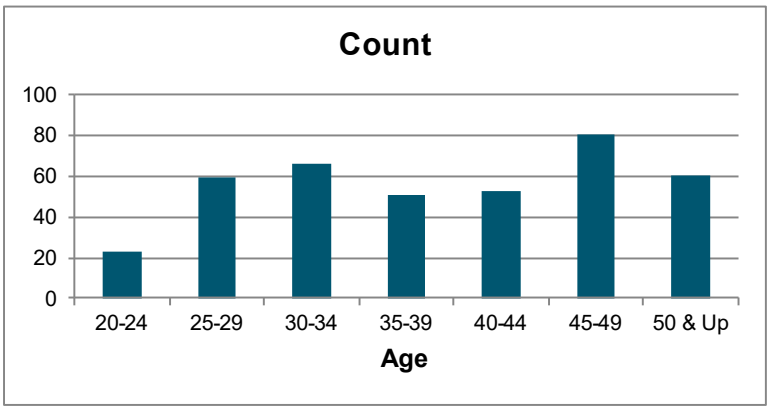
SUMMARY OF MEMBERSHIP DATA

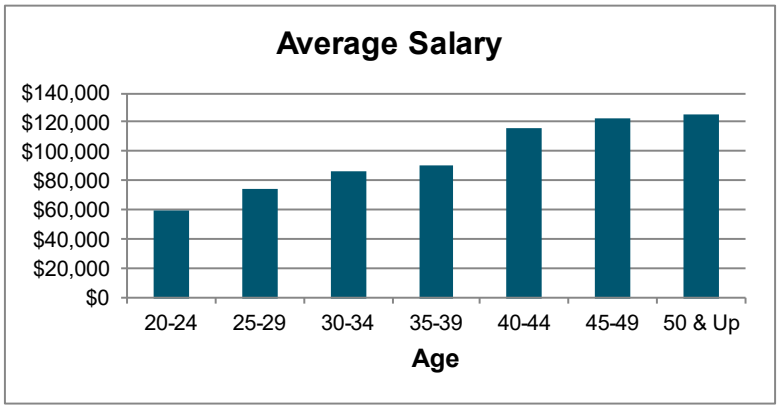
A. ACTIVE MEMBERS	July 1, 2024	July 1, 2023	% Change
1. Number of Active Members			
(a) Before assumed retirement age	384	384	0.0%
(b) Beyond assumed retirement age	8	5	60.0%
(c) Total	392	389	0.8%
2. Annual Reported Salary			
(a) Before assumed retirement age	$ 38,404,413	$ 30,595,014	25.5%
(b) Beyond assumed retirement age	1,105,604	539,149	105.1%
(c) Total	$ 39,510,017	$ 31,134,163	26.9%
3. Accumulated Contributions	$ 57,781,079	$ 52,169,645	10.8%
4. Active Member Averages			
(a) Age	39.6	39.7	(0.3%)
(b) Service	13.0	13.0	0.0%
(c) Compensation	$ 100,791	$ 80,036	25.9%
(d) Accumulated contributions	$ 147,401	$ 134,112	9.9%
B. INACTIVE MEMBERS			
1. Number of Inactive Members			
(a) System nonvested (refund only)	17	19	(10.5%)
(b) System vested	28	29	(3.4%)
(c) Total	45	48	(6.3%)
2. Accumulated Member Contributions	$ 4,485,382	$ 4,372,289	2.6%
3. Inactive Members Averages			
(a) Age (vested members only)	48.4	47.3	2.3%
(b) Accumulated member contributions	$ 99,675	$ 91,089	9.4%
C. RETIREES, DISABLEDS, AND BENEFICIARIES			
1. Number of Members			
(a) Retired	389	384	1.3%
(b) Disabled	15	16	(6.3%)
(c) Beneficiaries	120	117	2.6%
(d) DROP	32	31	3.2%
(e) Total	556	548	1.5%
2. Annual Benefits			
(a) Retired	$ 23,790,647	$ 22,773,604	4.5%
(b) Disabled	599,659	626,893	(4.3%)
(c) Beneficiaries	3,656,517	3,475,386	5.2%
(d) DROP	2,387,253	2,249,652	6.1%
(e) Total	$ 30,434,076	$ 29,125,535	4.5%
3. Market Value of DROP Account Balances	$ 5,466,688	$ 5,295,476	3.2%

ACTIVE MEMBERS
AS OF JULY 1, 2024

Total

	Count			Reported FY 2024 Earnings		
Age	Male	Female	Total	Male	Female	Total
20-24	19	4	23	$ 1,133,021	$ 252,767	$ 1,385,788
25-29	48	11	59	3,598,574	759,643	4,358,217
30-34	61	5	66	5,224,237	444,408	5,668,645
35-39	44	7	51	4,122,076	522,962	4,645,038
40-44	50	3	53	5,832,114	303,012	6,135,126
45-49	75	5	80	9,218,244	597,759	9,816,003
50 & Up	59	1	60	7,369,395	131,805	7,501,200
Total	356	36	392	$ 36,497,661	$ 3,012,356	$ 39,510,017

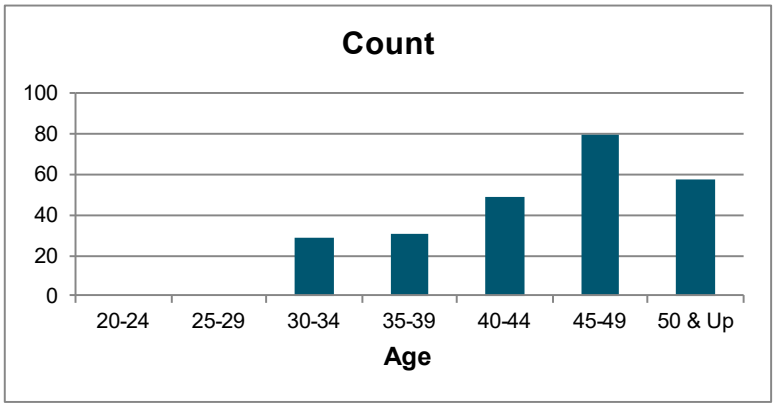


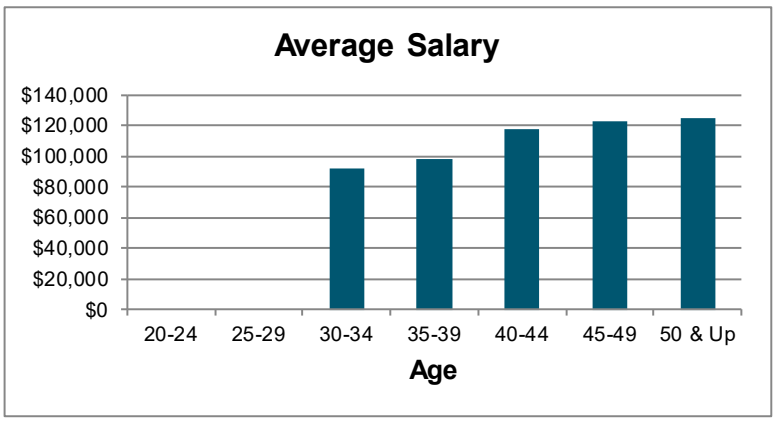


ACTIVE MEMBERS
AS OF JULY 1, 2024

Tier 1

	Count			Reported FY 2024 Earnings		
Age	Male	Female	Total	Male	Female	Total
20-24	0	0	0	$ 0	$ 0	$ 0
25-29	0	0	0	0	0	0
30-34	28	1	29	2,554,198	108,640	2,662,838
35-39	26	5	31	2,660,596	375,445	3,036,041
40-44	47	2	49	5,571,599	218,130	5,789,729
45-49	74	5	79	9,137,959	597,759	9,735,718
50 & Up	56	1	57	7,013,998	131,805	7,145,803
Total	231	14	245	$ 26,938,350	$ 1,431,779	$ 28,370,129

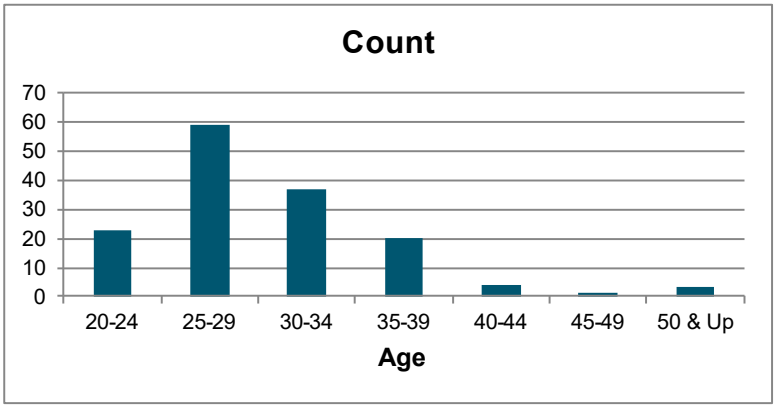


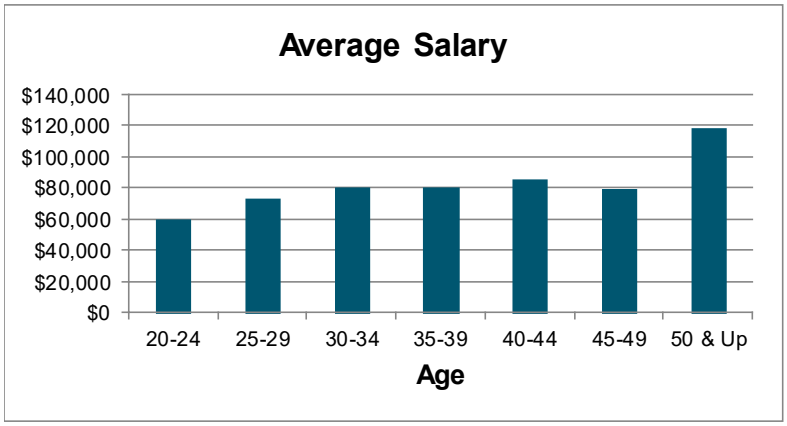


ACTIVE MEMBERS
AS OF JULY 1, 2024

Tier 2

	Count			Reported FY 2024 Earnings		
Age	Male	Female	Total	Male	Female	Total
20-24	19	4	23	$ 1,133,021	$ 252,767	$ 1,385,788
25-29	48	11	59	3,598,574	759,643	4,358,217
30-34	33	4	37	2,670,039	335,768	3,005,807
35-39	18	2	20	1,461,480	147,517	1,608,997
40-44	3	1	4	260,515	84,882	345,397
45-49	1	0	1	80,285	0	80,285
50 & Up	3	0	3	355,397	0	355,397
Total	125	22	147	$ 9,559,311	$ 1,580,577	$ 11,139,888





AGE AND SERVICE DISTRIBUTION
AS OF JULY 1, 2024

Age		0-4	5-9	10-14	15-19	20-24	Over 25	Total
20-24	Number	23	0	0	0	0	0	23
	Total Salary	$ 1,385,788	$ 0	$ 0	$ 0	$ 0	$ 0	$ 1,385,788
	Average Sal.	$ 60,252	$ 0	$ 0	$ 0	$ 0	$ 0	$ 60,252
25-29	Number	43	16	0	0	0	0	59
	Total Salary	$ 3,067,732	$ 1,290,485	$ 0	$ 0	$ 0	$ 0	$ 4,358,217
	Average Sal.	$ 71,343	$ 80,655	$ 0	$ 0	$ 0	$ 0	$ 73,868
30-34	Number	12	52	2	0	0	0	66
	Total Salary	$ 918,059	$ 4,519,530	$ 231,056	$ 0	$ 0	$ 0	$ 5,668,645
	Average Sal.	$ 76,505	$ 86,914	$ 115,528	$ 0	$ 0	$ 0	$ 85,889
35-39	Number	11	24	13	3	0	0	51
	Total Salary	$ 868,885	$ 2,097,196	$ 1,342,849	$ 336,108	$ 0	$ 0	$ 4,645,038
	Average Sal.	$ 78,990	$ 87,383	$ 103,296	$ 112,036	$ 0	$ 0	$ 91,079
40-44	Number	2	5	5	32	9	0	53
	Total Salary	$ 165,632	$ 448,132	$ 541,156	$ 3,785,829	$ 1,194,377	$ 0	$ 6,135,126
	Average Sal.	$ 82,816	$ 89,626	$ 108,231	$ 118,307	$ 132,709	$ 0	$ 115,757
45-49	Number	1	0	4	8	62	5	80
	Total Salary	$ 80,285	$ 0	$ 429,372	$ 923,978	$ 7,631,001	$ 751,367	$ 9,816,003
	Average Sal.	$ 80,285	$ 0	$ 107,343	$ 115,497	$ 123,081	$ 150,273	$ 122,700
50 & Up	Number	1	2	1	7	41	8	60
	Total Salary	$ 73,358	$ 282,039	$ 89,059	$ 796,015	$ 5,155,125	$ 1,105,604	$ 7,501,200
	Average Sal.	$ 73,358	$ 141,020	$ 89,059	$ 113,716	$ 125,735	$ 138,201	$ 125,020
Total	Number	93	99	25	50	112	13	392
	Total Salary	$ 6,559,739	$ 8,637,382	$ 2,633,492	$ 5,841,930	$ 13,980,503	$ 1,856,971	$ 39,510,017
	Average Sal.	$ 70,535	$ 87,246	$ 105,340	$ 116,839	$ 124,826	$ 142,844	$ 100,791

MEMBERS PARTICIPATING IN DROP
AS OF JULY 1, 2024

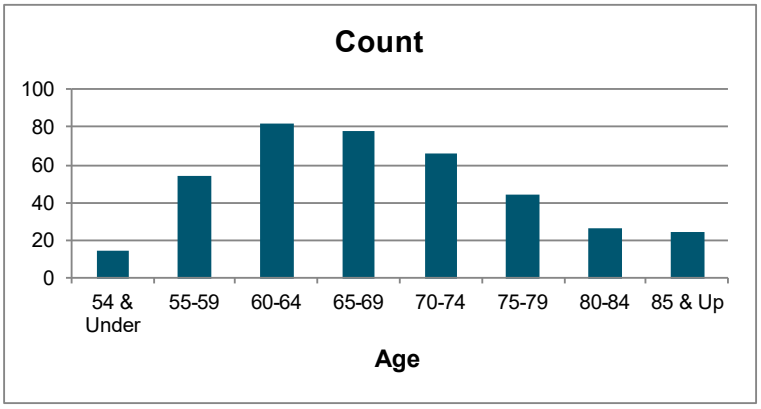
	Count			Annual Benefits		
Age	Male	Female	Total	Male	Female	Total
49 & Under	0	0	0	$ 0	$ 0	$ 0
50-51	7	0	7	600,791	0	600,791
52-53	6	0	6	459,279	0	459,279
54-55	13	0	13	870,637	0	870,637
56-57	3	0	3	247,650	0	247,650
58-59	3	0	3	208,896	0	208,896
60 & Up	0	0	0	0	0	0
Total	32	0	32	$ 2,387,253	$ 0	$ 2,387,253

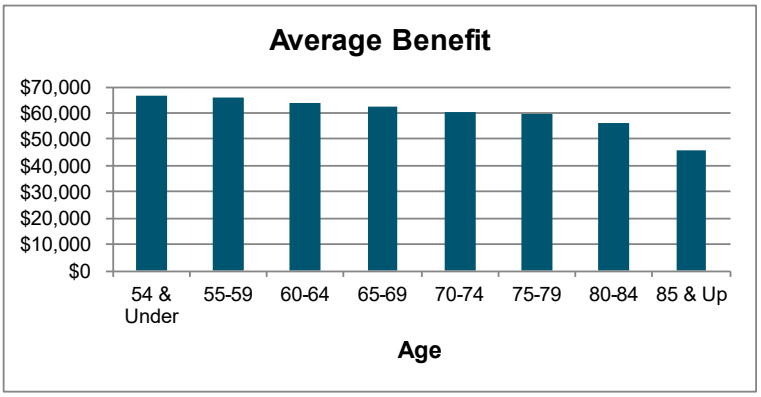
INACTIVE VESTED MEMBERS
AS OF JULY 1, 2024

	Count			Annual Benefits		
Age	Male	Female	Total	Male	Female	Total
20-24	0	0	0	$ 0	$ 0	$ 0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	6	0	6	155,242	0	155,242
45-49	10	0	10	333,416	0	333,416
50-54	10	2	12	386,889	71,124	458,013
55 & Up	0	0	0	0	0	0
Total	26	2	28	$ 875,547	$ 71,124	$ 946,671

RETIRED MEMBERS
AS OF JULY 1, 2024

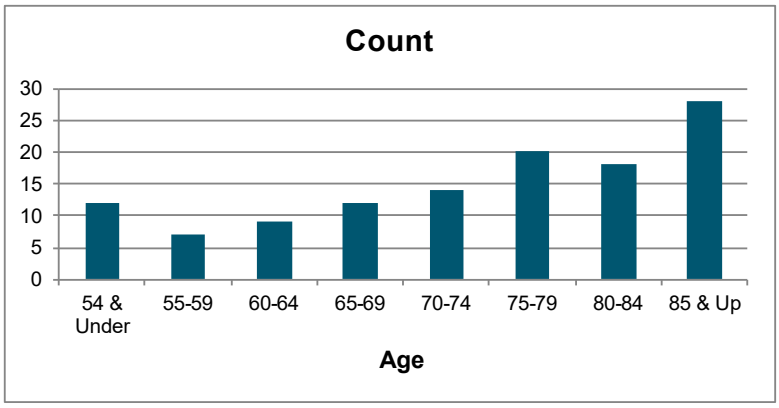
	Count			Annual Benefits		
Age	Male	Female	Total	Male	Female	Total
54 & Under	15	0	15	$ 995,001	$ 0	$ 995,001
55-59	50	4	54	3,284,463	275,680	3,560,143
60-64	76	6	82	4,844,839	383,872	5,228,711
65-69	72	6	78	4,513,690	362,893	4,876,583
70-74	64	2	66	3,912,475	56,769	3,969,244
75-79	43	1	44	2,546,013	69,322	2,615,335
80-84	26	0	26	1,453,372	0	1,453,372
85 & Up	24	0	24	1,092,258	0	1,092,258
Total	370	19	389	$ 22,642,111	$ 1,148,536	$ 23,790,647

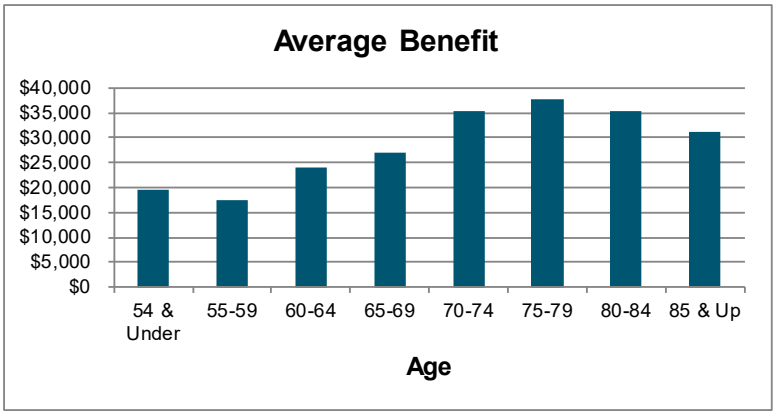




BENEFICIARIES
AS OF JULY 1, 2024

	Count			Annual Benefits		
Age	Male	Female	Total	Male	Female	Total
54 & Under	1	11	12	$ 23,801	$ 210,611	$ 234,412
55-59	0	7	7	0	122,527	122,527
60-64	0	9	9	0	217,238	217,238
65-69	0	12	12	0	324,986	324,986
70-74	0	14	14	0	495,791	495,791
75-79	0	20	20	0	756,025	756,025
80-84	0	18	18	0	634,805	634,805
85 & Up	1	27	28	35,021	835,712	870,733
Total	2	118	120	$ 58,822	$ 3,597,695	$ 3,656,517





DISABLED MEMBERS
AS OF JULY 1, 2024

	Count			Annual Benefits		
Age	Male	Female	Total	Male	Female	Total
54 & Under	7	1	8	$ 289,489	$ 33,230	$ 322,719
55-59	1	0	1	28,928	0	28,928
60-64	0	0	0	0	0	0
65-69	0	1	1	0	40,405	40,405
70-74	3	0	3	119,378	0	119,378
75-79	2	0	2	88,229	0	88,229
80-84	0	0	0	0	0	0
85 & Up	0	0	0	0	0	0
Total	13	2	15	$ 526,024	$ 73,635	$ 599,659

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APPENDIX B – SUMMARY OF PLAN PROVISIONS

Member	Any member of the Nebraska State Patrol, permanent force.
Participation Date	Date of becoming a member.
Benefit Tiers	Tier 1 refers to participants who joined the plan prior to July 1, 2016. Tier 2 refers to participants who joined the plan on or after July 1, 2016, as well as Tier 1 participants who took a refund and returned to the plan on or after July 1, 2016.
Definitions	
Covered pay	Gross annual earnings subject to contributions.
Final average compensation	For Tier 1 participants, it is the average of the highest three 12-month periods of covered pay, ending on the earlier of the participant's termination date or retirement date. For Tier 2 participants, it is the average of the highest five 12-month periods of covered pay, ending on the earlier of the participant's termination date or retirement date.
Salary caps	For Tier 2 participants only, increases in compensation during the final five plan years of employment will be capped at 8% per year.
Pension service	Length of service includes all service with the Nebraska State Patrol, permanent force, computed to the nearest one-twelfth year, plus declared emergency service in the armed forces.
Fiscal year	Twelve month period ending June 30.
Member and employer contributions	Participants contribute 10.0% of covered pay. Such contributions are credited with interest based on the 1-year treasury yield curve on July 1 of each year, as determined by State Statutes. Employer contributions on covered pay are 24.0% of monthly salary. (From July 1, 2013 to July 1, 2024, employee and employer contribution rates were 16.0% of pay for Tier 1 members and 17.0% for Tier 2 members. Prior to July 1, 2013, employee and employer contribution rates were 19.0% of pay.). The State makes any additional contributions that are actuarially required.

Pension benefit	3.0% of Final Average Compensation times Pension Service. The benefit is subject to a maximum of 75% of Final Average Compensation. Effective July 1, 2001, an automatic annual cost-of-living adjustment (COLA) equal to the CPI-W index is granted to each participant who has been retired for at least one full fiscal year. For Tier 1 participants, the COLA is capped at 2.5%, unless the benefit drops below 60% of the purchasing power of the original benefit. For Tier 2 participants, the COLA is capped at 1.0% and there is no purchasing power floor.
Normal Retirement Date (NRD)	First of month coinciding with or next following (a) the completion of 25 years of service and attaining age 50, (b) the completion of ten years of service and attaining age 55, or (c) attaining age 60 regardless of service.

Eligibility for Benefits

Deferred vested	Termination for reasons other than death, disability, or retirement after completing at least six years of pension service.
Disability retirement	Retirement by reason of disability as defined by State Statutes.
Early retirement	Retirement before NRD and on or after both attaining age 50 and completing ten years of pension service.
Normal retirement	Retire on NRD.
Postponed retirement	Retire after NRD.
Post-retirement death benefit	Death after retirement with surviving spouse or dependent children under age 19. For non-disability retirement, the surviving spouse must have been married to the member at the date of retirement.
Pre-retirement death benefit	Death prior to retirement.

Monthly Benefits Paid Upon the Following Events

Normal retirement	Pension benefit determined as of NRD.
Early retirement	Pension benefit determined as of early retirement date, reduced by 5/9% for each month that commencement (which must be after age 50 and ten years of service) of payment precedes the earlier of age 55 or completion of 25 years of service. No reduction is made after 25 years of service.
Postponed retirement	Monthly pension benefit determined as of actual retirement date.

Termination with deferred vested benefit

Refund of contributions with regular interest or a percentage of the pension benefit determined as of termination date, reduced by 5/9% for each month that commencement (which must be after age 50 and ten years of service) of payment precedes the earlier of age 55 or completion of 25 years of service. This percentage is based upon completed years of pension service as follows:

Years	Vested Percentage
5 and under	0%
6	20
7	40
8	60
9	80
10 or more	100

Disability retirement

A monthly benefit equal to 50% of current monthly salary at the date of disablement for members with less than 17 years of service.

For members with more than 17 years of service, a monthly benefit equal to the product of 3% of final monthly salary, times total years of service subject to a maximum of 75% of Final Average Compensation.

Pre-retirement death benefits

Surviving spouse or dependent children under age 19:
Benefit is computed as if member retired for disability on the date of death. This benefit is payable to the surviving spouse as long as spouse has dependent children under age 19. If spouse dies or remarries, 75% of this benefit continues to children until the youngest attains age 19. If there are no dependent children under age 19, 75% of this benefit is payable to the surviving spouse until death or remarriage.

No surviving spouse or dependent children under age 19:
A lump sum equal to the member's contributions plus regular interest.

Post-retirement death benefits

100% of member's annuity is payable to the surviving spouse provided spouse has dependent children under 19. If there is no surviving spouse or spouse dies or remarries, 75% of member's annuity continues to children until the youngest attains age 19. If there are no dependent children under age 19, 75% of member's annuity continues to surviving spouse.

Forms of payment	Normal form is 75% Joint and Survivor benefit. Members may also elect a refund of contributions. If there is no surviving spouse or dependent children under age 19, the member's accumulated contributions with interest are paid to the beneficiary or estate.
Deferred Retirement Option Plan (DROP)	A Tier 1 member may elect to participate in the DROP after they attain age 50 with 25 years of service. A member can continue to work while participating in the DROP, but must terminate employment within 5 years of entry into the DROP. The member's retirement benefits would be calculated as of the DROP entry date. The monthly payments that begin at entry into the DROP are accumulated until the member terminates service, at which time the DROP accumulated benefits and investment income can be paid as a lump sum, rollover or annuity. The COLA for retirees would not apply to the member during participation in the DROP and both the member and employer contributions cease upon entry into the DROP. Tier 2 members cannot participate in DROP.

Benefits Reflected in Valuation

All benefits were valued, including future cost of living increases granted by statute.

Plan Provisions Effective After July 1, 2024

No future changes in plan provisions were recognized in determining the funded status or in determining the actuarial soundness of statutory contribution levels.

Changes in Plan Provisions Since the Prior Year

There has been one change to plan provisions since the prior year. The 2024 Nebraska Legislature passed Legislative Bill 196 which decreased the member contribution rate to 10.00% of pay and increased the employer contribution rate to 24.00% of pay.

A. ACTUARIAL METHODS

1. **Calculation of Normal Cost and Actuarial Accrued Liability:** The method used to determine the normal cost and actuarial accrued liability was the Entry Age Actuarial Cost Method described below.

Entry Age Actuarial Cost Method

Projected pension and preretirement spouse's death benefits were determined for all active members who had not reached age 60 or 25 years of service. Cost factors designed to produce annual costs as a level percentage of each member's expected compensation in each year from the assumed entry age to the assumed retirement age were applied to the projected benefits to determine the normal cost (the portion of the total cost of the plan allocated to the current year under the method). The normal cost is determined by summing intermediate results for active members who had not reached age 60 or 25 years of service and determining an average normal cost rate which is then related to the total payroll of active members who had not reached age 60 or 25 years of service. The actuarial assumptions shown in Appendix C were used in determining the projected benefits and cost factors. The actuarial accrued liability for active members (the portion of the total cost of the plan allocated to prior years under the method) was determined as the excess of the actuarial present value of projected benefits over the actuarial present value of future normal costs.

The actuarial accrued liability for retired members and their beneficiaries currently receiving benefits, active members who either reached age 60 or 25 years of service, terminated vested members and disabled members not yet receiving benefits was determined as the actuarial present value of the benefits to be paid. No future normal costs are payable for these members.

The actuarial accrued liability under this method at any point in time is the theoretical amount of the fund that would have been accumulated had annual contributions equal to the normal cost been made in prior years (it does not represent the liability for benefits accrued to the valuation date). The unfunded actuarial accrued liability is the excess of the actuarial accrued liability over the actuarial value of plan assets measured on the valuation date. Under the Entry Age Normal method, experience gains or losses, i.e., decreases or increases in actuarial accrued liabilities attributable to deviations in experience from the actuarial assumptions, adjust the unfunded actuarial accrued liability.

The unfunded actuarial accrued liability is amortized using the "layered" approach. The unfunded actuarial accrued liability as of July 1, 2006 was the initial or legacy amortization base, amortized over a closed 30-year period. Changes in the unfunded actuarial accrued liability due to assumption changes or actuarial experience gains/losses are amortized over separate 25-year amortization bases, each with their own individual payment schedules, beginning June 30, 2021 and after. If the UAAL is less than or equal to zero, then all prior bases shall be considered fully funded and the UAAL shall be amortized over a 25-year period as of the actuarial valuation date. The UAAL amortization payment schedules are determined using the level percent of payroll methodology, where payments escalate annually with the assumed increase in payroll growth.

Please note that the use of closed amortization periods, coupled with the State contributing the full actuarial required contribution each year, will result in the System being fully funded at the end of the amortization period, if all actuarial assumptions are met. In our opinion, the amortization policy meets the requirements of Actuarial Standard of Practice Number 4.

In our professional judgement, the funding policy adopted by the Board 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.

2. **Calculation of the Actuarial Value of Assets:** The actuarial value of assets is based on a five-year smoothing method and is determined by spreading the effect of each year's investment return in excess of or below the expected return. The market value of assets as the valuation date is reduced by the sum of the following:

   i. 80% of the return to be spread during the first year preceding the valuation date,

   ii. 60% of the return to be spread during the second year preceding the valuation date,

   iii. 40% of the return to be spread during the third year preceding the valuation date, and

   iv. 20% of the return to be spread during the fourth year preceding the valuation date.

   The return to be spread is the difference between (1) the actual investment return on market value of assets and (2) the expected return of actuarial value of assets. Effective July 1, 2000, the expected return on actuarial value of assets includes interest on the previous year's unrecognized return.

B. VALUATION PROCEDURES

Data Procedures

Salaries for first year members are annualized by NPERS and reflected in the Calculated Salary field in the census data. This is used in the valuation process for new members. For continuing active members, the Accumulated Salary field from the data, representing the actual salary earned in the prior fiscal year, is used in the valuation process.

As part of the comprehensive 2023 to 2025 SLEBC contract agreement, State Patrol officers will receive a 5% pay rate increase effective July 1, 2024. The impact of this increase is reflected in the current actuarial valuation.

When multiple records are received, the record with the oldest beneficiary date of birth is valued.

Other Valuation Procedures

The compensation amounts used in the projection of benefits and liabilities for active members were prior plan year compensations. Salary increases are assumed to apply to annual amounts.

Projected benefits were limited by the dollar limitation required by the Internal Revenue Code Section 415 as it applies to governmental plans and compensation limited by Section 401(a)(17).

Decrements are assumed to occur mid-year, except that immediate retirement is assumed for those who are at or above the age at which retirement rates are 100%. Standard adjustments are made for multiple decrements.

No actuarial accrued liability is included for participants who terminated without being vested prior to the valuation date, except those who are owed a refund of contributions.

Changes in Methods and Procedures Since the Prior Year

There have been no changes to methods or procedures since the prior valuation.

APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS

ECONOMIC ASSUMPTIONS

1. Investment Return

7.00% per annum, compounded annually, net of expenses.

2. Inflation

2.35% per annum, compounded annually.

3. Salary Increase

Rates vary by service as follows:

	Rates by Service			
Years	Inflation	Productivity	Merit	Total
1	2.35%	0.50%	5.50%	8.35%
2	2.35	0.50	4.50	7.35
3	2.35	0.50	3.60	6.45
4	2.35	0.50	3.00	5.85
5	2.35	0.50	2.60	5.45
6	2.35	0.50	2.30	5.15
7	2.35	0.50	2.05	4.90
8	2.35	0.50	1.85	4.70
9	2.35	0.50	1.65	4.50
10	2.35	0.50	1.60	4.45
11	2.35	0.50	1.56	4.41
12	2.35	0.50	1.53	4.38
13-25	2.35	0.50	1.50	4.35
26	2.35	0.50	1.20	4.05
27	2.35	0.50	0.90	3.75
28	2.35	0.50	0.60	3.45
29	2.35	0.50	0.30	3.15
30+	2.35	0.50	0.00	2.85

4. Payroll Growth

2.85% per annum.

5. Interest on Employee Contributions

2.50% per annum, compounded annually.

6. Increases on Compensation And Benefit Limits

2.35% per annum on the 401(a)(17) compensation limit and the 415 benefit limit.

APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS

DEMOGRAPHIC ASSUMPTIONS

1. Mortality

a. Healthy lives - Active members — Pub-2010 General Members (Above Median) Employee Mortality Table (100% of male rates, 95% of female rates), both male and female rates set back one year, projected generationally using MP-2019 modified to 75% of the ultimate rates.

b. Healthy lives – Retired members — Pub-2010 General Members (Above Median) Retiree Mortality Table (100% of male rates, 95% of female rates), both male and female rates set back one year, projected generationally using MP-2019 modified to 75% of the ultimate rates.

c. Healthy lives – Beneficiaries — Pub-2010 General Members (Above Median) Contingent Survivor Mortality Table (100% of male rates, 95% of female rates), both male and female rates set back one year, projected generationally using MP-2019 modified to 75% of the ultimate rates.

d. Disabled lives — Pub-2010 Non-Safety Disabled Retiree Mortality Table (static table).

e. Healthy mortality rates and projection scale are shown below at sample ages:

	Pre-retirement Mortality	
	Mortality Rate (Base Rates)	
Sample Age	Males	Females
20	0.04%	0.01%
30	0.04	0.01
40	0.07	0.03
50	0.11	0.06
60	0.27	0.16

	Post-retirement Mortality	
	Mortality Rate (Base Rates)	
Sample Age	Males	Females
50	0.11%	0.06%
60	0.53	0.35
70	1.17	0.80
80	3.60	2.60
90	11.73	9.07

	Projection Scale – Post-retirement Mortality					
	Scale (2020)		Scale (2030)		Scale (2040)	
Sample Age	Males	Females	Males	Females	Males	Females
50	0.0004	0.0030	0.0026	0.0036	0.0075	0.0075
60	0.0004	-0.0041	0.0063	0.0069	0.0075	0.0075
70	0.0017	0.0052	0.0069	0.0063	0.0075	0.0075
80	0.0067	0.0061	0.0066	0.0070	0.0075	0.0075
90	0.0048	0.0032	0.0067	0.0067	0.0069	0.0069

f. Disabled mortality rates are shown below at sample ages:

Sample Age	Males	Females
30	0.35%	0.26%
40	0.65	0.63
50	1.61	1.48
60	2.50	1.96
70	3.90	2.86
80	7.35	6.01

2. Retirement

Retirement is assumed to occur upon attaining certain age and service requirements. The retirement assumption varies depending on benefit eligibility and age at retirement.

Early/Normal Retirement Eligibility	Age and Service Requirements	Retirement Assumption
Reduced	Age 50 Service: 10 years	1% at each age
Unreduced	Age 55 Service: 10 years	10% at each age
Unreduced (Eligible for DROP)	Age 50 Service: 25 years	100% at each age
Unreduced (Mandatory)	Age 60	100% at each age

3. Termination

Rates vary by service. Sample rates are as follows:

Rates by Service	
Years	Rate
<1	4.00%
1	3.75
5	2.75
10	2.00
15	1.25
20+	0.00

4. Disability

Rates vary by age. Sample rates are as follows:

Rates by Age	
Age	Rate
25	0.08%
30	0.10
35	0.13
40	0.20
45	0.31
50	0.52
55	0.91
60	1.36

OTHER ASSUMPTIONS

1. Form of Payment

75% Joint & Survivor Annuity. Deferred vesteds are assumed to take the greater of the present value of an annuity at earliest unreduced eligibility or a refund of contributions.

2. Marital Status
   a. Percent married
   b. Spouse's age

100% married
Females assumed to be three years younger than males.

3. Children

All members are assumed to have one dependent child at death or retirement. The child is assumed to be 28 years younger than the member and is assumed to always survive until age 19.

4. Administrative Expense

0.26% of payroll

5. Commencement Age for Deferred Vested Benefit

Age 55

6. Cost of Living Adjustments

2.00% per annum, compounded annually for Tier 1 members.

1.00% per annum, compounded annually for Tier 2 members.

7. DROP Participation	All members elect the DROP at the earliest possible date and remain in the DROP for 4 years or to age 60, if earlier. No COLA is received during DROP.
8. State Contribution	Additional State contributions for the current plan year are assumed to be contributed in a lump sum on the July 1 following the plan year end. These amounts from the prior plan year are treated as a contribution receivable on the plan's financial statements.

Changes in Assumptions since the Prior Year

At their meeting on December 21, 2020, the Public Employees Retirement Board adopted a new set of actuarial assumptions, based on the recommendations in the 2020 experience study. Changes to the set of economic assumptions are phased in over a four-year period, beginning with the July 1, 2021 valuation. Below is a summary of the key assumption changes in this valuation:

- Price inflation assumption was lowered from 2.45% to 2.35%.
- Investment return assumption was lowered from 7.10% to 7.00%.
- COLA assumption for Tier 1 members was lowered from 2.05% to 2.00%.
- General wage inflation assumption was lowered from 2.95% to 2.85%.
- Payroll growth assumption was lowered from 2.95% to 2.85%.

APPENDIX D – GLOSSARY OF TERMS

Actuarial Accrued Liability	The difference between the actuarial present value of system benefits and the actuarial value of future normal costs. Also referred to as "accrued liability" or "actuarial liability".
Actuarial Assumptions	Estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.
Accrued Service	Service credited under the system which was rendered before the date of the actuarial valuation.
Actuarial Equivalent	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate assumptions.
Actuarial Cost Method	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of retirement system benefit between future normal cost and actuarial accrued liability. Sometimes referred to as the "actuarial funding method".
Experience Gain (Loss)	The difference between actual experience and actuarial assumptions anticipated experience during the period between two actuarial valuation dates.
Actuarial Present Value	The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment.
Amortization	Paying off an interest-discounted amount with periodic payments of interest and principal, as opposed to paying off with lump sum payment.
Normal Cost	The actuarial present value of retirement system benefits allocated to the current year by the actuarial cost method.
Unfunded Actuarial Accrued Liability	The difference between actuarial accrued liability and the valuation assets. Sometimes referred to as "unfunded actuarial liability" or "unfunded accrued liability.