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***NEBRASKA PUBLIC EMPLOYEES  
RETIREMENT SYSTEM***

**JUDGES RETIREMENT SYSTEM**

**ACTUARIAL VALUATION REPORT  
AS OF JULY 1, 2023**

**Fifty-Eighth Actuarial Report for  
System Plan Year Beginning July 1, 2023  
and  
State Fiscal Year Ending June 30, 2025**







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November 10, 2023

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

Dear Members of the Board:

At your request, we have performed an actuarial valuation of the Judges Retirement System as of July 1, 2023 for the purpose of determining the actuarial required contribution for the plan year ending June 30, 2024. It is our understanding that any required additional State contribution for this plan year will be made on July 1, 2024 (State fiscal year end 2025). The major findings of the valuation are contained in this report, which reflects the benefit and funding provisions in place on July 1, 2023. There have been no changes to the actuarial methods or benefit provisions from the prior valuation, but the set of economic assumptions has changed since the last valuation.

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

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

We further certify that all costs, liabilities, rates of interest and other factors for the Judges Retirement System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer the best estimate of anticipated experience affecting the System. Nevertheless, the emerging costs will vary from those presented in this report to the extent actual experience differs from that projected by the actuarial assumptions. The Public Employees Retirement Board has the final decision

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regarding the appropriateness of the assumptions and adopted the set of assumptions indicated in Appendix C.

In order to prepare the results in this report, we have utilized actuarial models that were developed to measure liabilities and develop actuarial costs. These models include tools that we have produced and tested, along with commercially available valuation software that we have reviewed to confirm the appropriateness and accuracy of the output. In utilizing these models, we develop and use input parameters and assumptions about future contingent events along with recognized actuarial approaches to develop the needed results. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

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

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

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

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

Sincerely,

A handwritten signature in blue ink that reads 'Patrice Beckham' in a cursive script.

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

A handwritten signature in blue ink that reads 'Brent A. Banister' in a cursive script.

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





## SECTION 1 – BOARD SUMMARY

This report presents the results of the July 1, 2023 actuarial valuation of the Judges Retirement System. The primary purposes of performing this actuarial valuation are to:

- Determine the level of State contributions for the plan year ending June 30, 2024 that will be sufficient to meet the funding policy set out in the Nebraska statutes.
- Disclose asset and liability measurements as well as the current funded status of the System as of the valuation date.
- Assess and disclose the key risks associated with funding the System.
- Compare actual and expected experience under the System during the plan year ended June 30, 2023.
- Analyze and report on trends in System contributions, assets and liabilities over the past several years.

The actuarial valuation results provide a “snapshot” view of the System’s financial condition on July 1, 2023. As the result of various factors discussed later, the amount of valuation assets in excess of System liabilities decreased from \$3.0 million last year to \$2.6 million this year, and the funded ratio remained steady at 101%.

The Nebraska statutes require the State to make any additional contribution necessary to meet the actuarial required contribution in excess of court fees, member contributions, the payroll-related State contribution and any other State appropriations. **Based on the results of the July 1, 2023 actuarial valuation, the State contribution of 5% of payroll for fiscal year 2024 is \$1,370,712 (to be paid July 1, 2024). No additional State contribution is necessary for the plan year ending June 30, 2024.**

### Changes to Actuarial Assumptions

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

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

The net impact of the scheduled change in the set of economic assumptions in this valuation was an increase of \$1.1 million in the actuarial accrued liability, as well as an increase of 0.47% in the actuarial required contribution rate. The continued phase-in of the economic assumptions is expected to increase the actuarial accrued liability, normal cost rate and actuarial contribution rate next year, absent the impact of future favorable experience. If the ultimate set of economic assumptions was fully recognized in the current



## SECTION 1 – BOARD SUMMARY

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valuation, it would decrease the surplus of valuation assets over actuarial accrued liability by \$1.1 million, decrease the funded ratio to 100.6% and increase the actuarial required contribution rate by 0.46%.

### **Actual Experience Impacting the July 1, 2023 Valuation**

The valuation results reflect net unfavorable experience for the past plan year as demonstrated by a decrease in the actuarial value of assets over the actuarial accrued liability. As of July 1, 2023, the actuarial value of assets exceeds the actuarial accrued liability (surplus) by \$2.6 million compared to an expected surplus of \$3.7 million. The key factors impacting the 2023 valuation include:

- The rate of return on the market value of assets for the year ending June 30, 2023 was 9.9%, as reported by the Nebraska Investment Council, compared to the assumed return of 7.2% for that year. However, the asset smoothing method used in the valuation only recognizes 20% of the difference between the dollar amount of the assumed and actual return in the current valuation. The partial recognition of FY 2023 experience, coupled with the scheduled recognition of the deferred investment experience from the prior four years, resulted in a rate of return on the actuarial (smoothed) value of assets of 6.9%. Because this return is lower than the assumed rate of return (7.2% for FY 2023), there was an actuarial experience loss of \$0.8 million on the actuarial value of assets which decreased the surplus of actuarial assets over actuarial accrued liability.
- There was a net actuarial experience loss of \$0.3 million on System liabilities. This is the net impact of various factors primarily due to mortality experience that was less favorable than expected and larger COLAs than expected.
- Total contributions for the plan year ending June 30, 2023, which included court fees and the State payroll-related contribution, were about \$1.58 million higher than the actuarial required contribution amount, which increased the surplus of actuarial assets over actuarial accrued liability.

The actuarial required contribution rate decreased from 23.84% of payroll last year to 23.71% of payroll in this year's valuation, a decrease of 0.13%. The Judges Retirement System is funded by employee contributions, court fees, and contributions from the State, including a payroll-related contribution first paid July 1, 2023. The initial State contribution rate in the legislation was 5.0% of payroll, but the rate may be adjusted in future valuations depending on the funded status of the System. Based on the results of the July 1, 2023 actuarial valuation, we recommend the State payroll-related contribution remain 5% of payroll for the plan year ending June 30, 2024 is \$1,370,712 (expected to be paid July 1, 2024).



**SECTION 1 – BOARD SUMMARY**

A summary of the key results from the July 1, 2023 actuarial valuation is shown in the following table. Further detail on the valuation results can be found in the following sections of this Board Summary.

	Valuation Results	
	July 1, 2023	July 1, 2022
Unfunded Actuarial Accrued Liability	(\$2,553,129)	(\$2,983,812)
Funded Ratio (Actuarial Assets)	101.08%	101.32%
Actuarial Required Contribution	23.71%	23.84%
Member Contribution Rate	<u>(8.82%)</u>	<u>(8.75%)</u>
Additional Required Contribution Rate	14.89%	15.09%
Employer Required Contribution Amount	\$4,081,979	\$3,911,078
Estimated Court Fees	\$4,348,888	\$3,865,010
Expected Payroll-Related Contribution	\$1,370,712	\$1,295,917
Additional Required State Contribution*	\$0	\$0

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

***EXPERIENCE FOR THE LAST PLAN YEAR***

Numerous factors contributed to the change in the System’s assets, liabilities, and actuarial required contribution rate between July 1, 2022 and July 1, 2023. The components are examined in detail in the following discussion.

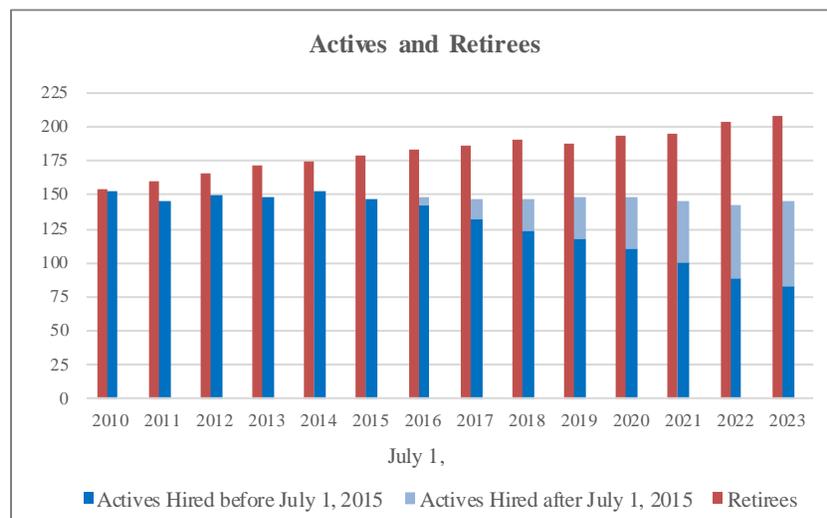
**MEMBERSHIP**

There were 146 active members in the 2023 valuation, a small increase from 143 active members in the 2022 valuation. As of July 1, 2023, 64 out of 146 (44%) of the active members are covered by Tier 2 (hired on or after July 1, 2015). The Tier 2 benefit structure provides lower benefits and a higher employee contribution rate than Tier 1, so employer costs are expected to trend down as more of the active membership is in Tier 2. While Tier 2 members represent a comparatively small part of the total actuarial accrued liability, the new Tier 2 provisions are beginning to impact the valuation.

The graph below compares the number of active members to the number of retirees and beneficiaries (members receiving a benefit) in each valuation since 2010. The number of active members has remained relatively steady, around 150, while the number of retirees and beneficiaries has increased from 154 to 208. The increase in the number of retirees and beneficiaries relative to the number of actives is not unexpected given the maturity of the system, historical improvements in mortality rates and the stable number of judicial positions in the State. This is a key reason for advance funding of the benefits.



**SECTION 1 – BOARD SUMMARY**



**ASSETS**

As of June 30, 2023, the System had net assets of \$235.1 million, when measured on a market value basis. This was an increase of \$15.4 million from the prior year. The investment return on the market value of assets for FY 2023 was 9.9%.

The market value of assets is not used directly in the calculation of the unfunded actuarial accrued liability and the actuarial required contribution rate. An asset valuation method, which smoothes the effect of market fluctuations, is applied to determine the value of assets used in the valuation, called the actuarial value of assets. In this year’s valuation, the actuarial value of assets is \$238.1 million, an increase of \$9.5 million from the prior year. The components of change in the asset values are shown in the following table.

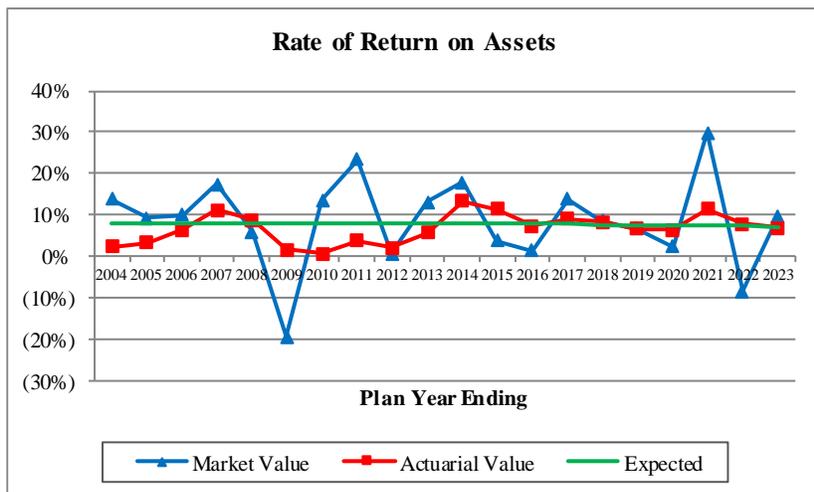
	Market Value (\$M)		Actuarial Value (\$M)	
<b>Net Assets, June 30, 2022</b>	\$	219.73	\$	228.63
- Employer and Member Contributions	+	7.77	+	7.77
- Benefit Payments and Admin Expenses	-	13.77	-	13.77
- Net Investment Income	+	21.38	+	15.47
<b>Net Assets, June 30, 2023</b>	\$	235.11	\$	238.10
Estimated Rate of Return*		9.9%		6.9%

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

Due to the smoothing of actual investment experience over the last five years, the rate of return on the actuarial value of assets was 6.9%, which is lower than the investment return assumption for FY 2023 of 7.2%. As a result, there was an experience loss on assets of \$0.8 million. As a result of the combined impact of the favorable investment experience for FY 2023 and the scheduled recognition of deferred investment gains and losses, the net deferred investment loss of \$8.9 million in last year’s valuation is now a net deferred investment loss of \$3.0 million in the current valuation (actuarial value exceeds market value of assets). Please see Section 3 of this report for more detailed information on the market and actuarial value of assets.



**SECTION 1 – BOARD SUMMARY**



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

**LIABILITIES**

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

The unfunded actuarial accrued liability/(surplus) as of July 1, 2023, using both the actuarial and market value of assets, is shown in the following table.

	Actuarial Value of Assets	Market Value of Assets
Actuarial Accrued Liability	\$235,546,054	\$235,546,054
Value of Assets	<u>238,099,183</u>	<u>235,106,994</u>
UAAL/(Surplus)	(\$2,553,129)	\$439,060
Funded Ratio	101.08%	99.81%

The net deferred investment loss means that, absent investment returns higher than expected (7.1% for FY 2024 and 7.0% for FY 2025) or other favorable experience, the funded ratio is expected to decrease over the next four years as the deferred investment experience is recognized. We also expect some downward pressure on the funded ratio as a result of the phase-in of the set of economic assumptions. See Section 4 of the report for the detailed development of the unfunded actuarial accrued liability/(surplus).



**SECTION 1 – BOARD SUMMARY**

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The components of the net decrease in valuation assets over actuarial accrued liability of \$0.4 million from July 1, 2022 to July 1, 2023 are shown in the following table:

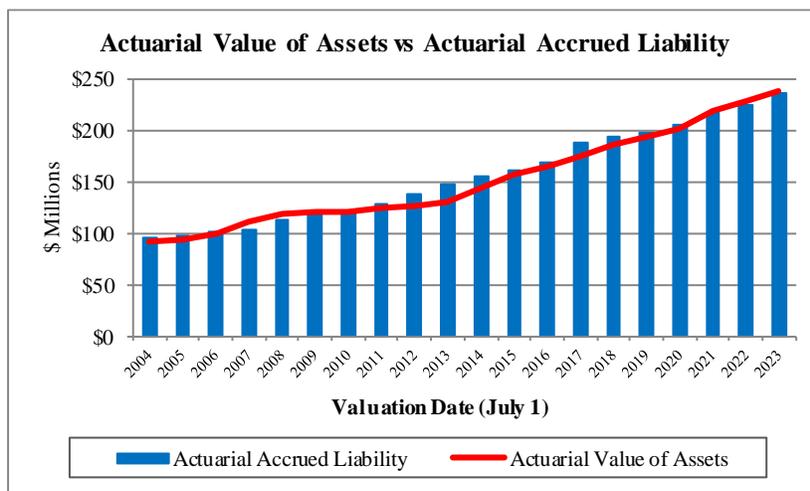
	(\$ Millions)
<b>UAAL/(Surplus), July 1, 2022</b>	(\$2.98)
- Expected change from amortization method	0.02
- Contributions (above)/below actuarial contribution	(1.58)
- Investment experience	0.82
- Liability experience	0.33
- Assumption changes	1.13
- Other experience	<u>(0.29)</u>
<b>UAAL/(Surplus), July 1, 2023</b>	<b>(\$2.55)</b>

As shown above, various factors impacted the change in the System’s funded status. Actuarial experience gains/(losses), which result from actual experience that is more/(less) favorable than anticipated by the actuarial assumptions, are reflected in the UAAL/(surplus) and are measured as the difference between the expected UAAL or surplus and the actual UAAL or surplus, taking into account any changes due to actuarial assumptions and methods, or benefit provisions. Overall, the System experienced a net actuarial experience loss of \$1.15 million. The actuarial loss may be explained by considering the separate experience of assets and liabilities. As noted earlier, there was a \$0.82 million loss on the actuarial value of assets. Unfavorable experience on System liabilities, mainly due to mortality experience that was less favorable than expected based on the actuarial assumptions, resulted in a \$0.33 million loss. A breakdown of the various components of experience gains/losses can be found in Table 8 of this report. The increase in the UAAL as a result of unfavorable experience was more than offset by favorable contribution experience. Total contributions for the plan year ending June 30, 2023, which included court fees and the State payroll-related contribution, were about \$1.58 million higher than the actuarial required contribution amount.

As the following graph of historical actuarial assets and actuarial accrued liabilities illustrates, the Judges Retirement System has generally been very well-funded over this period, with many years at or above the fully funded level. As losses from the market downturn in FY 2009 were recognized, there were a few years where the actuarial accrued liability was above the actuarial assets. However, the combination of legislation designed to improve the System’s funding and investment returns in excess of the assumed return have strengthened the System’s funded status.



**SECTION 1 – BOARD SUMMARY**



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

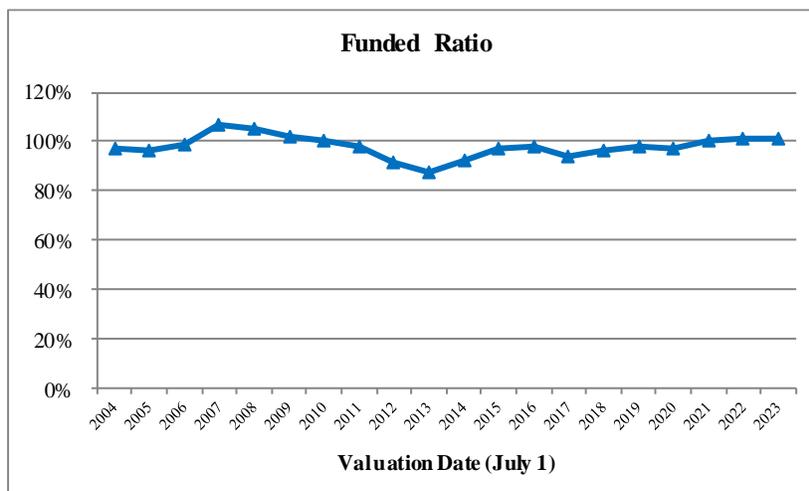
	7/1/2019	7/1/2020	7/1/2021	7/1/2022	7/1/2023
Funded Ratio	98.08%	97.34%	100.71%	101.32%	101.08%
UAAL/(Surplus)	\$3.81	\$5.49	(\$1.53)	(\$2.98)	(\$2.55)

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

The funded ratio over a longer period is shown in the following graph. The System has generally been at or just below 100% funded, other than in a few years. The changes to the benefit structure for members hired on or after July 1, 2015 (Tier 2), as well as increases in the court fees passed by the 2015 and 2021 legislature and the payroll-related state contribution passed by the 2021 legislature, are expected to mitigate the need for additional State contributions in the future.



## SECTION 1 – BOARD SUMMARY



### ACTUARIAL REQUIRED CONTRIBUTION RATE

The State’s funding policy is to contribute any additional payments necessary to meet the actuarial required contribution after taking into account the expected court fees, member contributions, State payroll-related contribution and other State appropriations. The payroll-related contribution and any additional State contribution for the plan year are made on the July 1 following the plan year-end. The actuarial required contribution rate consists of three components:

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

The UAAL contribution rate is determined by calculating the amortization payment as a level-percent of payroll, assuming the number of active members remains constant, and salary increases occur as assumed. This methodology results in payments that are lower in the initial years of the amortization period but increase each year in the future with the assumed payroll growth assumption (2.95% in the current valuation). Therefore, if the increase in covered payroll is less than assumed, the UAAL contribution rate will increase. When a surplus situation exists, as it currently does, the amortization method recognizes a portion of the surplus assets which reduces the amount of the actuarial required contribution.

Because it is extremely difficult to estimate the court fees for the current fiscal year, the actual court fees from the prior year have historically been used as the estimate for the current fiscal year. However, due to the scheduled increase in court fees due to the passage of LB 17 in the 2021 Legislature, court fees are expected to be higher during FY 2024 than FY 2023. Therefore, the estimated court fees for FY 2024 are \$4,348,888 (104% of the actual court fees received during FY 2023). This amount, when combined with expected member contributions, is sufficient to meet the full actuarial required contribution for the plan year ending June 30, 2024.

The payroll-related State contribution (initially set at 5% of payroll) was first applicable for the plan year ending June 30, 2023 (paid July 1, 2023). The payroll-related State contribution is subject to change in



**SECTION 1 – BOARD SUMMARY**

subsequent valuations depending on the funded status of the System. If the funded ratio is equal to or greater than 100% for two consecutive years, the actuary must assess whether the state contribution rate should be adjusted and make a recommendation to the Board in the annual actuarial valuation report. If the state contribution rate has been adjusted to less than 5% and the funded ratio is below 100% for two consecutive years, the actuary must assess whether the contribution rate should be adjusted (not greater than 5%) and make a recommendation to the Board. The payroll-related contribution can be no greater than 5% of total annual compensation, based on the total projected compensation reported in the most recent actuarial valuation.

It is our recommendation that the state contribution rate remain at 5% of payroll. Although the funded ratio on an actuarial basis is currently above 100%, the System’s funded status is expected to decrease over the next few years as the deferred investment loss is recognized and the final economic assumptions are phased-in. If all deferred investment losses were recognized immediately, the funded ratio would decrease to 99.8%. Additionally, an investment return of -5% or lower for fiscal year 2024 would decrease the funded ratio below 100% and require the full 5% payroll-related contribution as well as an additional required state contribution for the foreseeable future, if all other assumptions were met. Consequently, we recommend maintaining the 5% of payroll-related contribution rate at this time.

The funding components of the actuarial required contribution rate for the Judges Retirement System in the current and prior valuation are shown in the following table. See Section 5 of the report for the detailed development of the contribution rates.

<b>Contribution Rates</b>	<b>July 1, 2023</b>	<b>July 1, 2022</b>
1. Normal Cost Rate	23.99%	24.27%
2. Administrative Expenses	0.31%	0.31%
3. UAAL Contribution Rate	(0.59%)	(0.74%)
4. Total Actuarial Required Contribution Rate	23.71%	23.84%
5. Member Contribution Rate	(8.82%)	(8.75%)
6. Employer Required Contribution Rate [4 + 5]	14.89%	15.09%
7. Estimated Payroll	\$ 27,414,232	\$ 25,918,345
8. Employer Required Contribution Amount [6 * 7]	4,081,979	3,911,078
9. Estimated Court Fees	4,348,888	3,865,010
10. Expected Payroll-Related Contribution	1,370,712	1,295,917
11. Additional Required State Contribution* [8 - 9 - 10, but not less than \$0]	\$ 0	\$ 0

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



**SECTION 1 – BOARD SUMMARY**

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

<b>Total Actuarial Required Contribution Rate, July 1, 2022</b>	23.84%
- Change in normal cost rate (before assumption changes)	(0.48%)
- Contributions (above)/below actuarial contribution	(0.38%)
- Investment experience	0.19%
- Liability experience	0.08%
- Actual vs. expected payroll	0.02%
- Assumption changes	0.47%
- Other experience	<u>(0.03%)</u>
<b>Total Actuarial Required Contribution Rate, July 1, 2023</b>	23.71%

The following table shows the breakdown of non-member contributions by source, as determined in each actuarial valuation, over the last 20 years. Note these are not actual contributions but expected amounts based on the actuarial valuation results.

<b>Actuarial Valuation Results</b>				
<b>Plan Year</b>	<b>Total Required Contributions</b>	<b>Court Fees and State Appropriation</b>	<b>Payroll-Related Contribution</b>	<b>Additional State Contribution</b>
2023/2024	\$4,081,979	\$4,348,888	\$1,370,712	\$0
2022/2023	3,911,078	3,865,010	1,295,917	0
2021/2022	4,041,024	3,817,502		231,537
2020/2021	4,443,841	3,016,122		1,427,719
2019/2020	4,295,086	3,946,292		348,794
2018/2019	4,555,142	4,112,543		442,599
2017/2018	4,746,464	4,078,851		667,613
2016/2017	3,577,379	3,458,665		118,714
2015/2016	3,460,854	3,577,205		0
2014/2015	3,852,713	3,102,864		749,849 *
2013/2014	3,983,750	3,180,367		803,383
2012/2013	3,491,193	3,411,370		79,823 *
2011/2012	3,579,661	3,579,661		0
2010/2011	3,615,291	3,615,291		0
2009/2010	4,160,906	4,160,906		0
2008/2009	3,353,208	3,353,208		0
2007/2008	3,207,953	3,207,953		0
2006/2007	3,120,253	3,120,253		0
2005/2006	2,877,273	2,877,273		0
2004/2005	2,718,959	2,074,397		644,562

\* Contribution not fully made.

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



**SECTION 1 – BOARD SUMMARY**

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The actuarial required contribution, determined this year based on the snapshot of the System taken on the valuation date of July 1, 2023, will change each year as the deferred investment experience is recognized and other experience (both investment and demographic) impacts the System. Therefore, the actuarial required contribution rate is expected to change each year. To the extent the difference between the actual and expected experience is significant, the change in the actuarial required contribution rate is also expected to change significantly. This volatility in the actuarial required contribution rate results can result in extreme volatility in the additional State contribution as it is leveraged since it is the difference between the actuarial contribution and all other financing sources. However, the payroll-related contribution rate created by the 2021 legislature is expected to reduce the likelihood of additional State contributions.

The major source of funding for the Judges Retirement System, other than member contributions, is court fees. As the following table illustrates, the dollar amount of court fees had been declining prior to the passage of legislation in 2015 which increased the court fees allocated to the Judges Retirement System for fiscal years ending June 30, 2016 and June 30, 2018. The court fees decreased for fiscal year ending June 30, 2021, largely due to the impact of the COVID-19 pandemic. Due to the passage of LB 17 by the 2021 legislature, which provides for scheduled increases in the court fees over five years, the expectation is for the amount of court fees to increase over the next few years.

<b>Plan Year Ending</b>	<b>Court Fees</b>
June 30, 2007	\$3,135,709
June 30, 2008	\$3,280,964
June 30, 2009	\$3,419,091
June 30, 2010	\$3,543,047
June 30, 2011	\$3,507,417
June 30, 2012	\$3,411,370
June 30, 2013	\$3,180,367
June 30, 2014	\$3,102,864
June 30, 2015	\$2,977,205
June 30, 2016	\$3,458,665
June 30, 2017	\$3,578,851
June 30, 2018	\$4,112,543
June 30, 2019	\$3,946,292
June 30, 2020	\$3,548,379
June 30, 2021	\$3,319,567
June 30, 2022	\$3,716,356
June 30, 2023	\$4,181,623

The contributions to the Judges Retirement System are developed as a level percentage of payroll so the dollar amount of contributions is expected to increase from year to year as payroll increases, even if all assumptions are met. However, one of the major funding sources of the System (court fees) is not payroll related, and the dollar amount can vary from year to year, as evidenced in the table above. This disconnect between the funding policy and the financing mechanism creates the possibility for a unique funding



## **SECTION 1 – BOARD SUMMARY**

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challenge. However, the state payroll-related contribution passed by the 2021 legislature is expected to largely address this concern and reduce the volatility of the additional state contribution from year to year.

### **RISK ASSESSMENT AND DISCLOSURE**

A typical retirement plan faces many different risks. The term “risk” is most commonly associated with an outcome with undesirable results. However, in the actuarial world risk can be translated as uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. Actuarial Standard of Practice Number 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions. Risk evaluation is an important part of managing a defined benefit plan. Please see Section 6 of this report for an in-depth discussion of the specific risks facing the Nebraska Judges Retirement System.

**SECTION 1 – BOARD SUMMARY****SUMMARY OF PRINCIPAL RESULTS**

	<u>7/1/2023</u> Valuation	<u>7/1/2022</u> Valuation	<u>% Change</u>
<b>1. PARTICIPANT DATA</b>			
Number of:			
Active Members			
- Hired before July 1, 2015	82	88	(6.8%)
- Hired on or after July 1, 2015	<u>64</u>	<u>55</u>	16.4%
Total	146	143	2.1%
Retired Members and Beneficiaries	205	201	2.0%
Disabled Members	3	3	0.0%
Inactive Vested Members	<u>2</u>	<u>4</u>	(50.0%)
Total Members	356	351	1.4%
Projected Annual Salaries of Active Members	\$ 27,414,232	\$ 25,918,345	5.8%
Annual Retirement Payments for Retired Members, Disabled Members and Beneficiaries	\$ 14,359,184	\$ 13,485,973	6.5%
<b>2. ASSETS AND LIABILITIES</b>			
a. Market Value of Assets	\$ 235,106,994	\$ 219,726,450	7.0%
b. Actuarial Value of Assets	238,099,183	228,630,893	4.1%
c. Total Actuarial Accrued Liability	235,546,054	225,647,081	4.4%
d. Unfunded Actuarial Accrued Liability [c - b]	\$ (2,553,129)	\$ (2,983,812)	(14.4%)
e. Funded Ratio (Actuarial Value of Assets) [b / c]	101.08%	101.32%	(0.2%)
f. Funded Ratio (Market Value of Assets) [a / c]	99.81%	97.38%	2.5%
<b>3. EMPLOYER CONTRIBUTION RATES AS A PERCENT OF PAYROLL</b>			
Normal Cost	23.99%	24.27%	(1.2%)
Administrative Expenses	0.31%	0.31%	0.0%
Amortization of Unfunded Actuarial Accrued Liability	<u>(0.59%)</u>	<u>(0.74%)</u>	(20.3%)
Actuarial Required Contribution Rate	23.71%	23.84%	(0.5%)
Member Contribution Rate	<u>(8.82%)</u>	<u>(8.75%)</u>	0.8%
Employer Required Contribution Rate	14.89%	15.09%	(1.3%)
Employer Required Contribution Amount	\$ 4,081,979	\$ 3,911,078	4.4%
Expected Court Fees	4,348,888	3,865,010	12.5%
Expected Payroll-Related Contribution	1,370,712	1,295,917	5.8%
Additional Required State Contribution Amount*	\$ 0	\$ 0	0.0%

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



## **SECTION 2 – SCOPE OF THE REPORT**

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This report presents the actuarial valuation results of the Judges Retirement System as of July 1, 2023. This valuation was prepared at the request of the Public Employees Retirement Board of the Nebraska Public Employees Retirement System.

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

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

This report includes several appendices:

- Appendix A Schedules of valuation data classified by various categories of members.
- Appendix B A summary of the current benefit structure, as determined by the provisions of governing law on July 1, 2023.
- Appendix C A summary of the actuarial methods and assumptions used to estimate liabilities and determine contribution rates.
- Appendix D A glossary of actuarial terms.



## SECTION 3 – ASSETS

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In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is July 1, 2023. On that date, the assets available for the payment of benefits are appraised. The assets are compared with the liabilities of the System, which are generally in excess of assets. The actuarial process then leads to a method of determining the contributions needed by members and the employer in the future to balance the System's assets and liabilities.

### **Market Value of Assets**

The current market value represents the "snapshot" or "cash-out" value of System assets as of the valuation date. In addition, the market value of assets provides a basis for measuring investment performance from time to time. Table 1 is a comparison, at market values, of System assets as of July 1, 2023 and July 1, 2022, in total and by investment category. Table 2 summarizes the change in the market value of assets from July 1, 2022 to July 1, 2023.

### **Actuarial Value of Assets**

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

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



**TABLE 1**  
**JUDGES RETIREMENT SYSTEM**  
**MARKET VALUE OF ASSETS**  
**by Investment Category**

	<u>June 30, 2023</u>	<u>June 30, 2022</u>
1. Cash and Equivalents	\$ 183,484	\$ 151,425
2. Investments	236,473,780	222,827,734
3. Capital Assets	58	70
4. Receivables and Prepaids	20,473,973	12,755,350
5. Accounts Payable	<u>(22,024,301)</u>	<u>(16,008,129)</u>
6. Net Assets Available for Pension Benefits	\$ 235,106,994	\$ 219,726,450



**TABLE 2**  
**JUDGES RETIREMENT SYSTEM**  
**CHANGE IN MARKET VALUE OF ASSETS**

	2023	2022
1. Market Value of Assets, Beginning of Year	\$ 219,726,450	\$ 246,453,303
2. Contributions		
(a) Member	\$ 2,292,002	\$ 2,126,926
(b) Court fees	4,181,623	3,716,356
(c) State appropriations	1,295,917	231,537
(d) Total	\$ 7,769,542	\$ 6,074,819
3. Expenditures		
(a) Benefit payments	\$ 13,679,276	\$ 12,668,823
(b) Administrative expenses	89,815	71,616
(c) Total	\$ 13,769,091	\$ 12,740,439
4. Investment Return, Net of Expenses		
(a) Investment income	\$ 4,320,609	\$ 3,081,651
(b) Securities lending income	230,309	35,641
(c) Securities lending expense	(196,913)	(12,830)
(d) Net appreciation/(depreciation) in fair value of investments	17,026,088	(23,165,695)
(e) Other	0	0
(f) Net investment return	\$ 21,380,093	\$ (20,061,233)
5. Market Value of Assets, End of Year [1 + 2(d) - 3(c) + 4(f)]	\$ 235,106,994	\$ 219,726,450
6. Rate of Return, Net of Expenses*	9.9%	(8.3%)

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



**TABLE 3**  
**JUDGES RETIREMENT SYSTEM**  
**DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS**

	Year End			
	6/30/2020	6/30/2021	6/30/2022	6/30/2023
1. Actuarial Value of Assets, Beginning of Year	\$ 194,307,580	\$ 200,967,585	\$ 218,471,110	\$ 228,630,893
2. Unrecognized Return Beginning of Year	\$ 1,364,918	\$ (6,446,410)	\$ 27,982,193	\$ (8,904,443)
3. Contributions During Year				
(a) Member	\$ 1,962,507	\$ 2,029,383	\$ 2,126,926	\$ 2,292,002
(b) Court fees	3,548,379	3,319,567	3,716,356	4,181,623
(c) State appropriations	348,794	1,427,719	231,537	1,295,917
(d) Total	\$ 5,859,680	\$ 6,776,669	\$ 6,074,819	\$ 7,769,542
4. Benefit Payments and Admin Expenses During Year	\$ 11,477,914	\$ 12,066,177	\$ 12,740,439	\$ 13,769,091
5. Assumed Rate of Return	7.50%	7.50%	7.30%	7.20%
6. Expected Investment Income on (1), (2), (3) and (4)	\$ 14,504,369	\$ 14,379,388	\$ 17,782,466	\$ 15,649,314
7. Actual Return on Market Value, Net of Investment Expenses*	\$ 4,466,911	\$ 57,221,636	\$ (20,061,233)	\$ 21,380,093
8. Return to be Spread, End of Year [7 - 6]	\$ (10,037,458)	\$ 42,842,248	\$ (37,843,699)	\$ 5,730,779

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



**TABLE 3**  
**(continued)**

**JUDGES RETIREMENT SYSTEM**

**DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS**

9. Return to be Spread

Plan Year <u>Ending</u>	Return to be <u>Spread</u>	Unrecognized <u>Percent</u>	Unrecognized <u>Return</u>
2023	\$5,730,779	80%	\$4,584,623
2022	(37,843,699)	60%	(22,706,219)
2021	42,842,248	40%	17,136,899
2020	(10,037,458)	20%	(2,007,492)
			<u>(\$2,992,189)</u>

10. Total Market Value of Assets as of July 1, 2023 \$235,106,994

11. Total Actuarial Value of Assets as of July 1, 2023 \$238,099,183  
[10 - 9]

12. Asset Ratios

(a) Actuarial Value to Market Value [11 / 10] 101.27%  
(b) Market Value to Actuarial Value [10 / 11] 98.74%

Plan Year <u>Ended</u>	Gain/(Loss) <u>Deferred to</u> <u>Future Years</u>	<u>Gain/(Loss) to be Recognized in Plan Year Ending</u>			
		<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>
6/30/2020	(\$2,007,492)	(2,007,492)			
6/30/2021	17,136,899	8,568,450	8,568,449		
6/30/2022	(22,706,219)	(7,568,740)	(7,568,740)	(7,568,739)	
6/30/2023	4,584,623	1,146,156	1,146,156	1,146,156	1,146,155
<b>Total</b>	<b>(\$2,992,189)</b>	<b>\$138,374</b>	<b>\$2,145,865</b>	<b>(\$6,422,583)</b>	<b>\$1,146,155</b>



## **SECTION 4 – SYSTEM LIABILITIES**

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In the previous section, an actuarial valuation was compared with an inventory process, and an analysis was given of the inventory of assets of the Judges Retirement System as of the valuation date, July 1, 2023. In this section, the discussion will focus on the commitments (future benefit payments) of the System, which are referred to as its liabilities.

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

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

All liabilities reflect the benefit provisions in place as of July 1, 2023.

### **Actuarial Accrued Liability**

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

- (1) that which is attributable to the past and
- (2) that which is attributable to the future.

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



**TABLE 4**  
**JUDGES RETIREMENT SYSTEM**  
**PRESENT VALUE OF FUTURE BENEFITS (PVFB)**  
**AS OF JULY 1, 2023**

1. Active Employees		
(a) Retirement	\$	132,722,529
(b) Death		2,969,796
(c) Total	\$	<u>135,692,325</u>
2. Inactive Vested Members		587,870
3. Inactive Nonvested Members		0
4. Disabled Members		2,130,689
5. Retirees		122,074,780
6. Beneficiaries		<u>25,984,086</u>
7. Total Present Value of Future Benefits [1(c) + 2 + 3 + 4 + 5 + 6]	\$	286,469,750



**TABLE 5**  
**JUDGES RETIREMENT SYSTEM**  
**ACTUARIAL ACCRUED LIABILITY**  
**AS OF JULY 1, 2023**

1. Present Value of Future Benefits for Active Members	\$	135,692,325
2. Present Value of Future Normal Costs for Active Members		
(a) Retirement	\$	49,286,045
(b) Death		<u>1,637,651</u>
(c) Total	\$	50,923,696
3. Actuarial Accrued Liability for Active Members [1 - 2(c)]	\$	84,768,629
4. Actuarial Accrued Liability for Inactive Members	\$	150,777,425
5. Total Actuarial Accrued Liability [3 + 4]	\$	235,546,054
6. Actuarial Value of Assets	\$	238,099,183
7. Unfunded Actuarial Accrued Liability [5 - 6]	\$	(2,553,129)
8. Funded Ratio [6 / 5]		101.08%



**TABLE 6**  
**JUDGES RETIREMENT SYSTEM**  
**ACTUARIAL BALANCE SHEET**  
**AS OF JULY 1, 2023**

ASSETS

Actuarial Value of Assets	\$	238,099,183
Unfunded Actuarial Accrued Liability		(2,553,129)
Present Value of Future Normal Costs		<u>50,923,696</u>
Total Assets	\$	286,469,750

LIABILITIES

Present Value of Future Benefits			
Active members			
Retirement	\$	132,722,529	
Death		<u>2,969,796</u>	
Total			135,692,325
Inactive members			587,870
Retirees, disabilities and beneficiaries			<u>150,189,555</u>
Total	\$		286,469,750



TABLE 7  
JUDGES RETIREMENT SYSTEM  
ACTUARIAL GAIN/(LOSS)

**Liabilities**

1. Actuarial Accrued Liability as of July 1, 2022	\$ 225,647,081
2. Normal Cost for Plan Year Ending June 30, 2023, Including New Hires	5,898,263
3. Benefit Payments During Plan Year Ending June 30, 2023	(13,679,276)
4. Interest at 7.20%	16,228,340
5. Assumption changes	<u>1,125,054</u>
6. Expected Actuarial Accrued Liability as of July 1, 2023	\$ 235,219,462
7. Actuarial Accrued Liability as of July 1, 2023	\$ 235,546,054

**Assets**

8. Actuarial Value of Assets as of July 1, 2022	\$ 228,630,893
9. Contributions During Plan Year Ending June 30, 2023	7,769,542
10. Benefit Payments and Expenses During Plan Year Ending June 30, 2023	(13,769,091)
11. Interest at 7.20%	<u>16,290,433</u>
12. Expected Actuarial Value of Assets as of July 1, 2023	\$ 238,921,777
13. Actuarial Value of Assets as of July 1, 2023	\$ 238,099,183

**Gain / (Loss)**

14. Actuarial Gain / (Loss) on Liabilities [6 - 7]	\$ (326,592)
15. Actuarial Gain / (Loss) on Assets [13 - 12]	(822,594)
16. Total Actuarial Gain / (Loss) for Plan Year Ending June 30, 2023 [14 + 15]	\$ (1,149,186)



**TABLE 8**  
**JUDGES RETIREMENT SYSTEM**  
**GAIN/(LOSS) ANALYSIS BY SOURCE**

<b>Liability Sources</b>	<b>Gain/(Loss)</b>
Retirement	\$ 887,000
Termination	0
Mortality	(941,000)
Salary	(295,000)
COLA	(324,000)
Miscellaneous	346,000
Total Liability Gain/(Loss)	\$ (327,000)
Asset Gain/(Loss)	\$ (823,000)
Net Actuarial Gain/(Loss)	\$ (1,150,000)



TABLE 9

**JUDGES RETIREMENT SYSTEM**  
**PROJECTED BENEFIT PAYMENTS**

<u>Plan Year</u> <u>Ending June 30</u>	<u>Current</u> <u>Active Members</u>	<u>Current Inactive</u> <u>Members</u>	<u>Total</u>
2024	\$ 989,000	\$ 14,191,000	\$ 15,180,000
2025	1,592,000	14,158,000	15,750,000
2026	2,507,000	14,100,000	16,607,000
2027	3,213,000	13,994,000	17,207,000
2028	4,366,000	13,879,000	18,245,000
2029	5,165,000	13,741,000	18,906,000
2030	5,951,000	13,577,000	19,528,000
2031	6,663,000	13,381,000	20,044,000
2032	7,475,000	13,222,000	20,697,000
2033	8,135,000	12,965,000	21,100,000
2034	8,887,000	12,674,000	21,561,000
2035	9,841,000	12,346,000	22,187,000
2036	10,812,000	11,941,000	22,753,000
2037	11,595,000	11,526,000	23,121,000
2038	12,545,000	11,072,000	23,617,000
2039	13,562,000	10,592,000	24,154,000
2040	14,421,000	10,079,000	24,500,000
2041	15,396,000	9,534,000	24,930,000
2042	16,294,000	8,960,000	25,254,000
2043	17,255,000	8,364,000	25,619,000
2044	17,983,000	7,753,000	25,736,000
2045	18,549,000	7,131,000	25,680,000
2046	19,111,000	6,508,000	25,619,000
2047	19,813,000	5,891,000	25,704,000
2048	20,244,000	5,289,000	25,533,000
2049	20,487,000	4,707,000	25,194,000
2050	20,636,000	4,152,000	24,788,000
2051	20,732,000	3,632,000	24,364,000
2052	20,819,000	3,148,000	23,967,000
2053	20,784,000	2,706,000	23,490,000

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



## SECTION 5 – EMPLOYER CONTRIBUTIONS

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

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

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

### **Description of Contribution Rate Components**

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

In general, contributions are computed in accordance with a level-percent of payroll funding objective. The contribution rate based on the July 1, 2023 actuarial valuation will be used to determine the actuarial required employer contribution rate to the Judges Retirement System for the plan year ending June 30, 2024. Any State contributions are expected to be deposited on July 1, 2024 (State fiscal year 2025). In this context, the term "contribution rate" means the percentage, which is applied to a particular active member payroll to determine the actual employer contribution amount (i.e., in dollars) for the group.

This approach is intended to promote stable contributions, balance cost among generations of taxpayers and members, and ensure adequate prefunding of benefits.

### **Contribution Rate Summary**

In Table 10 the amortization payment related to the unfunded actuarial accrued liability/(surplus), as of July 1, 2023, is developed. Table 11 develops the actuarial required contribution rate for the System and the amount of any additional required state contributions.

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



TABLE 10  
JUDGES RETIREMENT SYSTEM  
SCHEDULE OF AMORTIZATION BASES

Amortization Bases	Original Amount	July 1, 2023 Remaining Payments	Date of Last Payment	Outstanding Balance as of July 1, 2023	Annual Contribution*
2023 Reset Base	\$ (2,553,129)	25	7/1/2048	\$ (2,553,129)	\$ (163,114)
<b>Total</b>				<b>\$ (2,553,129)</b>	<b>\$ (163,114)</b>

\* Contribution amount reflects mid-year timing.

- 1. Total UAAL Amortization Payments \$ (163,114)
- 2. Projected Payroll for FY 2024 \$ 27,414,232
- 3. UAAL Amortization Payment Rate (0.59%)

Note: The payments are determined as a level-percent of payroll using a 2.95% payroll growth assumption.



TABLE 11

JUDGES RETIREMENT SYSTEM

ACTUARIAL REQUIRED CONTRIBUTION RATE  
FOR PLAN YEAR ENDING JUNE 30, 2024

1. Normal Cost Rate	23.99%
2. Administrative Expenses	0.31%
3. UAAL Amortization Payment Rate (see Table 10)	(0.59%)
4. Total Actuarial Required Contribution Rate [1 + 2 + 3]	23.71%
5. Effective Statutory Member Contribution Rate	8.82%
6. Employer Required Contribution Rate [4 - 5]	14.89%
7. Projected Payroll for FY 2024	\$ 27,414,232
8. Employer Required Contribution Amount [6 * 7]	\$ 4,081,979
9. Expected Court Fees*	\$ 4,348,888
10. Payroll-Related State Contribution** [5.0% * 7]	\$ 1,370,712
11. Additional Required State Contribution as of July 1, 2024 [8 - 9 - 10, but not less than 0]	\$ 0

\* Due to the passage of Legislative Bill 17 (LB 17) by the 2021 Nebraska Legislature, court fees during FY 2024 are anticipated to be 104% of the actual fees collected during FY 2023.

\*\*LB 17 also introduced a payroll-related contribution of up to 5% of total annual compensation that will be paid by the State on July 1 of the following year. If the funded ratio is either above or below 100% for two consecutive years, the actuary must assess whether the rate should be adjusted.



## SECTION 6 – RISK CONSIDERATIONS

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

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

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

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

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

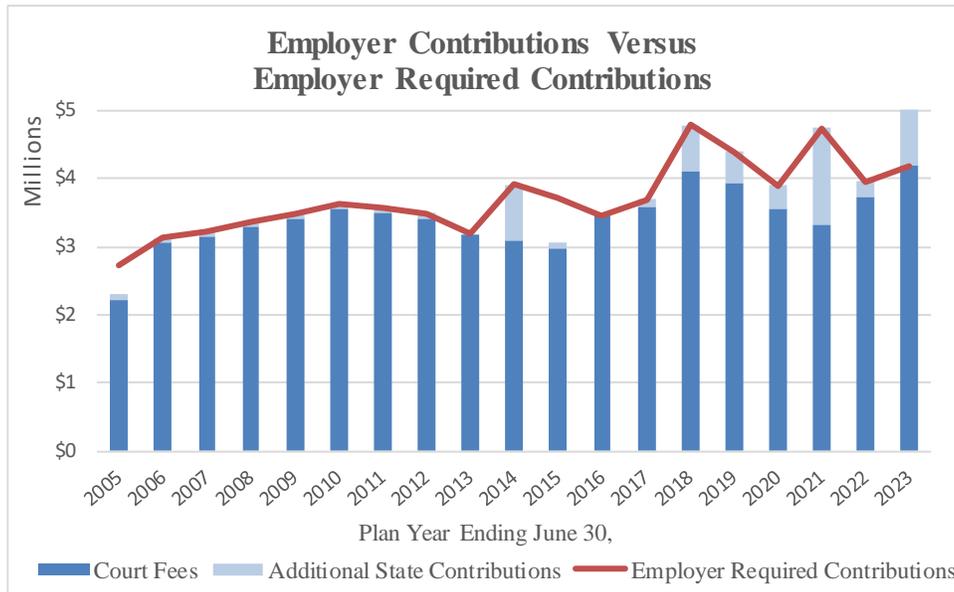
Although the external risks do exist, ASOP 51 does not require the actuary to opine on those risks, so no discussion is included here.

### *Actual vs Actuarial Contributions*

Employees contribute a fixed contribution rate, which is set by statute. State statutes also direct a portion of court fees from the General Fund to the Judges’ Retirement Fund. The State’s funding policy is to make an additional contribution to pay the excess of the actuarial required contribution over member contributions, court fees, and other state appropriations. The 2021 Nebraska State Legislature passed LB 17, which increased the expected amount of court fees to be contributed to the System in the future. The bill also introduced a payroll-related contribution that was first provided by the State on July 1, 2023 (calculated with the July 1, 2022 valuation). The actual contribution rate will be decided based on actuarial projections reflecting various investment return scenarios, but it will be no more than 5% of pay. There is a direct correlation between healthy, well-funded retirement plans and consistent contributions equal to the full actuarial contribution rate each year. As the following graph shows, the full actuarial employer contribution rate, including any additional State contributions, has been contributed in 17 of the last 19 years.



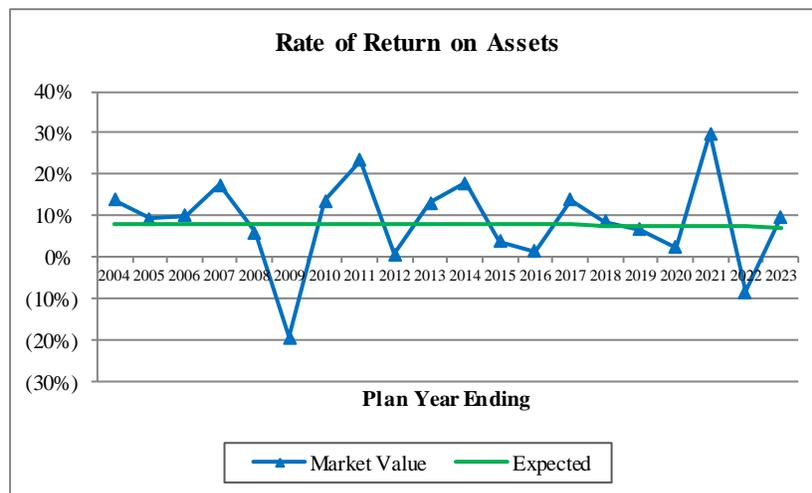
**SECTION 6 – RISK CONSIDERATIONS**



One of the positive factors regarding the funding of the Judges Retirement System is the State’s commitment to make any additional contributions that are needed to meet the actuarial required contribution. As a result, the System’s funded status is very strong.

**Investment Return Risk**

The most significant risk factor for most public retirement systems, including the Nebraska Judges Retirement System is investment return because of the volatility of returns and the size of plan assets compared to payroll (see Table 12). A perusal of historical returns over 10-20 years reveals that the actual return each year is rarely close to the expected return. This is to be expected, given the underlying capital market assumptions and the System’s asset allocation, but it creates significant contribution risk. As Table 12 illustrates, a return that varies from the 7.1% assumption by 10.0% (-2.9% or 17.1%) equates to 86% of payroll. Even with asset smoothing and amortization of the actuarial experience loss over 25 years, the impact on the actuarial contribution rate is dramatic (5.48% once the experience is fully recognized).





## SECTION 6 – RISK CONSIDERATIONS

Under the revised Actuarial Standards of Practice (ASOP) No. 4 effective for valuations after February 15, 2023, we are required to include a low-default-risk obligation measure of the System’s liability in our funding valuation report. This is an informational disclosure as described below and would not be appropriate for assessing the funding progress or health of the plan. This measure uses the unit credit cost method and reflects all the assumptions and provisions of the funding valuation except that the discount rate is derived from considering low-default-risk fixed income securities. We considered the FTSE Pension Discount Curve based on market bond rates published by the Society of Actuaries as of June 30, 2023 and with the 30-year spot rate used for all durations beyond 30. Using these assumptions, we calculate a liability of approximately \$282.0 million. This amount approximates the termination liability if the plan (or all covered employment) ended on the valuation date and all of the accrued benefits had to be paid with cash-flow matched bonds. This assurance of funded status and benefit security is typically more relevant for corporate plans than for governmental plans since governments rarely have the need or option to completely terminate a plan. However, this informational disclosure is required for all plans whether corporate or governmental and care should be taken to ensure the “one size fits all” metric is not misconstrued.

### *Contribution Risks*

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

<b>Return on Actuarial Value of Assets</b>	<b>2% Loss (5.1% Return)</b>	<b>5% Loss (2.1% Return)</b>	<b>10% Loss (-2.9% Return)</b>
Actuarial Required Contribution Rate	24.81%	26.45%	29.19%
Member Contribution Rate	<u>(8.82%)</u>	<u>(8.82%)</u>	<u>(8.82%)</u>
Employer Required Contribution Rate	15.99%	17.63%	20.37%
Employer Required Contribution Amount	\$4,383,536	\$4,833,129	\$5,584,279
Expected Court Fees	4,348,888	4,348,888	4,348,888
Expected Payroll-Related Contribution	1,370,712	1,370,712	1,370,712
Additional Required State Contribution*	\$0	\$0	\$0

\* Includes interest for expected payment timing.

Another funding challenge is that contributions to the Judges Retirement System are developed as a level percentage of payroll, so the dollar amount of contributions is expected to increase from year to year as payroll increases. However, one of the major funding sources of the System (court fees) is not payroll related, and the dollar amount can vary from year to year. This disconnect between the funding policy and the financing mechanism creates the possibility for a unique funding challenge. However, the State payroll-related contribution is expected to address this concern to a large extent and reduce the volatility of the additional state contribution from year to year.



## SECTION 6 – RISK CONSIDERATIONS

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We note that the risk associated with court fees is likely to be more pronounced for the next few years as a result of the COVID-19 pandemic, although this risk is offset by the scheduled increases due to LB 17. Therefore, it is difficult to anticipate how the amount of court fees will change over the next five to ten years.

### *Demographic Risks*

A key demographic risk for all retirement systems, including the Nebraska Judges Retirement System, is improvements in mortality (longevity) greater than anticipated. While the actuarial assumptions reflect small, continuous improvements in mortality experience over time and these assumptions are refined every experience study, the risk arises because there is a possibility of some sudden shift, perhaps due to a significant medical breakthrough that could quickly increase liabilities. Likewise, there is some possibility of a significant public health crisis that could result in a significant number of additional deaths in a short time period, as experienced with the COVID-19 pandemic. This type of event is also significant, although more easily absorbed. While either of these events could happen, it represents a small probability and thus represents much less risk than the volatility associated with investment returns.

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



TABLE 12

## JUDGES RETIREMENT SYSTEM

## HISTORICAL ASSET VOLATILITY RATIOS

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

Actuarial Valuation Date	Market Value of Assets	Covered Payroll	Asset Volatility Ratio	Increase in ACR with a Return 10% Lower than Assumed*
July 1, 2004	\$87,971,164	\$16,655,342	5.28	3.37%
July 1, 2005	94,958,898	16,285,137	5.83	3.72%
July 1, 2006	103,945,918	16,422,894	6.33	4.04%
July 1, 2007	121,215,683	17,003,921	7.13	4.56%
July 1, 2008	113,254,039	17,990,072	6.30	4.02%
July 1, 2009	90,446,117	18,373,339	4.92	3.14%
July 1, 2010	101,951,911	18,773,203	5.43	3.47%
July 1, 2011	124,852,333	18,182,238	6.87	4.39%
July 1, 2012	123,907,003	19,005,478	6.52	4.17%
July 1, 2013	137,021,979	20,099,647	6.82	4.36%
July 1, 2014	158,790,111	21,705,428	7.32	4.68%
July 1, 2015	160,800,009	21,973,679	7.32	4.68%
July 1, 2016	159,240,849	23,020,459	6.92	4.42%
July 1, 2017	176,605,831	23,614,251	7.48	4.78%
July 1, 2018	188,055,655	23,873,911	7.88	5.03%
July 1, 2019	195,672,498	24,445,565	8.00	5.11%
July 1, 2020	194,521,175	25,249,097	7.70	4.92%
July 1, 2021	246,453,303	25,689,918	9.59	6.13%
July 1, 2022	219,726,450	25,918,345	8.48	5.42%
July 1, 2023	235,106,994	27,414,232	8.58	5.48%

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

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

The assets at July 1, 2023 are 8.6 times payroll, so underperforming the investment return assumption by 10.00% (i.e., earn -2.90% for one year) creates an actuarial loss of about \$24 million, or 86% of payroll. While the actual impact in the first year is mitigated by the asset smoothing method and amortization of the UAAL, this illustrates the significant contribution risk associated with volatile investment returns.



**TABLE 13**  
**JUDGES RETIREMENT SYSTEM**  
**HISTORICAL CASH FLOWS**

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

Year End	Market Value of Assets (MVA)	Contributions	Benefit Payments	Net Cash Flow	Net Cash Flow as a Percent of MVA
6/30/2004	\$87,971,164	\$2,809,371	\$3,970,731	(\$1,161,360)	(1.32%)
6/30/2005	94,958,898	3,300,709	4,214,817	(914,108)	(0.96%)
6/30/2006	103,945,918	4,181,064	4,724,053	(542,989)	(0.52%)
6/30/2007	121,215,683	4,306,300	5,068,066	(761,766)	(0.63%)
6/30/2008	113,254,039	4,504,081	5,277,937	(773,856)	(0.68%)
6/30/2009	90,446,117	4,670,801	5,641,650	(970,849)	(1.07%)
6/30/2010	101,951,911	5,006,402	5,576,749	(570,347)	(0.56%)
6/30/2011	124,852,333	4,958,315	5,801,195	(842,880)	(0.68%)
6/30/2012	123,907,003	4,883,775	6,834,551	(1,950,776)	(1.57%)
6/30/2013	137,021,979	4,604,741	7,393,972	(2,789,231)	(2.04%)
6/30/2014	158,790,111	5,425,048	8,121,996	(2,696,948)	(1.70%)
6/30/2015	160,800,009	4,681,734	8,547,892	(3,866,158)	(2.40%)
6/30/2016	159,240,849	5,110,097	9,052,110	(3,942,013)	(2.48%)
6/30/2017	176,605,831	5,440,668	9,690,310	(4,249,642)	(2.41%)
6/30/2018	188,055,655	6,594,689	10,144,103	(3,549,414)	(1.89%)
6/30/2019	195,672,498	6,243,603	10,991,157	(4,747,554)	(2.43%)
6/30/2020	194,521,175	5,859,680	11,477,914	(5,618,234)	(2.89%)
6/30/2021	246,453,303	6,776,669	12,066,177	(5,289,508)	(2.15%)
6/30/2022	219,726,450	6,074,819	12,668,823	(6,594,004)	(3.00%)
6/30/2023	235,106,994	7,769,542	13,679,276	(5,909,734)	(2.51%)

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



TABLE 14

## JUDGES RETIREMENT SYSTEM

## LIABILITY MATURITY MEASUREMENTS

Most public sector retirement systems have been in operation for over 50 years. As a result, they have aging plan populations, and in some cases declining active populations, resulting in an increasing ratio of retirees to active members (see Table 15) and a growing percentage of retiree liability (see table below). With more of the total liability residing with retirees, investment volatility has a greater impact on the funding of the system because it is more difficult to restore the system financially after losses occur when there is comparatively less payroll over which to spread costs.

Actuarial Valuation Date	Retiree Liability (a)	Total Actuarial Liability (b)	Retiree Percentage (a) / (b)
July 1, 2004	\$40,000,310	\$95,671,391	41.8%
July 1, 2005	44,085,429	98,512,876	44.8%
July 1, 2006	49,128,336	101,438,239	48.4%
July 1, 2007	50,019,570	103,704,250	48.2%
July 1, 2008	50,873,865	114,251,081	44.5%
July 1, 2009	52,364,507	118,558,418	44.2%
July 1, 2010	51,765,715	121,309,682	42.7%
July 1, 2011	60,624,250	128,264,617	47.3%
July 1, 2012	70,871,220	137,464,661	51.6%
July 1, 2013	79,678,340	148,581,812	53.6%
July 1, 2014	82,799,667	156,326,683	53.0%
July 1, 2015	87,258,262	162,095,235	53.8%
July 1, 2016	94,142,544	168,103,750	56.0%
July 1, 2017	102,821,774	187,502,212	54.8%
July 1, 2018	110,928,188	194,269,172	57.1%
July 1, 2019	113,432,873	198,116,058	57.3%
July 1, 2020	118,314,628	206,455,118	57.3%
July 1, 2021	130,046,659	216,938,984	59.9%
July 1, 2022	141,922,194	225,647,081	62.9%
July 1, 2023	150,189,555	235,546,054	63.8%

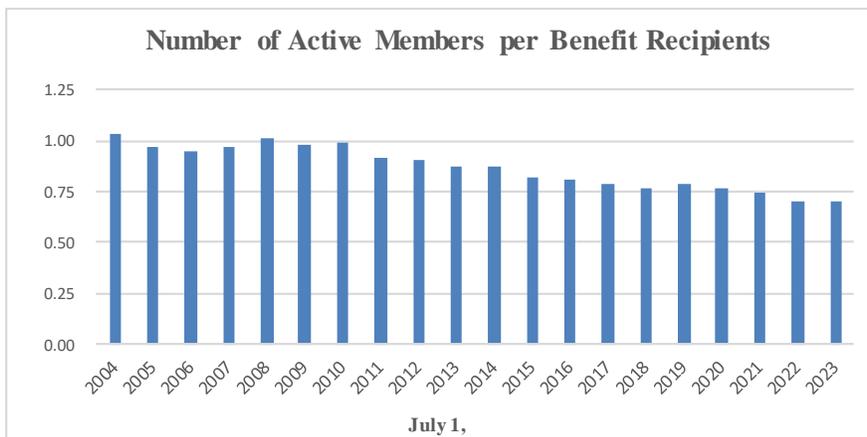
Note: Years prior to July 1, 2013 were provided by the prior actuary.



**TABLE 15**  
**JUDGES RETIREMENT SYSTEM**  
**HISTORICAL MEMBER STATISTICS**

Valuation Date July 1,	Number of Active Members	Number of Retired Members	Active/Retired
2004	163	158	1.03
2005	159	164	0.97
2006	154	162	0.95
2007	154	159	0.97
2008	157	155	1.01
2009	154	157	0.98
2010	153	154	0.99
2011	146	160	0.91
2012	150	166	0.90
2013	149	172	0.87
2014	153	175	0.87
2015	147	179	0.82
2016	149	184	0.81
2017	147	186	0.79
2018	147	190	0.77
2019	149	188	0.79
2020	148	194	0.76
2021	145	195	0.74
2022	143	204	0.70
2023	146	208	0.70

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





**TABLE 16**  
**JUDGES RETIREMENT SYSTEM**  
**COMPARISON OF VALUATION RESULTS UNDER ALTERNATE**  
**INVESTMENT RETURN ASSUMPTIONS**  
**(\$ in Thousands)**

This exhibit compares the key July 1, 2023 valuation results under five (5) different investment return assumptions to illustrate the impact of different assumptions on the funding of the System. Note that only the investment return assumption is changed, as identified in the heading below. All other assumptions are unchanged for purposes of this analysis.

<b>Investment Return Assumption</b>	<b>6.60%</b>	<b>6.85%</b>	<b>7.10%</b>	<b>7.35%</b>	<b>7.60%</b>
Actuarial Accrued Liability	\$247,434	\$241,371	\$235,546	\$229,946	\$224,560
Actuarial Value of Assets	238,099	238,099	238,099	238,099	238,099
Unfunded Actuarial Accrued Liability	\$9,334	\$3,272	(\$2,553)	(\$8,153)	(\$13,539)
Funded Ratio	96.23%	98.64%	101.08%	103.55%	106.03%
<b>Contributions</b>					
Normal Cost Rate	26.52%	25.22%	23.99%	22.83%	21.73%
Administrative Expenses	0.31%	0.31%	0.31%	0.31%	0.31%
UAAL Amortization Rate	2.07%	0.74%	(0.59%)	(1.95%)	(3.31%)
Actuarial Required Contribution Rate	28.90%	26.27%	23.71%	21.19%	18.73%
Member Contribution Rate	(8.82%)	(8.82%)	(8.82%)	(8.82%)	(8.82%)
Employer Required Contribution Rate	20.08%	17.45%	14.89%	12.37%	9.91%
Employer Required Contribution Amount	\$5,505	\$4,784	\$4,082	\$3,391	\$2,717
Expected Court Fees	4,349	4,349	4,349	4,349	4,349
Expected Payroll-Related Contribution	1,371	1,371	1,371	1,371	1,371
<b>Additional Required State Contribution</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

Note: All other assumptions are unchanged for purposes of this sensitivity analysis.  
Numbers may not add due to rounding.



## **SECTION 7 – HISTORICAL FUNDING AND OTHER INFORMATION**

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



SECTION 7 – HISTORICAL FUNDING AND OTHER INFORMATION

TABLE 17
JUDGES RETIREMENT SYSTEM
HISTORICAL FUNDING INFORMATION
SCHEDULE OF FUNDING PROGRESS

Table with 7 columns: Actuarial Valuation Date, Actuarial Value of Assets (a), Actuarial Accrued Liability (AAL) (b), Unfunded Actuarial Liability (UAAL) (b - a), Funded Ratio (a / b), Covered Payroll (c), and UAAL as a % of Covered Payroll [(b - a) / c]. Rows range from June 30, 2004 to June 30, 2023.

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



TABLE 18

## JUDGES RETIREMENT SYSTEM

## HISTORICAL FUNDING INFORMATION

SCHEDULE OF CONTRIBUTIONS FROM EMPLOYER  
AND OTHER CONTRIBUTING ENTITIES

Plan Year Ending	Employer Required Contributions*			Percent Contributed
	State	Court Fees	Total	
June 30, 2005	\$501,841	\$2,217,118	\$2,718,959	84%
June 30, 2006	72,244	3,048,009	3,120,253	100%
June 30, 2007	72,244	3,135,709	3,207,953	100%
June 30, 2008	72,244	3,280,964	3,353,208	100%
June 30, 2009	72,244	3,419,091	3,491,335	100%
June 30, 2010	72,244	3,543,047	3,615,291	100%
June 30, 2011	72,244	3,507,417	3,579,661	100%
June 30, 2012	72,244	3,411,370	3,483,614	100%
June 30, 2013	0	3,180,367	3,180,367	100%
June 30, 2014	803,383	3,102,864	3,906,247	100%
June 30, 2015	749,849	2,977,205	3,727,054	82%
June 30, 2016	0	3,458,665	3,458,665	100%
June 30, 2017	118,714	3,578,851	3,697,565	100%
June 30, 2018	667,613	4,112,543	4,780,156	100%
June 30, 2019	442,599	3,946,292	4,388,891	100%
June 30, 2020	348,794	3,548,379	3,897,173	100%
June 30, 2021	1,427,719	3,319,567	4,747,286	100%
June 30, 2022	231,537	3,716,356	3,947,893	100%
June 30, 2023	0	4,181,623	4,181,623	131%

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

\*ARC less member contributions



APPENDIX A – MEMBERSHIP DATA

MEMBER DATA RECONCILIATION

	Active Members	Inactive Vested	Retirees and Beneficiaries	Disabled Members	Total
As of July 1, 2022	143	4	201	3	351
Changes in status					
a) Retirement	(6)	(2)	8	0	0
b) Death	0	0	(7)	0	(7)
c) Nonvested terminations	0	0	0	0	0
d) Vested terminations	0	0	0	0	0
e) Contribution refund	0	0	0	0	0
f) Beneficiaries in receipt	0	0	3	0	3
g) Disability retirements	0	0	0	0	0
h) Return to active service	0	0	0	0	0
i) Expired benefits	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total changes in status	(6)	(2)	4	0	(4)
New entrants					
a) Without prior service	9	0	0	0	9
b) With prior service	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total new members	9	0	0	0	9
Net Change	3	(2)	4	0	5
As of July 1, 2023	146	2	205	3	356



**APPENDIX A – MEMBERSHIP DATA**

**SUMMARY OF MEMBERSHIP DATA**

<b>A. ACTIVE MEMBERS</b>	<b>July 1, 2023</b>	<b>July 1, 2022</b>	<b>% Change</b>
1. Number of Active Members			
(a) Before assumed retirement age	141	137	2.9%
(b) Beyond assumed retirement age	<u>5</u>	<u>6</u>	(16.7%)
(c) Total*	146	143	2.1%
2. Annual Reported Salary			
(a) Before assumed retirement age	\$ 25,707,948	\$ 24,098,188	6.7%
(b) Beyond assumed retirement age	<u>856,231</u>	<u>992,175</u>	(13.7%)
(c) Total	\$ 26,564,179	\$ 25,090,363	5.9%
3. Accumulated Contributions	\$ 20,748,267	\$ 19,584,138	5.9%
4. Active Member Averages			
(a) Age	56.4	56.8	(0.7%)
(b) Service	10.8	10.8	0.0%
(c) Compensation	\$ 181,946	\$ 175,457	3.7%
<b>B. INACTIVE VESTED MEMBERS</b>			
1. Number of Inactive Vested Members	2	4	(50.0%)
2. Accumulated Member Contributions	\$ 188,970	\$ 542,877	(65.2%)
3. Inactive Vested Member Averages			
(a) Age	55.0	59.3	(7.3%)
(b) Accumulated member contributions	\$ 94,485	\$ 135,719	(30.4%)
<b>C. RETIREES, DISABLED, AND BENEFICIARIES</b>			
1. Number of Members			
(a) Retired	147	146	0.7%
(b) Disabled	3	3	0.0%
(c) Beneficiaries	<u>58</u>	<u>55</u>	5.5%
(d) Total	208	204	2.0%
2. Annual Benefits			
(a) Retired	\$ 10,999,745	\$ 10,428,926	5.5%
(b) Disabled	308,865	301,803	2.3%
(c) Beneficiaries	<u>3,050,574</u>	<u>2,755,244</u>	10.7%
(d) Total	\$ 14,359,184	\$ 13,485,973	6.5%

\* As of July 1, 2023, there are 49 members who were hired after July 1, 2017, 15 members hired after July 1, 2015 but before July 1, 2017, 71 members who were hired after July 1, 2004 or who elected the enhanced joint and survivor benefit option, and 11 members who were hired before July 1, 2004 and did not elect the enhanced joint and survivor benefit option.

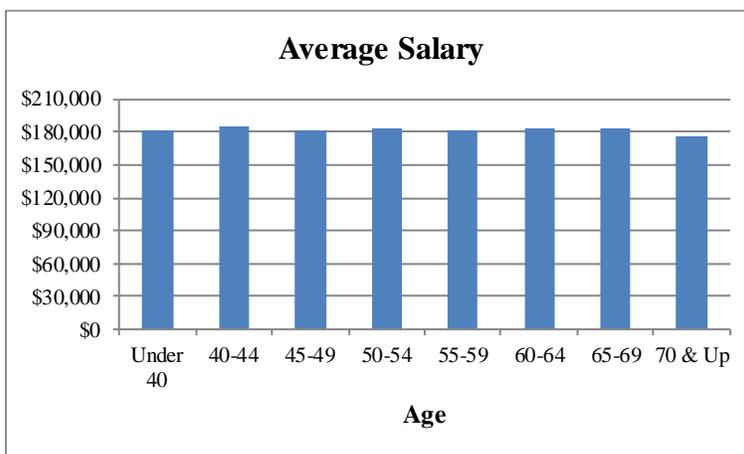
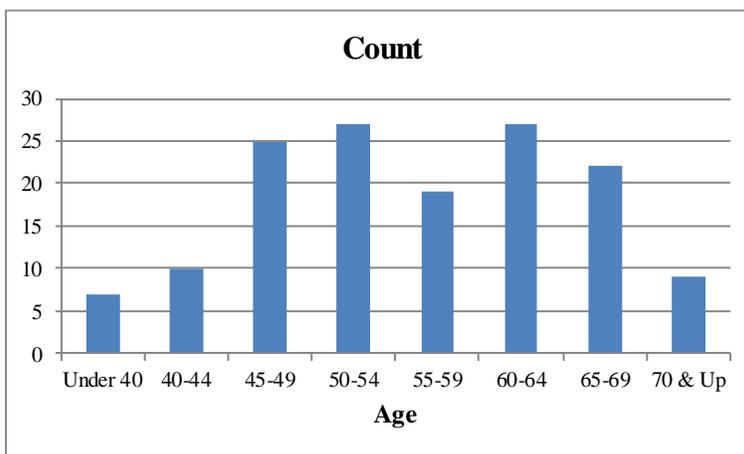


**APPENDIX A – MEMBERSHIP DATA**

**ACTIVE MEMBERS  
AS OF JULY 1, 2023**

**Total**

<u>Age</u>	<u>Count</u>			<u>Reported FY 2023 Earnings</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
Under 40	6	1	7	\$ 1,091,346	\$ 183,545	\$ 1,274,891
40-44	4	6	10	739,139	1,101,267	1,840,406
45-49	15	10	25	2,740,076	1,810,642	4,550,718
50-54	16	11	27	2,921,831	2,004,108	4,925,939
55-59	15	4	19	2,703,562	729,218	3,432,780
60-64	18	9	27	3,274,037	1,656,862	4,930,899
65-69	17	5	22	3,115,297	907,801	4,023,098
70 & Up	7	2	9	1,294,733	290,715	1,585,448
<b>Total</b>	<b>98</b>	<b>48</b>	<b>146</b>	<b>\$ 17,880,021</b>	<b>\$ 8,684,158</b>	<b>\$ 26,564,179</b>



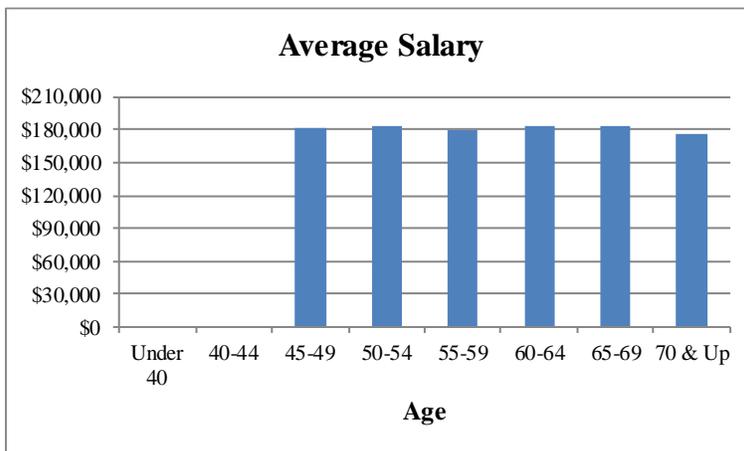
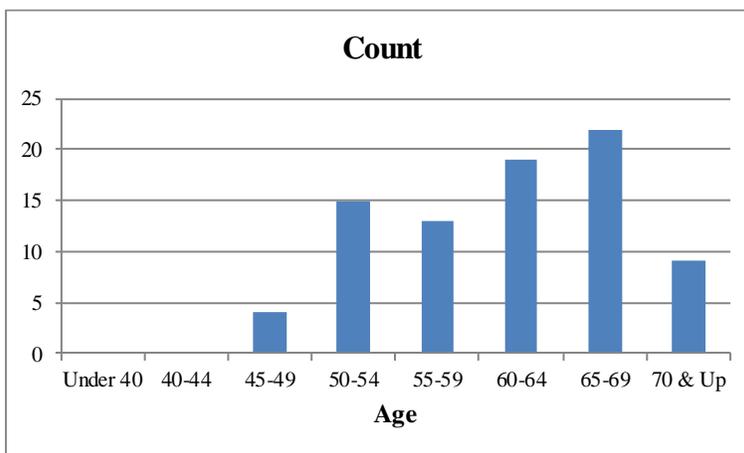


**APPENDIX A – MEMBERSHIP DATA**

**ACTIVE MEMBERS  
AS OF JULY 1, 2023**

**Members Hired Before July 1, 2015**

<u>Age</u>	<u>Count</u>			<u>Reported FY 2023 Earnings</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
Under 40	0	0	0	\$ 0	\$ 0	\$ 0
40-44	0	0	0	0	0	0
45-49	3	1	4	545,673	178,584	724,257
50-54	8	7	15	1,458,435	1,279,851	2,738,286
55-59	9	4	13	1,612,216	729,218	2,341,434
60-64	11	8	19	1,999,147	1,473,317	3,472,464
65-69	17	5	22	3,115,297	907,801	4,023,098
70 & Up	7	2	9	1,294,733	290,715	1,585,448
<b>Total</b>	<b>55</b>	<b>27</b>	<b>82</b>	<b>\$ 10,025,501</b>	<b>\$ 4,859,486</b>	<b>\$ 14,884,987</b>



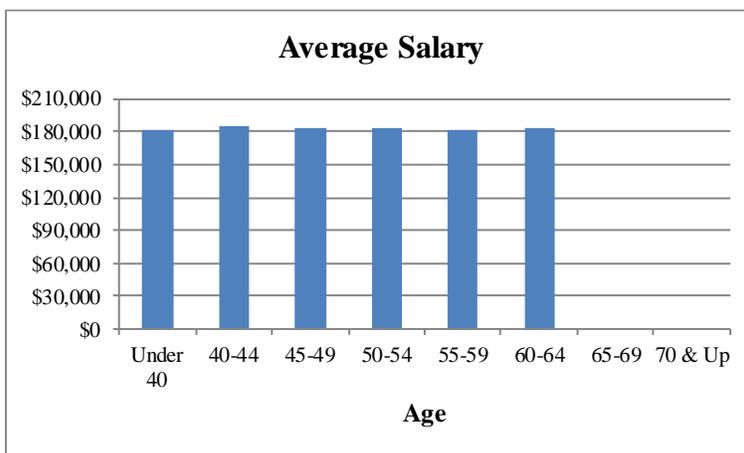
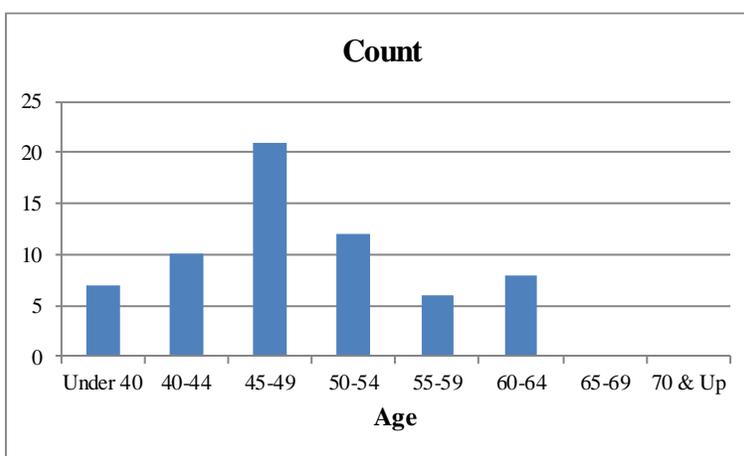


**APPENDIX A – MEMBERSHIP DATA**

**ACTIVE MEMBERS  
AS OF JULY 1, 2023**

**Members Hired On or After July 1, 2015**

<u>Age</u>	<u>Count</u>			<u>Reported FY 2023 Earnings</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
Under 40	6	1	7	\$ 1,091,346	\$ 183,545	\$ 1,274,891
40-44	4	6	10	739,139	1,101,267	1,840,406
45-49	12	9	21	2,194,403	1,632,058	3,826,461
50-54	8	4	12	1,463,396	724,257	2,187,653
55-59	6	0	6	1,091,346	0	1,091,346
60-64	7	1	8	1,274,890	183,545	1,458,435
65-69	0	0	0	0	0	0
70 & Up	0	0	0	0	0	0
<b>Total</b>	<b>43</b>	<b>21</b>	<b>64</b>	<b>\$ 7,854,520</b>	<b>\$ 3,824,672</b>	<b>\$ 11,679,192</b>





APPENDIX A – MEMBERSHIP DATA

**AGE AND SERVICE DISTRIBUTION  
AS OF JULY 1, 2023**

Age		0-4	5-9	10-14	15-19	Over 19	Total
<b>Under 40</b>	Number	6	1	0	0	0	7
	Total Salary	\$ 1,096,307	\$ 178,584	\$ 0	\$ 0	\$ 0	\$ 1,274,891
	Average Sal.	\$ 182,718	\$ 178,584	\$ 0	\$ 0	\$ 0	\$ 182,127
<b>40-44</b>	Number	7	3	0	0	0	10
	Total Salary	\$ 1,274,890	\$ 565,516	\$ 0	\$ 0	\$ 0	\$ 1,840,406
	Average Sal.	\$ 182,127	\$ 188,505	\$ 0	\$ 0	\$ 0	\$ 184,041
<b>45-49</b>	Number	16	6	3	0	0	25
	Total Salary	\$ 2,918,660	\$ 1,086,385	\$ 545,673	\$ 0	\$ 0	\$ 4,550,718
	Average Sal.	\$ 182,416	\$ 181,064	\$ 181,891	\$ 0	\$ 0	\$ 182,029
<b>50-54</b>	Number	7	13	5	2	0	27
	Total Salary	\$ 1,264,969	\$ 2,371,198	\$ 907,801	\$ 381,971	\$ 0	\$ 4,925,939
	Average Sal.	\$ 180,710	\$ 182,400	\$ 181,560	\$ 190,986	\$ 0	\$ 182,442
<b>55-59</b>	Number	3	6	5	4	1	19
	Total Salary	\$ 535,752	\$ 1,091,346	\$ 902,841	\$ 724,257	\$ 178,584	\$ 3,432,780
	Average Sal.	\$ 178,584	\$ 181,891	\$ 180,568	\$ 181,064	\$ 178,584	\$ 180,673
<b>60-64</b>	Number	2	6	11	5	3	27
	Total Salary	\$ 367,089	\$ 1,091,346	\$ 2,014,029	\$ 907,801	\$ 550,634	\$ 4,930,899
	Average Sal.	\$ 183,545	\$ 181,891	\$ 183,094	\$ 181,560	\$ 183,545	\$ 182,626
<b>65-69</b>	Number	0	2	5	6	9	22
	Total Salary	\$ 0	\$ 372,050	\$ 907,801	\$ 1,101,267	\$ 1,641,980	\$ 4,023,098
	Average Sal.	\$ 0	\$ 186,025	\$ 181,560	\$ 183,545	\$ 182,442	\$ 182,868
<b>70 &amp; Up</b>	Number	0	0	1	2	6	9
	Total Salary	\$ 0	\$ 0	\$ 188,505	\$ 377,010	\$ 1,019,933	\$ 1,585,448
	Average Sal.	\$ 0	\$ 0	\$ 188,505	\$ 188,505	\$ 169,989	\$ 176,161
<b>Total</b>	Number	41	37	30	19	19	146
	Total Salary	\$ 7,457,667	\$ 6,756,425	\$ 5,466,650	\$ 3,492,306	\$ 3,391,131	\$ 26,564,179
	Average Sal.	\$ 181,894	\$ 182,606	\$ 182,222	\$ 183,806	\$ 178,481	\$ 181,946



**APPENDIX A – MEMBERSHIP DATA**

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**INACTIVE VESTED MEMBERS  
AS OF JULY 1, 2023**

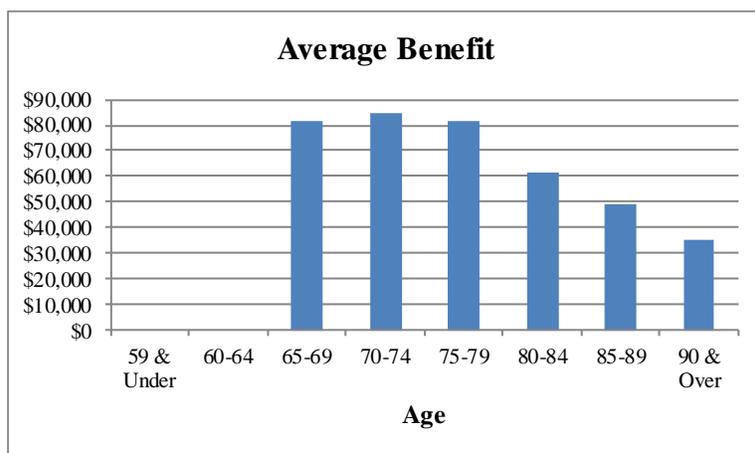
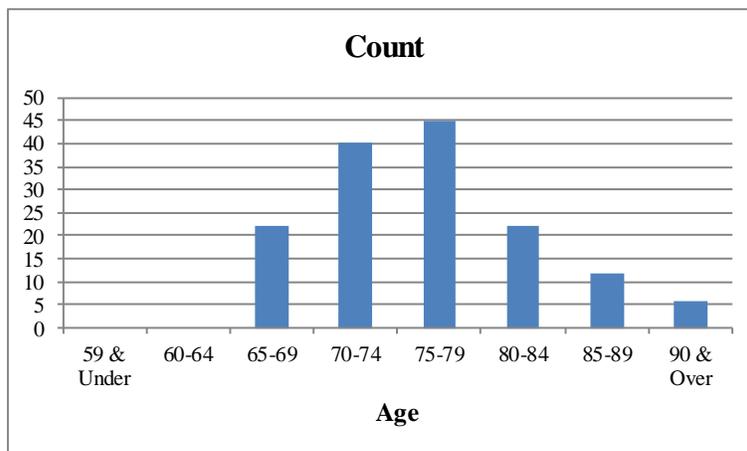
<u>Age</u>	<u>Count</u>			<u>Annual Benefits</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
59 & Under	1	1	2	\$ 16,493	\$ 51,052	\$ 67,545
60-64	0	0	0	0	0	0
65-69	0	0	0	0	0	0
70-74	0	0	0	0	0	0
75-79	0	0	0	0	0	0
80-84	0	0	0	0	0	0
85-89	0	0	0	0	0	0
90 & Over	0	0	0	0	0	0
Total	1	1	2	\$ 16,493	\$ 51,052	\$ 67,545



**APPENDIX A – MEMBERSHIP DATA**

**RETIRED MEMBERS  
AS OF JULY 1, 2023**

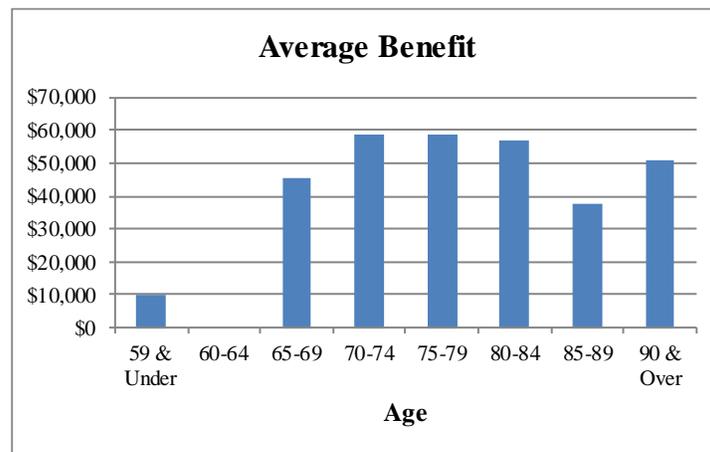
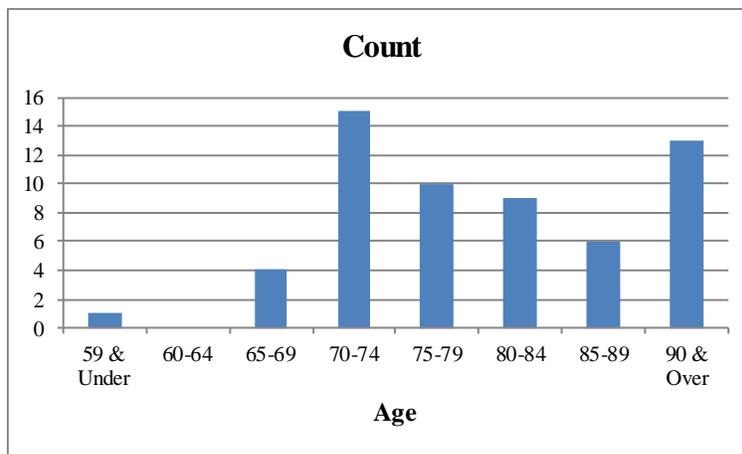
Age	Count			Annual Benefits		
	Male	Female	Total	Male	Female	Total
59 & Under	0	0	0	\$ 0	\$ 0	\$ 0
60-64	0	0	0	0	0	0
65-69	16	6	22	1,289,866	499,559	1,789,425
70-74	26	14	40	2,342,814	1,054,541	3,397,355
75-79	38	7	45	3,275,683	390,963	3,666,646
80-84	12	10	22	1,003,119	344,855	1,347,974
85-89	7	5	12	436,569	148,668	585,237
90 & Over	4	2	6	176,872	36,236	213,108
<b>Total</b>	<b>103</b>	<b>44</b>	<b>147</b>	<b>\$8,524,923</b>	<b>\$2,474,822</b>	<b>\$10,999,745</b>





**BENEFICIARIES RECEIVING BENEFITS  
AS OF JULY 1, 2023**

Age	Count			Annual Benefits		
	Male	Female	Total	Male	Female	Total
59 & Under	0	1	1	\$ 0	\$ 9,765	\$ 9,765
60-64	0	0	0	0	0	0
65-69	1	3	4	12,863	169,582	182,445
70-74	2	13	15	94,540	781,395	875,935
75-79	0	10	10	0	584,238	584,238
80-84	0	9	9	0	510,888	510,888
85-89	0	6	6	0	225,035	225,035
90 & Over	0	13	13	0	662,268	662,268
<b>Total</b>	<b>3</b>	<b>55</b>	<b>58</b>	<b>\$ 107,403</b>	<b>\$2,943,171</b>	<b>\$3,050,574</b>





**DISABLED MEMBERS  
AS OF JULY 1, 2023**

<u>Age</u>	<u>Count</u>			<u>Annual Benefits</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
59 & Under	0	0	0	\$ 0	\$ 0	\$ 0
60-64	0	0	0	0	0	0
65-69	0	0	0	0	0	0
70-74	1	0	1	107,048	0	107,048
75-79	1	0	1	103,540	0	103,540
80-84	1	0	1	98,277	0	98,277
85-89	0	0	0	0	0	0
90 & Over	0	0	0	0	0	0
Total	3	0	3	\$ 308,865	\$ 0	\$ 308,865



## APPENDIX B – SUMMARY OF PLAN PROVISIONS

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### Member

*Original* A judge who first serves prior to December 25, 1969, and who does not elect to become a Future member on or before November 1, 1981.

*Future* A judge who first serves on or after December 25, 1969, or who elects to become a Future member on or before November 1, 1981.

**Participation Date** Date of becoming a member.

### Definitions

*Final average earnings* For Judges who became members prior to July 1, 2015, the average of the highest three 12-month periods of covered pay, ending on the earlier of the participant's termination date or retirement date.

For Judges who became members on or after July 1, 2015, the average of the highest five 12-month periods of covered pay, ending on the earlier of the participant's termination date or retirement date.

*Fiscal year* Twelve month period ending June 30.

*Member contributions* All members hired after July 1, 2004, but before July 1, 2015, and members that elected an enhanced Joint and Survivor Benefit contribute 9% of pensionable pay up to 20 years of service, and 5% of pensionable pay thereafter. All other members hired before July 1, 2015 contribute 7% of pensionable pay during the first twenty years of service, and 1% of pensionable pay thereafter. Judges who first became members on or after July 1, 2015 will contribute 10% of compensation. Such contributions are credited with interest based on the 1-year Treasury yield curve on July 1 of each year, as determined by State Statutes.

*Monthly pension benefit* A monthly benefit equal to one-twelfth of 3.5% of final average salary times total years of service, subject to a maximum of 70% of final average salary. Effective July 1, 2001, an automatic annual cost-of-living adjustment (COLA) equal to the change in the CPI-W index, with a maximum increase of 2.5% in any one year, is provided for Judges who became members prior to July 1, 2015. Also provided is a minimum floor benefit equal to 75% of the purchasing power of the original benefit. For Judges who became members on or after July 1, 2015, an automatic cost-of-living adjustment (COLA) is provided equal to the change in the CPI-W index, not to exceed 1.0% in any one year. No purchasing power COLA applies.

*Normal Retirement Date (NRD)* Attainment of age 65.



## APPENDIX B – SUMMARY OF PLAN PROVISIONS

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*Pension service* Length of service includes all service as a Supreme Court, District Court, Worker’s compensation Court, separate Juvenile Court, County Court, Municipal Court, or Appeals Court judge in Nebraska, computed to the nearest one-twelfth year and includes declared emergency service in the armed forces.

### **Eligibility for Benefits**

*Deferred vested* Termination for reasons other than death, disability, or retirement. No service requirement for vesting.

*Disability retirement* Retirement by reason of permanent disability as determined by the Commission of Judicial qualifications.

*Early retirement* Retirement before NRD and after attaining age 55.

*Normal retirement* Retire on NRD.

*Postponed retirement* Retire after NRD.

*Pre-retirement spouse benefit* Death prior to retirement.

### **Monthly Benefits Paid Upon the Following Events**

*Normal retirement* Monthly pension benefit determined as of NRD.

*Early retirement* Monthly pension benefit determined as of early retirement date, reduced by 3% if the member retires at age 64, 6% at age 63, or 9% at age 62, and actuarially reduced for each month that commencement of payment precedes age 62. The actuarial reduction is based on the 1994 Group Annuity Mortality Table, 25% female, 75% male and 8% interest for members hired prior to July 1, 2017. For members hired on or after July 1, 2017, the Public Employees Retirement Board sets the actuarial assumptions used for actuarial reduction, with guidance from the System’s actuary.

*Postponed retirement* Monthly pension benefit determined as of actual retirement date.

*Termination with deferred vested benefit* Members may elect to receive either (I) a refund of their contributions with regular interest, or (II) a deferred normal retirement benefit payable at age 65 and calculated based upon service and salary at the date of termination.

*Disability retirement* Monthly pension benefit determined as of disability retirement date.



## APPENDIX B – SUMMARY OF PLAN PROVISIONS

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### *Pre-retirement spouse benefits*

- 1) **With 5 or more years of service:** A life annuity is payable to the surviving spouse in the amount which would have been payable had the member retired on the date of death and elected a joint and 100% survivor annuity.
- 2) **With less than 5 years of service:** A lump sum equal to the member's contributions plus regular interest.

### *Forms of payment*

All members hired after July 1, 2004, and members who elected increased contributions are eligible to receive benefits paid in the normal form of an enhanced 50% Joint and Survivor Annuity. All other members receive benefits paid in the normal form of a modified cash refund annuity. Optional forms are: life annuity, life annuity with period certain, contingent annuity and joint annuity. Pre-retirement spouse benefits are payable only as described above.

### **Funding Arrangement**

The Nebraska Retirement Fund for Judges is established in the State Treasury. The fund receives member contributions and pays benefits and expenses. Additional funds are received as follows:

### *Court Fees*

Beginning July 1, 2017, a fee of \$6 (previously \$4 effective July 1, 2015) from each (a) civil cause of action, criminal cause of action, traffic misdemeanor or infraction, and city or village ordinance violation filed in the district courts, the county courts, and the separate juvenile courts, (b) filing in the district court of an order, award, or judgment of the Nebraska Workers' Compensation Court or any judge thereof pursuant to section 48-188, (c) appeal or other proceeding filed in the Court of Appeals, and (d) original action, appeal, or other proceeding filed in the Supreme Court will be redirected from the General Fund to the Judges' Retirement Fund. Beginning July 1, 2021, this fee was increased to \$8 and is scheduled to increase by \$1 each year until reaching the ultimate rate of \$12 beginning July 1, 2025. These increases do not apply to any criminal cause of action, traffic misdemeanor or infraction, and city or village ordinance violation, which shall remain at \$6 after July 1, 2021.

In county courts, a sum shall be charged which is equal to 10% of each fee provided by Nebraska statutes sections 33-125 and 33-126.03, rounded to the nearest even dollar.

### *State*

Prior to July 1, 2023, the State makes any additional contributions that are necessary each year to pay the excess of the actuarial contribution (normal cost plus an amortization payment to fund unfunded actuarial accrued liability bases) over member contributions, court fees, and state appropriations.

Beginning July 1, 2023, the State shall contribute up to 5% of total annual compensation to the System as recommended by the actuary



## **APPENDIX B – SUMMARY OF PLAN PROVISIONS**

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and approved by the Board. If the 5% contribution is insufficient to meet the full actuarial required contribution in any given year, then an additional State contribution will still be required. If the funded ratio on the actuarial value of assets is at or above 100% for two consecutive years, then the actuary shall assess whether the contribution percentage should be adjusted.

### **Benefits Reflected in Valuation**

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

### **Plan Provision Effective After July 1, 2023**

No future changes in plan provisions were recognized in determining the funded status or in determining the State's contribution amount.

### **Changes since the Prior Year**

There have been no changes in the benefit provisions since the prior valuation.



## A. ACTUARIAL METHODS

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

### Entry Age Actuarial Cost Method

Projected pension and preretirement spouse's death benefits were determined for all active members under age 72. Cost factors designed to produce annual costs as a level-percentage of each member's expected compensation in each year from the assumed entry age to the assumed retirement age were applied to the projected benefits to determine the normal cost (the portion of the total cost of the plan allocated to the current year under the method). The normal cost is determined by summing intermediate results for active members under age 72 and determining an average normal cost rate which is then related to the total payroll of active members under age 72. The actuarial assumptions shown in Appendix C were used in determining the projected benefits and cost factors. The actuarial accrued liability for active members (the portion of the total cost of the plan allocated to prior years under the method) was determined as the excess of the actuarial present value of projected benefits over the actuarial present value of future normal costs.

The actuarial accrued liability for retired members and their beneficiaries currently receiving benefits, active members age 72 and over, terminated vested members and disabled members not yet receiving benefits was determined as the actuarial present value of the benefits to be paid. No future normal costs are payable for these members.

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

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



## APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS

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2. **Calculation of the Actuarial Value of Assets:** The actuarial value of assets is based on a five-year smoothing method and is determined by spreading the effect of each year's investment return in excess of or below the expected return. The market value of assets as the valuation date is reduced by the sum of the following:
- i. 80% of the return to be spread during the first year preceding the valuation date,
  - ii. 60% of the return to be spread during the second year preceding the valuation date,
  - iii. 40% of the return to be spread during the third year preceding the valuation date, and
  - iv. 20% of the return to be spread during the fourth year preceding the valuation date.

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

### B. VALUATION PROCEDURES

#### Data Procedures

Client data caps active service at 20 years. While capping the benefit amount at 20 years of service, we keep a record of actual service beyond 20 years in order to remain consistent with the Entry Age Method.

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

#### Other Valuation Procedures

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

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

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

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

### Changes in Methods and Procedures Since the Prior Year

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



## APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS

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### ACTUARIAL ASSUMPTIONS

#### Economic Assumptions

1. Investment Return 7.10% per annum, compounded annually, net of all expenses.  
Note: The assumption will decrease by 0.10% per year until reaching the ultimate rate of 7.00% in the 2024 valuation.
2. Inflation 2.45% per annum, compounded annually.  
Note: The assumption will decrease by 0.10% per year until reaching the ultimate rate of 2.35% in the 2024 valuation.
3. Salary Increases Salaries are assumed to increase 3.20% each year.  
Note: The assumption will decrease by 0.10% per year until reaching the ultimate rate of 3.10% in the 2024 valuation.
4. Payroll Growth 2.95% per annum  
Note: The assumption will decrease by 0.10% per year until reaching the ultimate rate of 2.85% in the 2024 valuation.
5. Interest on Employee Contributions 2.50% per annum, compounded annually.
6. Increases in Compensation And Benefit Limits 2.45% per annum on the 401(a)(17) compensation limit and 415 benefit limit  
Note: The assumption will decrease by 0.10% per year until reaching the ultimate rate of 2.35% in the 2024 valuation.

#### Demographic Assumptions

1. Mortality
  - a. Healthy lives - Active Members Pub-2010 General Members (Above Median) Employee Mortality Table (100% of male rates, 95% of female rates), both male and female rates set back one year, projected generationally using MP-2019 modified to 75% of the ultimate rates.
  - b. Healthy lives - Retired Members Pub-2010 General Members (Above Median) Retiree Mortality Table (100% of male rates, 95% of female rates), both male and female rates set back one year, projected generationally using MP-2019 modified to 75% of the ultimate rates.
  - c. Healthy lives - Beneficiaries Pub-2010 General Members (Above Median) Contingent Survivor Mortality Table (100% of male rates, 95% of female rates), both male and female rates set back one year, projected generationally using MP-2019 modified to 75% of the ultimate rates.
  - d. Disabled Members Pub-2010 Non-Safety Disabled Retiree Mortality Table (static table).



**APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS**

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

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

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

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

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

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



**APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS**

2. Retirement Rates vary by age. Rates are as follows:

Rates by Age	
Age	Rate
55-59	1.5%
60-63	3.0
64	15.0
65	20.0
66-71	15.0
72	100.0

3. Termination None

4. Disability None

**Other Assumptions**

1. Form of Payment Modified Cash Refund Annuity for members hired prior to July 1, 2004 and not electing the 50% Joint & Survivor Benefit. A 50% Joint & Survivor Benefit for members electing this provision, and new members hired on or after July 1, 2004. Deferred vesteds are assumed to take the greater of the present value of an annuity at age 63 or a refund of contributions.

For members hired on or after July 1, 2017, the Public Employee Retirement Board sets the actuarial assumptions used to determine the benefit amounts payable under optional forms of payment, with guidance from the System’s actuary.

2. Actuarial Equivalence Basis for Members Hired after July 1, 2017

a. Interest 7.00%

b. Mortality Pub-2010 General members (Above Median) Retiree Mortality Table (100% of male rates, 95% of female rates), both male and female rates set back one year, projected to 2040 using MP-2019 modified to 75% of the ultimate rates using a 75% male, 25% female blend.

3. Marital Status

a. Percent married 100% married

b. Spouse’s age Females assumed to be three years younger than males.

4. Administrative Expense 0.31% of payroll



## APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS

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5. Cost of Living Adjustment            2.05% per annum, compounded annually for members hired before July 1, 2015.  
Note: The assumption will decrease by 0.05% per year until reaching the ultimate rate of 2.00% in the 2024 valuation.  
1.00% per annum for members hired on or after July 1, 2015.
6. State Contribution                    State contributions for the current plan year are assumed to be contributed in a lump sum on the July 1 following the plan year end. These amounts from the prior plan year are treated as a contribution receivable on the plan's financial statements.

### Changes in Assumptions since the Prior Year

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

- Price inflation assumption was lowered from 2.55% to 2.45%.
- Investment return assumption was lowered from 7.20% to 7.10%.
- COLA assumption for Tier 1 members was lowered from 2.10% to 2.05%.
- General wage inflation assumption was lowered from 3.05% to 2.95%.
- Payroll growth assumption was lowered from 3.05% to 2.95%.
- Salary increase assumption was lowered from 3.30% to 3.20%.



## APPENDIX D – GLOSSARY OF TERMS

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