Public Employees' Retirement System of the State of Nevada

Actuarial Valuation and Review

As of June 30, 2023

Segal

Segal

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November 17, 2023

Public Employees' Retirement Board of the State of Nevada
693 West Nye Lane
Carson City, Nevada 89703

Dear Retirement Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2023 for the Public Employees' Retirement System of Nevada (PERS). It summarizes the actuarial data used in the valuation, establishes the actuarially determined contribution requirements for the 2023-2024 plan year and analyzes the preceding year's experience.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Plan. The census and financial information on which our calculations are based were provided by System staff. That assistance is gratefully acknowledged.

Segal does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. To the extent we can, however, Segal does review the data for reasonableness and consistency. Based on our review of the data, we have no reason to doubt the substantial accuracy of the information on which we have based this report and we have no reason to believe there are facts or circumstances that would affect the validity of these results.

The measurements shown in this actuarial valuation may not be applicable for other purposes. 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); and changes in plan provisions or applicable law.

The actuarial calculations were completed under the supervision of Mark Hamwee, FSA, MAAA, Enrolled Actuary. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are based upon our analysis and recommendations. In our opinion, the assumptions are reasonable and take into account the experience of the Plan and reasonable expectations. In addition, in our opinion, the combined effect of these assumptions is expected to have no significant bias.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

Segal

Brad Ramirez, FSA, MAAA, EA Vice President & Consulting Actuary	Mark Hamwee, FSA, MAAA, EA Vice President & Actuary	Todd Tauzer, FSA, MAAA, FCA, CERA Senior Vice President & Actuary

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Section 1: Actuarial Valuation Summary

Purpose and basis

This report has been prepared by Segal to present a valuation of the Public Employees' Retirement System of the State of Nevada as of June 30, 2023. The valuation was performed to determine whether the assets and contribution rates are sufficient to provide the prescribed benefits, and establish contributions which fully fund the System's liabilities over time.

The contribution requirements presented in this report are based on:

- The benefit provisions of the Public Employees' Retirement Act;
- The characteristics of covered active members, inactive vested members, retired members, disabled members, beneficiaries, and survivors as of June 30, 2023, provided by System staff;
- The assets of the Plan as of June 30, 2023, provided by System staff;
- Economic assumptions regarding future salary increases, investment earnings, and Consumer Price Index adopted by the Board for the June 30, 2023 valuation;
- Other actuarial assumptions regarding member terminations, retirement, death, etc. adopted by the Board for the June 30, 2023 valuation; and
- The funding policy adopted by the Retirement Board.

In preparing this valuation, we have employed generally accepted actuarial methods and assumptions to evaluate the Plan's assets, liabilities and future contribution requirements. Our calculations are based upon member data and financial information provided to us by System staff. This information has not been audited by us, but it has been reviewed and found to be consistent, both internally and with prior year's information.

The contribution requirements are determined as a percentage of payroll. The contribution rates provide for both Normal Cost and a contribution to amortize any unfunded or overfunded actuarial accrued liabilities. In this valuation, we have applied the funding policy adopted by the Retirement Board in September 2005, modified in May 2012, and amended in October 2021 and November 2022. Details of the funding policy are provided in *Section 4, Exhibit 2*.

A schedule of current amortization balances and payments may be found in *Section 3, Exhibit G*.

Section 1: Actuarial Valuation Summary

The actuarial assumptions were adopted by the Board following acceptance of Segal's June 30, 2020 Experience Study recommendations, as described in our report dated September 10, 2021.

Certain disclosure information required by GASB Statements No. 67 and 68 as of June 30, 2023 for the Plan is provided in a separate report.

Valuation highlights

Phase-in

1. The results of this valuation continue to reflect changes in the actuarial assumptions adopted by the Board for the June 30, 2021 valuation. The immediate recognition of these changes at that time would have increased the actuarially determined contribution rates in that valuation by 7.92% of payroll for Regular and by 15.04% of payroll for Police/Fire. The Board adopted a four-year phase-in of the cost impact of the changes in actuarial assumptions, meaning one fourth of the cost impact would be recognized in each of the actuarial valuations as of June 30, 2021, 2022, 2023, and 2024. As of June 30, 2023, three quarters of this impact has been recognized in the actuarially determined contribution requirements for the current period, and one quarter is deferred to the next year.

Contributions

2. Segal strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the UAAL and its principal balance. The funding policy adopted by the Board meets this standard. However, the statutory contribution rates are only updated every two years and implemented one year after the valuation date at which they were determined. Additionally, the Board adopted a four-year phase-in of the cost impact of the 2021 assumption changes. These factors tend to delay full payments on the normal cost and the unfunded actuarial accrued liability, particularly when contribution rates are increasing.
3. The actual contributions made during the year ended June 30, 2023 totaled $1,810 million for Regular and $518 million for Police/Fire. While the actual contributions were sufficient to pay the normal cost, they were insufficient to reduce the UAAL due to the difference between the statutory rates and the actuarially determined contributions and due to the four-year phase-in of the cost impact of the 2021 assumption changes. Due to the required delay in statutory contribution rate changes, the actual contributions were 90% and 89% of the actuarially determined contributions (which had been lowered by the four-year phase-in of the cost impact of the 2021 assumption changes) for Regular and Police/Fire, respectively.[1]
4. While the statutory contributions projected to be made during the upcoming year ending June 30, 2024 are expected to be sufficient to pay the normal cost, they are expected to be insufficient to reduce the UAAL (before accounting for any potential investment or other experience gains during the plan year). Due to the required delay in statutory contribution rate changes, the statutory contributions for the upcoming year are projected to be 95% and 92% of the actuarially determined contributions (which

[1] If the actuarially determined contribution rates were calculated without any adjustment for the phase-in, these ratios of actual contributions to actuarially determined contributions would be 80% and 77% for Regular and Police/Fire, respectively.

have been lowered by the four-year phase-in of the cost impact of the 2021 assumption changes) for Regular and Police/Fire, respectively.[1]

5. For years in which the actual contributions are less than the actuarially determined contributions, future actuarial losses are generated that will lead to increases in future statutory contributions. Lowering the actuarially determined contributions to reflect a phase-in also creates actuarial losses that will lead to increases in future statutory contributions.

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6. Actuarially determined contributions may increase or decrease from year to year even if all assumptions are exactly met. For both Regular and Police/Fire members, the actuarially determined contribution rates for 2023 increased from the previous year. Both groups saw an increase due to the continued phase-in of the cost impact of the 2021 assumption changes. Contribution rates also increased from a net liability loss and a contribution loss, partially offset by an investment gain after smoothing.

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7. The Public Employees' Retirement Act requires an adjustment in the statutory contribution rates on July 1 of each odd-numbered year based on the actuarially determined rates indicated in the actuarial valuation report for the immediately preceding even-numbered year.[2] In other words, contribution rate adjustments are driven by valuation results as of July 1 of even-numbered years. Because this valuation calculates the actuarially determined contribution rates for a Plan year beginning July 1 of an odd-numbered year, no adjustment in the statutory contribution rate is required as a result of this valuation.

[1] If the actuarially determined contribution rates were calculated without any adjustment for the phase-in, these ratios of projected contributions to actuarially determined contributions would be 90% and 86% for Regular and Police/Fire, respectively.

[2] For the valuations as of June 30, 2021, 2022, and 2023, the actuarially determined contribution rates used in this determination were lowered by the four-year phase-in of the cost impact of the 2021 assumption changes.

Summary of Contribution Rates

	Regular	Police/Fire
Employer-Pay:[1]		
Statutory Rate for Fiscal Years July 1, 2023 through June 30, 2025 (as determined from the June 30, 2022 valuation)	33.50%	50.00%
Actuarially Determined Rate per June 30, 2023 Actuarial Valuation[3]	35.18%	54.18%
Employee/Employer-Pay:[2]		
Statutory Rate for Fiscal Years July 1, 2023 through June 30, 2025 (as determined from the June 30, 2022 valuation)	35.00%	51.50%
Actuarially Determined Rate per June 30, 2023 Actuarial Valuation[3]	36.85%	55.77%

1 See cost-sharing mechanism in NRS 286.421.

2 See cost-sharing mechanism in NRS 286.410.

3 The actuarially determined contribution rates were lowered by the four-year phase-in of the cost impact of the 2021 assumption changes, and they reflect the third year of the phase-in. The actuarially determined contribution rates without any adjustment for the phase-in would be 37.16% for Regular Employer-Pay, 38.82% for Regular Employee/Employer-Pay, 57.95% for Police/Fire Employer-Pay, and 59.46% for Police/Fire Employee/Employer-Pay.

Assets

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8. The rate of return on the market value of assets for the PERS Fund was 9.19% for the 2022-2023 plan year. The market value rate of return was -5.06% for the preceding year.

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9. The smoothed rates of return on the actuarial value of assets for 2022-2023 for the PERS Fund were 8.73% for Regular and 8.70% for Police/Fire due to gradual recognition of current and prior years' investment gains and losses. This resulted in an actuarial gain of approximately $610 million for Regular and $180 million for Police/Fire when measured against last year's assumed rate of return of 7.25%. The actuarial investment gain decreased the actuarially determined contribution rates by 0.65% of payroll for Regular and by 1.01% of payroll for Police/Fire.

10. The ratio of the actuarial value of assets to the market value of assets for the PERS Fund is 99.06%. In the preceding year's valuation, this ratio was 99.50%.

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11. As indicated in *Section 2, Subsection B* of this report, the investment gains and losses not yet recognized as of June 30, 2023 net to gains of approximately $424 million for Regular and $122 million for Police/Fire, compared to unrecognized net gains of approximately $216 million and $56 million in the previous valuation, respectively.

12. The actuarial valuation report as of June 30, 2023 is based on financial data as of that date. Changes in the value of assets subsequent to that date, to the extent that they exist, are not reflected.

Actuarial experience

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13. The UAAL on an actuarial value of assets basis is $14.4 billion for Regular and $4.4 billion for Police/Fire, compared to the prior year values of $14.1 billion for Regular and $4.3 billion for Police/Fire. The unfunded actuarial accrued liability on a market value basis is $14.0 billion for Regular and $4.3 billion for Police/Fire, compared to the prior year values of $13.9 billion for Regular and $4.2 billion for Police/Fire.

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14. The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is 75.5% for Regular and 75.2% for Police/Fire, compared to the prior year funded ratio of 74.8% for Regular and 74.6% for Police/Fire. This ratio is one measure of funding status and its history is a measure of funding progress. The funded ratio measured on a market value basis is 76.2% for Regular and 75.9% for Police/Fire, compared to 75.2% for Regular and 75.0% for Police/Fire as of the prior valuation date. These measurements are not necessarily appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligation or the need for, or the amount of, future contributions.

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15. For Regular, the actuarial loss from total plan experience of $491 million, or 0.84% of actuarial accrued liability, is due to a loss from sources other than investments of $1,101 million, or 1.87% of actuarial accrued liability, which was primarily due to contributions less than expected and individual salary and service increases higher than expected, partially offset by an investment gain of $610 million, or 1.04% of actuarial accrued liability.

    For Police/Fire, the actuarial loss from total plan experience of $153 million, or 0.86% of actuarial accrued liability, is due to a loss from sources other than investments of $333 million, or 1.87% of actuarial accrued liability, which was primarily due to contributions less than expected and individual salary and service increases higher than expected, partially offset by an investment gain of $180 million, or 1.01% of actuarial accrued liability.

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16. There were actuarial experience losses due to a greater than expected change in the Consumer Price Index (2.97% versus 2.50% expected), which resulted in greater than expected post-retirement benefit increases (PRBIs) for continuing retirees, beneficiaries and survivors over the next several years. These losses amounted to $68 million for Regular and $19 million for Police/Fire. These losses increased the actuarially determined contribution rates by 0.07% of payroll for Regular and by 0.11% of payroll for Police/Fire.

    There were actuarial experience losses due to individual salary and service increases greater than expected for continuing active Regular and Police/Fire members; this amounted to a $302 million loss for Regular members and a $102 million loss for Police/Fire members. The average actual salary increase for continuing active members during 2022-2023 was 7.6% for Regular members and 7.9% for Police/Fire members. These losses increased the actuarially determined contribution rates by 0.32% of payroll for Regular and by 0.57% of payroll for Police/Fire.

17. The Regular active population increased between June 30, 2022 and June 30, 2023, leading to an increase in the rate payroll of 7.83% compared to the assumed increase of 3.50%, which decreased the actuarially determined contribution rate by 0.74% of payroll. The Police/Fire active population increased by a smaller amount, leading to an increase in the rate payroll of 4.74% compared to the assumed increase of 3.50%, which decreased the actuarially determined contribution rate by 0.29% of payroll.

18. In 2009, the Critical Labor Shortage (CLS) program was extended through June 30, 2015 but restrictions on eligible positions were added. This program allows PERS retirees to return to work without facing the usual suspension of retirement benefits. Subsequently, the 2015 "sunset" was removed and the program was made permanent. As of the valuation date, there were a total of 445 retired PERS members currently active and reenrolled in PERS under this provision. This program has a minimal effect on System costs.

Future expectations

19. Under the asset smoothing method the unrecognized net gains will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, but in a somewhat non-level (uneven) pattern as shown in the footnote on page 26. In particular, there will be gains recognized in the next two years, followed by a loss recognized in the third year, and a gain recognized in the fourth year. If, over the coming years, the System were to earn a net market value return equivalent to a 7.25% net return on an actuarial value basis, and all other actuarial assumptions are met, the contribution requirements would fluctuate over the next few years, including an increase next year attributable to the continued phase-in of the cost impact of the 2021 assumption changes.

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20. The June 30, 2023 unrecognized net investment gains of $546 million represent about 0.9% of the PERS Fund market value of assets. Unless offset by future investment losses or other unfavorable experience, the recognition of the $546 million net market gain is expected to have an impact on the System's future funded ratio and actuarial contribution requirement. This potential impact may be illustrated as follows:
    a. If the net deferred gain were recognized immediately in the actuarial value of assets, the funded ratio would increase from 75.5% to 76.2% for Regular members and increase from 75.2% to 75.9% for Police/Fire members.

b. If the net deferred gain were recognized immediately in the actuarial value of assets, the actuarially determined contribution rates would decrease as follows:

	June 30, 2023 Actuarially Determined Contribution Rate[1]	June 30, 2023 Rate Reflecting Deferred Gains
Regular:		
Employer-Pay	35.18%	34.73%
Employee/Employer-Pay	36.85%	36.40%
Police/Fire:		
Employer-Pay	54.18%	53.49%
Employee/Employer-Pay	55.77%	55.08%

[1] The actuarially determined contribution rates were lowered by the four-year phase-in of the cost impact of the 2021 assumption changes.

Risk

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21. Actuarial Standard of Practice No. 51 (ASOP 51) requires actuaries to identify and assess risks that “may reasonably be anticipated to significantly affect the plan’s future financial condition”. Examples of key risks listed that are particularly relevant to PERS are asset/liability mismatch risk, investment risk, and longevity risk. The standard also requires an actuary to consider if there is any ongoing contribution risk to the plan, however it does not require the actuary to evaluate the particular ability or willingness of contributing entities to make contributions when due, nor does it require the actuary to assess the likelihood or consequences of future changes in applicable law.

The actuary’s assessment can be strictly a qualitative discussion about potential adverse experience and the possible effect on future results, but it may also include quantitative numerical demonstrations where informative. The actuary is also encouraged to consider a recommendation as to whether a more detailed assessment or risk report would be significantly beneficial for the intended user in order to examine particular financial risks. When making that recommendation, the actuary will take into account such factors as the plan’s design, risk profile, maturity, size, funded status, asset allocation, cash flow, possible insolvency and current market conditions.

Because the actuarial valuation results are dependent on a fixed set of assumptions and data as of a specific date, there is risk that emerging results may differ, perhaps significantly, as actual experience is fluid and will not exactly track current assumptions. This potential divergence may have a significant impact on the future financial condition of the plan. We have not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the System's future financial condition, but have included a brief discussion of key risks that may affect the System in *Section 2, Subsection G*. A more detailed assessment of the risks tailored to specific interests or concerns of the Board would provide the Board with a better understanding of the inherent risks and is recommended. This assessment would further discuss and highlight information and risks particular to PERS such as detailed historical experience and key events, growing plan maturity, heightened contribution sensitivity to asset and liability changes, and projected sensitivity to potential future investment returns through selected scenario or stress test projections.

Note that this year the risk assessment section includes the disclosure of a "Low-Default-Risk Obligation Measure" (LDROM). This disclosure, along with commentary on the significance of the LDROM, is a new requirement under Actuarial Standard of Practice No. 4 (ASOP 4) for all pension funding actuarial valuation reports.

22. It is important to note that this actuarial valuation is based on plan assets as of June 30, 2023. The Plan's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the plan year. Moreover, this actuarial valuation does not include any possible short-term or long-term impacts on mortality of the covered population that may emerge after June 30, 2023 due to COVID-19. Segal is available to prepare projections of potential outcomes of market conditions and other demographic experience upon request.

GASB

23. This report constitutes an actuarial valuation for the purpose of determining the actuarially determined contribution under the Plan's funding policy and measuring the progress of that funding policy. The Net Pension Liability (NPL) and pension expense under Governmental Accounting Standards Board (GASB) Statements No. 67 and 68, for inclusion in the Plan's and employers' financial statements as of June 30, 2023, will be provided separately.

Summary of key valuation results

	Total (Regular and Police/Fire Combined)	
	2023	2022
Actuarially determined contribution rates for plan year beginning July 1:[1]		
Contribution rate	38.50%	36.51%
Funding elements for plan year beginning July 1:		
Normal cost, including administrative expenses[2]	21.25%	21.43%
Total rate payroll[3]	$7,648,776,500	$7,126,962,737
Market value of assets (MVA)	$58,315,106,777	$54,514,012,008
Actuarial value of assets (AVA)	$57,768,997,432	$54,242,120,678
Actuarial accrued liability (AAL)	$76,568,012,068	$72,568,906,707
Unfunded actuarial accrued liability on AVA basis	$18,799,014,636	$18,326,786,029
Funded ratio on actuarial value basis (AVA / AAL)	75.4%	74.7%
Funded ratio on market value basis (MVA / AAL)	76.2%	75.1%
Effective amortization period on an AVA basis[4]	16.4	17.3
Demographic data for plan year beginning July 1:		
Number of retired members and beneficiaries	81,861	79,049
Number of inactive vested members	20,090	19,511
Number of active members	112,019	108,635
Total salary[5]	$6,785,663,771	$6,340,156,736
Average salary	$60,576	$58,362

1 Average rate for the combined Regular and Police/Fire Employer-Pay and Employee/Employer-Pay plans. The actuarially determined contribution rates were lowered by the four-year phase-in of the cost impact of the 2021 assumption changes. The actuarially determined contribution rates for 2022 and 2023 reflect the second and third years of the phase-in, respectively.
2 The normal cost rate shown here reflects the full normal cost impact of the 2021 assumption changes without phase-in.
3 Based on actual pay for prior year, annualized for new hires and part-time employees, and projected one year using individual salary increase assumption.
4 Effective amortization period of full payments to amortize the UAAL layers, based on the actuarially determined contributions without reflecting the phase-in.
5 Based on actual pay for prior year, without adjustment and without reflecting the limitation on compensation for members hired on or after July 1, 2015.

Summary of key valuation results (continued)

	Regular		Police/Fire	
	2023	2022	2023	2022
Actuarially determined contribution rates for plan year beginning July 1:[1]				
Contribution rate for Employer-Pay[2]	35.18%	33.61%	54.18%	49.95%
Contribution rate for Employee/Employer-Pay[3]	36.85%	35.02%	55.77%	51.38%
Funding elements for plan year beginning July 1:				
Normal cost, including administrative expenses:[4]				
Employer-Pay[2]	18.80%	18.99%	32.39%	32.50%
Employee/Employer-Pay[3]	20.46%	20.38%	33.90%	33.77%
Total rate payroll[5]	$6,424,321,992	$5,957,884,949	$1,224,454,508	$1,169,077,788
Market value of assets (MVA)	$44,824,618,434	$41,942,108,337	$13,490,488,343	$12,571,903,671
Actuarial value of assets (AVA)	$44,400,597,216	$41,726,204,714	$13,368,400,216	$12,515,915,964
Actuarial accrued liability (AAL)	$58,795,590,269	$55,797,289,031	$17,772,421,799	$16,771,617,676
Unfunded actuarial accrued liability on AVA basis	$14,394,993,053	$14,071,084,317	$4,404,021,583	$4,255,701,712
Funded ratio on actuarial value basis (AVA / AAL)	75.5%	74.8%	75.2%	74.6%
Funded ratio on market value basis (MVA / AAL)	76.2%	75.2%	75.9%	75.0%
Effective amortization period on an AVA basis[6]	15.6	16.5	19.0	20.0
Demographic data for plan year beginning July 1:				
Number of retired members and beneficiaries	70,956	68,550	10,905	10,499
Number of inactive vested members	19,041	18,471	1,049	1,040
Number of active members	99,132	95,785	12,887	12,850
Total salary[7]	$5,661,206,786	$5,267,320,827	$1,124,456,985	$1,072,835,909
Average salary	$57,108	$54,991	$87,255	$83,489

[1] The actuarially determined contribution rates were lowered by the four-year phase-in of the cost impact of the 2021 assumption changes. The actuarially determined contribution rates for 2022 and 2023 reflect the second and third years of the phase-in, respectively.
[2] See cost-sharing mechanism in NRS 286.421.
[3] See cost-sharing mechanism in NRS 286.410.
[4] The normal cost rate shown here reflects the full normal cost impact of the 2021 assumption changes without phase-in.
[5] Based on actual pay for prior year, annualized for new hires and part-time employees, and projected one year using individual salary increase assumption.
[6] Effective amortization period of full payments to amortize the UAAL layers, based on the actuarially determined contributions without reflecting the phase-in.
[7] Based on actual pay for prior year, without adjustment and without reflecting the limitation on compensation for members hired on or after July 1, 2015.

Important information about actuarial valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

In order to prepare a valuation, Segal relies on a number of input items. These include:

Plan Provisions	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
Participant Information	An actuarial valuation for a plan is based on data provided to the actuary by the System. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Financial Information	Part of the cost of a plan will be paid from existing assets — the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date, as reported by the System. A snapshot as of a single date may not be an appropriate value for determining a single year's contribution requirement, especially in volatile markets. The System uses an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
Actuarial Assumptions	In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of participants in each year, as well as forecasts of the plan's benefits for each of those events. In addition, the benefits forecasted for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions are selected within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.
Models	Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary.

Section 1: Actuarial Valuation Summary

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

The actuarial valuation is prepared at the request of the System. Segal is not responsible for the use or misuse of its report, particularly by any other party.

An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan. Future contribution requirements may differ from those determined in the valuation because of:

- Differences between actual experience and anticipated experience;
- Changes in actuarial assumptions or methods;
- Changes in statutory provisions; and
- Differences between the contribution rates determined by the valuation and those adopted by the Board.

Some actuarial results in this report are not rounded, but that does not imply precision.

If the System is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.

Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The System should look to their other advisors for expertise in these areas.

While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.

Segal's report shall be deemed to be final and accepted by the System upon delivery and review. Trustees should notify Segal immediately of any questions or concerns about the final content.

As Segal has no discretionary authority with respect to the management or assets of the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Plan.

Section 2: Actuarial Valuation Results

A. Member data

Regular members

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, inactive vested members, retired members and beneficiaries.

This section presents a summary of significant statistical data on the Regular member group.

More detailed information for this valuation year and the preceding valuation can be found in *Section 3, Exhibits A, B, and C*.

Regular Member Population: 2014 – 2023

Year Ended June 30	Active Members	Inactive Vested Members	Retired Members and Beneficiaries	Ratio of Non-Actives to Actives
2014	88,709	13,851	48,283	0.70
2015	91,124	14,206	50,877	0.71
2016	93,030	14,795	53,484	0.73
2017	93,276	15,763	55,975	0.77
2018	94,615	15,714	58,561	0.79
2019	96,072	16,409	61,104	0.81
2020	98,228	16,475	63,376	0.81
2021	93,796	17,904	65,988	0.89
2022	95,785	18,471	68,550	0.91
2023	99,132	19,041	70,956	0.91

Regular members (continued)

Active members

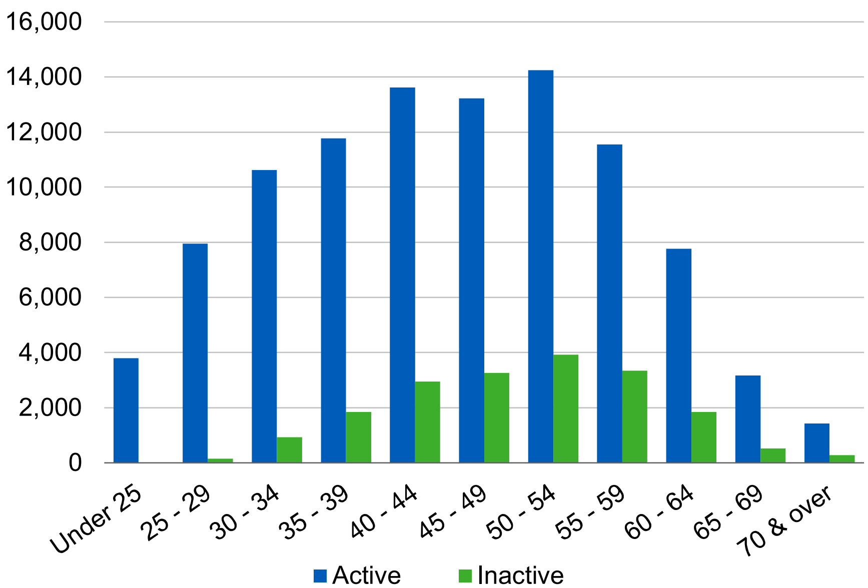
As of June 30,	2023	2022	Change
Active members	99,132	95,785	3.5%
Average age	45.5	45.7	(0.2)
Average years of service	9.6	9.8	(0.2)
Average annual salary	$57,108	$54,991	3.8%

Inactive members

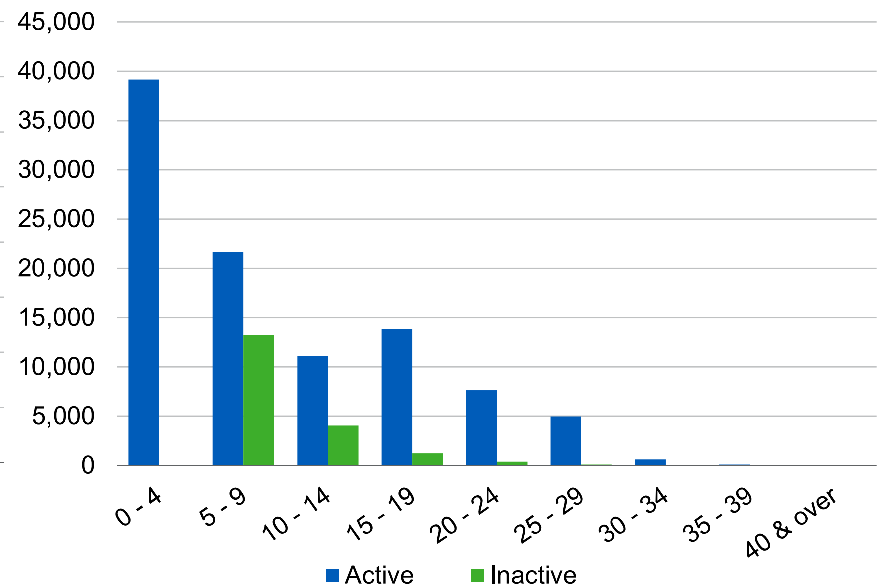
As of June 30,	2023	2022	Change
Inactive members	19,041	18,471	3.1%
Average age	50.1	50.2	(0.1)
Average years of service	9.0	9.1	(0.1)

Distribution of Active and Inactive Regular Members as of June 30, 2023

Active and Inactive Members by Age



Active and Inactive Members by Service



Regular members (continued)

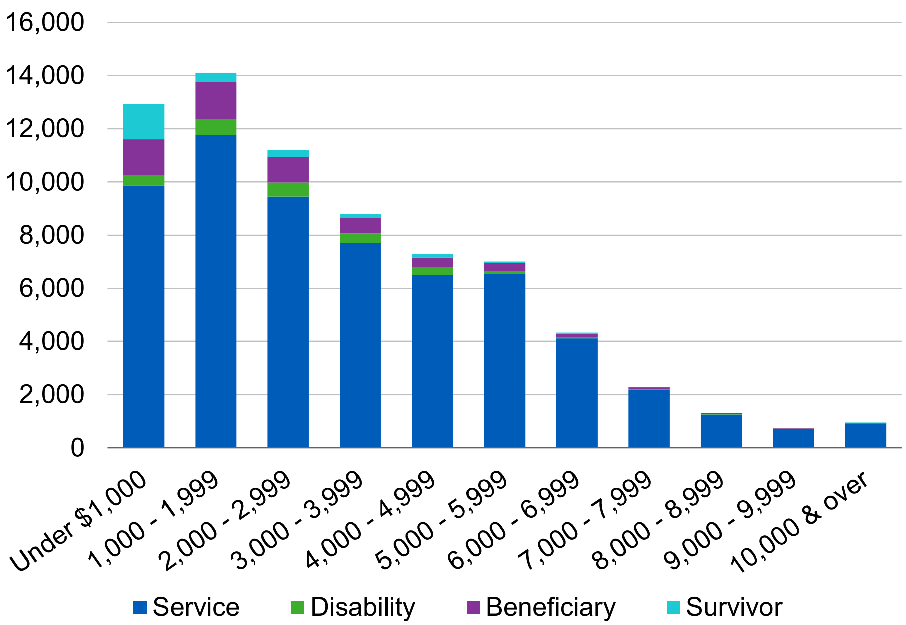
Retired members and beneficiaries

As of June 30,	2023	2022	Change
Retired members	63,399	61,268	3.5%
Beneficiaries and survivors	7,557	7,282	3.8%
Total monthly benefits	$232,690,308	$216,849,925	7.3%

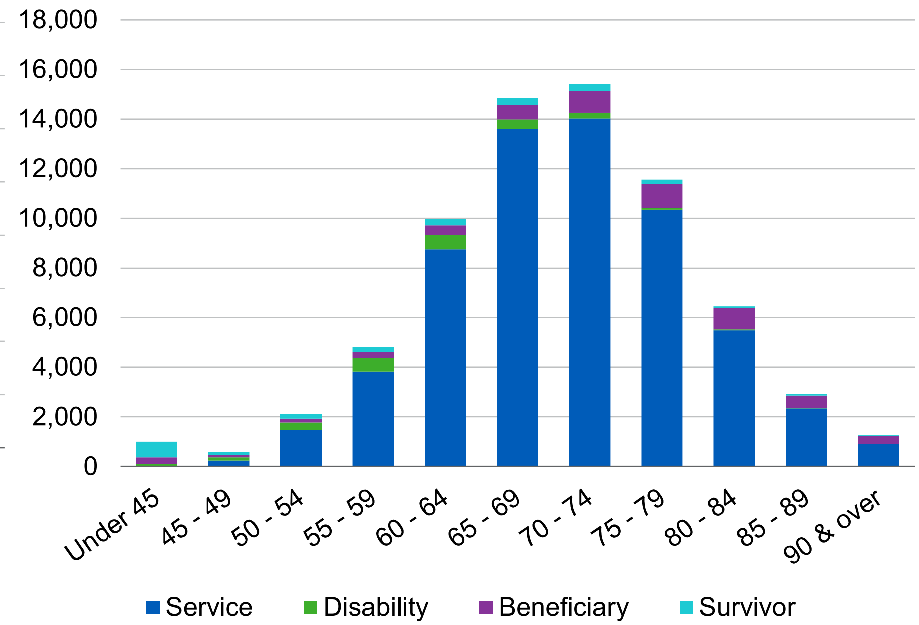
As of June 30, 2023, 2,469 retired members and 70 beneficiaries and survivors were receiving annual benefits of at least $100,000, which represents 3.6% of all retirees, beneficiaries and survivors, compared to 3.0% in the previous valuation.

Distribution of Regular Retired Members and Beneficiaries as of June 30, 2023

Retired Members and Beneficiaries by Type and Monthly Amount



Retired Members and Beneficiaries by Type and Age



A. Member data (continued)

Police/Fire members

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, inactive vested members, retired members and beneficiaries.

This section presents a summary of significant statistical data on the Police/Fire member group.

More detailed information for this valuation year and the preceding valuation can be found in *Section 3, Exhibits A, B, and C*.

Police/Fire Member Population: 2014 – 2023

Year Ended June 30	Active Members	Inactive Vested Members	Retired Members and Beneficiaries	Ratio of Non-Actives to Actives
2014	11,813	782	6,925	0.65
2015	11,984	826	7,282	0.68
2016	12,137	844	7,696	0.70
2017	12,525	905	8,155	0.72
2018	12,891	893	8,547	0.73
2019	13,095	932	8,952	0.75
2020	13,587	923	9,365	0.76
2021	13,134	967	9,967	0.83
2022	12,850	1,040	10,499	0.90
2023	12,887	1,049	10,905	0.93

Police/Fire members (continued)

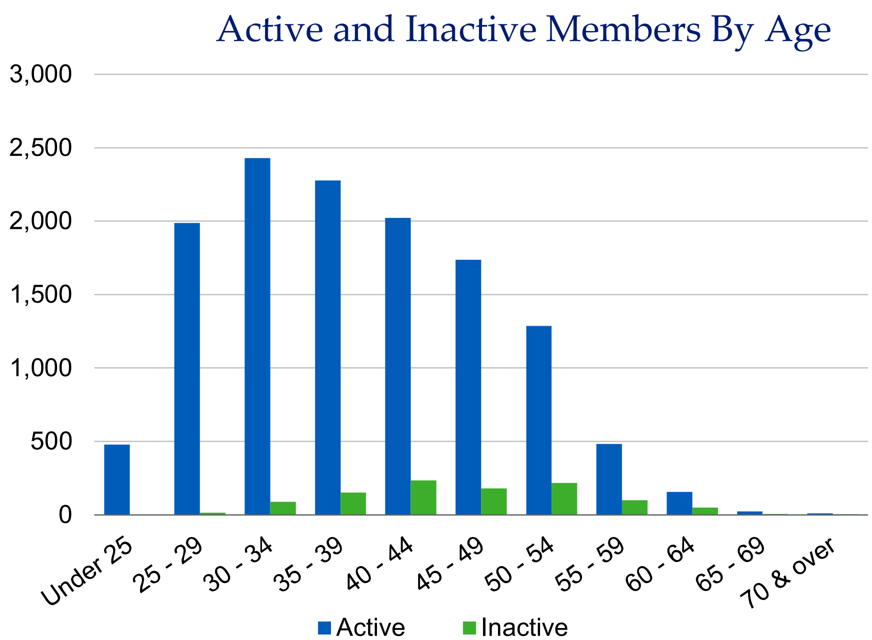
Active members

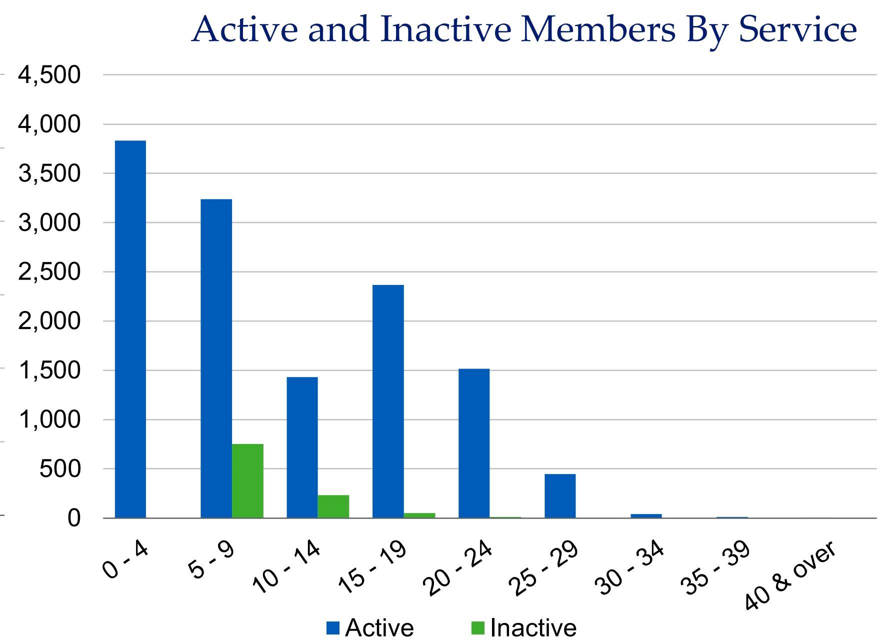
As of June 30,	2023	2022	Change
Active members	12,887	12,850	0.3%
Average age	39.2	39.3	(0.1)
Average years of service	10.8	10.8	0.0
Average annual salary	$87,255	$83,489	4.5%

Inactive members

As of June 30,	2023	2022	Change
Inactive members	1,049	1,040	0.9%
Average age	46.2	46.3	(0.1)
Average years of service	8.5	8.9	(0.4)

Distribution of Active and Inactive Police/Fire Members as of June 30, 2023





Police/Fire members (continued)

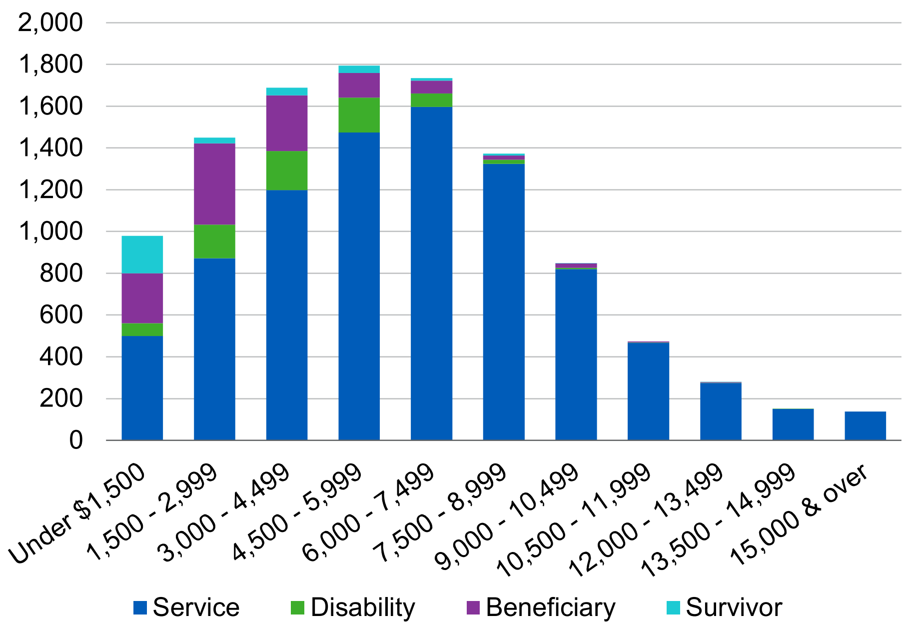
Retired members and beneficiaries

As of June 30,	2023	2022	Change
Retired members	9,479	9,142	3.7%
Beneficiaries and survivors	1,426	1,357	5.1%
Total monthly benefits	$64,455,135	$59,797,517	7.8%

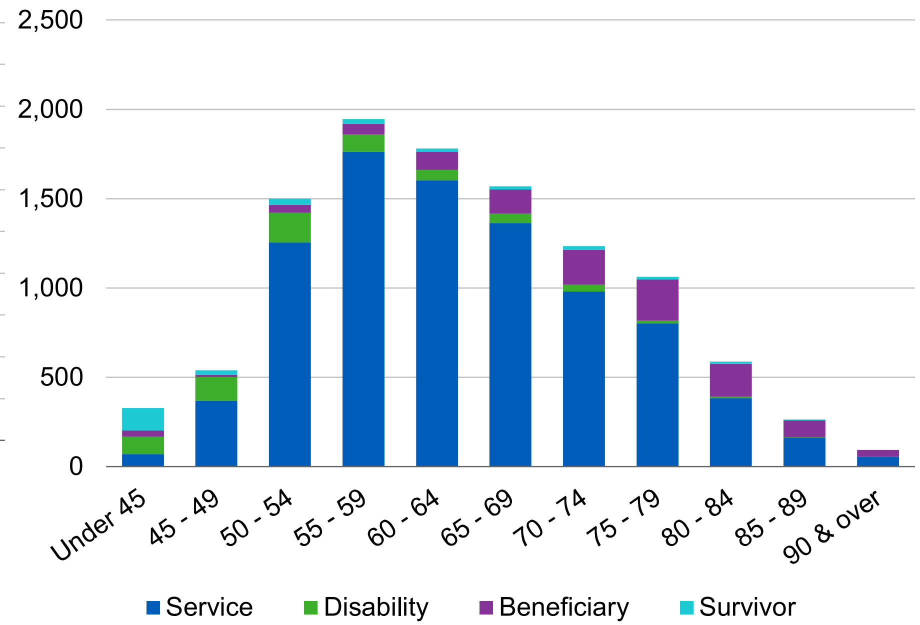
As of June 30, 2023, 2,387 retired members and 33 beneficiaries and survivors were receiving annual benefits of at least $100,000, which represents 22.2% of all retirees, beneficiaries and survivors, compared to 20.0% in the previous valuation.

Distribution of Police/Fire Retired Members and Beneficiaries as of June 30, 2023

Retired Members and Beneficiaries by Type and Monthly Amount



Retired Members and Beneficiaries by Type and Age

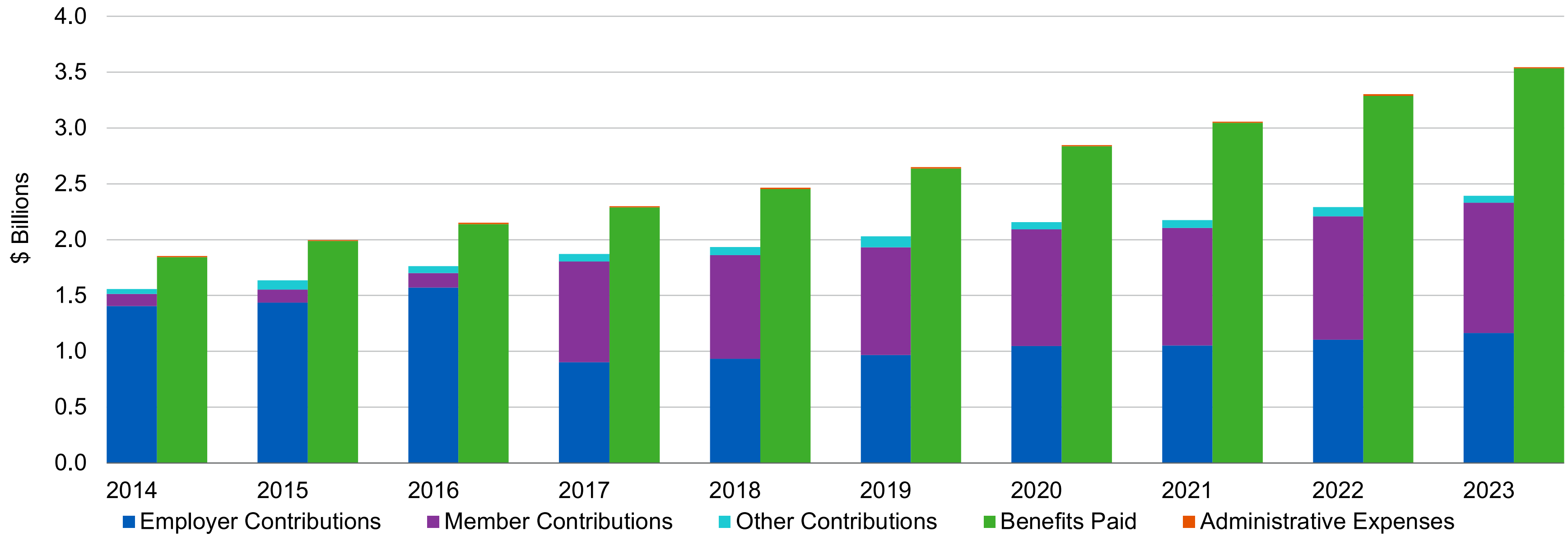


B. Financial information

Retirement plan funding anticipates that, over the long term, both net contributions (less administrative expenses) and net investment earnings (less investment fees) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in *Section 3, Exhibits D, E, and F*.

Comparison of Contributions with Benefits and Expenses for Years Ended June 30, 2014 – 2023[1]



[1] Starting in the year ended June 30, 2017, pursuant to GASB Statement No. 82, the financial statements recognize half of the employer contributions made on behalf of Employer-Pay members as member contributions.

Determination of Actuarial Value of Assets for Year Ended June 30, 2023

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

		Regular		Police/Fire	
1	**Market Value of Assets**		**$44,824,618,434**		**$13,490,488,343**
2	Calculation of unrecognized return	**Original Amount[1]**	**Unrecognized Return**	**Original Amount[1]**	**Unrecognized Return**
a.	Year ended June 30, 2023[2]	$818,441,862	$654,753,490	$245,697,713	$196,558,170
b.	Year ended June 30, 2022[2]	(5,073,922,259)	(3,044,353,355)	(1,517,027,149)	(910,216,289)
c.	Year ended June 30, 2021[2]	7,074,416,935	2,829,766,774	2,101,133,203	840,453,281
d.	Year ended June 30, 2020[2]	(80,728,453)	(16,145,691)	(23,535,176)	(4,707,035)
e.	Year ended June 30, 2019[2]	313,413,248	0	91,717,871	0
f.	Total unrecognized return[3]	$3,051,621,333	$424,021,218	$897,986,462	$122,088,127
3	Preliminary Actuarial Value of Assets: 1 – 2f		$44,400,597,216		$13,368,400,216
4	Additional write up/(down) due to 70%/130% corridor		$0		$0
5	**Actuarial Value of Assets 3 + 4**		**$44,400,597,216**		**$13,368,400,216**
6	Actuarial Value of Assets as a percentage of Market Value of Assets: 5 ÷ 1[4]		99.05%		99.10%

[1] Difference between the actual return on the market value of assets and the expected return on the actuarial value of assets.
[2] Recognition at 20% per year over 5 years.
[3] Deferred return as of June 30, 2023 recognized in each of the next four years:

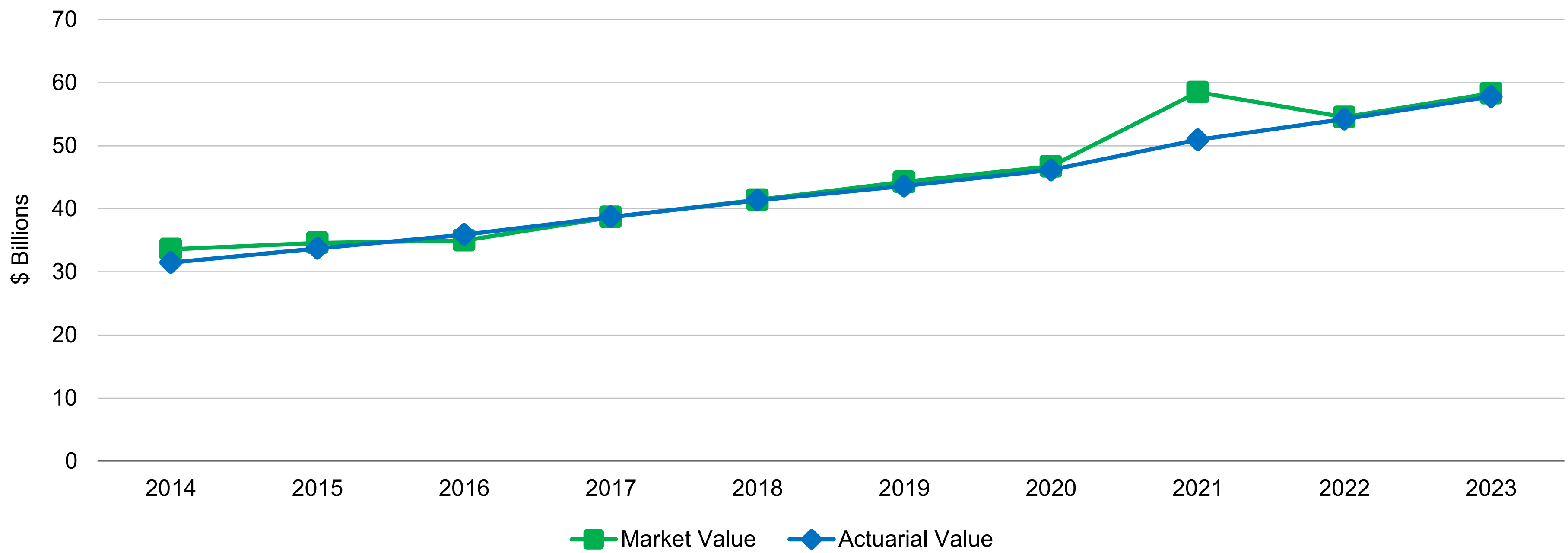
	Regular	Police/Fire	Total
a. Amount recognized during 2023/2024	$547,641,618	$161,253,718	$708,895,336
b. Amount recognized during 2024/2025	$563,787,307	$165,960,754	$729,748,061
c. Amount recognized during 2025/2026	($851,096,079)	($254,265,888)	($1,105,361,967)
d. Amount recognized during 2026/2027	$163,688,372	$49,139,543	$212,827,915
	$424,021,218	$122,088,127	$546,109,345

[4] Total actuarial value as a percentage of total market value is 99.06% for Regular and Police/Fire.

Section 2: Actuarial Valuation Results

Both the actuarial value and market value of assets are representations of PERS's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because PERS's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

Market Value and Actuarial Value of Assets as of June 30, 2014 – 2023



C. Actuarial experience

To calculate the actuarially determined contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the actuarial contribution requirement will decrease from the previous year. On the other hand, the actuarial contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the actuarial contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The net total loss is $644.3 million, which includes $789.9 million from investment gains (after smoothing), a loss of $727.9 million from contribution experience, and $706.4 million in losses from all other sources. The net experience variation from individual sources other than investments was 1.87% of the Actuarial Accrued Liability. A discussion of the major components of the actuarial experience is on the following pages.

Actuarial Experience for Year Ended June 30, 2023

		Regular	Police/Fire	Total
1	Net gain/(loss) from investments[1]	$610,324,267	$179,597,293	$789,921,560
2	Net gain/(loss) from post-retirement benefit increases other than expected[2]	(67,937,661)	(19,286,078)	(87,223,739)
3	Net gain/(loss) from individual salary and service increases other than expected[2]	(302,418,251)	(101,583,803)	(404,002,054)
4	Net gain/(loss) from contributions greater/(less) than expected[3]	(542,737,393)	(185,101,766)	(727,839,159)
5	Net gain/(loss) from administrative expenses other than expected	447,461	215,520	662,981
6	Net gain/(loss) from other experience[2]	(188,800,565)	(27,003,227)	(215,803,792)
7	**Net experience gain/(loss): 1 + 2 + 3 + 4 + 5 + 6**	**$(491,122,142)**	**$(153,162,061)**	**$(644,284,203)**

[1] Details on page 29.
[2] Details on page 32. Does not include the effect of plan or assumption changes, if any.
[3] Includes a contribution loss due to the actuarially determined contributions being lowered by the four-year phase-in of the cost impact of the 2021 assumption changes.

Investment experience

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the PERS investment policy. The rate of return on the market value of assets was 9.19% for 2022-2023.

Market Value Investment Experience for Year Ended June 30, 2023

		Regular	Police/Fire	Total
1	Actual return	$3,809,971,237	$1,144,897,771	$4,954,869,008
2	Average value of assets	41,478,377,767	12,458,747,122	53,937,124,889
3	Actual rate of return: **1 ÷ 2**	9.19%	9.19%	9.19%
4	Assumed rate of return	7.25%	7.25%	7.25%
5	Expected return: **2 × 4**	3,007,182,388	903,259,166	3,910,441,554
6	**Actuarial gain/(loss): 1 – 5**	**$802,788,849**	**$241,638,605**	**$1,044,427,454**

For valuation purposes, the assumed rate of return on the actuarial value of assets for the 2022-2023 plan year is 7.25%. The actual rates of return on an actuarial basis for the 2022-2023 plan year were 8.73% for Regular and 8.70% for Police/Fire. Because the actual return for the year was greater than the assumed return, PERS experienced an actuarial gain during the year ended June 30, 2023 with regard to its investments.

Actuarial Value Investment Experience for Year Ended June 30, 2023

		Regular	Police/Fire	Total
1	Actual return	$3,601,853,642	$1,078,797,351	$4,680,650,993
2	Average value of assets	41,262,474,144	12,402,759,415	53,665,233,559
3	Actual rate of return: **1 ÷ 2**	8.73%	8.70%	8.72%
4	Assumed rate of return	7.25%	7.25%	7.25%
5	Expected return: **2 × 4**	2,991,529,375	899,200,058	3,890,729,433
6	**Actuarial gain/(loss): 1 – 5**	**$610,324,267**	**$179,597,293**	**$789,921,560**

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the last ten years, including five-year and ten-year averages.

Investment Return – Actuarial Value vs. Market Value: 2014 – 2023

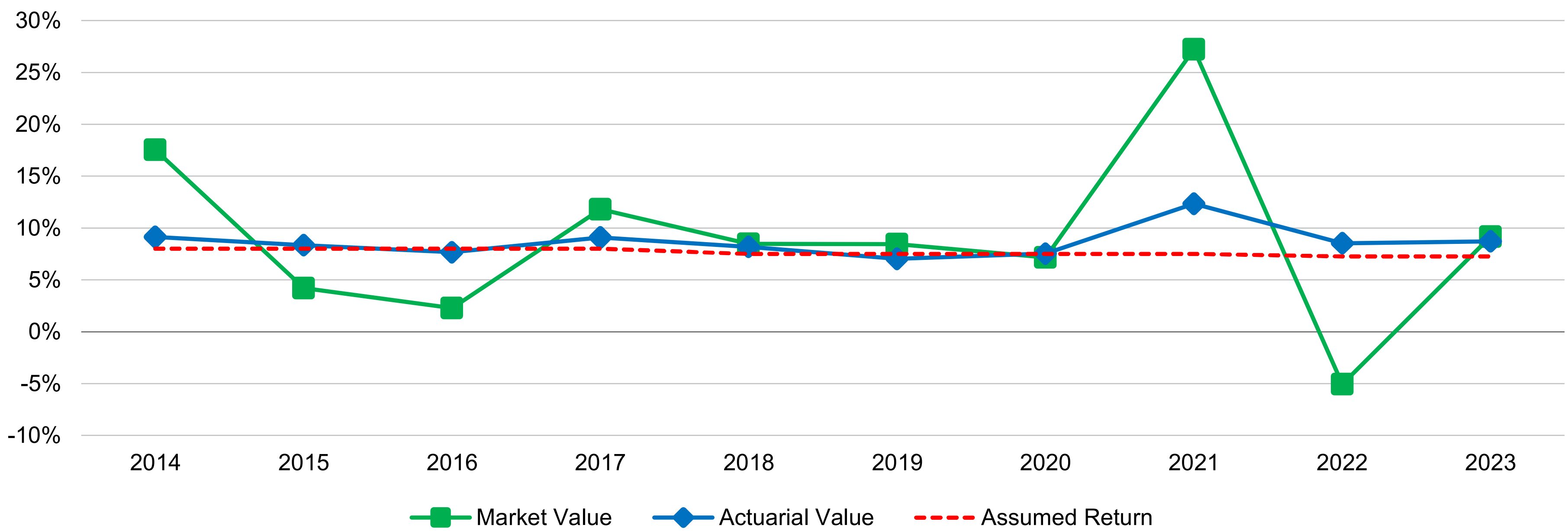
Year Ended June 30	Regular				Police/Fire				Total			
	Market Value Investment Return		Actuarial Value Investment Return		Market Value Investment Return		Actuarial Value Investment Return		Market Value Investment Return		Actuarial Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
2014	$3,941,218,147	17.55%	$2,066,313,021	9.10%	$1,092,158,512	17.54%	$583,651,095	9.32%	$5,033,376,659	17.55%	$2,649,964,116	9.15%
2015	1,091,598,827	4.19%	2,032,338,690	8.32%	306,479,335	4.18%	582,473,284	8.50%	1,398,078,162	4.19%	2,614,811,974	8.36%
2016	607,842,576	2.27%	1,998,441,567	7.66%	172,798,662	2.27%	569,208,453	7.67%	780,641,238	2.27%	2,567,650,020	7.66%
2017	3,195,254,603	11.82%	2,529,012,783	9.12%	917,155,134	11.82%	722,225,866	9.08%	4,112,409,737	11.82%	3,251,238,649	9.11%
2018	2,531,944,593	8.50%	2,447,884,797	8.21%	732,574,827	8.50%	705,926,799	8.18%	3,264,519,420	8.50%	3,153,811,596	8.20%
2019	2,695,615,596	8.47%	2,230,820,715	7.02%	787,003,317	8.47%	654,177,997	7.06%	3,482,618,913	8.47%	2,884,998,712	7.03%
2020	2,425,618,631	7.15%	2,511,373,011	7.52%	714,927,575	7.15%	741,028,781	7.53%	3,140,546,206	7.15%	3,252,401,792	7.52%
2021	9,718,611,414	27.23%	4,360,096,632	12.37%	2,886,741,179	27.23%	1,292,651,780	12.34%	12,605,352,593	27.23%	5,652,748,412	12.36%
2022	(2,259,116,683)	-5.06%	3,320,457,851	8.55%	(675,125,576)	-5.06%	989,437,894	8.52%	(2,934,242,259)	-5.06%	4,309,895,745	8.55%
2023	3,809,971,237	9.19%	3,601,853,642	8.73%	1,144,897,771	9.19%	1,078,797,351	8.70%	4,954,869,008	9.19%	4,680,650,993	8.72%
Total	$27,758,558,941		$27,098,592,709		$8,079,610,736		$7,919,579,300		$35,838,169,677		$35,018,172,009	
Five-year average return		**8.92%**		**8.82%**		**8.92%**		**8.81%**		**8.92%**		**8.82%**
Ten-year average return		**8.82%**		**8.65%**		**8.82%**		**8.68%**		**8.82%**		**8.66%**

Note: The five-year and ten-year average returns are geometric averages of the returns over each time period.

Section 2: Actuarial Valuation Results

In the preceding *Subsection B* we described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this method is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs. This effect is clear in the chart below, where the year-to-year returns on actuarial value are less volatile than the returns on market value.

Market and Actuarial Rates of Return for Years Ended June 30, 2014 – 2023



Other experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include the extent of turnover among the participants, retirement experience (earlier or later than projected), mortality (more or fewer deaths than projected), the number of disability retirements, and salary increases different than assumed, and post-retirement benefit increases (PRBIs) different than expected.

The net gain/(loss) from this other experience for the year ended June 30, 2023 amounted to a loss of $559 million for Regular and a loss of $148 million for Police/Fire, which are 0.95% and 0.83% of the actuarial accrued liability, respectively. A brief summary of the demographic gain/(loss) experience (excluding contribution and administrative expense experience) of PERS for the year ended June 30, 2023 is shown in the chart below.

Experience Due to Sources Other Than Investment Return for Year Ended June 30, 2023

	Regular	% of AAL	Police/Fire	% of AAL	Total	% of AAL
Age and Service Retirements	$(147,231,344)	(0.25%)	$(26,311,249)	(0.15%)	$(173,542,593)	(0.23%)
Disability Retirements	(9,899,358)	(0.02%)	(6,354,368)	(0.04%)	(16,253,726)	(0.02%)
Pre and Post-Retirement Mortality	16,938,028	0.03%	(4,129,341)[1]	(0.02%)	12,808,687	0.02%
Post-Retirement Benefit Increases (PRBIs)	(67,937,661)	(0.12%)	(19,286,078)	(0.11%)	(87,223,739)	(0.11%)
Withdrawal From Employment	35,264,596	0.06%	(4,998,881)	(0.03%)	30,265,715	0.04%
Individual Pay and Service Increases[2]	(302,418,251)	(0.51%)	(101,583,803)	(0.57%)	(404,002,054)	(0.53%)
Active New Entrants	(21,709,222)	(0.04%)	14,082,829	0.08%	(7,626,393)	(0.01%)
Active Rehires	(69,429,527)	(0.12%)	(8,203,126)	(0.05%)	(77,632,653)	(0.10%)
Inactive and Retiree Showups	(30,370,184)	(0.05%)	(5,812,560)	(0.03%)	(36,182,744)	(0.05%)
Other[3]	37,636,446	0.06%	14,723,469	0.08%	52,359,915	0.07%
Total Liability Experience Gain/(Loss) During Year	**$(559,156,477)**	**(0.95%)**	**$(147,873,108)**	**(0.83%)**	**$(707,029,585)**	**(0.92%)**

Note: The total gain/(loss) dollar amounts and percentages may not exactly match the sum of the components due to rounding.

1 Reflects Police/Fire mortality experience and also the assumption that existing "employer-pay" Police/Fire retirees with an unmodified option who retired after June 30, 1981 and before July 1, 2011 will have no surviving spouse.
2 Also includes other data changes for continuing actives.
3 The actual contributions toward purchase of service ($49.3 million for Regular and $13.5 million for Police/Fire) offset the Gain/(Loss) for Age and Service Retirements for new retirees and Individual Pay and Service Increases for continuing actives. The contributions toward purchase of service for other members are allocated to Other.

D. Development of unfunded actuarial accrued liability for year ended June 30, 2023

		Regular	Police/Fire	Total
1	**Unfunded actuarial accrued liability at beginning of year**	**$14,071,084,317**	**$4,255,701,712**	**$18,326,786,029**
2	Normal cost at beginning of year	1,135,427,591	378,728,869	1,514,156,460
3	Expected total contributions at beginning of year[1]	(2,254,445,477)	(673,263,355)	(2,927,708,832)
4	Expected administrative expenses at beginning of year	11,915,770	2,338,156	14,253,926
5	Interest for whole year on **1 + 2 + 3 + 4**	939,888,710	287,354,140	1,227,242,850
6	Expected unfunded actuarial accrued liability at end of year	$13,903,870,911	$4,250,859,522	$18,154,730,433
7	Changes due to			
	a. Investment gain	$(610,324,267)	$(179,597,293)	$(789,921,560)
	b. Post-retirement benefit increases greater than expected	67,937,661	19,286,078	87,223,739
	c. Individual salary and service increases greater than expected	302,418,251	101,583,803	404,002,054
	d. Contributions less than expected[2]	542,737,393	185,101,766	727,839,159
	e. Administrative expenses less than expected	(447,461)	(215,520)	(662,981)
	f. Other experience[3]	188,800,565	27,003,227	215,803,792
	Total changes	$491,122,142	$153,162,061	$644,284,203
8	**Unfunded actuarial accrued liability at end of year**	**$14,394,993,053**	**$4,404,021,583**	**$18,799,014,636**

[1] The expected total contributions are based on the actuarially determined contribution rates without any adjustment due to the four-year phase-in of the cost impact of the 2021 assumption changes.

[2] The contribution loss is due to the net effect of a) statutory contribution rates lower than the actuarially determined contribution rates, b) actuarially determined contribution rates being lowered by the four-year phase-in of the cost impact of the 2021 assumption changes, and c) timing effect of actuarially determined contributions payable at the beginning of the year vs. actual contributions payable throughout the two years beginning one year after the rate-setting year, partially offset by d) higher than expected payroll growth.

[3] Details on page 32.

E. Actuarially determined contribution rates

The amount of annual contribution required to fund the Plan is comprised of a normal cost payment and a payment on the unfunded actuarial accrued liability. This total amount is then divided by the projected payroll for active members to determine the actuarially determined contribution rate. As of June 30, 2023, the average actuarially determined contribution rate (lowered by the four-year phase-in of the cost impact of the 2021 assumption changes) is 38.50% of payroll.[1]

The Board sets the funding policy used to calculate the recommended contribution based on layered 20-year amortization periods as a level percentage of payroll. See *Section 4, Exhibit 2* for further details on the elements of the funding policy. Based on this policy and the assumptions currently in effect, the total actuarially determined contribution rate has no negative amortization[2] and each amortization layer is fully funded in 20 years. However, the four-year phase-in of the cost impact of the 2021 assumption changes lowers the contribution rate to a level where it is not sufficient to reduce the UAAL, and each year it is in effect, it creates contribution losses that will be amortized in a new 20-year layer.

The current funding policy is intended to result in predictable employer contributions that eliminate the unfunded actuarial accrued liability within 20 years, thereby providing benefit security to plan members while balancing the needs of current and future contributors to the plan. The current funding policy is intended to fully fund the cost of the benefits and to allocate the cost of benefits reasonably and equitably over time while minimizing the volatility of employer contributions. Other than the continued recognition of the four-year phase-in of the cost impact of the 2021 assumption changes, the actuarially determined contribution is expected to remain level as a percent of payroll, except when any current amortization layer is fully amortized, assuming there are no future actuarial gains or losses. Furthermore, the funded ratio is expected to increase as the UAAL is methodically funded by employer contributions.

The actuarially determined contribution as of June 30, 2023 is based on the data previously described, the actuarial assumptions and Plan provisions described in *Section 4*, including all changes affecting future costs adopted at the time of the actuarial valuation, actuarial gains and losses and changes in the actuarial assumptions.

The statutory contribution rates are adjusted at the beginning of each odd-numbered fiscal year, based on the actuarially determined rates indicated in the actuarial valuation report for the immediately preceding year. See *Section 4, Exhibit 3* for details about this adjustment.

[1] The average actuarially determined contribution rate without any adjustment for the phase-in would be 40.76%.
[2] Negative amortization means that the amortization payment towards the UAAL is less than the interest on the UAAL and therefore the outstanding balance of the UAAL increases.

Actuarially Determined Contribution Rates for Year Beginning July 1

	2023		2022	
	Regular	Police/Fire	Regular	Police/Fire
Employer-Pay, Current Statutory Rate[1]	**33.50%**	**50.00%**	**29.75%**	**44.00%**
Normal cost	18.60%	32.19%	18.79%	32.30%
Amortization percentage	18.36%	25.56%	18.58%	24.99%
Administrative expenses	0.20%	0.20%	0.20%	0.20%
Phase-in adjustment	(1.98%)	(3.77%)	(3.96%)	(7.54%)
Employer-Pay, Total Rate[2]	**35.18%**	**54.18%**	**33.61%**	**49.95%**
Employer-Pay, New Statutory Rate[1]	**N/A**	**N/A**	**33.50%**	**50.00%**
Employee/Employer-Pay, Current Statutory Rate[3]	**35.00%**	**51.50%**	**31.00%**	**45.50%**
Normal cost	20.26%	33.70%	20.18%	33.57%
Amortization percentage	18.36%	25.56%	18.58%	24.99%
Administrative expenses	0.20%	0.20%	0.20%	0.20%
Phase-in adjustment	(1.97%)	(3.69%)	(3.94%)	(7.38%)
Employee/Employer-Pay, Total Rate[2]	**36.85%**	**55.77%**	**35.02%**	**51.38%**
Employee/Employer-Pay, New Statutory Rate[3]	**N/A**	**N/A**	**35.00%**	**51.50%**

[1] See cost-sharing mechanism in NRS 286.421.
[2] The actuarially determined contribution rates were lowered by the four-year phase-in of the cost impact of the 2021 assumption changes. The actuarially determined contribution rates without any adjustment for the phase-in would be 37.16% for Regular Employer-Pay, 38.82% for Regular Employee/Employer-Pay, 57.95% for Police/Fire Employer-Pay, and 59.46% for Police/Fire Employee/Employer-Pay.
[3] See cost-sharing mechanism in NRS 286.410.

Reconciliation of actuarially determined contribution rate

The actuarially determined contribution rates as of June 30, 2023 are based on all of the data described in the previous sections, the actuarial assumptions described in *Section 4*, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

The chart below details the changes in the actuarially determined contribution rate from the prior rate-setting year to the current year's valuation. As of June 30, 2023, this rate was increased due to the continued phase-in of the cost impact of the 2021 assumption changes.

Reconciliation of Actuarially Determined Contribution Rate from June 30, 2022 to June 30, 2023[1]

	Regular	Estimated Annual Dollar Cost[2]	Police/Fire	Estimated Annual Dollar Cost[2]
Actuarially Determined Contribution Rate as of June 30, 2022	**33.87%**	**$2,017,935,632**	**50.05%**	**$585,123,433**
• Effect of investment (gain)/loss	(0.65%)	(41,904,843)	(1.01%)	(12,331,144)
• Effect of (gains)/losses on individual salary and service experience	0.32%	20,764,026	0.57%	6,974,740
• Effect on existing amortization of payroll growth (greater)/less than expected	(0.74%)	38,748,576[3]	(0.29%)	10,226,871[3]
• Effect of changes in normal cost	(0.14%)	79,884,033[4]	(0.10%)	16,640,902[4]
• Effect of contributions (greater)/less than expected[5]	0.58%	37,264,330	1.04%	12,709,081
• Effect of (gain)/loss on post-retirement benefit increases	0.07%	4,664,597	0.11%	1,324,181
• Effect of other (gains)/losses[6]	0.20%	13,904,855	0.15%	2,096,220
• Effect of four-year phase-in of the cost impact of the 2021 assumption changes	1.98%	108,730,669	3.77%	41,992,068
Total change	**1.62%**	**$262,056,243**	**4.24%**	**$79,632,919**
Actuarially Determined Contribution Rate as of June 30, 2023	**35.49%**	**$2,279,991,875**	**54.29%**	**$664,756,352**

[1] Average rate for the Employer-pay and Employee/Employer-pay plans.
[2] Based on rate payroll for each valuation date shown.
[3] Actual dollar increase in existing amortization bases.
[4] Actual dollar increase/(decrease) in normal cost.
[5] Includes a contribution loss due to the actuarially determined contributions being lowered by the four-year phase-in of the cost impact of the 2021 assumption changes.
[6] Estimated annual dollar cost also reflects change in payroll from the June 30, 2022 valuation.

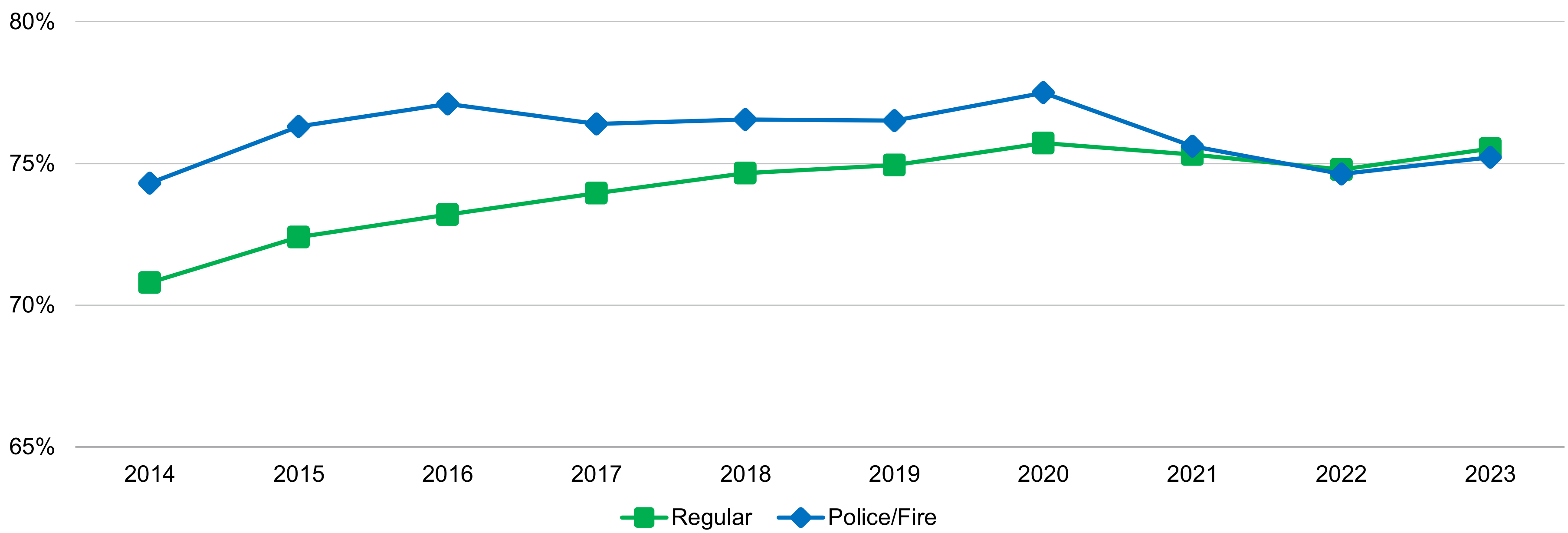
F. Funded ratio

One critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the actuarial value of assets to the actuarial accrued liabilities of the plan.

The funded status measures shown in this valuation are appropriate for assessing the need for or amount of future contributions. However, they are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations.

Higher ratios indicate a well-funded plan with assets sufficient to cover the plan's liabilities. Lower ratios may indicate recent changes to actuarial assumptions, benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors.

Funded Ratio for Years Ending June 30, 2014 – 2023



G. Risk assessment

Because the actuarial valuation results are dependent on a fixed set of assumptions and data as of a specific date, there is risk that emerging results may differ, perhaps significantly, as actual experience is fluid and will not exactly track current assumptions. This potential divergence may have a significant impact on the future financial condition of the plan.

This section does not contain a detailed analysis of the potential range of future measurements, but does include a concise discussion of some of the primary risks that may affect the Plan's future financial condition. We recommend a more detailed assessment of the risks to provide the Board with a better understanding of the risks inherent in the Plan that can inform both financial preparation and future decision making. This assessment would enable us to work with the Board to highlight and illustrate particular risks or potential future outcomes that the Board may be interested in discussing and could include tailored scenario testing, sensitivity testing, stress testing and stochastic modeling.

This section provides descriptions and basic assessments of the primary risks that are likely to have an ongoing influence on the Plan's financial health, as well as a discussion of historical trends and maturity measures:

Risk assessments

- Asset/Liability Mismatch Risk (the potential that future plan experience does not affect asset and liability values in the same way, causing them to diverge)

  The most significant asset/liability mismatch risk to the Plan is investment risk, as discussed below. In fact, investment risk has the potential to impact asset/liability mismatch in two ways. The first mismatch is evident in annual valuations: when asset values deviate from assumptions they are typically independent from liability changes. The second mismatch can be caused when systemic asset deviations from assumptions may signal the need for an assumption change, which causes liability values and contribution rates to move in the opposite direction from any change in the expected experience of asset growth rates.

  Asset/liability mismatch can also be caused by demographic assumption risks such as longevity, which affect liabilities but have no impact on asset levels. This risk is also discussed below.

- Investment Risk (the risk that investment returns will be different than expected)

  The investment return assumption is a long-term, static assumption for valuation purposes even though in reality market experience can be quite volatile in any given year. That volatility can cause significant changes in the financial condition of the Plan, affecting both funded status and contribution rates. The inherent year-to-year volatility is reduced by smoothing through the Actuarial Value of Assets; however, investment experience can still have a sizable impact.

The market value rate of return over the last 10 years has ranged from a low of -5.06% to a high of 27.23%.

- Longevity Risk (the risk that mortality experience will be different than expected)

  The actuarial valuation includes current life expectancy assumptions and an expectation of future improvement in life expectancy, which are significant assumptions given the relatively long duration of liabilities for pension plans. Emerging plan experience that does not match these expectations will result in increases or decreases in the actuarially determined contribution over time. This risk can be reduced by using tables appropriate for the Plan (public experience tables) that are weighted by benefit levels, and by using generational mortality projections. Effective with the July 1, 2021 valuation, the Board has adopted amount-weighted mortality tables with generational mortality projections.

- Other Risks

  In addition to longevity, the valuation includes a variety of other assumptions that are unlikely to match future experience exactly. One example is projected salary scales over time. As salary is central to the determination of benefits paid in retirement, deviations from the projected salary scales could have a material impact on the benefits anticipated for each member. Examples of demographic assumptions include retirement, termination and disability assumptions, and will likely vary in significance for different cost groups.

Some plans also carry significant contribution risk, defined as the potential for actual future contributions deviating from expected future contributions. However, the employers have a proven track record of contributing at the statutory contributions that are closely related to the Actuarially Determined Contributions based on the Board's Actuarial Funding Policy, so contribution risk is minimal.

Based on the Plan's amortization policy, any new UAAL from actuarial gains, losses or assumption changes is amortized over a "closed" amortization period of 20 years as a level percentage of payroll. The assumed total payroll growth rates used to compute the UAAL amortization payment are set by the Board. The assumed total payroll growth rates are 3.50% for both Regular and Police/Fire. In years when the actual total payroll growth is less than the assumption, the System will receive less UAAL contributions than expected. This "contribution loss" could lead to future contribution rate increases.

Evaluation of historical trends

Past experience can help demonstrate the sensitivity of key results to the Plan's actual experience. Over the past 10 years:

- The funded percentage on the actuarial value of assets basis has increased from 70.8% to 75.5% for Regular and 74.3% to 75.2% for Police/Fire. This is primarily due to favorable investment experience over these 10 years, partially offset by the strengthening of actuarial assumptions through multiple Experience Studies. For a more detailed history see *Section 2, Subsection F, Funded Ratio* on page 37.

- The geometric average investment return on the actuarial value of assets over the last 10 years was 8.66%. This includes a high of a 12.36% return and a low of 7.03%. The average over the last 5 years was 8.82%. For more details see the Investment Return table in *Section 2, Subsection C* on page 30.
- A major source of new UAAL was the strengthening of assumptions through multiple assumption changes. For example, the assumption changes in 2013 updated mortality tables and other assumptions, adding $1,460 million in unfunded liability. The assumption changes in 2017 changed the discount rate from 8.00% to 7.50% and updated mortality tables and other assumptions, adding $1,046 million in unfunded liability. The assumption changes in 2021 changed the discount rate from 7.50% to 7.25% and updated mortality tables and other assumptions, adding $3,345 million in unfunded liability. It is important to note that assumptions reflect anticipated plan costs in the future, and changes in those assumptions reflect changes in anticipated plan costs. Ultimately plan costs will only be known as experience unfolds. For more details on the unfunded liability changes see *Section 3, Exhibit G, Table of Amortization Bases* starting on page 52.

Maturity measures

Over the last 10 years the ratio of non-active members to active members has increased from 0.70 to 0.91 for Regular and 0.65 to 0.93 for Police/Fire. An increased ratio indicates that the plan has grown in maturity over time. This is to be expected, but is also informative for understanding plan sensitivity to particular risks. For more details see *Section 2, Subsection A, Member Data* on pages 19 and 22.

As pension plans mature, the cash needed to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the Plan's asset allocation is aligned to meet emerging pension liabilities. For the prior year, benefits and expenses paid were $1,154 million more than contributions received. This outflow is 2.0% of the market value of assets. Plans with higher levels of negative cash flows have a need for a larger allocation to income generating assets, which can create a drag on investment return. For more details on historical cash flows see the Comparison of Contributions with Benefits and Expenses in *Section 2, Subsection B, Financial Information* on page 25.

Low-Default-Risk Obligation Measure (LDROM)

In December 2021, the Actuarial Standards Board issued a revision of Actuarial Standard of Practice No. 4 (ASOP 4) Measuring Pension Obligations and Determining Pension Plan Costs or Contributions. One of the revisions to ASOP 4 requires the disclosure of a Low-Default-Risk Obligation Measure (LDROM) when performing a funding valuation. The LDROM presented in this report is calculated using the same methodology and assumptions used to determine the Actuarial Accrued Liability (AAL) used for funding, except for the discount rate. The LDROM is required to be calculated using "a discount rate…derived from low-default-risk fixed income securities whose cash flows are reasonably consistent with the pattern of benefits expected to be paid in the future."

Section 2: Actuarial Valuation Results

The LDROM is a calculation assuming a plan's assets are invested in an all-bond portfolio, generally lowering expected long-term investment returns. The discount rate selected and used for this purpose is the Bond Buyer General Obligation 20-year Municipal Bond Index Rate, published at the end of each week. The last published rate in June of the measurement period, by The Bond Buyer, is 3.65% for use effective June 30, 2023. This is the rate used to determine the discount rate for valuing reported public pension plan liabilities in accordance with Governmental Accounting Standards when plan assets are projected to be insufficient to make projected benefit payments, and the 20-year period reasonably approximates the duration of plan liabilities. The LDROM is not used to determine a plan's funded status or Actuarially Determined Contribution Rate. The plan's expected return on assets, currently 7.25%, is used for these calculations.

As of June 30, 2023, the LDROM for the Plan is $125.45 billion. The difference between the plan's AAL of $76.57 billion and the LDROM can be thought of as the increase in the AAL if the entire portfolio were invested in low-default-risk securities. Alternatively, this difference could also be viewed as representing the expected savings from investing in the plan's diversified portfolio compared to investing only in low-default-risk securities.

ASOP 4 requires commentary to help the intended user understand the significance of the LDROM with respect to the funded status of the plan, plan contributions, and the security of participant benefits. In general, if plan assets were invested exclusively in low-default-risk securities, the funded status would be lower and the Actuarially Determined Contribution would be higher. While investing in a portfolio with low-default-risk securities may be more likely to reduce investment volatility and the volatility of employer contributions, it also may be more likely to result in higher employer contributions or lower benefits.

Section 3: Supplemental Information

Exhibit A: Table of plan coverage

Regular	Year Ended June 30 2023	Year Ended June 30 2022	Change From Prior Year
Active members in valuation:			
• Number	99,132	95,785	3.5%
Employer-Pay	77,496	75,217	3.0%
Employee/Employer-Pay	21,636	20,568	5.2%
• Average age	45.5	45.7	(0.2)
• Average service	9.6	9.8	(0.2)
• Total annual salary	$5,661,206,786	$5,267,320,827	7.5%
• Average annual salary	$57,108	$54,991	3.8%
• Account balances	$1,155,431,646	$1,094,086,963	5.6%
• Total active vested members	64,353	63,624	1.1%
Inactive vested members	19,041	18,471	3.1%
Retired members:			
• Number in pay status	60,994	58,870	3.6%
• Average age	71.0	70.8	0.2
• Average monthly benefit	$3,443	$3,325	3.5%
Disabled members:			
• Number in pay status	2,405	2,398	0.3%
• Average age	61.3	61.1	0.2
• Average monthly benefit	$2,614	$2,500	4.6%
Beneficiaries:			
• Number in pay status	5,199	4,994	4.1%
• Average age	72.7	72.3	0.4
• Average monthly benefit	$2,425	$2,307	5.1%
Survivors:			
• Number in pay status	2,358	2,288	3.1%
• Average age	55.6	55.6	0.0
• Average monthly benefit	$1,607	$1,571	2.3%
Total pay status:			
• Number in pay status	70,956	68,550	3.5%
• Average age	70.3	70.1	0.2
• Average monthly benefit	$3,279	$3,163	3.7%

Exhibit A: Table of plan coverage (continued)

Police/Fire	Year Ended June 30 2023	2022	Change From Prior Year
Active members in valuation:			
• Number	12,887	12,850	0.3%
Employer-Pay	11,655	11,500	1.3%
Employee/Employer-Pay	1,232	1,350	(8.7%)
• Average age	39.2	39.3	(0.1)
• Average service	10.8	10.8	0.0
• Total annual salary	$1,124,456,985	$1,072,835,909	4.8%
• Average annual salary	$87,255	$83,489	4.5%
• Account balances	$166,664,894	$163,668,463	1.8%
• Total active vested members	9,439	9,187	2.7%
Inactive vested members	1,049	1,040	0.9%
Retired members:			
• Number in pay status	8,811	8,503	3.6%
• Average age	64.1	63.9	0.2
• Average monthly benefit	$6,534	$6,299	3.7%
Disabled members:			
• Number in pay status	668	639	4.5%
• Average age	54.8	54.7	0.1
• Average monthly benefit	$3,985	$3,850	3.5%
Beneficiaries:			
• Number in pay status	1,124	1,055	6.5%
• Average age	72.4	72.1	0.3
• Average monthly benefit	$3,159	$2,975	6.2%
Survivors:			
• Number in pay status	302	302	0.0%
• Average age	46.2	45.8	0.4
• Average monthly benefit	$2,216	$2,123	4.4%
Total pay status:			
• Number in pay status	10,905	10,499	3.9%
• Average age	63.9	63.6	0.3
• Average monthly benefit	$5,910	$5,696	3.8%

Exhibit A: Table of plan coverage (continued)

Total	Year Ended June 30 2023	2022	Change From Prior Year
Active members in valuation:			
• Number	112,019	108,635	3.1%
Employer-Pay	89,151	86,717	2.8%
Employee/Employer-Pay	22,868	21,918	4.3%
• Average age	44.8	44.9	(0.1)
• Average service	9.7	9.9	(0.2)
• Total annual salary	$6,785,663,771	$6,340,156,736	7.0%
• Average annual salary	$60,576	$58,362	3.8%
• Account balances	$1,322,096,540	$1,257,755,426	5.1%
• Total active vested members	73,792	72,811	1.3%
Inactive vested members	20,090	19,511	3.0%
Retired members:			
• Number in pay status	69,805	67,373	3.6%
• Average age	70.2	69.9	0.3
• Average monthly benefit	$3,833	$3,700	3.6%
Disabled members:			
• Number in pay status	3,073	3,037	1.2%
• Average age	59.9	59.7	0.2
• Average monthly benefit	$2,912	$2,784	4.6%
Beneficiaries:			
• Number in pay status	6,323	6,049	4.5%
• Average age	72.6	72.2	0.4
• Average monthly benefit	$2,556	$2,423	5.5%
Survivors:			
• Number in pay status	2,660	2,590	2.7%
• Average age	54.5	54.4	0.1
• Average monthly benefit	$1,676	$1,635	2.5%
Total pay status:			
• Number in pay status	81,861	79,049	3.6%
• Average age	69.5	69.2	0.3
• Average monthly benefit	$3,630	$3,499	3.7%

Exhibit B: Members in active service as of June 30, 2023 by age, years of service, and average annual salary

Regular

		Years of Service[1]								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	3,790	3,766	24	—	—	—	—	—	—	—
	$25,100	$24,964	$46,489	—	—	—	—	—	—	—
25 – 29	7,955	6,768	1,175	12	—	—	—	—	—	—
	39,752	37,870	50,325	$65,624	—	—	—	—	—	—
30 – 34	10,615	6,273	3,719	585	37	1	—	—	—	—
	47,486	40,972	56,147	60,908	$67,522	*	—	—	—	—
35 – 39	11,779	5,295	3,550	1,937	929	68	—	—	—	—
	54,137	41,686	60,031	67,993	71,541	$83,500	—	—	—	—
40 – 44	13,620	4,636	3,304	1,996	2,892	721	71	—	—	—
	60,306	41,551	61,219	70,844	75,495	83,957	$87,440	—	—	—
45 – 49	13,224	3,603	2,820	1,593	2,560	1,884	748	16	—	—
	64,509	42,414	59,412	67,530	76,758	85,117	89,271	$93,080	—	—
50 – 54	14,238	3,339	2,640	1,752	2,644	1,936	1,819	107	1	—
	66,594	43,160	59,904	65,529	74,258	82,815	90,484	91,138	*	—
55 – 59	11,553	2,605	2,043	1,512	2,268	1,555	1,316	232	22	—
	64,375	42,710	57,569	61,791	71,003	79,909	86,541	87,813	$85,006	—
60 – 64	7,768	1,759	1,489	1,048	1,616	1,012	645	150	40	9
	61,290	42,488	56,912	59,763	67,258	73,810	83,074	84,572	90,054	$81,721
65 – 69	3,165	755	626	430	651	331	268	79	15	10
	60,119	40,462	57,754	57,293	67,646	74,473	79,957	79,233	112,640	87,268
70 & over	1,425	386	259	211	248	140	105	42	25	9
	52,917	31,576	50,356	53,702	65,197	62,952	73,838	82,934	63,648	115,033
Total	**99,132**	**39,185**	**21,649**	**11,076**	**13,845**	**7,648**	**4,972**	**626**	**103**	**28**
	$57,108	**$39,463**	**$58,279**	**$65,361**	**$72,955**	**$80,991**	**$87,334**	**$86,329**	**$85,884**	**$94,409**

* Not shown for groups with fewer than five members.

[1] Includes purchased service.

Exhibit B: Members in active service as of June 30, 2023 by age, years of service, and average annual salary (continued)

Police/Fire

		Years of Service[1]								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	479	477	2	—	—	—	—	—	—	—
	$45,700	$45,625	*	—	—	—	—	—	—	—
25 – 29	1,987	1,455	528	4	—	—	—	—	—	—
	64,718	59,738	$78,365	*	—	—	—	—	—	—
30 – 34	2,429	994	1,224	187	23	1	—	—	—	—
	73,846	59,898	81,784	$91,785	$105,954	*	—	—	—	—
35 – 39	2,276	494	811	509	415	46	1	—	—	—
	87,294	59,652	81,873	97,047	114,736	$124,599	*	—	—	—
40 – 44	2,022	200	361	347	803	293	18	—	—	—
	100,059	60,043	81,440	97,666	111,409	120,381	$127,028	—	—	—
45 – 49	1,737	102	165	198	584	560	128	—	—	—
	107,496	57,306	78,284	94,056	109,043	121,575	137,280	—	—	—
50 – 54	1,285	73	101	107	372	428	191	13	—	—
	108,243	59,261	72,188	85,560	104,582	120,016	137,154	$142,476	—	—
55 – 59	483	26	30	55	120	147	84	15	6	—
	102,663	45,889	73,413	87,467	97,257	111,157	125,809	133,736	$132,551	—
60 – 64	156	8	11	19	42	38	20	12	4	2
	99,100	45,843	85,336	84,735	86,702	103,391	127,509	131,170	*	*
65 – 69	24	2	5	4	5	3	2	—	2	1
	88,554	*	87,804	*	75,055	*	*	—	*	*
70 & over	9	2	1	1	4	—	—	1	—	—
	68,258	*	*	*	*	—	—	*	—	—
Total	**12,887**	**3,833**	**3,239**	**1,431**	**2,368**	**1,516**	**444**	**41**	**12**	**3**
	$87,255	**$57,799**	**$80,660**	**$94,547**	**$109,014**	**$119,528**	**$133,785**	**$136,023**	**$128,172**	*****

* Not shown for groups with fewer than five members.

[1] Includes purchased service.

Exhibit B: Members in active service as of June 30, 2023 by age, years of service, and average annual salary (continued)

Total

		Years of Service[1]								
Age	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	4,269	4,243	26	—	—	—	—	—	—	—
	$27,412	$27,287	$47,808	—	—	—	—	—	—	—
25 – 29	9,942	8,223	1,703	16	—	—	—	—	—	—
	44,742	41,740	59,019	$68,002	—	—	—	—	—	—
30 – 34	13,044	7,267	4,943	772	60	2	—	—	—	—
	52,394	43,561	62,495	68,387	$82,255	*	—	—	—	—
35 – 39	14,055	5,789	4,361	2,446	1,344	114	1	—	—	—
	59,507	43,219	64,093	74,039	84,878	$100,084	*	—	—	—
40 – 44	15,642	4,836	3,665	2,343	3,695	1,014	89	—	—	—
	65,445	42,316	63,211	74,816	83,300	94,482	$95,447	—	—	—
45 – 49	14,961	3,705	2,985	1,791	3,144	2,444	876	16	—	—
	69,499	42,824	60,456	70,462	82,755	93,471	96,286	$93,080	—	—
50 – 54	15,523	3,412	2,741	1,859	3,016	2,364	2,010	120	1	—
	70,042	43,504	60,357	66,682	77,998	89,550	94,919	96,699	*	—
55 – 59	12,036	2,631	2,073	1,567	2,388	1,702	1,400	247	28	—
	65,911	42,741	57,798	62,692	72,322	82,607	88,897	90,602	$95,194	—
60 – 64	7,924	1,767	1,500	1,067	1,658	1,050	665	162	44	11
	62,034	42,503	57,120	60,208	67,751	74,880	84,410	88,023	93,201	$98,767
65 – 69	3,189	757	631	434	656	334	270	79	17	11
	60,333	40,503	57,992	57,465	67,702	74,862	79,941	79,233	113,745	92,247
70 & over	1,434	388	260	212	252	140	105	43	25	9
	53,013	31,428	50,403	53,649	65,584	62,952	73,838	84,370	63,648	115,033
Total	**112,019**	**43,018**	**24,888**	**12,507**	**16,213**	**9,164**	**5,416**	**667**	**115**	**31**
	$60,576	**$41,097**	**$61,191**	**$68,700**	**$78,221**	**$87,367**	**$91,142**	**$89,384**	**$90,297**	**$101,176**

* Not shown for groups with fewer than five members.

[1] Includes purchased service.

Exhibit C: Reconciliation of member data

	Active Members	Inactive Vested Members	Retired Members	Disabled Members	Beneficiaries and Survivors	Total
Number as of June 30, 2022	**108,635**	**19,511**	**67,373**	**3,037**	**8,639**	**207,195**
• New members	14,432	0	0	0	760	15,192
• Terminations – with vested rights	(2,461)	2,461	0	0	0	0
• Terminations – without vested rights	(5,923)	(166)	N/A	N/A	N/A	(6,089)
• Retirements	(2,974)	(1,008)	4,051	(69)	N/A	0
• New disabilities	(171)	(21)	0	192	N/A	0
• Return to work	668	(664)	(2)	(2)	N/A	0
• Died with or without beneficiary	(82)	(38)	(1,639)	(79)	(358)	(2,196)
• Certain period expired	N/A	N/A	0	0	(58)	(58)
• Data adjustments	(105)	15	22	(6)	0	(74)
Number as of June 30, 2023	**112,019**	**20,090**	**69,805**	**3,073**	**8,983**	**213,970**

Exhibit D: Summary statement of income and expenses on an actuarial value basis (based on unaudited financial statements)

	Year Ended June 30, 2023			Year Ended June 30, 2022
	Regular	**Police/Fire**	**Total**	**Total**
Net assets at actuarial value at the beginning of the year	**$41,726,204,714**	**$12,515,915,964**	**$54,242,120,678**	**$50,942,455,021**
Contribution income:[1]				
• Employer contributions[2]	$904,779,436	$259,094,418	$1,163,873,854	$1,103,990,008
• Member contributions	904,779,436	259,094,418	1,163,873,854	1,103,990,008
• Repayment and purchase of service	49,303,003	13,549,655	62,852,658	82,411,480
Total contributions	$1,858,861,875	$531,738,491	$2,390,600,366	$2,290,391,496
Investment income:				
• Interest	$359,546,118	$0	$359,546,118	$161,256,553
• Dividends	738,117,020	0	738,117,020	713,766,500
• Net appreciation	3,755,039,509	0	3,755,039,509	(3,940,090,118)
• Other	174,299,111	0	174,299,111	147,800,484
• Transfer of annual investment income	(1,144,235,001)	1,144,235,001	0	0
• Securities lending income	2,122,178	0	2,122,178	6,193,380
• Change in fair value of securities lending	0	0	0	0
• Other income	807,972	662,770	1,470,742	3,703,489
• Change in unrecognized return	(208,117,595)	(66,100,420)	(274,218,015)	7,244,138,004
• Less investment fees	(75,725,670)	0	(75,725,670)	(26,872,547)
Net investment income	$3,601,853,642	$1,078,797,351	$4,680,650,993	$4,309,895,745
Total income available for benefits	**$5,460,715,517**	**$1,610,535,842**	**$7,071,251,359**	**$6,600,287,241**
Less operating expenses:				
• Retirement and survivor benefits	$(2,632,056,992)	$(714,097,190)	$(3,346,154,182)	$(3,107,324,168)
• Disability benefits	(96,763,587)	(34,833,298)	(131,596,885)	(124,617,138)
• Refunds to members	(41,532,063)	(9,570,852)	(51,102,915)	(53,537,925)
• Administrative expenses	(11,881,133)	(2,211,968)	(14,093,101)	(13,453,262)
• Transfer to JRS	(1,407,857)	0	(1,407,857)	(1,689,041)
• Other expenses	(19,665)	0	(19,665)	(50)
Net operating expenses	$(2,783,661,297)	$(760,713,308)	$(3,544,374,605)	$(3,300,621,584)
Interfund transfer	$(2,661,718)	$2,661,718	$0	$0
Change in reserve for future benefits	**$2,674,392,502**	**$852,484,252**	**$3,526,876,754**	**$3,299,665,657**
Net assets at actuarial value at the end of the year	**$44,400,597,216**	**$13,368,400,216**	**$57,768,997,432**	**$54,242,120,678**

[1] Pursuant to GASB Statement No. 82, the financial statements recognize half of the employer contributions made on behalf of Employer-Pay members as member contributions.

[2] See cost-sharing mechanisms in NRS 286.410 and NRS 286.421.

Exhibit E: Summary statement of plan assets (based on unaudited financial statements)

	Year Ended June 30, 2023		Year Ended June 30, 2022	
Cash and cash equivalents		$575,507,671		$511,020,040
Receivables:				
• Contributions receivable	$208,013,711		$213,753,422	
• Pending trades receivable	68,032,701		45,076,880	
• Accrued investment income	223,716,471		171,044,397	
Total accounts receivable		499,762,883		429,874,699
Investments:				
• Fixed income securities	$14,142,712,734		$14,521,166,462	
• Marketable equity securities	24,374,366,739		21,073,996,031	
• International securities	10,999,045,099		9,678,799,992	
• Real estate	3,058,559,255		3,471,506,085	
• Private equity	4,799,220,448		4,955,746,744	
Total investments at market value		57,373,904,275		53,701,215,314
Collateral on loaned securities		0		248,941,553
Property and equipment		12,956,878		8,081,697
Other assets		3,962,814		5,107,407
Total assets		$58,466,094,521		$54,904,240,710
Liabilities:				
• Accounts payable	$(10,033,523)		$(33,781,903)	
• Pending trades payable	(140,954,221)		(107,505,246)	
• Obligations under securities lending activities	0		(248,941,553)	
Total liabilities		$(150,987,744)		$(390,228,702)
Net assets at market value		**$58,315,106,777**		**$54,514,012,008**
Net assets at actuarial value		**$57,768,997,432**		**$54,242,120,678**

Exhibit F: Development of the fund through June 30, 2023

Year Ended June 30	Employer Contributions[1]	Member Contributions[1]	Other Contributions	Net Investment Return[2]	Administrative Expenses	Benefit Payments[3]	Actuarial Value of Assets at End of Year
2013							$29,108,541,364
2014	$1,405,006,553	$109,656,492	$42,752,491	$2,649,964,116	$9,592,570	$1,840,771,509	31,465,556,937
2015	1,436,652,815	114,302,545	82,485,688	2,614,811,974	9,648,626	1,986,231,557	33,717,929,776
2016	1,569,709,596	129,788,195	61,736,428	2,567,650,020	11,950,720	2,138,616,015	35,896,247,280
2017	901,744,209	901,744,209	67,230,428	3,251,238,649	9,872,019	2,289,032,062	38,719,300,694
2018	930,269,428	930,269,427	73,557,803	3,153,811,596	12,945,720	2,451,895,189	41,342,368,039
2019	965,518,968	965,518,968	98,357,134	2,884,998,712	11,812,306	2,635,977,671	43,608,971,844
2020	1,045,108,804	1,045,108,804	67,038,909	3,252,401,792	12,398,452	2,834,539,498	46,171,692,203
2021	1,051,938,035	1,051,938,035	69,958,026	5,652,748,412	12,555,534	3,043,264,156	50,942,455,021
2022	1,103,990,008	1,103,990,008	82,411,480	4,309,895,745	13,453,312	3,287,168,272	54,242,120,678
2023	1,163,873,854	1,163,873,854	62,852,658	4,680,650,993	14,112,766	3,530,261,839	57,768,997,432

[1] Starting in the year ended June 30, 2017, pursuant to GASB Statement No. 82, the financial statements recognize half of the employer contributions made on behalf of Employer-Pay members as member contributions.
[2] Net of investment fees.
[3] Includes transfers in/out of the System (e.g. to the Judicial Retirement System) that correspond to transfers of liability.

Exhibit G: Table of amortization bases

Regular

Date Established	Initial Years	Initial Amount	Outstanding Balance	Years Remaining	Current Annual Payment[1]
June 30, 2004	30	$3,306,492,730	$4,258,974,348	11	$459,674,054
June 30, 2022[2]	20	9,655,883,143	9,644,896,563	19	686,176,636
June 30, 2023	20	491,122,142	491,122,142	20	33,720,429
Subtotal			**$14,394,993,053**	**15.6[3]**	**$1,179,571,119**

[1] Level percentage of payroll with payroll expected to increase 3.50% per year for Regular and Police/Fire. Payments shown as of beginning of year.
[2] The outstanding balance of all Regular amortization bases established between June 30, 2005 and June 30, 2022 were combined and re-amortized over a closed 20-year period as of June 30, 2022.
[3] Effective amortization period. Combined Regular and Police/Fire average amortization period is 16.4.

Exhibit G: Table of amortization bases (continued)

Police/Fire

Date Established	Initial Years	Initial Amount	Outstanding Balance	Years Remaining	Current Annual Payment[1]
June 30, 2022[2]	20	$4,255,701,712	$4,250,859,522	19	$302,423,200
June 30, 2023	20	153,162,061	153,162,061	20	10,516,102
Subtotal			**$4,404,021,583**	**19.0[3]**	**$312,939,302**
Total			**$18,799,014,636**		**$1,492,510,421**

[1] Level percentage of payroll with payroll expected to increase 3.50% per year for Regular and Police/Fire. Payments shown as of beginning of year.
[2] The outstanding balance of all Police/Fire amortization bases established between June 30, 2004 and June 30, 2022 were combined and re-amortized over a closed 20-year period as of June 30, 2022.
[3] Effective amortization period. Combined Regular and Police/Fire average amortization period is 16.4.

Exhibit H: Definition of pension terms

The following list defines certain technical terms for the convenience of the reader:

Actuarial Accrued Liability for Actives:	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial Accrued Liability for Pensioners and Beneficiaries:	The single-sum value of lifetime benefits to existing pensioners and beneficiaries. This sum takes account of life expectancies appropriate to the ages of the annuitants and the interest that the sum is expected to earn before it is entirely paid out in benefits.
Actuarial Cost Method:	A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the actuarially determined contribution.
Actuarial Gain or Loss:	A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield in actuarial liabilities that are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.
Actuarially Equivalent:	Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial Present Value (APV):	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. Each such amount or series of amounts is: Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.) Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, and Discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Present Value of Future Plan Benefits:	The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits when due.
Actuarial Valuation:	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB, such as the Actuarially Determined Contribution (ADC) and the Net Pension Liability (NPL).
Actuarial Value of Assets (AVA):	The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.
Actuarially Determined:	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.
Actuarially Determined Contribution (ADC):	The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the Plan's funding policy. The ADC consists of the Employer Normal Cost and the Amortization Payment.
Amortization Method:	A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.
Amortization Payment:	The portion of the pension plan contribution, or ADC, that is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Assumptions or Actuarial Assumptions:	The estimates upon which the cost of the Fund is calculated, including: Investment return - the rate of investment yield that the Fund will earn over the long-term future; Mortality rates - the death rates of employees and pensioners; life expectancy is based on these rates; Retirement rates - the rate or probability of retirement at a given age or service; Disability rates – the probability of disability retirement at a given age; Termination rates - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; Salary increase rates - the rates of salary increase due to inflation and productivity growth.
Closed Amortization Period:	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Open Amortization Period.
Decrements:	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.
Defined Benefit Plan:	A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.
Defined Contribution Plan:	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
Employer Normal Cost:	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
Experience Study:	A periodic review and analysis of the actual experience of the Fund that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.
Funded Ratio:	The ratio of the Actuarial Value of Assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the Market Value of Assets (MVA), rather than the AVA.
Investment Return:	The rate of earnings of the Fund from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

Normal Cost:	That portion of the Actuarial Present Value of pension plan benefits and expenses allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated.
Open Amortization Period:	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period with level percentage of payroll is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never decrease, but will become smaller each year, in relation to covered payroll, if the actuarial assumptions are realized.
Unfunded Actuarial Accrued Liability:	The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative, in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.
Valuation Date or Actuarial Valuation Date:	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

Section 4: Actuarial Valuation Basis

Exhibit 1: Summary of actuarial valuation results

The valuation was made with respect to the following data supplied to us:

1	Retired members as of the valuation date (including 8,983 beneficiaries and survivors in pay status)	81,861
2	Members inactive during year ended June 30, 2023 with vested rights	20,090
3	Members active during the year ended June 30, 2023	112,019
4	Total members	213,970

The actuarial factors as of the valuation date are as follows:

1	Normal cost[1]		
	Regular members	$1,215,311,624	
	Police/Fire members	395,369,771	
	Total normal cost		$1,610,681,395
2	Actuarial accrued liability		
	Retired members and beneficiaries	$46,427,793,500	
	Inactive members with vested rights	2,046,220,881	
	Active members	28,093,997,687	
	Total actuarial accrued liability		$76,568,012,068
3	Actuarial value of assets ($58,315,106,777 at market value as reported by System staff)		57,768,997,432
4	Unfunded actuarial accrued liability: **2 - 3**		$18,799,014,636
5	Total rate payroll		7,648,776,500

[1] Does not include administrative expenses.

Exhibit 2: Actuarial assumptions and methods

Rationale for Assumptions:	The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the Actuarial Experience Study dated September 10, 2021. These assumptions were adopted by the Board.
Economic Assumptions	
Net Investment Return:	7.25% (including 2.50% for inflation), net of investment expenses Based on the actuarial experience study referenced above, expected investment expenses represent about 0.13% of the actuarial value of assets.
Consumer Price Index:	Increase of 2.50% per year
Annual Administrative Expenses:	0.20% of payroll added to normal cost

Salary Increases:

Inflation: 2.50% plus

Productivity pay increases: 0.50% plus

Merit and promotion salary increases:

	Rate (%)	
Years of Service	**Regular**	**Police/Fire**
0 – 1	6.10	11.50
1 – 2	5.00	8.20
2 – 3	4.40	5.80
3 – 4	4.00	5.20
4 – 5	3.70	4.90
5 – 6	3.40	4.70
6 – 7	3.30	4.40
7 – 8	3.20	4.20
8 – 9	3.00	4.00
9 – 10	2.80	3.90
10 – 11	2.60	3.50
11 – 12	2.30	2.80
12 – 13	2.10	2.20
13 – 14	1.90	2.00
14 – 15	1.80	1.90
15 – 16	1.70	1.70
16 – 17	1.60	1.70
17 – 18	1.50	1.70
18 – 19	1.40	1.70
19 – 20	1.30	1.70
20 & Over	1.20	1.60

Future salary increases are assumed to occur at the beginning of the year.

Total Payroll Growth:

Assumed payroll growth rates are used to compute the unfunded actuarial accrued liability amortization payments as a level percentage of projected payroll. For this valuation, the payroll for the coming year is based on actual annualized payroll for the actives as of the valuation date and projected by the salary scale. However, for members with less than one year of service as of the valuation date, no salary increase assumption is applied to their annualized compensation. For the purpose of calculating the actuarially determined contribution rate, the total payroll growth assumption for future years is 3.50% per year for both Regular and Police/Fire.

Post-Retirement Benefit Increases:	For current retirees and beneficiaries, future Post-Retirement Benefit Increases reflect actual changes in historical CPI and are assumed to follow the formulas described in Exhibit 3 of this section. For future retirees, those hired prior to January 1, 2010 are assumed to reach the cap after 14 years of retirement. Those hired between January 1, 2010 and July 1, 2015 are also assumed to reach the cap after 14 years of retirement. Those hired after July 1, 2015 are assumed to never receive an annual increase that exceeds 2.50%. Underlying all of these assumptions is that CPI will grow over time at a rate of 2.50% per year.
Demographic Assumptions:	
Post-Retirement Mortality Rates:	*Healthy* • **Regular Members:** Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 30% for males and 15% for females, projected generationally with the two-dimensional mortality improvement scale MP-2020. The above listed mortality tables only provide rates for ages 50 and older. To develop mortality rates for ages 40 through 50, we have smoothed the difference between the rates at age 40 from the Pub-2010 General Employee Amount-Weighted Above-Median Mortality Tables and the rates at age 50 from the Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables. To develop the mortality rates before age 40, we have used the Pub-2010 General Employee Amount-Weighted Above-Median Mortality Tables rates. This methodology for developing an extended annuitant mortality table is similar to the method used by the IRS to develop the base mortality table for determining minimum funding standards for single-employer defined benefit pension plans under Internal Revenue Code Section 430. While Section 430 is not applicable to NVPERS, we believe this is a reasonable method for developing annuitant mortality rates at earlier ages. • **Police/Fire Members:** Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 30% for males and 5% for females, projected generationally with the two-dimensional mortality improvement scale MP-2020. The above listed mortality tables only provide rates for ages 45 and older. To develop mortality rates for ages 35 through 45, we have smoothed the difference between the rates at age 35 from the Pub-2010 Safety Employee Amount-Weighted Above-Median Mortality Tables and the rates at age 45 from the Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Tables. To develop the mortality rates before age 35, we have used the Pub-2010 Safety Employee Amount-Weighted Above-Median Mortality Tables rates. This methodology for developing an extended annuitant mortality table is similar to the method used by the IRS to develop the base mortality table for determining minimum funding standards for single-employer defined benefit pension plans under Internal Revenue Code Section 430. While Section 430 is not applicable to NVPERS, we believe this is a reasonable method for developing annuitant mortality rates at earlier ages.

Post-Retirement Mortality Rates (continued):	*Disabled* • **Regular Members:** Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females) with rates increased by 20% for males and 15% for females, projected generationally with the two-dimensional mortality improvement scale MP-2020. • **Police/Fire Members:** Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females) with rates increased by 30% for males and 10% for females, projected generationally with the two-dimensional mortality improvement scale MP-2020. *Beneficiaries* • **Regular and Police/Fire Current Beneficiaries in Pay Status:** Pub-2010 Contingent Survivor Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 15% for males and 30% for females, projected generationally with the two-dimensional mortality improvement scale MP-2020. The above listed mortality table only provides rates for ages 45 and older. To develop mortality rates for ages 35 through 45, we have smoothed the difference between the rates at age 35 from the Pub-2010 General Employee Amount-Weighted Above-Median Mortality Tables and the rates at age 45 from the Pub-2010 Contingent Survivor Amount-Weighted Above-Median Mortality Tables. To develop the mortality rates before age 35, we have used the Pub-2010 General Employee Amount-Weighted Above-Median Mortality Tables rates. This methodology for developing an extended annuitant mortality table is similar to the method used by the IRS to develop the base mortality table for determining minimum funding standards for single-employer defined benefit pension plans under Internal Revenue Code Section 430. While Section 430 is not applicable to NVPERS, we believe this is a reasonable method for developing annuitant mortality rates at earlier ages. • **Regular and Police/Fire Contingent Beneficiaries:** Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 30% for males and 15% for females, projected generationally with the two-dimensional mortality improvement scale MP-2020. The above listed mortality tables only provide rates for ages 50 and older. To develop mortality rates for ages 40 through 50, we have smoothed the difference between the rates at age 40 from the Pub-2010 General Employee Amount-Weighted Above-Median Mortality Tables and the rates at age 50 from the Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Tables. To develop the mortality rates before age 40, we have used the Pub-2010 General Employee Amount-Weighted Above-Median Mortality Tables rates. This methodology for developing an extended annuitant mortality table is similar to the method used by the IRS to develop the base mortality table for determining minimum funding standards for single-employer defined benefit pension plans under Internal Revenue Code Section 430. While Section 430 is not applicable to NVPERS, we believe this is a reasonable method for developing annuitant mortality rates at earlier ages.

Post-Retirement Mortality Rates (continued):

For the mortality table applicable to contingent beneficiaries, “Approach 1” from the Society of Actuaries “Pub-2010 Public Retirement Plans Mortality Tables Report” (as noted on page 61 of that report) was utilized. In particular, the mortality basis for contingent beneficiaries has been assumed to be the same mortality basis as the Healthy Regular retiree table listed above (except using rates applicable to the beneficiary’s gender) for both when the primary retiree is alive and is no longer alive.

The Pub-2010 Amount-Weighted Mortality Tables and adjustments as shown above reasonably reflect the mortality experience of the Plan as of the measurement date. These mortality tables were adjusted to future years using a generational projection to reflect future mortality improvement between the measurement date and those years.

Pre-Retirement Mortality Rates:

- **Regular Members:** Pub-2010 General Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2020.
- **Police/Fire Members:** Pub-2010 Safety Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2020.

The Pub-2010 Amount-Weighted Mortality Tables reasonably reflect the projected mortality experience of the Plan as of the measurement date. The generational projection is a provision made for future mortality improvement.

Pre-Retirement Mortality Rates (%)

	Regular		Police/Fire	
Age	**Male**	**Female**	**Male**	**Female**
20	0.04	0.01	0.04	0.02
25	0.02	0.01	0.03	0.02
30	0.03	0.01	0.04	0.02
35	0.04	0.02	0.04	0.03
40	0.06	0.03	0.05	0.04
45	0.09	0.05	0.07	0.06
50	0.13	0.08	0.10	0.08
55	0.19	0.11	0.15	0.11
60	0.28	0.17	0.23	0.15
65	0.41	0.27	0.35	0.20
70	0.61	0.45	0.66	0.39

Note that generational projections beyond the base year (2010) are not reflected in the above mortality rates.

Deaths that occur during the first two years of employment are assumed to be non-duty related.

Disability Rates:

	Disability Rates (%)	
Age	**Regular**	**Police/Fire**
22	0.01	0.00
27	0.03	0.06
32	0.04	0.16
37	0.10	0.32
42	0.20	0.50
47	0.30	0.80
52	0.55	0.70
57	0.70	0.50
62	0.30	0.30
65 & Over	0.00	0.00

Disability rates are applied only for members with more than 5 years of service and less than 30 years of service for Regular members with an effective date of membership before July 1, 2015, less than 33 1/3 years of service for Regular members with an effective date of membership on or after July 1, 2015, less than 25 years of service for Police/Fire members with an effective date of membership before January 1, 2010, or less than 30 years of service for Police/Fire members with an effective date of membership on or after January 1, 2010.

Termination Rates:

Years of Service	Termination Rates (%) Regular	Termination Rates (%) Police/Fire
0 – 1	15.75	14.50
1 – 2	12.75	8.25
2 – 3	10.25	6.50
3 – 4	8.25	5.50
4 – 5	7.50	4.50
5 – 6	6.50	4.25
6 – 7	5.75	3.25
7 – 8	5.25	2.50
8 – 9	4.75	2.50
9 – 10	4.50	1.90
10 – 11	4.25	1.40
11 – 12	3.25	1.25
12 – 13	3.00	1.00
13 – 14	2.75	0.90
14 – 15	2.25	0.80
15 – 16	2.25	0.70
16 – 17	2.25	0.60
17 – 18	2.00	0.50
18 – 19	1.75	0.40
19 – 20	1.75	0.30
20 – 21	1.75	0.30
21 – 22	1.75	0.30
22 – 23	1.75	0.30
23 – 24	1.75	0.30
24 – 25	1.50	0.30
25 & Over	1.50	0.30

No termination is assumed after a member reaches earliest unreduced retirement age.

The termination liability is based on the greater actuarial value of a refund of member contributions and a deferred vested retirement benefit.

Retirement Rates:

Regular members with an effective date of membership before January 1, 2010:

	Retirement Rates (%)					
	Years of Service					
Age	**5 – 9**	**10 – 19**	**20 – 24**	**25 – 27**	**28 – 29**	**30 & Over**
45	0.00	0.10	0.10	0.50	20.00	20.00
46	0.00	0.20	0.20	1.00	20.00	20.00
47	0.00	0.30	0.30	1.50	20.00	20.00
48	0.00	0.40	0.40	2.00	20.00	20.00
49	0.00	0.50	0.50	2.00	20.00	20.00
50	0.20	0.60	0.70	2.00	20.00	20.00
51	0.30	0.70	1.00	2.00	20.00	20.00
52	0.40	0.80	1.20	3.00	20.00	20.00
53	0.50	1.00	1.50	3.00	20.00	20.00
54	0.60	1.20	2.00	3.00	20.00	20.00
55	0.80	1.50	3.00	3.00	20.00	20.00
56	1.00	2.00	3.50	4.00	20.00	20.00
57	1.50	2.50	4.00	7.00	20.00	20.00
58	2.00	3.00	5.00	7.00	20.00	20.00
59	2.50	4.00	7.00	11.00	20.00	20.00
60	5.00	11.00	18.00	25.00	21.00	21.00
61	6.00	10.00	15.00	20.00	21.00	21.00
62	7.00	11.00	16.00	20.00	20.00	20.00
63	8.00	11.00	16.00	20.00	20.00	20.00
64	9.00	11.00	16.00	20.00	20.00	20.00
65	18.00	19.00	22.00	22.00	25.00	25.00
66	18.00	19.00	22.00	22.00	25.00	25.00
67	18.00	19.00	22.00	22.00	25.00	25.00
68	18.00	19.00	22.00	22.00	25.00	25.00
69	18.00	19.00	22.00	22.00	25.00	25.00
70	20.00	20.00	25.00	30.00	30.00	30.00
71	20.00	20.00	25.00	30.00	30.00	30.00
72	20.00	20.00	25.00	30.00	30.00	30.00
73	20.00	20.00	25.00	30.00	30.00	30.00
74	20.00	20.00	25.00	30.00	30.00	30.00
75 & Over	100.00	100.00	100.00	100.00	100.00	100.00

Retirement Rates (continued):

Regular members with an effective date of membership on or after January 1, 2010 and before July 1, 2015:

	Retirement Rates (%)					
	Years of Service					
Age	5 – 9	10 – 19	20 – 24	25 – 27	28 – 29	30 & Over
45	0.00	0.00	0.00	0.00	20.00	20.00
46	0.00	0.00	0.00	0.00	20.00	20.00
47	0.00	0.00	0.00	0.00	20.00	20.00
48	0.00	0.00	0.00	0.00	20.00	20.00
49	0.00	0.00	0.00	0.00	20.00	20.00
50	0.00	0.00	0.00	0.00	20.00	20.00
51	0.00	0.00	0.00	0.00	20.00	20.00
52	0.00	0.40	0.70	1.70	20.00	20.00
53	0.00	0.60	0.90	1.80	20.00	20.00
54	0.00	0.80	1.30	1.90	20.00	20.00
55	0.20	1.00	2.00	2.00	20.00	20.00
56	0.40	1.40	2.50	2.90	20.00	20.00
57	0.60	1.90	3.00	5.20	20.00	20.00
58	0.80	2.30	3.90	5.40	20.00	20.00
59	1.00	3.20	5.60	8.80	20.00	20.00
60	2.00	4.00	6.00	10.00	21.00	21.00
61	3.50	6.00	10.00	15.00	21.00	21.00
62	4.00	10.30	15.00	18.70	20.00	20.00
63	5.00	10.30	15.00	18.70	20.00	20.00
64	7.00	10.30	15.00	18.70	20.00	20.00
65	17.00	17.80	20.60	20.60	25.00	25.00
66	17.00	17.80	20.60	20.60	25.00	25.00
67	17.00	17.80	20.60	20.60	25.00	25.00
68	17.00	17.80	20.60	20.60	25.00	25.00
69	17.00	17.80	20.60	20.60	25.00	25.00
70	19.00	18.70	23.40	28.10	30.00	30.00
71	19.00	18.70	23.40	28.10	30.00	30.00
72	19.00	18.70	23.40	28.10	30.00	30.00
73	19.00	18.70	23.40	28.10	30.00	30.00
74	19.00	18.70	23.40	28.10	30.00	30.00
75 & Over	100.00	100.00	100.00	100.00	100.00	100.00

Retirement Rates (continued):

Regular members with an effective date of membership on or after July 1, 2015:

	Retirement Rates (%)					
	Years of Service					
Age	5 – 9	10 – 19	20 – 24	25 – 29	30 – 33.3	33.3 & Over
45	0.00	0.00	0.00	0.00	7.20	20.00
46	0.00	0.00	0.00	0.00	8.30	20.00
47	0.00	0.00	0.00	0.00	9.40	20.00
48	0.00	0.00	0.00	0.00	10.40	20.00
49	0.00	0.00	0.00	0.00	11.50	20.00
50	0.00	0.00	0.00	0.00	12.60	20.00
51	0.00	0.00	0.00	0.00	13.70	20.00
52	0.00	0.40	0.60	1.50	14.80	20.00
53	0.00	0.50	0.80	1.60	15.80	20.00
54	0.00	0.70	1.20	1.70	16.90	20.00
55	0.20	0.90	1.80	1.80	18.00	20.00
56	0.40	1.30	2.30	2.60	18.00	20.00
57	0.50	1.70	2.70	4.70	18.00	20.00
58	0.70	2.10	3.50	4.90	18.00	20.00
59	0.90	2.90	5.00	7.90	18.00	20.00
60	1.80	3.60	5.40	9.00	18.90	21.00
61	3.20	5.40	9.00	13.50	18.90	21.00
62	3.60	9.30	13.50	16.80	18.00	20.00
63	4.50	9.30	13.50	16.80	18.00	20.00
64	6.30	9.30	13.50	16.80	18.00	20.00
65	15.30	16.00	18.50	18.50	22.50	25.00
66	15.30	16.00	18.50	18.50	22.50	25.00
67	15.30	16.00	18.50	18.50	22.50	25.00
68	15.30	16.00	18.50	18.50	22.50	25.00
69	15.30	16.00	18.50	18.50	22.50	25.00
70	17.10	16.80	21.10	25.30	27.00	30.00
71	17.10	16.80	21.10	25.30	27.00	30.00
72	17.10	16.80	21.10	25.30	27.00	30.00
73	17.10	16.80	21.10	25.30	27.00	30.00
74	17.10	16.80	21.10	25.30	27.00	30.00
75 & Over	100.00	100.00	100.00	100.00	100.00	100.00

Retirement Rates (continued):

Police/Fire members with an effective date of membership before January 1, 2010:

	Retirement Rates (%)					
	Years of Service					
Age	5 – 9	10 – 19	20 – 22	23 – 24	25 – 29	30 & Over
40	0.00	0.10	0.00	0.00	0.00	0.00
41	0.00	0.20	0.00	20.00	20.00	0.00
42	0.00	0.30	1.00	20.00	20.00	0.00
43	0.00	0.40	2.00	20.00	20.00	0.00
44	0.00	0.50	3.00	20.00	20.00	0.00
45	0.00	0.70	3.50	20.00	20.00	20.00
46	0.00	0.90	4.00	20.00	20.00	20.00
47	0.00	1.10	4.50	20.00	20.00	20.00
48	0.00	1.30	5.00	20.00	20.00	20.00
49	0.00	1.50	6.50	20.00	20.00	20.00
50	1.50	4.50	16.00	23.00	23.00	23.00
51	1.50	4.50	13.00	23.00	23.00	23.00
52	1.50	5.00	13.00	23.00	23.00	23.00
53	1.50	6.00	13.00	23.00	23.00	23.00
54	1.50	7.00	13.00	23.00	23.00	23.00
55	4.50	11.00	18.00	25.00	25.00	25.00
56	4.50	11.00	18.00	25.00	25.00	25.00
57	4.50	11.00	18.00	25.00	25.00	25.00
58	4.50	11.00	18.00	25.00	25.00	25.00
59	4.50	11.00	18.00	25.00	25.00	25.00
60	5.00	18.00	26.00	35.00	35.00	35.00
61	6.00	18.00	26.00	35.00	35.00	35.00
62	7.00	18.00	26.00	35.00	35.00	35.00
63	8.00	18.00	26.00	35.00	35.00	35.00
64	9.00	18.00	26.00	35.00	35.00	35.00
65	20.00	25.00	40.00	50.00	50.00	50.00
66	20.00	25.00	40.00	50.00	50.00	50.00
67	20.00	25.00	40.00	50.00	50.00	50.00
68	20.00	25.00	40.00	50.00	50.00	50.00
69	20.00	25.00	40.00	50.00	50.00	50.00
70 & Over	100.00	100.00	100.00	100.00	100.00	100.00

Retirement Rates (continued):

Police/Fire members with an effective date of membership on or after January 1, 2010 and before July 1, 2015:

	Retirement Rates (%)					
	Years of Service					
Age	**5 – 9**	**10 – 19**	**20 – 24**	**25 – 27**	**28 – 29**	**30 & Over**
40	0.00	0.00	0.00	0.00	0.00	0.00
41	0.00	0.00	0.00	0.00	0.00	0.00
42	0.00	0.00	0.70	0.00	0.00	0.00
43	0.00	0.00	1.50	10.90	20.00	0.00
44	0.00	0.00	2.40	12.00	20.00	0.00
45	0.00	0.00	2.90	13.10	20.00	20.00
46	0.00	0.00	3.40	14.20	20.00	20.00
47	0.00	0.00	3.90	15.40	20.00	20.00
48	0.00	0.00	4.50	16.50	20.00	20.00
49	0.00	0.00	6.00	17.60	20.00	20.00
50	0.00	2.10	15.00	21.50	23.00	23.00
51	0.00	2.30	12.20	21.50	23.00	23.00
52	0.00	2.80	12.20	21.50	23.00	23.00
53	0.00	3.50	12.20	21.50	23.00	23.00
54	0.00	4.40	12.20	21.50	23.00	23.00
55	2.80	7.20	16.90	23.40	25.00	25.00
56	3.00	7.80	16.90	23.40	25.00	25.00
57	3.20	8.40	16.90	23.40	25.00	25.00
58	3.40	9.10	16.90	23.40	25.00	25.00
59	3.50	9.70	16.90	23.40	25.00	25.00
60	4.10	16.90	24.30	32.80	35.00	35.00
61	5.10	16.90	24.30	32.80	35.00	35.00
62	6.10	16.90	24.30	32.80	35.00	35.00
63	7.20	16.90	24.30	32.80	35.00	35.00
64	8.30	16.90	24.30	32.80	35.00	35.00
65	18.70	23.40	37.50	46.80	50.00	50.00
66	18.70	23.40	37.50	46.80	50.00	50.00
67	18.70	23.40	37.50	46.80	50.00	50.00
68	18.70	23.40	37.50	46.80	50.00	50.00
69	18.70	23.40	37.50	46.80	50.00	50.00
70 & Over	100.00	100.00	100.00	100.00	100.00	100.00

Retirement Rates (continued):

Police/Fire members with an effective date of membership on or after July 1, 2015:

	Retirement Rates (%)				
	Years of Service				
Age	5 – 9	10 – 19	20 – 24	25 – 29	30 & Over
40	0.00	0.00	0.00	0.00	0.00
41	0.00	0.00	0.00	0.00	0.00
42	0.00	0.00	0.70	0.00	0.00
43	0.00	0.00	1.50	10.90	0.00
44	0.00	0.00	2.40	12.00	0.00
45	0.00	0.00	2.90	13.10	20.00
46	0.00	0.00	3.40	14.20	20.00
47	0.00	0.00	3.90	15.40	20.00
48	0.00	0.00	4.50	16.50	20.00
49	0.00	0.00	6.00	17.60	20.00
50	0.00	2.10	15.00	21.50	23.00
51	0.00	2.30	12.20	21.50	23.00
52	0.00	2.80	12.20	21.50	23.00
53	0.00	3.50	12.20	21.50	23.00
54	0.00	4.40	12.20	21.50	23.00
55	2.80	7.20	16.90	23.40	25.00
56	3.00	7.80	16.90	23.40	25.00
57	3.20	8.40	16.90	23.40	25.00
58	3.40	9.10	16.90	23.40	25.00
59	3.50	9.70	16.90	23.40	25.00
60	4.10	16.90	24.30	32.80	35.00
61	5.10	16.90	24.30	32.80	35.00
62	6.10	16.90	24.30	32.80	35.00
63	7.20	16.90	24.30	32.80	35.00
64	8.30	16.90	24.30	32.80	35.00
65	18.70	23.40	37.50	46.80	50.00
66	18.70	23.40	37.50	46.80	50.00
67	18.70	23.40	37.50	46.80	50.00
68	18.70	23.40	37.50	46.80	50.00
69	18.70	23.40	37.50	46.80	50.00
70 & Over	100.00	100.00	100.00	100.00	100.00

Section 4: Actuarial Valuation Basis

Retirement Rates (continued):	The following categories of active members are assumed to receive an unreduced benefit when they retire:

Group (Active Members)	Years of Service
Regular members with an effective date of membership before January 1, 2010	28 – 29 years of service
Regular members with an effective date of membership on or after January 1, 2010 and before July 1, 2015	28 – 29 years of service
Police/Fire members with an effective date of membership before January 1, 2010	23 – 24 years of service
Police/Fire members with an effective date of membership on or after January 1, 2010 and before July 1, 2015	28 – 29 years of service

Retirement Age for Inactive Vested Members:	Inactive vested members are generally assumed to retire at the earliest unreduced retirement age. The following categories of inactive vested members are assumed to retire immediately with an unreduced benefit:

Group (Inactive Vested Members)	Years of Service
Regular members with an effective date of membership before January 1, 2010	28 – 29 years of service
Regular members with an effective date of membership on or after January 1, 2010 and before July 1, 2015	28 – 29 years of service
Police/Fire members with an effective date of membership before January 1, 2010	23 – 24 years of service
Police/Fire members with an effective date of membership on or after January 1, 2010 and before July 1, 2015	28 – 29 years of service

Unknown Data for Members:	Same as those exhibited by members with similar known characteristics. If not specified, Regular members are assumed to be female, and Police/Fire members are assumed to be male.
Future Benefit Accruals:	1.0 year of service per year
Definition of Active Member:	All active members of NVPERS as of the valuation date
Form of Payment:	All active and inactive members are assumed to elect the unmodified option at retirement (Option 1).

Section 4: Actuarial Valuation Basis

Percent Married:	Because pre-retirement death benefits are payable to a surviving beneficiary of an unmarried member, all members are assumed to have a beneficiary upon pre-retirement death. The unmodified option is a straight life annuity except for “employer-pay” Police/Fire retirees, for whom it is a 50% joint and survivor annuity. Existing “employer-pay” Police/Fire retirees with an unmodified option who retired after June 30, 1981 and before July 1, 2011 have been valued assuming no surviving spouse, pending the results of an analysis and verification of spousal information. 75% of “employer-pay” Police/Fire male members and 65% of “employer-pay” Police/Fire female members are assumed to be married at retirement.
Age of Spouse:	Male members 2 years older than their spouses, female members 2 years younger than their spouses. Spouses are assumed to be of the opposite sex of the member.
Dependent Children:	The assumption for dependent children in the actuarial valuation is one dependent child who is 28 years younger than the member.
Actuarial Methods	
Actuarial Cost Method:	Entry Age Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percentage of salary, with Normal Cost determined based on the plan provisions and benefit accrual rate applicable to that individual.
Actuarial Value of Assets:	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period. The actuarial value of assets is further limited to not less than 70% or greater than 130% of the market value of assets.

Amortization Policy:	Effective June 30, 2022 the outstanding balance of all Regular amortization bases, except for the initial base dated June 30, 2004, were combined and re-amortized over a closed 20-year period, and the outstanding balance of all Police/Fire amortization bases, including the initial base dated June 30, 2004, were combined and re-amortized over a closed 20-year period. Any new UAAL as a result of actuarial gains or losses or a change in actuarial assumptions or methods will be amortized over 20 years. Unless an alternative amortization period is recommended by the Actuary and accepted by the Board based on the results of an actuarial analysis: a) with the exception noted in b., below, the increase in UAAL as a result of any plan amendments will be amortized over a period of 15 years; b) the increase in UAAL that would result from a temporary retirement incentive will be pre-funded by the participating employer(s). UAAL layers shall be amortized over "closed" amortization periods so that the amortization period for each layer decreases by one year with each actuarial valuation. UAAL layers shall be amortized as a level percentage of payroll so that the amortization amount in each year during the amortization period shall be expected to be a level percentage of covered payroll, taking into consideration the current assumption for general payroll increase. If an overfunding exists (i.e., the total of all UAAL becomes negative so that there is a surplus), the contribution rate will be the greater of: a) the rate resulting from a 30-year amortization of the surplus, and b) the previous year's rate, reduced by 25% of the difference between the previous rate and the rate resulting from a 30-year amortization of the surplus. These amortization policy components will apply separately to each of the Regular and Police/Fire UAAL cost groups.
Projected Compensation:	Projected compensation for the year following the valuation date is calculated by increasing the compensation provided by System staff with the assumed rate of salary increase. For members with less than one year of service as of the valuation date, no salary increase assumption is applied to their annualized compensation.
Phase-In:	On October 21, 2021, the Board adopted a four-year phase-in of the cost impact of the assumption changes being made pursuant to the Experience Study dated September 10, 2021. One fourth of the cost impact attributable to the assumption changes, measured as of June 30, 2021 separately for each cost group, will be recognized in each of the valuations as of June 30, 2021, 2022, 2023, and 2024.
Changes in Actuarial Assumptions:	There have been no changes in actuarial assumptions since the last valuation.

Exhibit 3: Summary of plan provisions

This exhibit summarizes the major provisions of the Nevada Public Employees' Retirement Act included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year:	July 1 through June 30
Service Retirement:	
	For members with an effective date of membership before January 1, 2010:
Requirement for Regular Members	Age 65 with five years of service, or age 60 with ten years of service, or at any age with 30 years of service.
Requirement for Police/Fire Members	Age 65 with five years of service, or age 55 with ten years of Police/Fire service, or age 50 with 20 years of Police/Fire service, or at any age with 25 years of Police/Fire service.
Benefit Amount	2.67% of final average compensation (average of 36 highest consecutive months) per year of service earned on or after July 1, 2001 plus 2.50% of final average compensation per year of service before July 1, 2001. Maximum benefits are 90% of average compensation for individuals who became members before July 1, 1985 and 75% of average compensation for individuals who became members after June 30, 1985.
	For members with an effective date of membership on or after January 1, 2010:
Requirement for Regular Members	Age 65 with five years of service, or age 62 with ten years of service, or at any age with 30 years of service.
Requirement for Police/Fire Members	Age 65 with five years of service, or age 60 with ten years of Police/Fire service, or age 50 with 20 years of Police/Fire service, or at any age with 30 years of Police/Fire service. For Police/Fire members with an effective date of membership on or after July 1, 2015, purchased service generally may not be counted toward years needed to attain eligibility.
Benefit Amount	2.50% of final average compensation (average of 36 highest consecutive months) per year of service. Maximum benefits are 75% of average compensation.
	For Regular members with an effective date of membership on or after July 1, 2015:
Requirement	Age 65 with five years of service, or age 62 with ten years of service, or age 55 with 30 years of service, or any age with 33 1/3 years of service. Purchased service generally may not be counted toward years needed to attain eligibility.
Benefit Amount	2.25% of final average compensation (average of 36 highest consecutive months) per year of service. Maximum benefits are 75% of average compensation.
Limitation on Compensation Used in Determining Retirement Benefits:	For any member with an effective date of membership on or after July 1, 2015, compensation used in determining retirement benefits is limited to $200,000. This limit shall be adjusted annually based on CPI.

Early Retirement:	
Requirement	Any age with five years of service.
Benefit Amount	**For members with an effective date of membership before January 1, 2010:** Accrued retirement benefit reduced 4% per year for each year that the member is under the age required for service retirement. **For members with an effective date of membership on or after January 1, 2010:** Accrued retirement benefit reduced 6% per year for each year that the member is under the age required for service retirement.
Disability:	
Requirement	Five years of service and totally unable to perform current job or any comparable job for which the member is qualified by training and experience, because of injury or illness of a permanent nature, provided the member is in the employ of a participating employer at the time of application for disability retirement.
Benefit Amount	Accrued service retirement benefit without reduction for age. (System disability benefit is reduced for other benefits received on account of same disability, if such other benefits are financed by a Nevada public employer, to the extent that total disability benefits would otherwise exceed 100% of final average compensation.)
Vesting:	
Requirement	Any age with five years of service, provided the member has not received a refund of member contributions.
Benefit Amount	Accrued service retirement benefit payable upon attainment of age 65 if member has between five and ten years of service at termination, or upon attainment of the age required for service retirement if member has ten or more years of service at termination.

Spouse's Pre-Retirement Death Benefit:	
Requirement	Eligible survivors of an active member who dies receive survivor benefits if: (a) the deceased member had two years of service in the 2½ years immediately preceding death; or (b) the deceased member had ten years of service; or (c) death was caused by occupational disease or a service-connected accident regardless of the deceased member's length of service; or (d) death occurred within 18 months after termination of employment where mental or physical condition required the termination; or (e) death occurred while member was on leave of absence for training and member met requirements of (a) at time such leave began.
Benefit Amount	a) Unmarried children under age 18, or age 18 to 23 and attending an accredited school on a full-time basis: \$400 per month per child. Payments cease upon attaining age 18 or age 23 if full-time student, unless child is incapacitated; or upon marriage, adoption, or death. b) Spouse, or survivor beneficiary of an unmarried member, of deceased member with fewer than ten years of service (and at least two years of service in the last 2½ years): \$450 per month. Payments cease upon death. c) Spouse, or survivor beneficiary of an unmarried member, of deceased member with ten but fewer than 15 years of service: greater of \$450 per month or Option 3 benefit that would have been payable if deceased member had retired on date of death without reduction for early payment. Payments cease upon death. d) Spouse, or survivor beneficiary of an unmarried member, of deceased member with 15 or more years of service: greater of \$450 per month or Option 2 benefit that would have been payable if deceased member had retired on date of death without reduction for early payment. Payments cease upon death. e) Spouse, or survivor beneficiary of an unmarried member, of deceased member eligible to retire with respect to both age and service: greater of \$450 per month, Option 2 or Option 3 benefit that would have been payable if deceased member had retired on death, without reduction for early payment. Payments cease upon death. f) Dependent parents: \$400 per month each, provided there are no other eligible survivors. Payments cease upon death. g) Lump sum payment option: a spouse, or survivor beneficiary of an unmarried member, may waive right to monthly survivor benefits and instead receive a lump sum refund of deceased member's contributions plus half the contributions made under the Employer-Pay provisions, provided no other person is eligible for survivor benefits.
Benefit Limitations	Total survivor benefits, including any other survivor benefit received from any other source, shall not exceed final average compensation (a) if the other benefit was provided or purchased by a public employer, except for lump sum payments under a group insurance program; and (b) to the extent that the total of the allowance and the other benefit would otherwise exceed the deceased member's final average compensation.

Spouse's Pre-Retirement Death Benefit (continued):	
Benefit for Certain Spouses	A member who begins receiving service or disability retirement benefits from the Police/Fire members retirement fund after June 30, 1981, is eligible to receive an unreduced service retirement allowance. Upon the death of such a retired member, a spouse who was the retired member's spouse at the time of retirement is entitled to receive 50% of the unreduced allowance; this benefit is payable to the surviving spouse beginning at age 50. A surviving spouse is not eligible to receive this 50% spouse's benefit if the retired member elects an optional benefit form at the time of retirement. Service performed after July 1, 1981, in positions other than as a Police/Fire member, except military service, is not credited toward this 50% spouse's benefit. Existing "employer-pay" Police/Fire retirees who retired after June 30, 1981 and before July 1, 2011 have been valued assuming no surviving spouse, pending the results of an analysis and verification of spousal information.
Benefit for Spouses of Members Killed in the Line of Duty:	The spouse of a member who is a police officer or firefighter killed in the line of duty on or after July 1, 2013, or the spouse of any other member killed in the course of employment on or after July 1, 2013, is entitled to receive a monthly allowance equal to the greater of: a) 50% of the salary of the member on the date of the member's death; or b) 100% of the retirement allowance that the member was eligible to receive based on the member's years of service obtained before the member's death without any reduction for age for the deceased member. The spouse may elect to receive this benefit in lieu of any other available death benefit. This benefit is also available to a survivor beneficiary of an unmarried member.

Post-Retirement Benefit Increases:	
Benefit Amount	**For members with an effective date of membership before January 1, 2010:** The lesser of a) 2% per year following the third anniversary of the commencement of benefits, 3% per year following the sixth anniversary, 3 ½% per year following the ninth anniversary, 4% per year following the twelfth anniversary and 5% per year following the fourteenth anniversary, or b) The annual benefit increase is equal to the average percentage increase in the Consumer Price Index (or other Board approved index) for the three preceding years. In any event, a member's benefit must be increased by the percentages in paragraph (a) if their benefit has not been increased at a rate greater than or equal to the average of the Consumer Price Index (All Items) (or other Board approved index) for the period between retirement and the date of increase. **For members with an effective date of membership on or after January 1, 2010 and before July 1, 2015:** Same as above, except the increases do not exceed 4% per year. **For members with an effective date of membership on or after July 1, 2015:** 2% per year following the third through fifth anniversaries of the commencement of benefits; 2 ½% per year following the sixth through eighth anniversaries. On succeeding anniversaries the annual increase shall be the lesser of 3% or the CPI for the preceding calendar year.
Optional Benefit Forms	Retirees may elect one of the following forms of payment: • Option 1 (unmodified) – Single life annuity except for: Police/Fire members who contribute under the "employer pay" contribution plan, Option 1 is a 50% joint and survivor annuity • Option 2 – 100% joint and survivor • Option 3 – 50% joint and survivor • Option 4 – 100% joint and survivor, with payments to beneficiary commencing at age 60 • Option 5 – 50% joint and survivor, with payments to beneficiary commencing at age 60 • Option 6 – Specific sum option up to 100% of allowance paid to retiree • Option 7 – Specific sum option up to 100% of allowance paid to retiree, with payments to beneficiary commencing at age 60 • Option 8 – Single life annuity with a 6-month certain death benefit If the beneficiary predeceases the retired member, the optional allowance reverts to the unmodified allowance.

Contribution Rates:	For the fiscal years July 1, 2023 through June 30, 2025, statutory contribution rates as a percentage of compensation are as follows:

	Regular	Police/Fire
Employer-Pay	33.50%	50.00%
Employee/Employer-Pay	17.50% / 17.50%	25.75% / 25.75%

Total contribution rates are adjusted at the beginning of each odd-numbered fiscal year, based on the actuarially determined rates indicated in the actuarial valuation report for the immediately preceding year. Rates are only adjusted upward if the new rates are more than 0.50% higher than the existing rate for Employer-Pay and if the new rates (for each the employee and the employer) are more than 0.25% higher for Employee/Employer. Rates are only adjusted downward if the new rates are more than 2.00% lower than the existing rate for Employer-Pay (and adjusted only by the amount in excess of 2.00%) and if the new rates (for each the employee and the employer) are more than 1.00% lower than the existing rate for Employee/Employer (and adjusted only by the amount in excess of 1.00%). Rates for each the employee and the employer are rounded to the nearest 0.25% of payroll.

For the valuations as of June 30, 2021, 2022, and 2023, the actuarially determined contribution rates used in this determination were lowered by the four-year phase-in of the cost impact of the 2021 assumption changes.

Under the Employer-Pay provisions, the contributions made by employers on behalf of members are not credited to member accounts and are not refunded upon termination. For members covered by the Employer-Pay provisions, final average compensation is increased by half the total contribution made by the public employer and may not be less than it would have been if contributions had been made by the member and the employer separately.

Changes in Plan Provisions:	There were no changes in plan provisions since the last actuarial valuation.

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