Minnesota State Retirement System
Judges Retirement Fund

GASB Statements No. 67 and No. 68
Accounting and Financial Reporting for Pensions
June 30, 2024

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November 22, 2024

Minnesota State Retirement System
Judges Retirement Fund
St. Paul, Minnesota

Dear Board of Directors:

This report provides accounting and financial reporting information that is intended to comply with the Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68 for the Judges Retirement Fund, as amended by GASB Statement No. 82. These calculations have been made on a basis that is consistent with our understanding of these accounting standards.

GASB Statement No. 67 is the accounting standard that applies to the financial reports issued by retirement systems. GASB Statement No. 68 establishes accounting and financial reporting for state and local government employers who provide their employees (including former employees) pension benefits through a trust. GASB Statement No. 82 is an amendment to GASB Statements No. 67, No. 68, and No. 73, intended to improve consistency in the application of the accounting standards.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of providing financial reporting and disclosure information that satisfies the requirements of GASB Statements No. 67 and No. 68. The Net Pension Liability is not an appropriate measure for measuring the sufficiency of plan assets to cover the estimated cost of settling the employer's benefit obligation. The Net Pension Liability is not an appropriate measure for assessing the need for or amount of future employer contributions. The calculation of the plan's liability for this report may not be applicable for purposes of funding the plan. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statements No. 67 and No. 68 may produce significantly different results. The information in this report is calculated on a total plan basis. The Minnesota State Retirement System (MSRS) is responsible for preparing the Schedule of Employer Allocations and the Schedule of Pension Amounts by Employer, as applicable. This report may be provided to parties other than MSRS only in its entirety and only with the permission of MSRS. GRS is not responsible for unauthorized use of this report.

This report is based upon information, furnished to us by MSRS, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. If your understanding of this information is different, please let us know. This information was checked for internal consistency, but it was not audited.

This report complements the actuarial valuation report for funding purposes that was or will be provided to the System and should be considered in conjunction with that report. Please see the actuarial valuation report as of June 30, 2024 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

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To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the Judges Retirement Fund as of the measurement date. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

This report was prepared using our proprietary valuation model and related software which, in our professional judgment, has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

Bonita J. Wurst and Sheryl Christensen are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

Bonita J. Wurst

Bonita J. Wurst, ASA, EA, FCA, MAAA

Sheryl Christensen

Sheryl Christensen, FSA, EA, FCA, MAAA

BJW/SLC:rmn

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SECTION A

EXECUTIVE SUMMARY

Executive Summary
as of June 30, 2024 (Dollars in Thousands)

	2024
Actuarial Valuation Date	June 30, 2024
Measurement Date of the Net Pension Liability	June 30, 2024
Membership	
Number of	
- Service Retirements	336
- Survivors	77
- Disability Retirements	10
- Deferred Retirements	21
- Terminated Other Non-vested	1
- Active Members	318
- Total	763
Covered-Employee Payroll	$ 58,849 [1]
Net Pension Liability	
Total Pension Liability	$ 446,640
Plan Fiduciary Net Position	294,703
Net Pension Liability	$ 151,937
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	65.98%
Net Pension Liability as a Percentage of Covered-Employee Payroll	258.18%
Development of the Single Discount Rate	
Single Discount Rate	7.00%
Long-Term Expected Rate of Investment Return	7.00%
Long-Term Municipal Bond Rate	3.97% [2]
Last year ending June 30 in the 2025 to 2124 projection period for which projected benefit payments are fully funded	2124
Total Pension Expense/(Income)	$ 13,200

Deferred Outflows and Deferred Inflows of Resources by Source Arising from Current and Prior Periods to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience in the measurement of Total Pension Liability	$ 6,641	$ 1,499
Changes in assumptions	4,939	10,091
Net difference between projected and actual earnings on pension plan investments	13,928	23,959
Total	$ 25,508	$ 35,549

[1] *Assumed equal to actual employer contributions (not including $6 million state contribution) divided by employer contribution rate.*

[2] *Based on the 20-Year Municipal GO Index of mixed maturity general obligation municipal bonds as of the weekly rate closest to but not later than the Measurement Date.*

Discussion

Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67, *Financial Reporting for Pension Plans,* establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability. Similarly, GASB Statement No. 68, *Accounting and Financial Reporting for Pensions,* establishes standards for state and local government employers (as well as non-employer contributing entities) to account for and disclose the net pension liability, pension expense, and other information associated with providing retirement benefits to their employees (and former employees) on their basic financial statements.

The following discussion provides a summary of the information that is required to be disclosed under these accounting standards. A number of these disclosure items are provided in this report. However, certain information, such as notes regarding accounting policies and investments, is not included in this report and the retirement system and/or plan sponsor will be responsible for preparing and disclosing that information to comply with these accounting standards.

Financial Statements

GASB Statement No. 68 requires state and local governmental employers to recognize the net pension liability and the pension expense on their financial statements. The net pension liability is the difference between the total pension liability and the plan's fiduciary net position. In traditional actuarial terms, this is analogous to the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

Paragraph 57 of GASB Statement No. 68 states, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." The information contained in this report does not incorporate any contributions made to the Judges Retirement Fund subsequent to the measurement date of June 30, 2024.

The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of the difference between expected and actual experience in the measurement of the Total Pension Liability, assumption changes, and investment experience.

Pension plans that prepare their own, stand-alone financial statements are required to present two financial statements – a Statement of Fiduciary Net Position and a Statement of Changes in Fiduciary Net Position in accordance with GASB Statement No. 67. The *Statement of Fiduciary Net Position* presents the assets and liabilities of the pension plan at the end of the pension plan's reporting period. The *Statement of Changes in Fiduciary Net Position* presents the additions, such as contributions and investment income, and deductions, such as benefit payments and expenses, and net increase or decrease in the fiduciary net position.

Notes to Financial Statements

GASB Statement No. 68 requires the notes to the employer's financial statements to disclose the total pension expense, the pension plan's liabilities and assets, and deferred outflows and inflows of resources related to pensions.

Both GASB Statements No. 67 and No. 68 require the notes to the financial statements for the employers and pension plans to include certain descriptive information about the pension plans through which the pension benefits are provided. The list of disclosure items should include:

- A description of benefits provided by the plan;
- The classes of employees and number of members covered by the pension plan;
- A description of the plan's funding policy, which includes member and employer contribution requirements;
- The pension plan's investment policies;
- The pension plan's fiduciary net position, net pension liability, and the pension plan's fiduciary net position as a percentage of the total pension liability;
- The net pension liability using a discount rate that is 1% higher and 1% lower than the current discount rate used to calculate the total pension liability and net pension liability for financial reporting purposes;
- Significant assumptions and methods used to calculate the total pension liability;
- Inputs to the discount rates; and
- Certain information about mortality assumptions and the dates of experience studies.

Retirement systems that issue stand-alone financial statements are required to disclose additional information in accordance with GASB Statement No. 67. This information includes:

- The composition of the pension plan's Board and the authority under which benefit terms may be amended;
- A description of how fair value is determined;
- Information regarding certain reserves and investments, which include concentrations of investments greater than or equal to 5%, receivables, and insurance contracts excluded from plan assets; and
- Annual money-weighted rate of return.

MSRS' comprehensive annual financial report, which contains the basic financial statements and related note disclosures for the Judges Retirement Fund, can be found online at http://www.msrs.state.mn.us/annual-reports-fy-2024 or obtained from MSRS at 60 Empire Drive, Suite 300, St. Paul, Minnesota, 55103 or requested via email at info@msrs.us or telephone at 1.800.657.5757.

Required Supplementary Information

GASB Statement No. 67 requires a 10-year fiscal history of:

- Sources of changes in the net pension liability;
- Information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered-employee payroll; and
- Comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy.

Measurement of the Net Pension Liability

The net pension liability is to be measured as the total pension liability, less the amount of the pension plan's fiduciary net position. In actuarial terms, this will be the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status

Given the plan's contribution allocation procedure, if there are no changes in benefits, Chapter 356 required contributions are made, and all actuarial assumptions are met (including the assumption of the plan earning 7.00% on an actuarial value of assets basis, as prescribed by statutes), then the following outcomes are expected:

1. The employer normal cost is expected to decline as a percentage of payroll;
2. The funded status of the plan is expected to gradually improve and is expected to be 100% funded within the next 24 years; and
3. The unfunded liability will decline as a dollar amount (based on the current 24-year amortization period and if contributions are equal to the required amount).

The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

Limitations of Funded Status Measurements

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the market value of assets. Unless otherwise indicated, with regard to any funded status measurements presented in this report:

1. The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations; in other words, of transferring the obligations to an unrelated third party in an arm's length market value type transaction.
2. The measurement is dependent upon the actuarial cost method which, in combination with the plan's amortization policy, affects the timing and amounts of future contributions. The amounts of future contributions will most certainly differ from those assumed in this report due to future actual experience differing from assumed experience based upon the actuarial assumptions. A funded status measurement in this report of 100% is not synonymous with no required future contributions. If the funded status were 100%, the plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit).
3. The measurement would produce a different result if the actuarial value of assets were used instead of the market value of assets.

Limitation of Project Scope

Actuarial standards do not require the actuary to evaluate the ability of the plan sponsor or other contributing entity to make required contributions to the plan when due. Such an evaluation was not within the scope of this project and is not within the actuary's domain of expertise. Consequently, the actuary performed no such evaluation.

Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. For employer reporting, the net pension liability and pension expense should be measured as of a date (measurement date) no earlier than the end of the employer's prior fiscal year, consistently applied from period to period. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled forward from the actuarial valuation date to the measurement date.

The total pension liability shown in this report is based on an actuarial valuation performed as of June 30, 2024 and a measurement date of June 30, 2024.

Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a single discount rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the long-term expected rate of return on pension plan investments is 7.00%; the municipal bond rate is 3.97% (based on the weekly rate closest to but not later than the measurement date of the "20-Year Municipal GO AA Index" as published by Fidelity); and the resulting single discount rate is 7.00%.

SECTION B

FINANCIAL STATEMENTS

Statement of Pension Expense Under GASB Statement No. 68 Fiscal Year Ended June 30, 2024 (Dollars in Thousands)

A. Expense			
1.	Service Cost	$	10,043
2.	Interest on the Total Pension Liability		29,416
3.	Current-Period Benefit Changes		-
4.	Employee Contributions		(4,420)
5.	Projected Earnings on Plan Investments		(18,592)
6.	Pension Plan Administrative Expense		105
7.	Other Changes in Plan Fiduciary Net Position		-
8.	Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability		
	Arising from Current Reporting Period		1,456
9.	Recognition of Outflow (Inflow) of Resources due to assumption changes		
	Arising from Current Reporting Period		-
10.	Recognition of Outflow (Inflow) of Resources due to the difference between projected (7.00%) and actual earnings on Pension Plan Investments		
	Arising from Current Reporting Period		(2,780)
11.	**Increases/(Decreases) from Experience in the Current Reporting Period**	**$**	**15,228**
12.	Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability		
	Arising from Prior Reporting Periods	$	(449)
13.	Recognition of Outflow (Inflow) of Resources due to assumption changes		
	Arising from Prior Reporting Periods		892
14.	Recognition of Outflow (Inflow) of Resources due to the difference between projected and actual earnings on Pension Plan Investments		
	Arising from Prior Reporting Periods		(2,471)
15.	**Total Pension Expense / (Income)**	**$**	**13,200**

Differences between expected and actual experience and changes in assumptions are recognized in pension expense using a systematic and rational method over a closed period equal to the average of the expected remaining service lives of all employees that are provided with pension through the pension plan (active employees and inactive employees) determined as of the beginning of the measurement period.

At the beginning of the current measurement period, the expected remaining service lives of all active employees in the plan was approximately 3,640 years. Additionally, the total plan membership (active employees and inactive employees) was 760. As a result, the average of the expected remaining service lives for purposes of recognizing the applicable deferred outflows and inflows of resources established in the current measurement period is 5.0000 years (rounded).

Additionally, differences between projected and actual earnings on plan investments should be recognized in pension expense using a systematic and rational method over a closed five-year period. For this purpose, the deferred outflows and inflows of resources are recognized in the pension expense as a level dollar amount over the closed period identified above.

Statement of Outflows and Inflows
Arising from Current Reporting Period
Fiscal Year Ended June 30, 2024 (Dollars in Thousands)

A. Outflows (Inflows) of Resources due to Liabilities		
1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	$	7,281
2. Assumption Changes (gains) or losses		-
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		5
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience of the Total Pension Liability		1,456
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes		-
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	$	1,456
7. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for the difference between expected and actual experience of the Total Pension Liability	$	5,825
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes		-
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	$	5,825
B. Outflows (Inflows) of Resources due to Assets		
1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	$	(13,901)
2. Recognition period for Assets {in years}		5
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets		(2,780)
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	$	(11,121)

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended June 30, 2024 (Dollars in Thousands)

A. Outflows and Inflows of Resources due to Liabilities and Assets to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows/ (Inflows) of Resources
1. Due to Liabilities	$ 6,803	$ 4,904	$ 1,899
2. Due to Assets	8,324	13,575	(5,251)
3. Total	$ 15,127	$ 18,479	$ (3,352)

B. Outflows and Inflows of Resources by Source to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows/ (Inflows) of Resources
1. Differences between expected and actual experience	$ 1,864	$ 857	$ 1,007
2. Assumption Changes	4,939	4,047	892
3. Net Difference between projected and actual earnings on pension plan investments	8,324	13,575	(5,251)
4. Total	**$ 15,127**	**$ 18,479**	**$ (3,352)**

C. Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows/ (Inflows) of Resources
1. Differences between expected and actual experience	$ 6,641	$ 1,499	$ 5,142
2. Assumption Changes	4,939	10,091	(5,152)
3. Net Difference between projected and actual earnings on pension plan investments*	13,928	23,959	(10,031)
4. Total	**$ 25,508**	**$ 35,549**	**$ (10,041)**

D. Deferred Outflows and Deferred Inflows of Resources by Year to be Recognized in Future Pension Expenses

Year Ending June 30	Net Deferred Outflows/ (Inflows) of Resources
2025	$ (4,553)
2026	578
2027	(4,742)
2028	(1,324)
2029	-
Thereafter	-
Total	**$ (10,041)**

** Paragraph 71(b) of GASB Statement No. 68 requires deferred outflows and inflows arising from differences between projected and actual earnings on pension plan investments to be aggregated and shown as a net amount. For purposes of this valuation, amounts are shown separately for calculation purposes.*

Recognition of Deferred Outflows and Inflows of Resources
Fiscal Year Ended June 30, 2024 (Dollars in Thousands)

Year Established	Initial Amount	Initial Recognition Period	Current Year Recognition	Remaining Recognition	Remaining Recognition Period
Deferred Outflow (Inflow) Due to Differences Between Expected and Actual Experience on Liabilities					
2020	$ (802)	5.0000	$ (161)	$ 0	0.0000
2021	(1,481)	5.0000	(296)	(297)	1.0000
2022	2,040	5.0000	408	816	2.0000
2023	(2,002)	5.0000	(400)	(1,202)	3.0000
2024	7,281	5.0000	1,456	5,825	4.0000
Total			**$ 1,007**	**$ 5,142**	
Deferred Outflow (Inflow) Due to Assumption Changes					
2021	24,695	5.0000	$ 4,939	$ 4,939	1.0000
2022	$ (10,257)	5.0000	(2,051)	(4,104)	2.0000
2023	(9,979)	5.0000	(1,996)	(5,987)	3.0000
Total			**$ 892**	**$ (5,152)**	
Deferred Outflow (Inflow) Due to Differences Between Projected and Actual Earnings on Plan Investments					
2020	$ 6,797	5.0000	$ 1,360	$ 0	0.0000
2021	(48,867)	5.0000	(9,774)	(9,774)	1.0000
2022	34,820	5.0000	6,964	13,928	2.0000
2023	(5,106)	5.0000	(1,021)	(3,064)	3.0000
2024	(13,901)	5.0000	(2,780)	(11,121)	4.0000
Total			**$ (5,251)**	**$ (10,031)**	
Deferred Outflow (Inflow) Due to All Sources					
Total			**$ (3,352)**	**$ (10,041)**	

Statement of Fiduciary Net Position as of June 30, 2024 (Dollars in Thousands)

Assets		June 30, 2024
Cash & Short-term Investments	$	5,629
Receivables		585
Investment Pools (at fair value)		288,864
Securities Lending Collateral		12,588
Capital Assets		-
Total Assets	**$**	**307,666**
Total Deferred Outflows of Resources	**$**	**-**
Total Liabilities	**$**	**(12,963)**
Total Deferred Inflows of Resources	**$**	**-**
Net Position Restricted for Pensions	**$**	**294,703**

Statement of Changes in Fiduciary Net Position for the Fiscal Year Ended June 30, 2024 (Dollars in Thousands)

1. Net position at market value at beginning of year	**$**	**268,987**
Additions		
2. Contributions		
a. Employee	$	4,420
b. Employer		13,241
c. Other sources		6,293
d. Total contributions	$	23,954
3. Investment income		
a. Investment income/(loss)	$	33,600
b. Investment expenses		(1,107)
c. Net investment income/(loss)	$	32,493
4. Other Additions		-
5. Total Additions *(2.d.) + (3.c.) + (4.)*	**$**	**56,447**
Deductions		
6. Benefits Paid		
a. Annuity benefits	$	(30,354)
b. Refunds		(272)
c. Total benefits paid	$	(30,626)
7. Expenses		
a. Other deductions	$	-
b. Administrative		(105)
c. Total expenses	$	(105)
8. Total deductions *(6.c.) + (7.c.)*	**$**	**(30,731)**
9. Net increase/(decrease) in fiduciary net position *(5.) + (8.)*	**$**	**25,716**
10. Net position at market value at end of year *(1.) + (9.)*	**$**	**294,703**
11. State Board of Investment calculated annual investment return for the Judges Retirement Fund*		12.3%

** The fiscal year 2024 investment return for the Combined Funds is 12.3%.*

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in Net Pension Liability and Related Ratios
Current Period
Fiscal Year Ended June 30, 2024 (Dollars in Thousands)

A. Total pension liability			
1. Service Cost	$	10,043	
2. Interest on the total pension liability		29,416	
3. Changes of benefit terms		-	
4. Difference between expected and actual experience of the total pension liability		7,281	
5. Changes of assumptions		-	
6. Benefit payments, including refunds of employee contributions		(30,626)	
7. Net change in total pension liability	$	16,114	
8. Total pension liability – beginning		430,526	
9. Total pension liability – ending	**$**	**446,640**	
B. Plan fiduciary net position			
1. Contributions – employer	$	19,534	[1]
2. Contributions – employee		4,420	
3. Net investment income		32,493	
4. Benefit payments, including refunds of employee contributions		(30,626)	
5. Pension plan administrative expense		(105)	
6. Other changes		-	
7. Net change in plan fiduciary net position	$	25,716	
8. Plan fiduciary net position – beginning		268,987	
9. Plan fiduciary net position – ending	**$**	**294,703**	
C. Net pension liability, *A.9 - B.9.*	**$**	**151,937**	
D. Plan fiduciary net position as a percentage of the total pension liability, *B.9 / A.9.*		**65.98%**	
E. Covered-employee payroll	**$**	**58,849**	[2]
F. Net pension liability as a percentage of covered-employee payroll, *C. / E.*		**258.18%**	

[1] *Includes $6 million supplemental state aid and $293 thousand in one-time state aid.*

[2] *Assumed equal to actual employer contributions (not including $6 million in state contributions) divided by employer contribution rate.*

Schedule of Changes in Net Pension Liability and Related Ratios Multiyear
(Dollars in Thousands)

Last 10 Fiscal Years

Fiscal year ending June 30,	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
Total Pension Liability										
Service Cost	$ 10,043	$ 11,063	$ 11,707	$ 10,204	$ 9,897	$ 9,881	$ 9,857	$ 9,483	$ 13,711	$ 12,251
Interest on the Total Pension Liability	29,416	28,538	27,360	29,568	28,721	27,769	26,746	25,367	21,349	21,773
Benefit Changes	0	295	0	(9,525)	0	0	0	0	0	0
Experience[1]	7,281	(2,002)	2,040	(1,481)	(802)	804	1,424	(4,958)	7,135	(4,366)
Assumption Changes	0	(9,979)	(10,257)	24,695	0	0	0	11,652	(85,756)	21,696
Benefit Payments	(30,354)	(29,287)	(28,035)	(27,038)	(26,272)	(25,233)	(23,585)	(22,785)	(22,378)	(21,893)
Refunds	(272)	0	0	0	(30)	0	0	(309)	0	0
Net Change in Total Pension Liability	$ 16,114	$ (1,372)	$ 2,815	$ 26,423	$ 11,514	$ 13,221	$ 14,442	$ 18,450	$ (65,939)	$ 29,461
Total Pension Liability - Beginning	430,526	431,898	429,083	402,660	391,146	377,925	363,483	345,033	410,972	381,511
Total Pension Liability - Ending (a)	**$ 446,640**	**$ 430,526**	**$ 431,898**	**$ 429,083**	**$ 402,660**	**$ 391,146**	**$ 377,925**	**$ 363,483**	**$ 345,033**	**$ 410,972**
Plan Fiduciary Net Position										
Employer Contributions [2]	$ 19,534	$ 18,245	$ 18,248	$ 17,916	$ 17,767	$ 17,287	$ 17,027	$ 13,758	$ 10,219	$ 9,776
Employee Contributions	4,420	4,121	4,214	4,166	4,168	4,049	3,973	3,932	3,763	3,629
Pension Plan Net Investment Income	32,493	22,013	(17,022)	64,934	8,955	14,491	19,265	24,729	(186)	7,572
Benefit Payments	(30,354)	(29,287)	(28,035)	(27,038)	(26,272)	(25,233)	(23,585)	(22,785)	(22,378)	(21,893)
Refunds	(272)	0	0	0	(30)	0	0	(309)	0	0
Pension Plan Administrative Expense	(105)	(76)	(72)	(77)	(113)	(87)	(66)	(89)	(93)	(60)
Other Changes	0	0	0	0	0	0	0	0	0	0
Net Change in Plan Fiduciary Net Position	**$ 25,716**	**$ 15,016**	**$ (22,667)**	**$ 59,901**	**4,475**	**10,507**	**16,614**	**19,236**	**(8,675)**	**(976)**
Plan Fiduciary Net Position - Beginning	268,987	**253,971**	**276,638**	**216,737**	**212,262**	**201,755**	**185,141**	**165,905**	**174,580**	**175,556**
Plan Fiduciary Net Position - Ending (b)	**$ 294,703**	**$ 268,987**	**$ 253,971**	**$ 276,638**	**$ 216,737**	**$ 212,262**	**$ 201,755**	**$ 185,141**	**$ 165,905**	**$ 174,580**
Net Pension Liability - Ending (a) - (b)	**$ 151,937**	**$ 161,539**	**$ 177,927**	**$ 152,445**	**$ 185,923**	**$ 178,884**	**$ 176,170**	**$ 178,342**	**$ 179,128**	**$ 236,392**
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	**65.98 %**	**62.48 %**	**58.80 %**	**64.47 %**	**53.83 %**	**54.27 %**	**53.38 %**	**50.94 %**	**48.08 %**	**42.48 %**
Covered-Employee Payroll[3]	**$ 58,849**	**$ 54,422**	**$ 54,436**	**$ 52,960**	**$ 52,298**	**$ 50,164**	**$ 49,009**	**$ 47,813**	**$ 45,418**	**$ 43,449**
Net Pension Liability as a Percentage of Covered-Employee Payroll	**258.18 %**	**296.83 %**	**326.86 %**	**287.85 %**	**355.51 %**	**356.60 %**	**359.46 %**	**373.00 %**	**394.40 %**	**544.07 %**

(1) Includes impact of changes in expected timing of future post-retirement benefit increases.

(2) Includes $3 million supplemental state aid for fiscal year ending 2017 and $6 million annual supplemental state aid thereafter; includes $293 thousand one-time state aid for fiscal year ending 2024.

(3) Assumed equal to actual employer contributions (not including $6 million in state contributions) divided by employer contribution rate.

Schedule of Net Pension Liability Multiyear (Dollars in Thousands)

Last 10 Fiscal Years

Fiscal Year Ending June 30,	Total Pension Liability (a)	Plan Net Position (b)	Net Pension Liability (a) - (b) = (c)	Plan Net Position as a % of Total Pension Liability (b)/(c)	Covered-Employee Payroll (d)	Net Pension Liability as a % of Covered-Employee Payroll (c)/(d)
2015	$ 410,972	$ 174,580	$ 236,392	42.48%	$ 43,449	544.07%
2016	345,033	165,905	179,128	48.08	45,418	394.40
2017	363,483	185,141	178,342	50.94	47,813	373.00
2018	377,925	201,755	176,170	53.38	49,009	359.46
2019	391,146	212,262	178,884	54.27	50,164	356.60
2020	402,660	216,737	185,923	53.83	52,298	355.51
2021	429,083	276,638	152,445	64.47	52,960	287.85
2022	431,898	253,971	177,927	58.80	54,436	326.86
2023	430,526	268,987	161,539	62.48	54,422	296.83
2024	446,640	294,703	151,937	65.98	58,849	258.18

Schedule of Contributions Multiyear (Dollars in Thousands)

Last 10 Fiscal Years

Fiscal Year Ending June 30,	Actuarially Determined Contribution [1]	Actual Contributions	Contribution Deficiency (Excess)	Covered-Employee Payroll [2]	Actual Contributions as a % of Covered-Employee Payroll
	(a)	(b)	(a) - (b) = (c)	(d)	(b)/(d)
2015	$ 14,298	$ 9,776	$ 4,522	$ 43,449	22.50%
2016	15,644	10,219	5,425	45,418	22.50
2017	16,790	13,758 [3]	3,032	47,813	28.77
2018	18,032	17,027 [3]	1,005	49,009	34.74
2019	17,491	17,287 [3]	204	50,164	34.46
2020	18,304	17,767 [3]	537	52,298	33.97
2021	18,167	17,916 [3]	251	52,960	33.83
2022	15,661	18,248 [3]	(2,587)	54,436	33.52
2023	15,155	18,245 [3]	(3,090)	54,422	33.53
2024	18,313	19,534 [3]	(1,221)	58,849	33.19

Notes to Schedule of Contributions

Methods and Assumptions Used to Determine Fiscal Year Ending June 30, 2024 Contribution Rates Reported in this Schedule:

Notes	[1] Actuarially determined contribution rates are calculated as of each June 30 and apply to the fiscal year beginning on the day after the measurement date. [2] Assumed equal to actual employer contributions (not including $6 million in state contributions) divided by employer contribution rate. [3] Includes supplemental state aid of $3,000 for fiscal year ending June 30, 2017 and $6,000 annual supplemental state aid thereafter.
Valuation Date	June 30, 2023
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Closed
Remaining Amortization Period	25 years
Asset Valuation Method	5-Year smoothed market; no corridor
Inflation	2.25%
Payroll Increases	2.50%
Salary Increases	2.50%
Investment Rate of Return	7.00%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2021 valuation pursuant to an experience study of the period 2015-2019, dated June 30, 2020.
Healthy Post-Retirement Mortality	Pub-2010 General annuitant generational mortality tables, projected with scale MP-2019 from a base year of 2010.
Other Information	
Benefit Increases After Retirement	1.50% per year.

See separate funding actuarial valuation report as of July 1, 2023 for additional detail. To obtain this report, contact MSRS as noted on page 3. This report is also available online at:

https://www.msrs.state.mn.us/annual-reports-fy-2023

Schedule of Investment Returns Multiyear

Last 10 Fiscal Years

Fiscal Year Ending June 30,	Annual Return[1]
2015	4.5 %
2016	(0.1)
2017	15.2
2018	10.5
2019	7.2
2020	4.2
2021	30.1
2022	(6.2)
2023	8.8
2024	12.3

[1] *Annual money-weighted rate of return, net of investment expenses.*

The Minnesota State Board of Investment (SBI) compiled this data and the related investment notes and provided it to MSRS for GASB compliance purposes. MSRS furnished this information to us for inclusion within this report. We did not audit this information. We are not responsible for its accuracy or completeness.

Rate of Return

For the fiscal year ended June 30, 2024, the annual money-weighted rate of return for the Judges Retirement Fund was 12.3%. The money-weighted rate of return is a method of calculating period-by-period returns on pension plan investments that adjusts for the changing amounts actually invested. For purposes of this schedule, the money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.

To request additional information about the computation of the annual money-weighted rate of return and the investments for the Minnesota Retirement Systems (including the investments for MSRS' defined benefit retirement funds), contact SBI at 60 Empire Drive, Suite 100, St. Paul, Minnesota, 55103, via email at minn.sbi@state.mn.us or telephone at 1.651.296.3328.

SECTION D

ADDITIONAL FINANCIAL STATEMENT DISCLOSURES

Asset Allocation

Long-Term Expected Return on Plan Assets

The long-term expected rate of return on pension plan investments was determined using a building-block method. Estimates for expected future real rates of return (expected returns, net of inflation) were developed for each asset class using both long-term historical returns and long-term capital market expectation from a number of investment management and consulting organizations. The asset class estimates and the target allocations were then combined to produce a geometric, long-term expected real rate of return for the portfolio. Inflation expectations were applied to derive the nominal rate of return for the portfolio. For each asset class that is included in the pension fund's target asset allocation as of June 30, 2024, these estimates are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return (Geometric Mean)
Domestic Equity	33.5%	5.10%
International Equity	16.5%	5.30%
Private Markets	25.0%	5.90%
Fixed Income	25.0%	0.75%
Total	100.0%	

The Minnesota State Board of Investment (SBI) compiled this data and the related investment notes and provided it to MSRS for GASB compliance purposes. MSRS furnished this information to us for inclusion within this report. We did not audit this information. We are not responsible for its accuracy or completeness.

For purposes of this valuation, the long-term expected rate of return assumption is 7.00%. This assumption is based on the State Employees Retirement Fund Experience study report dated June 29, 2023.

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

Single Discount Rate

A single discount rate of 7.00% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 7.00%. The projection of cash flows used to determine this single discount rate assumed that member, employer, and state contributions will be made at the current statutory contribution rates. Based on these assumptions, the pension plan's fiduciary net position and future contributions were projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Regarding the sensitivity of the net pension liability to changes in the single discount rate, the following presents the fund's net pension liability, calculated using a single discount rate of 7.00%, as well as what the fund's net pension liability would be if it were calculated using a single discount rate that is 1-percentage-point lower (6.00%) or 1-percentage-point higher (8.00%) than the current rate:

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

(Dollars in Thousands)

	1% Decrease 6.00%	Current Single Discount Rate Assumption 7.00%	1% Increase 8.00%
Total Pension Liability	$490,748	$446,640	$408,733
Net Position Restricted for Pensions	294,703	294,703	294,703
Net Pension Liability	**$196,045**	**$151,937**	**$114,030**

For more information on the calculation of the single discount rate, refer to Section G of this report.

Note that we believe the 8.00% interest rate assumption does not comply with Actuarial Standards of Practice.

GASB Statement No. 68 Reconciliation (Dollars in Thousands)

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)	Deferred Outflows	Deferred Inflows	Total Pension Expense
Balance Beginning of Year	**$ 430,526**	**$ 268,987**	**$ 161,539**	**$ 33,354**	**$ 40,127**	
Changes for the Year:						
Service Cost	$ 10,043		$ 10,043			$ 10,043
Interest on Total Pension Liability	29,416		29,416			29,416
Interest on Plan Fiduciary Net Position		$ 18,592 (1)	(18,592)			(18,592)
Changes in Benefit Terms	-		-			-
Liability Experience Gains and Losses	7,281		7,281	$ 5,825	$ -	1,456
Changes in Assumptions	-		-	-	-	-
Recognition of Deferred Outflows/(Inflows) of Resources Arising from Prior Reporting Periods						
Liability Experience Gains/(Losses)				(408)	(857)	(449)
Assumption Changes				(4,939)	(4,047)	892
Investment Gains/(Losses)				(8,324)	(10,795)	(2,471)
Contributions - Employer		19,534	(19,534)			
Contributions - Employees		4,420	(4,420)			(4,420)
Asset Gain/(Loss)		13,901 (1)	(13,901)	-	11,121	(2,780)
Benefit Payments and Refunds	(30,626)	(30,626)	-			
Administrative Expenses		(105)	105			105
Other Changes						
Net Changes	**$ 16,114**	**$ 25,716**	**$ (9,602)**	**$ (7,846)**	**$ (4,578)**	**$ 13,200**
Balance End of Year	**$ 446,640**	**$ 294,703**	**$ 151,937**	**$ 25,508**	**$ 35,549**	

(1) The sum of these items in column (b) equals the net investment income of $32,493.

Summary of Population Statistics

		Terminated		Recipients			
	Actives*	Deferred Retirement	Other Non-Vested	Service Retirement	Disability Retirement	Survivor	Total
Members on July 1, 2023	**321**	**17**	**1**	**330**	**12**	**79**	**760**
New members	15	0	0	0	0	0	**15**
Return to active	0	0	0	0	0	0	**0**
Terminated non-vested	0	0	0	0	0	0	**0**
Service retirements	(12)	(2)	0	14	0	0	**0**
Terminated deferred	(6)	6	0	0	0	0	**0**
Terminated refund/transfer	0	0	0	0	0	0	**0**
Deaths	0	0	0	(8)	(2)	(6)	**(16)**
New beneficiary	0	0	0	0	0	4	**4**
Disabled	0	0	0	0	0	0	**0**
Unexpected status changes	0	0	0	0	0	0	**0**
Net change	(3)	4	0	6	(2)	(2)	**3**
Members on July 1, 2024	**318**	**21**	**1**	**336**	**10**	**77**	**763**

* *Includes Tier 1 active Judges who have reached the maximum benefit formula (employee contributions are directed to the Unclassified Employees Retirement Plan).*

SECTION E

SUMMARY OF BENEFITS

Summary of Plan Provisions

Following is a summary of the major plan provisions used in the valuation of this report. MSRS is solely responsible for the validity, accuracy and comprehensiveness of this information. If any of the plan provisions shown below are not accurate and complete, the valuation results may differ significantly from those shown in this report and may require a revision of this report.

Plan year	July 1 through June 30.
Eligibility	A judge or justice of any court. If the member was active prior to January 1, 1974, benefits may be computed according to provisions of the prior plan.
Tier 1 / Tier 2 member	Tier 1 includes judges or justices first appointed or elected before July 1, 2013, and Tier 2 includes judges or justices first appointed or elected after June 30, 2013. A judge or justice with less than five years of service as of December 30, 2013, may make a one-time irrevocable election into Tier 2. For the purpose of this valuation, we have assumed no Tier 1 members elected Tier 2 benefits as of the valuation date.
Contributions	
Member	9.00% of salary for Tier 1 members, 7.00% of salary for Tier 2 members. Tier 1 member contributions after maximum benefit is reached are redirected to the Unclassified Employees Retirement Plan.
Employer	22.50% of salary. Member contributions are "picked up" according to the provisions of Internal Revenue Code 414(h).
State contributions	$6,000,000 per year until the Plan is fully funded for a minimum of three consecutive years on an actuarial value of assets basis or July 1, 2048 if earlier.
Allowable service	Service as a judge. Credit may also be earned for uncredited judicial service if the appropriate employee contributions, with interest, are made.
Salary	Salary set by law.
Average salary	Average of the five highest years of salary of the last 10 years prior to termination of judicial service.

Summary of Plan Provisions (Continued)

Retirement

Normal retirement benefit

Age/Service requirement	First appointed as a judge before July 1, 2013 (Tier 1): (a.) Age 65 and five years of Allowable Service (b.) Age 70 (mandatory retirement age) First appointed as a judge after June 30, 2013 (Tier 2): (a.) Age 66 and five years of Allowable Service (b.) Age 70 (mandatory retirement age) Judges appointed before July 1, 2013, with less than five years of allowable service on or before December 31, 2013, may make a one-time election for the Tier 2 benefit package.
Amount	First appointed as a judge before July 1, 2013 (Tier 1): 2.70% of Average Salary for each year of Allowable Service prior to July 1, 1980, and 3.20% of Average Salary for each year of Allowable Service after June 30, 1980. Maximum benefit equal to 76.80% of Average Salary. First appointed as a judge after June 30, 2013 (Tier 2): 2.50% of Average Salary for each year of Allowable Service. Tier 1 who elected into Tier 2: 3.20% of Average Salary for each year of Allowable Service prior to January 1, 2014, plus 2.50% of Average Salary for each year of Allowable Service after December 31, 2013.

Early retirement

Age/Service requirement	Age 60 and five years of Allowable Service.
Amount	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with reduction of 0.50% for each month the member is under Normal Retirement Age at time of retirement.
Form of payment	Life annuity. Actuarially equivalent options are: (a.) 50%,75% or 100% joint and survivor with no bounce back feature (b.) 50%, 75% or 100% with bounce back feature (c.) 15-year certain and life thereafter
Benefit increases	1.50% per year. A benefit recipient who has been receiving a benefit for at least 12 full months as of the June 30 of the calendar year immediately before the adjustment will receive a full increase. Members receiving benefits for at least one month but less than 12 full months as of the June 30 of the calendar year immediately before the adjustment will receive a pro rata increase.

Summary of Plan Provisions (Continued)

Disability	
<u>Disability benefit</u>	
Age/Service requirement	Permanent inability to perform the function of judge.
Amount	No benefit is paid by the Fund. Instead salary is continued for one year but not beyond age 70. Employee contributions continue and Allowable Service is earned. If disability continues after the first year (or at age 70 if earlier), the larger of 25.00% of Average Salary or the Normal Retirement Benefit, without reduction.
<u>Retirement after disability</u>	
Age/Service requirement	Member is still disabled after salary payments cease after one year or at age 70, if earlier.
Amount	No change in disability benefit amount from pre-retirement computed benefit amount.
<u>Form of payment</u>	Same as for retirement.
<u>Benefit increases</u>	Same as for retirement.
Death	
<u>Survivor's benefit</u>	
Age/service requirement	Active or disabled member dies before retirement or a former member eligible for a deferred annuity dies.
Amount	Larger of 25% of Average Salary or 60% of Normal Retirement Benefit earned at date of death. If member dies after age 60 with five or more years of service, spouse may receive the 100% joint and survivor benefit the member had earned as of date of death. Benefit paid to spouse for life. If no spouse, benefit is paid to surviving dependent children until child marries, dies, or attains age 18 (age 22 if full-time student).
Benefit increases	Same as for retirement.
<u>Refund of contributions</u>	
Age/service requirement	Member dies prior to retirement or former member eligible for a deferred annuity dies and survivors' benefits are not payable.
Amount	Member's contributions with 6.00% interest through June 30, 2011. Beginning July 1, 2011, a member's contributions increase at 4.00% interest. Beginning July 1, 2018, a member's contributions increase at 3.00% interest.

Summary of Plan Provisions (Concluded)

Termination	
<u>Refund of contributions</u>	
Age/Service requirement	Termination of service as a judge.
Amount	Member's contributions with 6.00% interest through June 30, 2011. Beginning July 1, 2011, a member's contributions increase at 4.00% interest. Beginning July 1, 2018, a member's contributions increase at 3.00% interest. If a member is vested, a deferred annuity may be elected in lieu of a refund.
<u>Deferred benefit</u>	
Age/service requirement	Five years of Allowable Service.
Amount	Benefit computed under law in effect at termination. Amount is payable at normal or early retirement. If a member terminated employment prior to July 1, 1997 but was not eligible to commence their pension before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
<u>Form of payment</u>	Same as for retirement.
Optional form conversion factors	Effective July 1, 2019 and phased in over a 24-month period, actuarially equivalent factors based on the RP-2014 mortality table for healthy annuitants for a member turning age 66 in 2021, reflecting projected mortality improvements using Scale MP-2017, white collar adjustment, blended 70% males, 5.65% post-retirement interest, and 7.50% pre-retirement interest. Reflecting statutory requirements, joint and survivor factors are based on an interest assumption of 6.50%.
Combined service annuity	Members are eligible for combined service benefits if they: (a.) Have sufficient allowable service in total that equals or exceeds the applicable service credit vesting requirement of the retirement plan with the longest applicable service credit vesting requirement; (b.) Have at least six months of allowable service credit in each plan worked under; and (c.) Are not in receipt of a benefit from another plan, or have applied for benefits with an effective date within one year. Members who meet the above requirements must have their benefit based on the following: (a.) Allowable service in all covered plans are combined in order to determine eligibility for early retirement; and (b.) Average salary is based on the high five consecutive years during their entire service in all covered plans.
Changes in plan provisions	There were no changes in plan provisions since the prior valuation.

SECTION F

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Actuarial Methods Used for the Determination of Total Pension Liability and Related Values

Actuarial Cost Method

Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using an **Individual Entry-Age Actuarial Cost Method** having the following characteristics:

(i) The annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement; and

(ii) Each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Actuarial gains/(losses), as they occur, reduce (increase) the Total Pension Liability.

Asset Valuation Method

Fair value of assets.

Summary of Actuarial Assumptions Used for the Determination of Total Pension Liability and Related Values

The following assumptions were used in valuing the liabilities and benefits under the plan. The assumptions are based on the experience study dated June 30, 2020 and a review of inflation and investment assumptions included in the State Employees Retirement Fund Experience Study dated June 29, 2023. An experience study for the 2019-2023 period was issued on July 16, 2024. This report recommended changes to demographic assumptions, expected to be effective at a future date.

Investment return	7.00% per annum.
Single discount rate	7.00% per annum.
Salary increases	2.50% per year.
Payroll growth	2.50% per year.
Inflation	2.25% per year.
Mortality rates	
Healthy pre-retirement	Pub-2010 General Employee Mortality Table adjusted for mortality improvements using mortality improvement Scale MP-2019.
Healthy post-retirement	Pub-2010 General Retired Mortality Table adjusted for mortality improvements using mortality improvement Scale MP-2019.
Disabled	Pub-2010 General Disabled Mortality Table adjusted for mortality improvements using mortality improvement Scale MP-2019.
Notes	The Pub-2010 employee mortality table as published by the Society of Actuaries (SOA) contains mortality rates for ages 18 to 80 and the annuitant mortality table contains mortality rates for ages 50 to 120. We have extended the annuitant mortality table as needed for members younger than age 50 who are receiving a benefit by deriving rates based on the employee table and the juvenile table. Similarly, we have extended the employee table as needed for members older than age 80 by deriving rates based on the annuitant table.
Retirement	Members retiring from active status are assumed to retire according to the age related rates shown in the rate table. Members who have attained the highest assumed retirement age are assumed to retire in one year.
Withdrawal	None.
Disability	Age-related rates based on experience; see table of sample rates.
Administrative expenses	In the valuation year, equal to prior year administrative expenses expressed as a percentage of prior year projected payroll. In each subsequent year, equal to the initial administrative expense percentage applied to payroll for the closed group.
Refund of contributions	For non-vested members, account balances accumulate interest until the assumed commencement date and are discounted back to the valuation date. Active members decrementing after becoming eligible for a benefit are assumed to take the contributions accumulated with interest if larger than the value of the benefit.

Summary of Actuarial Assumptions (Continued)

Commencement of deferred benefits	Members receiving deferred annuities (including current terminated deferred members) are assumed to begin receiving benefits at age 65.
Percentage married	Marital status as indicated by data.
Age of spouse	Male members are assumed to have a beneficiary three years younger and female members are assumed to have a beneficiary two years older.
Form of payment	Members are assumed to elect a life annuity.
Allowance for combined service annuity	None.
Eligibility testing	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Decrement operation	Decrements are assumed to occur mid-fiscal year.
Service credit accruals	It is assumed that members accrue one year of service credit per year.
Pay increases	Pay increases are assumed to happen at the beginning of the fiscal year. This is equivalent to assuming that reported earnings are pensionable earnings for the year ending on the valuation date.
Final average salary	For present value of future benefit purposes, final average salary was calculated in accordance with pay increase assumptions, but was not permitted to fall below the final average salary reported in the data.
Unknown data for certain members	To prepare this report, GRS has used and relied on participant data supplied by the Fund. Although GRS has reviewed the data in accordance with Actuarial Standards of Practice No. 23, GRS has not verified or audited any of the data or information provided. There were no members reported with missing or invalid birth dates. In cases where submitted data was missing or incomplete, the following assumptions were applied: Data for active members: There were 5 Tier 1 members who have reached the 24-year service cap. These members are reflected as active members in this valuation. We assumed these members earned the greater of the salary reported under the Unclassified Employees Retirement Plan or $182,805 for the July 1, 2023 to June 30, 2024 plan year. There were no members reported with missing service. There were 3 members reported with a missing or invalid gender. We assumed female gender.

Summary of Actuarial Assumptions (Continued)

Unknown data for certain members (Concluded)	Data for terminated members: There were no members reported without a benefit and no members reported with a missing or invalid gender. Data for members receiving benefits: There were no members reported without a benefit. There were 3 members reported with a missing gender. We assumed male gender for retirees and female gender for survivors. There was 1 retiree reported with a survivor option and a survivor date of death. We assumed no benefit was payable to the survivor and the member benefit already reflected the increase to the life annuity value (i.e. bounce back), if applicable. There were 3 retirees reported with a bounceback annuity and an unreasonable reduction factor. A factor of 0.80, 0.85 and 0.90 was assumed for the 100%, 75% and 50% joint and survivor annuity, respectively. There were no survivors reported on the data file with an expired benefit. There were retired members reported with a survivor option and an invalid or missing survivor gender (35 members) and/or survivor date of birth (28 members). We used the valuation assumptions if the survivor gender or date of birth was missing or invalid.
Changes in actuarial assumptions	There were no changes in actuarial assumptions since the prior valuation.

Summary of Actuarial Assumptions (Concluded)

Age in 2024	Percentage of Members Dying each Year*					
	Healthy Post-Retirement Mortality**		Healthy Pre-Retirement Mortality**		Disability Mortality**	
	Male	Female	Male	Female	Male	Female
20	0.04%	0.01%	0.04%	0.01%	0.44%	0.26%
25	0.03	0.01	0.03	0.01	0.34	0.21
30	0.05	0.02	0.05	0.02	0.51	0.36
35	0.07	0.03	0.07	0.03	0.69	0.56
40	0.09	0.04	0.09	0.04	0.86	0.76
45	0.12	0.07	0.10	0.06	1.07	0.99
50	0.28	0.21	0.14	0.08	1.51	1.41
55	0.41	0.29	0.21	0.13	2.02	1.78
60	0.63	0.40	0.32	0.20	2.55	2.05
65	0.91	0.59	0.47	0.28	3.03	2.17
70	1.41	0.95	0.65	0.43	3.60	2.54
75	2.37	1.66	0.97	0.71	4.61	3.54
80	4.25	3.06	1.54	1.21	6.53	5.47
85	7.77	5.78	6.53	4.97	9.78	8.69
90	13.48	10.78	13.48	10.78	14.93	12.83

* *Generally, mortality rates are expected to increase as age increases (with the exception of young ages, where expected mortality may decrease as age increases). In cases where the application of the projection scale would reverse the nature of this trend, standard mortality rates have been adjusted slightly. The adjustment has no material effect on results.*

** *Rates are adjusted for mortality improvements using Scale MP-2019 from a base year of 2010.*

Percentage of Eligible Members Retiring each Year

Age	Disabled Retirement	Age	Healthy Retirement
20	0.000%	60	0.0%
25	0.000	61	2.5
30	0.000	62	4.0
35	0.000	63	8.0
40	0.006	64	8.0
45	0.018	65	25.0
50	0.030	66	23.0
55	0.072	67	15.0
60	0.186	68	20.0
65	0.000	69	40.0
70	0.000	70	100.0

SECTION G

CALCULATION OF THE SINGLE DISCOUNT RATE

Calculation of the Single Discount Rate

GASB Statement No. 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Fiduciary Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the long-term rate of return is used as the discount rate. In years where assets are not projected to be sufficient to meet benefit payments, the use of a municipal bond rate is required, as described in the following paragraph.

The *Single Discount Rate* (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the plan fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.00%; the municipal bond rate is 3.97% (based on the weekly rate closest to but not later than the measurement date of the “20-Year Municipal GO Index” as published by Fidelity) and **the resulting single discount rate as of June 30, 2024 is 7.00%.** In describing this index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax-exempt securities.

The tables in this section provide background for the development of the single discount rate.

The **Projection of Contributions** table shows the development of expected contributions in future years. Normal Cost contributions for future hires are not included (nor are their liabilities).

The **Projection of Plan Fiduciary Net Position** table shows the development of expected asset levels in future years.

The **Present Values of Projected Benefit Payments** table shows the development of the Single Discount Rate. It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR.

Single Discount Rate Development
Projection of Contributions (Dollars in Thousands)

Fiscal Year Ending	Projected Covered-Employee Payroll			Projected Contributions				
	Payroll for Current Employees	Payroll for New Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Contributions on Future Payroll toward Current UAL[1]	Additional State Contributions[2]	Total Contributions
	(a)	(b)	(c) = (a) + (b)	(d)	(e)	(f)		(g) = (d) + (e) + (f)
2024	$ 58,849		$ 58,849					
2025	58,166	$ 1,193	59,359	$ 4,364	$ 13,087	$ 141	$ 6,000	$ 23,593
2026	56,615	4,228	60,843	4,202	12,738	501	6,000	23,441
2027	54,750	7,614	62,364	3,984	12,319	901	6,000	23,204
2028	53,082	10,841	63,923	3,878	11,944	1,284	6,000	23,105
2029	50,993	14,528	65,521	3,726	11,474	1,720	6,000	22,920
2030	48,719	18,440	67,159	3,546	10,962	2,183	6,000	22,691
2031	46,586	22,252	68,838	3,308	10,482	2,635	6,000	22,425
2032	44,345	26,214	70,559	3,127	9,978	3,104	6,000	22,209
2033	42,052	30,271	72,323	2,949	9,462	3,584	6,000	21,995
2034	39,852	34,279	74,131	2,747	8,967	4,059	6,000	21,772
2035	37,707	38,277	75,984	2,575	8,484	4,532	6,000	21,591
2036	35,257	42,627	77,884	2,343	7,933	5,047	6,000	21,323
2037	32,584	47,247	79,831	2,162	7,331	5,594	6,000	21,088
2038	30,082	51,745	81,827	1,944	6,768	6,127	6,000	20,839
2039	27,655	56,217	83,872	1,817	6,222	6,656	6,000	20,696
2040	25,156	60,813	85,969	1,677	5,660	7,200	6,000	20,538
2041	22,617	65,502	88,119	1,526	5,089	7,755	6,000	20,370
2042	20,161	70,160	90,321	1,373	4,536	8,307	6,000	20,216
2043	17,660	74,920	92,580	1,213	3,974	8,870	6,000	20,057
2044	15,204	79,690	94,894	1,054	3,421	9,435	6,000	19,910
2045	12,876	84,390	97,266	896	2,897	9,992	6,000	19,785
2046	10,561	89,137	99,698	737	2,376	10,554	-	13,667
2047	8,452	93,738	102,190	592	1,902	11,099	-	13,592
2048	6,625	98,120	104,745	464	1,491	11,617	-	13,572
2049	5,002	102,362	107,364	350	1,126	12,120	-	13,595
2050	3,619	106,429	110,048	253	814	12,601	-	13,669
2051	2,553	110,246	112,799	179	574	13,053	-	13,806
2052	1,790	113,829	115,619	125	403	13,477	-	14,005
2053	1,099	117,411	118,510	77	247	13,901	-	14,226
2054	611	120,861	121,472	43	138	14,310	-	14,490
2055	455	124,054	124,509	32	102	14,688	-	14,822
2056	348	127,274	127,622	24	78	15,069	-	15,172
2057	178	130,634	130,812	12	40	15,467	-	15,520
2058	36	134,047	134,083	2	8	15,871	-	15,882
2059	-	137,435	137,435	-	-	16,272	-	16,272
2060	-	140,871	140,871	-	-	16,679	-	16,679
2061	-	144,392	144,392	-	-	17,096	-	17,096
2062	-	148,002	148,002	-	-	17,523	-	17,523
2063	-	151,702	151,702	-	-	17,962	-	17,962
2064	-	155,495	155,495	-	-	18,411	-	18,411
2065	-	159,382	159,382	-	-	18,871	-	18,871
2066	-	163,367	163,367	-	-	19,343	-	19,343
2067	-	167,451	167,451	-	-	19,826	-	19,826
2068	-	171,637	171,637	-	-	20,322	-	20,322
2069	-	175,928	175,928	-	-	20,830	-	20,830
2070	-	180,326	180,326	-	-	21,351	-	21,351
2071	-	184,835	184,835	-	-	21,884	-	21,884
2072	-	189,455	189,455	-	-	22,432	-	22,432
2073	-	194,192	194,192	-	-	22,992	-	22,992
2074	-	199,047	199,047	-	-	23,567	-	23,567

1. *Equal to total contributions (29.50% of new employee payroll) net of new employee normal cost and expenses (17.66% of pay).*
2. *Additional State contributions equal to $6 million are assumed to stop after 21 years.*

Totals may not add due to rounding.

Single Discount Rate Development
Projection of Contributions (Dollars in Thousands, Concluded)

Fiscal Year Ending	Projected Covered-Employee Payroll: Payroll for Current Employees	Payroll for New Employees	Total Employee Payroll	Projected Contributions: Contributions from Current Employees	Employer Contributions for Current Employees	Contributions on Future Payroll toward Current UAL[1]	Additional State Contributions[2]	Total Contributions
	(a)	(b)	(c) = (a) + (b)	(d)	(e)	(f)		(g) = (d) + (e) + (f)
2075	$ -	$ 204,023	$ 204,023	$ -	$ -	$ 24,156	$ -	$ 24,156
2076	-	209,123	209,123	-	-	24,760	-	24,760
2077	-	214,351	214,351	-	-	25,379	-	25,379
2078	-	219,710	219,710	-	-	26,014	-	26,014
2079	-	225,203	225,203	-	-	26,664	-	26,664
2080	-	230,833	230,833	-	-	27,331	-	27,331
2081	-	236,604	236,604	-	-	28,014	-	28,014
2082	-	242,519	242,519	-	-	28,714	-	28,714
2083	-	248,582	248,582	-	-	29,432	-	29,432
2084	-	254,796	254,796	-	-	30,168	-	30,168
2085	-	261,166	261,166	-	-	30,922	-	30,922
2086	-	267,696	267,696	-	-	31,695	-	31,695
2087	-	274,388	274,388	-	-	32,488	-	32,488
2088	-	281,248	281,248	-	-	33,300	-	33,300
2089	-	288,279	288,279	-	-	34,132	-	34,132
2090	-	295,486	295,486	-	-	34,986	-	34,986
2091	-	302,873	302,873	-	-	35,860	-	35,860
2092	-	310,445	310,445	-	-	36,757	-	36,757
2093	-	318,206	318,206	-	-	37,676	-	37,676
2094	-	326,161	326,161	-	-	38,617	-	38,617
2095	-	334,315	334,315	-	-	39,583	-	39,583
2096	-	342,673	342,673	-	-	40,572	-	40,572
2097	-	351,240	351,240	-	-	41,587	-	41,587
2098	-	360,021	360,021	-	-	42,626	-	42,626
2099	-	369,021	369,021	-	-	43,692	-	43,692
2100	-	378,247	378,247	-	-	44,784	-	44,784
2101	-	387,703	387,703	-	-	45,904	-	45,904
2102	-	397,396	397,396	-	-	47,052	-	47,052
2103	-	407,330	407,330	-	-	48,228	-	48,228
2104	-	417,514	417,514	-	-	49,434	-	49,434
2105	-	427,951	427,951	-	-	50,669	-	50,669
2106	-	438,650	438,650	-	-	51,936	-	51,936
2107	-	449,617	449,617	-	-	53,235	-	53,235
2108	-	460,857	460,857	-	-	54,565	-	54,565
2109	-	472,378	472,378	-	-	55,930	-	55,930
2110	-	484,188	484,188	-	-	57,328	-	57,328
2111	-	496,293	496,293	-	-	58,761	-	58,761
2112	-	508,700	508,700	-	-	60,230	-	60,230
2113	-	521,417	521,417	-	-	61,736	-	61,736
2114	-	534,453	534,453	-	-	63,279	-	63,279
2115	-	547,814	547,814	-	-	64,861	-	64,861
2116	-	561,509	561,509	-	-	66,483	-	66,483
2117	-	575,547	575,547	-	-	68,145	-	68,145
2118	-	589,936	589,936	-	-	69,848	-	69,848
2119	-	604,684	604,684	-	-	71,595	-	71,595
2120	-	619,801	619,801	-	-	73,384	-	73,384
2121	-	635,296	635,296	-	-	75,219	-	75,219
2122	-	651,179	651,179	-	-	77,100	-	77,100
2123	-	667,458	667,458	-	-	79,027	-	79,027
2124	-	684,145	684,145	-	-	81,003	-	81,003

1. *Equal to total contributions (29.50% of new employee payroll) net of new employee normal cost and expenses (17.66% of pay).*
2. *Additional State contributions equal to $6 million are assumed to stop after 21 years.*

Totals may not add due to rounding.

Single Discount Rate Development
Projection of Plan Fiduciary Net Position (Dollars in Thousands)

Fiscal Year Ending	Projected Beginning Plan Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2025	$ 294,703	$ 23,593	$ 31,053	$ 116	$ 20,369	$ 307,496
2026	307,496	23,441	32,044	113	21,225	320,005
2027	320,005	23,204	33,234	110	22,051	331,917
2028	331,917	23,105	34,274	106	22,846	343,488
2029	343,488	22,920	35,399	102	23,611	354,518
2030	354,518	22,691	36,772	97	24,328	364,668
2031	364,668	22,425	37,845	93	24,993	374,148
2032	374,148	22,209	38,917	89	25,612	382,964
2033	382,964	21,995	39,860	84	26,190	391,204
2034	391,204	21,772	40,599	80	26,734	399,031
2035	399,031	21,591	41,195	75	27,255	406,607
2036	406,607	21,323	41,836	71	27,754	413,777
2037	413,777	21,088	42,545	65	28,224	420,479
2038	420,479	20,839	43,051	60	28,667	426,873
2039	426,873	20,696	43,418	55	29,097	433,192
2040	433,192	20,538	43,764	50	29,523	439,439
2041	439,439	20,370	43,996	45	29,946	445,714
2042	445,714	20,216	44,142	40	30,375	452,122
2043	452,122	20,057	44,202	35	30,817	458,759
2044	458,759	19,910	44,172	30	31,277	465,744
2045	465,744	19,785	44,007	26	31,768	473,264
2046	473,264	13,667	43,794	21	32,091	475,207
2047	475,207	13,592	43,423	17	32,237	477,597
2048	477,597	13,572	42,864	13	32,423	480,715
2049	480,715	13,595	42,160	10	32,667	484,807
2050	484,807	13,669	41,294	7	32,986	490,161
2051	490,161	13,806	40,229	5	33,402	497,135
2052	497,135	14,005	38,988	4	33,940	506,088
2053	506,088	14,226	37,705	2	34,618	517,225
2054	517,225	14,490	36,310	1	35,455	530,860
2055	530,860	14,822	34,741	1	36,475	547,415
2056	547,415	15,172	33,157	1	37,700	567,129
2057	567,129	15,520	31,622	-	39,145	590,171
2058	590,171	15,882	30,087	-	40,823	616,789
2059	616,789	16,272	28,510	-	42,754	647,305
2060	647,305	16,679	26,934	-	44,959	682,009
2061	682,009	17,096	25,378	-	47,456	721,182
2062	721,182	17,523	23,845	-	50,265	765,126
2063	765,126	17,962	22,336	-	53,408	814,160
2064	814,160	18,411	20,851	-	56,907	868,626
2065	868,626	18,871	19,393	-	60,786	928,890
2066	928,890	19,343	17,964	-	65,070	995,338
2067	995,338	19,826	16,567	-	69,786	1,068,383
2068	1,068,383	20,322	15,206	-	74,963	1,148,462
2069	1,148,462	20,830	13,884	-	80,631	1,236,039
2070	1,236,039	21,351	12,606	-	86,824	1,331,608
2071	1,331,608	21,884	11,378	-	93,574	1,435,688
2072	1,435,688	22,432	10,204	-	100,919	1,548,834
2073	1,548,834	22,992	9,089	-	108,897	1,671,634
2074	1,671,634	23,567	8,038	-	117,549	1,804,712

For purposes of this projection, we assumed the 22.5% regular employer statutory contribution rate would continue after the plan becomes fully funded.

Totals may not add due to rounding.

Single Discount Rate Development
Projection of Plan Fiduciary Net Position
(Dollars in Thousands, Concluded)

Fiscal Year Ending	Projected Beginning Plan Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2075	$ 1,804,712	$ 24,156	$ 7,052	$ -	$ 126,918	$ 1,948,734
2076	1,948,734	24,760	6,137	-	137,052	2,104,410
2077	2,104,410	25,379	5,292	-	148,000	2,272,497
2078	2,272,497	26,014	4,520	-	159,814	2,453,806
2079	2,453,806	26,664	3,820	-	172,552	2,649,202
2080	2,649,202	27,331	3,193	-	186,275	2,859,614
2081	2,859,614	28,014	2,637	-	201,046	3,086,036
2082	3,086,036	28,714	2,151	-	216,937	3,329,536
2083	3,329,536	29,432	1,731	-	234,021	3,591,258
2084	3,591,258	30,168	1,374	-	252,379	3,872,430
2085	3,872,430	30,922	1,075	-	272,097	4,174,374
2086	4,174,374	31,695	828	-	293,268	4,498,510
2087	4,498,510	32,488	628	-	315,992	4,846,362
2088	4,846,362	33,300	468	-	340,375	5,219,569
2089	5,219,569	34,132	343	-	366,532	5,619,891
2090	5,619,891	34,986	247	-	394,588	6,049,217
2091	6,049,217	35,860	174	-	424,673	6,509,576
2092	6,509,576	36,757	120	-	456,931	7,003,143
2093	7,003,143	37,676	82	-	491,514	7,532,251
2094	7,532,251	38,617	54	-	528,584	8,099,399
2095	8,099,399	39,583	35	-	568,319	8,707,265
2096	8,707,265	40,572	22	-	610,904	9,358,719
2097	9,358,719	41,587	14	-	656,541	10,056,833
2098	10,056,833	42,626	8	-	705,445	10,804,897
2099	10,804,897	43,692	5	-	757,846	11,606,430
2100	11,606,430	44,784	3	-	813,991	12,465,203
2101	12,465,203	45,904	1	-	874,144	13,385,249
2102	13,385,249	47,052	1	-	938,586	14,370,886
2103	14,370,886	48,228	-	-	1,007,621	15,426,735
2104	15,426,735	49,434	-	-	1,081,572	16,557,741
2105	16,557,741	50,669	-	-	1,160,785	17,769,196
2106	17,769,196	51,936	-	-	1,245,631	19,066,762
2107	19,066,762	53,235	-	-	1,336,505	20,456,502
2108	20,456,502	54,565	-	-	1,433,833	21,944,900
2109	21,944,900	55,930	-	-	1,538,067	23,538,897
2110	23,538,897	57,328	-	-	1,649,695	25,245,920
2111	25,245,920	58,761	-	-	1,769,236	27,073,918
2112	27,073,918	60,230	-	-	1,897,247	29,031,394
2113	29,031,394	61,736	-	-	2,034,322	31,127,452
2114	31,127,452	63,279	-	-	2,181,099	33,371,830
2115	33,371,830	64,861	-	-	2,338,260	35,774,951
2116	35,774,951	66,483	-	-	2,506,534	38,347,968
2117	38,347,968	68,145	-	-	2,686,702	41,102,815
2118	41,102,815	69,848	-	-	2,879,600	44,052,264
2119	44,052,264	71,595	-	-	3,086,122	47,209,981
2120	47,209,981	73,384	-	-	3,307,224	50,590,589
2121	50,590,589	75,219	-	-	3,543,929	54,209,737
2122	54,209,737	77,100	-	-	3,797,334	58,084,171
2123	58,084,171	79,027	-	-	4,068,611	62,231,810
2124	62,231,810	81,003	-	-	4,359,014	66,671,826

For purposes of this projection, we assumed the 22.5% regular employer statutory contribution rate would continue after the plan becomes fully funded.

Totals may not add due to rounding.

Single Discount Rate Development
Present Values of Projected Benefits (Dollars in Thousands)

Fiscal Year Ending	Projected Beginning Plan Fiduciary Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^((a)-.5)	(g)=(e)*vf ^((a)-.5)	(h)=(c)/(1+sdr)^(a-.5)
2025	$ 294,703	$ 31,053	$ 31,053	$ -	$ 30,020	$ -	$ 30,020
2026	307,496	32,044	32,044	-	28,951	-	28,951
2027	320,005	33,234	33,234	-	28,062	-	28,062
2028	331,917	34,274	34,274	-	27,047	-	27,047
2029	343,488	35,399	35,399	-	26,107	-	26,107
2030	354,518	36,772	36,772	-	25,346	-	25,346
2031	364,668	37,845	37,845	-	24,379	-	24,379
2032	374,148	38,917	38,917	-	23,429	-	23,429
2033	382,964	39,860	39,860	-	22,427	-	22,427
2034	391,204	40,599	40,599	-	21,349	-	21,349
2035	399,031	41,195	41,195	-	20,245	-	20,245
2036	406,607	41,836	41,836	-	19,215	-	19,215
2037	413,777	42,545	42,545	-	18,262	-	18,262
2038	420,479	43,051	43,051	-	17,271	-	17,271
2039	426,873	43,418	43,418	-	16,278	-	16,278
2040	433,192	43,764	43,764	-	15,334	-	15,334
2041	439,439	43,996	43,996	-	14,407	-	14,407
2042	445,714	44,142	44,142	-	13,509	-	13,509
2043	452,122	44,202	44,202	-	12,643	-	12,643
2044	458,759	44,172	44,172	-	11,808	-	11,808
2045	465,744	44,007	44,007	-	10,994	-	10,994
2046	473,264	43,794	43,794	-	10,225	-	10,225
2047	475,207	43,423	43,423	-	9,475	-	9,475
2048	477,597	42,864	42,864	-	8,741	-	8,741
2049	480,715	42,160	42,160	-	8,035	-	8,035
2050	484,807	41,294	41,294	-	7,355	-	7,355
2051	490,161	40,229	40,229	-	6,697	-	6,697
2052	497,135	38,988	38,988	-	6,066	-	6,066
2053	506,088	37,705	37,705	-	5,482	-	5,482
2054	517,225	36,310	36,310	-	4,934	-	4,934
2055	530,860	34,741	34,741	-	4,412	-	4,412
2056	547,415	33,157	33,157	-	3,935	-	3,935
2057	567,129	31,622	31,622	-	3,508	-	3,508
2058	590,171	30,087	30,087	-	3,119	-	3,119
2059	616,789	28,510	28,510	-	2,762	-	2,762
2060	647,305	26,934	26,934	-	2,439	-	2,439
2061	682,009	25,378	25,378	-	2,148	-	2,148
2062	721,182	23,845	23,845	-	1,886	-	1,886
2063	765,126	22,336	22,336	-	1,651	-	1,651
2064	814,160	20,851	20,851	-	1,440	-	1,440
2065	868,626	19,393	19,393	-	1,252	-	1,252
2066	928,890	17,964	17,964	-	1,084	-	1,084
2067	995,338	16,567	16,567	-	934	-	934
2068	1,068,383	15,206	15,206	-	801	-	801
2069	1,148,462	13,884	13,884	-	684	-	684
2070	1,236,039	12,606	12,606	-	580	-	580
2071	1,331,608	11,378	11,378	-	489	-	489
2072	1,435,688	10,204	10,204	-	410	-	410
2073	1,548,834	9,089	9,089	-	342	-	342
2074	1,671,634	8,038	8,038	-	282	-	282

Totals may not add due to rounding.

Single Discount Rate Development
Present Values of Projected Benefits
(Dollars in Thousands, Concluded)

Fiscal Year Ending	Projected Beginning Plan Fiduciary Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^((a)-.5)	(g)=(e)*vf ^((a)-.5)	(h)=(c)/(1+sdr)^(a-.5)
2075	$ 1,804,712	$ 7,052	$ 7,052	$ -	$ 30,020	$ -	$ 231
2076	1,948,734	6,137	6,137	-	28,951	-	188
2077	2,104,410	5,292	5,292	-	28,062	-	152
2078	2,272,497	4,520	4,520	-	27,047	-	121
2079	2,453,806	3,820	3,820	-	26,107	-	96
2080	2,649,202	3,193	3,193	-	25,346	-	75
2081	2,859,614	2,637	2,637	-	24,379	-	58
2082	3,086,036	2,151	2,151	-	23,429	-	44
2083	3,329,536	1,731	1,731	-	22,427	-	33
2084	3,591,258	1,374	1,374	-	21,349	-	25
2085	3,872,430	1,075	1,075	-	20,245	-	18
2086	4,174,374	828	828	-	19,215	-	13
2087	4,498,510	628	628	-	18,262	-	9
2088	4,846,362	468	468	-	17,271	-	6
2089	5,219,569	343	343	-	16,278	-	4
2090	5,619,891	247	247	-	15,334	-	3
2091	6,049,217	174	174	-	14,407	-	2
2092	6,509,576	120	120	-	13,509	-	1
2093	7,003,143	82	82	-	12,643	-	1
2094	7,532,251	54	54	-	11,808	-	0
2095	8,099,399	35	35	-	10,994	-	0
2096	8,707,265	22	22	-	10,225	-	0
2097	9,358,719	14	14	-	9,475	-	0
2098	10,056,833	8	8	-	8,741	-	0
2099	10,804,897	5	5	-	8,035	-	0
2100	11,606,430	3	3	-	7,355	-	0
2101	12,465,203	1	1	-	6,697	-	0
2102	13,385,249	1	1	-	6,066	-	0
2103	14,370,886	-	-	-	5,482	-	0
2104	15,426,735	-	-	-	4,934	-	0
2105	16,557,741	-	-	-	4,412	-	0
2106	17,769,196	-	-	-	3,935	-	0
2107	19,066,762	-	-	-	3,508	-	0
2108	20,456,502	-	-	-	3,119	-	0
2109	21,944,900	-	-	-	2,762	-	-
2110	23,538,897	-	-	-	2,439	-	-
2111	25,245,920	-	-	-	2,148	-	-
2112	27,073,918	-	-	-	1,886	-	-
2113	29,031,394	-	-	-	1,651	-	-
2114	31,127,452	-	-	-	1,440	-	-
2115	33,371,830	-	-	-	1,252	-	-
2116	35,774,951	-	-	-	1,084	-	-
2117	38,347,968	-	-	-	934	-	-
2118	41,102,815	-	-	-	801	-	-
2119	44,052,264	-	-	-	684	-	-
2120	47,209,981	-	-	-	580	-	-
2121	50,590,589	-	-	-	489	-	-
2122	54,209,737	-	-	-	410	-	-
2123	58,084,171	-	-	-	342	-	-
2124	62,231,810	-	-	-	282	-	-
				Totals	$ 529,334	$ -	$ 529,334

Totals may not add due to rounding.

SECTION H

GLOSSARY OF TERMS

Glossary of Terms

Accrued Service	Service credited under the system which was rendered before the date of the actuarial valuation.
Actuarial Accrued Liability (AAL)	The AAL is the difference between the actuarial present value of all benefits and the actuarial value of future normal costs. The definition comes from the fundamental equation of funding which states that the present value of all benefits is the sum of the Actuarial Accrued Liability and the present value of future normal costs. The AAL may also be referred to as "accrued liability" or "actuarial liability."
Actuarial Assumptions	These assumptions are estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and compensation increases. Actuarial assumptions are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (compensation increases, payroll growth, inflation and investment return) consist of an underlying real rate of return plus an assumption for a long-term average rate of inflation.
Actuarial Cost Method	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the pension trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the actuarial funding method.
Actuarial Equivalent	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.
Actuarial Gain (Loss)	The difference in liabilities between actual experience and expected experience during the period between two actuarial valuations is the gain (loss) on the accrued liabilities.
Actuarial Present Value (APV)	The amount of funds currently required to provide a payment or series of payments in the future. The present value is determined by discounting future benefit payments at predetermined rates of interest to reflect the expected effects of the time value (present value) of money and the probabilities of payment.
Actuarial Valuation	The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.
Actuarial Valuation Date	The date as of which an actuarial valuation is performed.
Actuarially Determined Contribution (ADC)	A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically, the Actuarially Determined Contribution has a normal cost payment and an amortization payment.

Glossary of Terms

Amortization Method	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be "open" (meaning, reset each year) or "closed" (the number of years remaining will decline each year).
Amortization Payment	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
Cost-of-Living Adjustments	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
Covered-Employee Payroll	The payroll of covered employees, which is typically only the pensionable pay and does not include pay above any pay cap.
Deferred Inflows and Outflows of Resources	The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources.
Discount Rate or Single Discount Rate	For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically: 1. The benefit payments to be made while the pension plans' fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period; and 2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.
Entry Age Actuarial Cost Method or Entry Age Normal (EAN)	The EAN is a funding method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit age(s). The portion of the actuarial present value allocated to a valuation year is the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.

Glossary of Terms

Fiduciary Net Position	The fiduciary net position is the value of the net assets of the trust restricted for pension benefits.
GASB	The Governmental Accounting Standards Board is an organization that exists with authority to promulgate accounting standards for state and local governmental entities.
Long-Term Expected Rate of Return	The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.
Money-Weighted Rate of Return	The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.
Multiple-Employer Defined Benefit Pension Plan	A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
Municipal Bond Rate	The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.
Net Pension Liability (NPL)	The NPL is the liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit pension plan.
Non-Employer Contributing Entities	Non-employer contributing entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB Accounting Statements No. 67 and No. 68 plan members are not considered non-employer contributing entities.
Normal Cost	The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.
Other Postemployment Benefits (OPEB)	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other postemployment benefits do not include termination benefits.
Real Rate of Return	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
Service Cost	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.

Glossary of Terms

Total Pension Expense	The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year: 1. Service Cost 2. Interest on the Total Pension Liability 3. Current-Period Changes in Benefit Terms 4. Employee Contributions 5. Projected Earnings on Plan Investments 6. Pension Plan Administrative Expense 7. Other Changes in Plan Fiduciary Net Position 8. Recognition of Outflow (Inflow) of Resources due to the difference between expected and actual in measurement of the Total Pension Liability 9. Recognition of Outflow (Inflow) of Resources due to Assumption Changes 10. Recognition of Outflow (Inflow) of Resources due to the difference between projected and actual earnings on pension plan investments
Total Pension Liability (TPL)	The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
Unfunded Actuarial Accrued Liability (UAAL)	The UAAL is the difference between actuarial accrued liability and valuation assets.
Valuation Assets	The valuation assets are the plan fiduciary net position used in determining the net position liability of the plan. For purposes of the GASB Statement No. 67, the asset valuation method is equal to the market value of assets.