

Minnesota State Retirement System

State Employees Retirement Fund

GASB Statement Nos. 67 and 68

Accounting and Financial Reporting for Pensions

June 30, 2024





November 22, 2024

Minnesota State Retirement System
State Employees 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 State Employees 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. 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 the 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.

To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the State Employees 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 L. 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, ASA, EA, FCA, MAAA

Sheryl L. Christensen, FSA, EA, FCA, MAAA

BJW/SLC:rmn



Table of Contents

	<u>Page</u>
Section A	Executive Summary
	Executive Summary..... 1
	Discussion..... 2-5
Section B	Financial Statements
	Statement of Pension Expense Under GASB Statement No. 68 6
	Statement of Outflows and Inflows Arising from Current Reporting Period 7
	Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods 8
	Recognition of Deferred Outflows and Inflows of Resources..... 9
	Statement of Fiduciary Net Position 10
	Statement of Changes in Fiduciary Net Position 11
Section C	Required Supplementary Information
	Schedule of Changes in Net Pension Liability and Related Ratios Current Period 12
	Schedule of Changes in Net Pension Liability and Related Ratios Multiyear 13
	Schedule of Net Pension Liability Multiyear 14
	Schedule of Contributions Multiyear 15
	Notes to Schedule of Contributions..... 15
	Schedule of Investment Returns Multiyear 16
Section D	Additional Financial Statement Disclosures
	Asset Allocation..... 17
	Sensitivity of Net Pension Liability to the Single Discount Rate Assumption 18
	GASB Statement No. 68 Reconciliation 19
	Summary of Population Statistics 20
Section E	Summary of Benefits
	Summary of Plan Provisions..... 21-26
Section F	Actuarial Cost Method and Actuarial Assumptions
	Actuarial Methods..... 27
	Summary of Actuarial Assumptions..... 28-34
Section G	Calculation of the Single Discount Rate
	Calculation of the Single Discount Rate 35
	Projection of Contributions..... 36-37
	Projection of Plan Fiduciary Net Position 38-39
	Present Values of Projected Benefits..... 40-41
Section H	Glossary of Terms 42-45

SECTION A

EXECUTIVE SUMMARY

Executive Summary

as of June 30, 2024 (Dollars in Thousands)

	<u>2024</u>
Actuarial Valuation Date	June 30, 2024
Measurement Date of the Net Pension Liability	June 30, 2024
Membership	
Number of	
- Service Retirements	42,537
- Survivors	4,770
- Disability Retirements	1,649
- Deferred Retirements	18,827
- Terminated Other Non-Vested	11,689
- Active Members	55,453
- Total	<u>134,925</u>
Covered-employee Payroll	<u>\$ 4,062,909</u> ⁽¹⁾
Net Pension Liability	
Total Pension Liability	\$ 18,171,621
Plan Fiduciary Net Position	<u>18,138,356</u>
Net Pension Liability	<u>\$ 33,265</u>
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	99.82%
Net Pension Liability as a Percentage of Covered-employee Payroll	0.82%
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)	<u>\$ (33,995)</u>

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

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Difference between expected and actual experience in the measurement of the Total Pension Liability	\$ 243,916	\$ 2,677
Changes in assumptions	375,035	608,127
Net difference between projected and actual earnings on pension plan investments	870,511	1,489,419
Totals	<u>\$ 1,489,462</u>	<u>\$ 2,100,223</u>

⁽¹⁾ Assumed equal to actual member contributions divided by member 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. GASB Statement No. 82, *Pension Issues*, is an amendment to GASB Statements No. 67, No. 68, and No. 73, intended to improve consistency in the application of the accounting standards.

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 State Employees Retirement Fund subsequent to the measurement date of June 30, 2024.

The pension expense or income 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 of 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.

GASB Statement Nos. 67 and 68 require the notes of 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 State Employees Retirement Fund, can be found online at 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
- A 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 7.0% 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 remain approximately level 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 grow initially as a dollar amount for two years (based on the current 24- year amortization period and if contributions are equal to the required amount) before beginning to decline.

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 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/(Income)

1. Service Cost	\$ 342,616
2. Interest on the Total Pension Liability	1,207,244
3. Current-Period Benefit Changes	-
4. Employee Contributions	(223,460)
5. Projected Earnings on Plan Investments	(1,147,542)
6. Pension Plan Administrative Expense	11,826
7. Other Changes in Plan Fiduciary Net Position	(17,601)
8. Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability	
<i>Arising from Current Reporting Period</i>	39,665
9. Recognition of Outflow (Inflow) of Resources due to assumption changes	
<i>Arising from Current Reporting Period</i>	(24,167)
10. Recognition of Outflow (Inflow) of Resources due to the difference between projected (7.00%) and actual earnings on Pension Plan Investments	
<i>Arising from Current Reporting Period</i>	(169,826)
11. Increases/(Decreases) from Experience in the Current Reporting Period	\$ 18,755
12. Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability	
<i>Arising from Prior Reporting Periods</i>	\$ 26,303
13. Recognition of Outflow (Inflow) of Resources due to assumption changes	
<i>Arising from Prior Reporting Periods</i>	77,156
14. Recognition of Outflow (Inflow) of Resources due to the difference between projected and actual earnings on Pension Plan Investments	
<i>Arising from Prior Reporting Periods</i>	(156,209)
15. Total Pension Expense/ (Income)	<u>\$ (33,995)</u>

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 597,692 years. Additionally, the total plan membership (active employees and inactive employees) was 130,298. 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	\$ 198,325
2. Assumption Changes (gains) or losses	(120,835)
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years, rounded to the nearest whole number}	5
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience in the measurement of the Total Pension Liability	39,665
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	(24,167)
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	<u>\$ 15,498</u>
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	\$ 158,660
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	(96,668)
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	<u>\$ 61,992</u>

B. Outflows (Inflows) of Resources due to Assets

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ (849,130)
2. Recognition period for Assets {in years}	5
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	<u>(169,826)</u>
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	<u>\$ (679,304)</u>

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	\$ 444,938	\$ 325,981	\$ 118,957
2. Due to Assets	524,259	850,294	(326,035)
3. Total	\$ 969,197	\$ 1,176,275	\$ (207,078)

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	\$ 69,902	\$ 3,934	\$ 65,968
2. Assumption Changes	375,036	322,047	52,989
3. Net Difference between projected and actual earnings on pension plan investments	524,259	850,294	(326,035)
4. Total	\$ 969,197	\$ 1,176,275	\$ (207,078)

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	\$ 243,916	\$ 2,677	\$ 241,239
2. Assumption Changes	375,035	608,127	(233,092)
3. Net Difference between projected and actual earnings on pension plan investments*	870,511	1,489,419	(618,908)
4. Total	\$ 1,489,462	\$ 2,100,223	\$ (610,761)

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	\$ (200,364)
2026	37,519
2027	(293,588)
2028	(154,328)
2029	-
Thereafter	-
Total	\$ (610,761)

* 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	\$ (12,979)	5.0000	\$ (2,595)	\$ 0	0.0000
2021	13,632	5.0000	2,727	2,727	1.0000
2022	(6,694)	5.0000	(1,339)	(2,677)	2.0000
2023	137,549	5.0000	27,510	82,529	3.0000
2024	198,325	5.0000	39,665	158,660	4.0000
Total			\$ 65,968	\$ 241,239	
Deferred Outflow (Inflow) Due to Assumption Changes					
2020	\$ (465,611)	5.0000	\$ (93,123)	\$ 0	0.0000
2021	1,875,179	5.0000	375,036	375,035	1.0000
2022	(514,065)	5.0000	(102,813)	(205,626)	2.0000
2023	(509,721)	5.0000	(101,944)	(305,833)	3.0000
2024	(120,835)	5.0000	(24,167)	(96,668)	4.0000
Total			\$ 52,989	\$ (233,092)	
Deferred Outflow (Inflow) Due to Differences Between Projected and Actual Earnings on Plan Investments					
2020	\$ 445,017	5.0000	\$ 89,004	\$ 0	0.0000
2021	(3,078,219)	5.0000	(615,644)	(615,643)	1.0000
2022	2,176,276	5.0000	435,255	870,511	2.0000
2023	(324,120)	5.0000	(64,824)	(194,472)	3.0000
2024	(849,130)	5.0000	(169,826)	(679,304)	4.0000
Total			\$ (326,035)	\$ (618,908)	
Deferred Outflow (Inflow) Due to All Sources					
Total			\$ (207,078)	\$ (610,761)	

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

Assets	June 30, 2024
Cash & Short-term Investments	\$ 295,051
Receivables	30,680
Investment Pools (at fair value)	17,821,686
Securities Lending Collateral	777,103
Capital Assets	14,591
Total Assets	\$ 18,939,111
 Total Deferred Outflows of Resources	 \$ -
Total Liabilities	\$ (800,755)
Total Deferred Inflows of Resources	\$ -
 Net Position Restricted for Pensions	 \$ 18,138,356

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

1.a.	Net Position at market value at beginning of year, as reported	\$ 16,645,007
1.b.	Change in accounting principle	224
1.c.	Net position at market value at beginning of year	<u>\$ 16,645,231</u>
Additions		
2.	Contributions	
a.	Employee	\$ 223,460
b.	Employer	252,540
c.	Other sources	76,440
d.	Total contributions	<u>\$ 552,440</u>
3.	Investment income	
a.	Investment income/(loss)	\$ 2,064,641
b.	Investment expenses	(67,969)
c.	Net investment income/(loss)	<u>\$ 1,996,672</u>
4.	Other Additions	<u>17,420</u>
5.	Total Additions (2.d.) + (3.c.) + (4.)	<u>\$ 2,566,532</u>
Deductions		
6.	Benefits Paid	
a.	Annuity benefits	\$ (1,043,040)
b.	Refunds	(18,498)
c.	Total benefits paid	<u>\$ (1,061,538)</u>
7.	Expenses	
a.	Other deductions	\$ (43)
b.	Administrative	(11,826)
c.	Total expenses	<u>\$ (11,869)</u>
8.	Total deductions (6.c.) + (7.c.)	<u>\$ (1,073,407)</u>
9.	Net increase/(decrease) in fiduciary net position (5.) + (8.)	<u>\$ 1,493,125</u>
10.	Net position at market value at end of year (1.) + (9.)	<u><u>\$ 18,138,356</u></u>
11.	State Board of Investment calculated annual investment return for the State Employees 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	\$ 342,616
2. Interest on the total pension liability	1,207,244
3. Changes of benefit terms	-
4. Difference between expected and actual experience of the total pension liability	198,325
5. Changes of assumptions ⁽³⁾	(120,835)
6. Benefit payments, including refunds of employee contributions	(1,061,538)
7. Net change in total pension liability	\$ 565,812
8. Total pension liability – beginning	17,605,809
9. Total pension liability – ending	<u><u>\$ 18,171,621</u></u>

B. Plan fiduciary net position

1. Contributions – employer	\$ 328,980
2. Contributions – employee	223,460
3. Net investment income	1,996,672
4. Benefit payments, including refunds of employee contributions	(1,061,538)
5. Pension plan administrative expense	(11,826)
6. Other changes ⁽²⁾	17,601
7. Net change in plan fiduciary net position	\$ 1,493,349
8. Plan fiduciary net position – beginning	16,645,007
9. Plan fiduciary net position – ending	<u><u>\$ 18,138,356</u></u>

C. Net pension liability, A.9. - B.9.

\$ 33,265

D. Plan fiduciary net position as a percentage of the total pension liability, B.9. / A.9.

99.82%

E. Covered-employee payroll

\$ 4,062,909 ⁽¹⁾

F. Net pension liability as a percentage of covered-employee payroll, C. / E.

0.82%

⁽¹⁾ Assumed equal to actual member contributions divided by member contribution rate.

⁽²⁾ Includes \$224 adjustment to the beginning of year assets.

⁽³⁾ Includes impact of change in actuarial equivalent factors.



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	\$ 342,616	\$ 331,361	\$ 340,333	\$ 270,993	\$ 267,779	\$ 255,056	\$ 455,709	\$ 619,666	\$ 211,491	\$ 210,545
Interest on the Total Pension Liability	1,207,244	1,156,223	1,117,920	1,113,853	1,114,756	1,078,390	1,069,154	982,066	1,020,925	1,018,035
Benefit Changes	-	36,428	-	-	-	-	(1,711,128)	83,490	-	-
Difference between Expected and Actual Experience	198,325	137,549	(6,694)	13,632	(12,979)	23,180	(8,132)	49,659	21,209	(493,197)
Assumption Changes	(120,835)	(509,721)	(514,065)	1,875,179	(465,611)	-	(4,219,074)	(4,691,209)	9,911,319	-
Benefit Payments	(1,043,040)	(1,001,955)	(966,698)	(923,364)	(885,517)	(841,776)	(797,027)	(750,526)	(707,361)	(665,821)
Refunds	(18,498)	(17,209)	(19,243)	(12,556)	(13,725)	(15,199)	(13,533)	(11,576)	(13,345)	(12,026)
Net Change in Total Pension Liability	\$ 565,812	\$ 132,676	\$ (48,447)	\$ 2,337,737	\$ 4,703	\$ 499,651	\$ (5,224,031)	\$ (3,718,430)	\$10,444,238	\$ 57,536
Total Pension Liability - Beginning	17,605,809	17,473,133	17,521,580	15,183,843	15,179,140	14,679,489	19,903,520	23,621,950	13,177,712	13,120,176
Total Pension Liability - Ending (a)	\$18,171,621	\$17,605,809	\$17,473,133	\$17,521,580	\$15,183,843	\$15,179,140	\$14,679,489	\$19,903,520	\$23,621,950	\$13,177,712
Plan Fiduciary Net Position										
Employer Contributions	\$ 328,980	\$ 227,175	\$ 212,759	\$ 206,381	\$ 204,006	\$ 182,939	\$ 164,233	\$ 158,352	\$ 151,168	\$ 146,333
Employee Contributions	223,460	218,890	206,056	199,525	197,897	182,210	166,726	161,670	153,854	149,293
Pension Plan Net Investment Income	1,996,672	1,373,781	(1,060,537)	4,098,129	569,670	948,366	1,276,550	1,667,562	(9,633)	501,185
Benefit Payments	(1,043,040)	(1,001,955)	(966,698)	(923,364)	(885,517)	(841,776)	(797,027)	(750,526)	(707,361)	(665,821)
Refunds	(18,498)	(17,209)	(19,243)	(12,556)	(13,725)	(15,199)	(13,533)	(11,576)	(13,345)	(12,026)
Pension Plan Administrative Expense	(11,826)	(10,668)	(10,483)	(10,779)	(10,261)	(9,877)	(9,564)	(10,165)	(10,196)	(8,719)
Other Changes	17,601	25,143	27,945	27,024	21,332	32,204	20,423	47,232	20,259	29,470
Net Change in Plan Fiduciary Net Position	\$ 1,493,349	\$ 815,157	\$ (1,610,201)	\$ 3,584,360	\$ 83,402	\$ 478,867	\$ 807,808	\$ 1,262,549	\$ (415,254)	\$ 139,715
Plan Fiduciary Net Position - Beginning	16,645,007	15,829,850	17,440,051	13,855,691	13,772,289	13,293,422	12,485,614	11,223,065	11,638,319	11,498,604
Plan Fiduciary Net Position - Ending (b)	\$18,138,356	\$16,645,007	\$15,829,850	\$17,440,051	\$13,855,691	\$13,772,289	\$13,293,422	\$12,485,614	\$11,223,065	\$11,638,319
Net Pension Liability - Ending (a) - (b)	\$ 33,265	\$ 960,802	\$ 1,643,283	\$ 81,529	\$ 1,328,152	\$ 1,406,851	\$ 1,386,067	\$ 7,417,906	\$12,398,885	\$ 1,539,393
Plan Fiduciary Net Position as a Percentage										
of Total Pension Liability	99.82 %	94.54 %	90.60 %	99.53 %	91.25 %	90.73 %	90.56 %	62.73 %	47.51 %	88.32 %
Covered-Employee Payroll ⁽¹⁾	\$ 4,062,909	\$ 3,648,167	\$ 3,434,267	\$ 3,325,417	\$ 3,298,283	\$ 3,168,870	\$ 3,031,382	\$ 2,939,455	\$ 2,797,345	\$ 2,714,418
Net Pension Liability as a Percentage										
of Covered-Employee Payroll	0.82 %	26.34 %	47.85 %	2.45 %	40.27 %	44.40 %	45.72 %	252.36 %	443.24 %	56.71 %

Notes to Schedule:

(1) Assumed equal to actual member contribution divided by member contribution rate.



Schedule of Net Pension Liability Multiyear (Dollars in Thousands)

Last 10 Fiscal Years

Fiscal Year Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered- employee Payroll	Net Pension Liability as a % of Covered- employee Payroll
	(a)	(b)	(a) - (b) = (c)	(b) / (a)	(d)	(c) / (d)
2015	\$ 13,177,712	\$ 11,638,319	\$ 1,539,393	88.32%	\$ 2,714,418	56.71%
2016	23,621,950	11,223,065	12,398,885	47.51	2,797,345	443.24
2017	19,903,520	12,485,614	7,417,906	62.73	2,939,455	252.36
2018	14,679,489	13,293,422	1,386,067	90.56	3,031,382	45.72
2019	15,179,140	13,772,289	1,406,851	90.73	3,168,870	44.40
2020	15,183,843	13,855,691	1,328,152	91.25	3,298,283	40.27
2021	17,521,580	17,440,051	81,529	99.53	3,325,417	2.45
2022	17,473,133	15,829,850	1,643,283	90.60	3,434,267	47.85
2023	17,605,809	16,645,007	960,802	94.54	3,648,167	26.34
2024	18,171,621	18,138,356	33,265	99.82	4,062,909	0.82

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 Contribution as a % of Covered- Employee Payroll
	(a)	(b)	(a) - (b) = (c)	(d)	(b) / (d)
2015	\$ 198,695	\$ 146,333	\$ 52,362	\$ 2,714,418	5.39%
2016	194,136	151,168	42,968	2,797,345	5.40
2017	264,257	158,352	105,905	2,939,455	5.39
2018	234,629	164,233	70,396	3,031,382	5.42
2019	183,161	182,939	222	3,168,870	5.77
2020	184,044	204,006	(19,962)	3,298,283	6.19
2021	151,639	206,381	(54,742)	3,325,417	6.21
2022	107,493	212,759	(105,266)	3,434,267	6.20
2023	85,002	227,175	(142,173)	3,648,167	6.23
2024	205,583	328,980	(123,397)	4,062,909	8.10

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 member contributions divided by employee contribution rate.

Valuation Date	June 30, 2023
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Closed
Remaining Amortization Period	30 Years
Asset Valuation Method	5-Year smoothed market; no corridor
Inflation	2.25%
Payroll Growth	3.00%
Salary Increases	Service based table of rates ranging from 13.00% with one year of service to 3.00% with 29 or more years of service, including inflation
Investment Rate of Return	7.00%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition.
Healthy Post-retirement Mortality	Pub-2010 General Retiree Mortality Table adjusted for mortality improvements using projection scale MP-2018. Rates are multiplied by a factor of 1.04 for males and 1.10 for females.

Other Information

Benefit Increases After Retirement The post-retirement increase is 1.50% for all future years.

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
2014	4.5 %
2015	(0.1)
2016	15.2
2017	10.5
2018	7.3
2019	4.2
2020	30.3
2021	(6.2)
2022	8.9
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 State Employees 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 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 rate of return for the portfolio. Inflation expectations were applied to derive the nominal rate of return for the portfolio. For each major 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 experience study report dated June 29, 2023.

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 an 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 employee and employer contributions will be made at the current statutory contribution rates. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. As a result, 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 plan'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	\$ 20,427,187	\$ 18,171,621	\$ 16,298,104
Net Position Restricted for Pensions	18,138,356	18,138,356	18,138,356
Net Pension Liability	<u>\$ 2,288,831</u>	<u>\$ 33,265</u>	<u>\$ (1,840,252)</u>

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	\$ 17,605,809	\$ 16,645,007	\$ 960,802	\$ 2,260,334	\$ 2,306,533	
Changes for the Year:						
Service Cost	\$ 342,616		\$ 342,616			\$ 342,616
Interest on Total Pension Liability	1,207,244		1,207,244			1,207,244
Interest on Fiduciary Net Position		\$ 1,147,542 ⁽¹⁾	(1,147,542)			(1,147,542)
Changes in Benefit Terms	-		-			-
Liability Experience Gains and Losses	198,325		198,325	\$ 158,660	\$ -	39,665
Changes in Assumptions ⁽³⁾	(120,835)		(120,835)	-	96,668	(24,167)
Recognition of Deferred Outflows/(Inflows) of Resources Arising from Prior Reporting Periods						
Liability Experience Gains/(Losses)				(30,237)	(3,934)	26,303
Assumption Changes				(375,036)	(297,880)	77,156
Investment Gains/(Losses)				(524,259)	(680,468)	(156,209)
Contributions - Employer		328,980	(328,980)			
Contributions - Employees		223,460	(223,460)			(223,460)
Asset Gain/(Loss)		849,130 ⁽¹⁾	(849,130)	-	679,304	(169,826)
Benefit Payments and Refunds	(1,061,538)	(1,061,538)	-			
Administrative Expenses		(11,826)	11,826			11,826
Other changes ⁽²⁾		17,601	(17,601)			(17,601)
Net Changes	\$ 565,812	\$ 1,493,349	\$ (927,537)	\$ (770,872)	\$ (206,310)	\$ (33,995)
Balance End of Year	\$ 18,171,621	\$ 18,138,356	\$ 33,265	\$ 1,489,462	\$ 2,100,223	

⁽¹⁾ The sum of these items in column (b) equals the net investment income of \$1,996,672.

⁽²⁾ Includes \$224 adjustment to the beginning of year assets.

⁽³⁾ Includes impact of change in actuarial equivalent factors.



Summary of Population Statistics

	Actives	Terminated*		Recipients**			Total
		Deferred Retirement	Other Non-Vested	Service Retirement	Disability Retirement	Survivor	
Members on July 1, 2023	52,459	18,349	11,437	41,718	1,706	4,629	130,298
New members	7,650						7,650
Return to active	536	(266)	(270)	0	0	0	0
Terminated non-vested	(1,899)	0	1,899	0	0	0	0
Service retirements	(1,090)	(732)	0	1,822	0	0	0
Unclassified retirements	0	0	0	36	0	0	36
Terminated deferred	(1,535)	1,535	0	0	0	0	0
Terminated refund/transfer	(564)	(176)	(1,863)	0	0	0	(2,603)
Deaths	(84)	(45)	(17)	(1,096)	(92)	(240)	(1,574)
New beneficiary	0	0	0	0	0	410	410
Disabled	(20)	0	0	0	20	0	0
Data adjustments	0	162	503	57	15	(29)	708
Net change	2,994	478	252	819	(57)	141	4,627
Members on July 1, 2024	55,453	18,827	11,689	42,537	1,649	4,770	134,925

* Includes members in the General and Military Affairs Plans.

** Includes members in the General, Military Affairs and Unclassified Plans.

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	State employees, non-academic staff of the University of Minnesota and employees of certain Metro level government units, unless excluded by law.											
Contributions	Shown as a percent of salary: <table><thead><tr><th><u>Effective as of</u></th><th><u>Member</u></th><th><u>Employer</u></th></tr></thead><tbody><tr><td>July 1, 2023</td><td>5.50%</td><td>6.25%</td></tr><tr><td>July 1, 2025</td><td>6.00%</td><td>6.25%</td></tr></tbody></table> Member contributions are “picked up” according to the provisions of Internal Revenue Code 414(h).			<u>Effective as of</u>	<u>Member</u>	<u>Employer</u>	July 1, 2023	5.50%	6.25%	July 1, 2025	6.00%	6.25%
<u>Effective as of</u>	<u>Member</u>	<u>Employer</u>										
July 1, 2023	5.50%	6.25%										
July 1, 2025	6.00%	6.25%										
Allowable Service	Service during which member contributions were made. May also include certain leaves of absence, military service and periods while temporary Worker's Compensation is paid. Excludes lump sum vacation and severance pay at termination.											
Average Salary	Average of the five highest successive years of Salary. Average Salary is based on all Allowable Service if less than five years.											
Salary	Includes wages, allowances and fees. Excludes lump sum payments at separation, employer contributions to deferred compensation and tax-sheltered annuity plans and benevolent vacation and sick leave donation programs.											
Retirement												
<u>Normal retirement benefit</u>												
Age/Service requirement	First hired before July 1, 1989: (a.) Age 65 and three years of Allowable Service. (b.) Proportionate Retirement Annuity is available at age 65 and one year of Allowable Service. First hired after June 30, 1989: (a.) The greater of age 65 or the age eligible for full Social Security retirement benefits (but not higher than age 66) and three years of Allowable Service. (b.) Proportionate Retirement Annuity is available at normal retirement age and one year of Allowable Service.											
Amount	1.70% of Average Salary for each year of Allowable Service.											

Summary of Plan Provisions (Continued)

Retirement (Continued)

Early retirement

Age/Service requirement

First hired before July 1, 1989:

- (a.) Age 55 and three years of Allowable Service.
- (b.) Any age with 30 years of Allowable Service.
- (c.) Rule of 90: Age plus Allowable Service totals 90.

First hired after June 30, 1989:

- (a.) Age 55 and three years of Allowable Service.

Amount

First hired before July 1, 1989:

The greater of (a) or (b):

- (a.) 1.20% of Average Salary for each of the first ten years of Allowable Service and 1.70% of Average Salary for each subsequent year with reduction of 0.25% for each month the member is under age 65 at time of retirement or under age 62 if 30 or more years of Allowable Service. No reduction if age plus years of Allowable Service totals 90.
- (b.) 1.70% of Average Salary for each year of Allowable Service assuming augmentation to age 65 at 3.00% per year and actuarial reduction for each month the member is under age 65. Augmentation adjustment is phased out over a five-year period starting July 1, 2019, resulting in no augmentation adjustment after June 30, 2024.

First hired after June 30, 1989:

1.70% of Average Salary for each year of Allowable Service assuming augmentation to the age eligible for full Social Security retirement benefit (but not higher than age 66) at 3.00% (2.50% if hired after June 30, 2006) per year and actuarial reduction for each month the member is under the normal retirement age. Augmentation adjustment is phased out over a five-year period starting July 1, 2019, resulting in no augmentation adjustment after June 30, 2024.

Form of payment

Life annuity with return on death of any balance of member contributions over aggregate monthly payments. Actuarially equivalent options are:

- (a.) 50%, 75%, or 100% Joint and Survivor with bounce back feature without additional reduction.
- (b.) 15-year Certain and Life.

Summary of Plan Provisions (Continued)

Retirement (Continued)

Benefit increases

1.5% 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.

Prior to 2002, members who retired under the laws in effect before July 1, 1973, received an additional lump sum payment each year. In 1989, this lump sum payment was the greater of \$25 times each full year of Allowable Service or \$400 per full year of service less any Social Security benefits received or annuity from a Minnesota public employee pension plan. In each following year, the lump sum payment was increased by the same percentage increase that was applied to regular annuities paid from the Minnesota Post Retirement Investment Fund. Effective January 1, 2002, the annual lump sum payment was divided by 12 and paid as a monthly life annuity in the annuity form elected.

Disability

Disability benefit

Age/Service requirement

Total and permanent disability before normal retirement age with three years of Allowable Service.

Amount

Normal Retirement benefit based on Allowable Service and Average Salary at disability without reduction for commencement before normal retirement age.

Payments stop if disability ceases or death occurs. Payments revert to a retirement annuity at normal retirement age. Benefits may be reduced on resumption of partial employment.

Retirement after disability

Age/Service requirement

Normal retirement age with continued disability.

Amount

Any optional annuity continues. Otherwise, a normal retirement benefit equal to the disability benefit paid before normal retirement age, or an actuarially equivalent optional annuity.

Form of payment

Same as for retirement.

Benefit Increases

Same as for retirement.



Summary of Plan Provisions (Continued)

Death

Surviving spouse optional benefit

Age/Service requirement	Member or former member who dies before retirement or disability benefits commence with three years of Allowable Service. If a former member dies before age 55 and has less than 30 years of Allowable Service, benefits commence when the former member would have been age 55. If an active member dies, benefits may commence immediately, regardless of age.
Amount	<p>Surviving spouse receives the 100% joint and survivor benefits using the Normal Retirement formula above. If commencement is prior to age 55, the appropriate early retirement formula described above applies except that one-half the monthly reduction factor is used from age 55 to the commencement age and the Rule of 90 does not apply. In lieu of this benefit, the surviving spouse may elect a refund of member contributions with interest or an actuarially equivalent term certain annuity.</p> <p>If a member dies prior to July 1, 1997, and the beneficiary was not eligible to commence a survivor benefit as of July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.</p>
Benefit increases	Same as for retirement.

Surviving dependent children's benefit

Age/Service requirement	If no surviving spouse, all children (biological or adopted) below age 20 who are dependent for more than half of their support on deceased member.
Amount	Actuarially equivalent 100% joint and survivor annuity to surviving spouse payable to the later of age 20 or five years. The amount is proportionally divided among surviving children.
Benefit increases	Same as for retirement.

Refund of contributions

Age/Service requirement	Active member dies and survivor benefits are not payable or a former member dies before annuity begins or former member who is not entitled to an annuity dies.
Amount	<p>Member's contributions with 6.00% interest through June 30, 2011.</p> <p>Beginning July 1, 2011, a member's contributions increase at 4.00% interest.</p> <p>Beginning July 1, 2018, a member's contributions increase at 3.00% interest.</p>

Summary of Plan Provisions (Continued)

Death (Continued)

Refund of contributions (Continued)

**Age/Service
requirement**

Retired or disabled annuitant who did not select an optional annuity dies, or the remaining recipient of an option dies.

Amount

The excess of the member's contributions over all benefits paid.

Unclassified Plan Provision

Eligible members credited with employee shares in the Unclassified Plan may elect to terminate participation in the Unclassified Plan and be covered by the State Employees Retirement Fund prior to termination of covered employment assuming that the member has acquired at least 10 years of allowable state service (no more than seven years of service if hired after June 30, 2010).

Termination

Refund of contributions

**Age/Service
requirement**

Termination of state service.

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.

Deferred benefit

**Age/Service
requirement**

Three years of Allowable Service

Amount

Benefit computed under law in effect at termination and increased by the following annual augmentation percentage:

- (a.) 0.00% before July 1, 1971;
- (b.) 5.00% from July 1, 1971 to January 1, 1981;
- (c.) 3.00% thereafter (2.50% if hired after June 30, 2006) until January 1 of the year following attainment of age 55 or January 1, 2012, whichever is earlier;
- (d.) 5.00% thereafter until the annuity begins (2.50% if hired after June 30, 2006), but before January 1, 2012;
- (e.) 2.00% from January 1, 2012 through December 31, 2018; and
- (f.) 0.00% from January 1, 2019, thereafter.

Amount is payable at normal or early retirement.

Generally, members active with a public employer the day prior to the privatization of the employer become vested immediately and receive enhanced augmentation.

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%.



Summary of Plan Provisions (Continued)

Combined Service Annuity	<p>Members are eligible for combined service benefits if they:</p> <ul style="list-style-type: none">(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. <p>Members who meet the above requirements must have their benefit based on the following:</p> <ul style="list-style-type: none">(a.) Allowable service in all covered plans is combined in order to determine eligibility for early retirement.(b.) Average salary is based on the high five consecutive years during their entire service in all covered plans.
Actuarial Equivalent Factors	<p>Actuarially equivalent factors based on Pub-2010 mortality for healthy annuitants, reflecting projected mortality improvements using Scale MP-2021 from a base year of 2010, with male rates multiplied by a factor of 1.04 and female rates multiplied by a factor of 1.10, blended 50% males and 50% females, 5.42% post-retirement interest, and 7.0% pre-retirement interest. Based upon statutory requirements; Joint and Survivor factors are based on an interest assumption of 6.50%. Early Retirement Factors will be phased in over three years, beginning July 1, 2024.</p>
Changes in Plan Provisions	<p>The actuarial equivalent factors were updated to reflect changes in assumptions.</p>

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. All actuarial assumptions are prescribed by Minnesota Statutes, the Legislative Commission on Pensions and Retirement (LCPR), or the MSRS Board of Directors. These parties are responsible for selecting the assumptions used for this valuation. Unless otherwise noted, the assumptions are based on the last adopted experience study, dated June 29, 2023. The Allowance for Combined Service Annuity assumptions are based on an analysis completed by the LCPR actuary and documented in a report dated October 2016.

Investment return	7.00% per annum (prescribed by Minnesota Statutes).
Single discount rate	7.00% per annum.
Salary increases	Reported salary at valuation date increased according to the rate table, to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for members with less than one year of service.
Inflation	2.25% per year.
Payroll growth	3.00% per year.
Mortality rates	
Healthy pre-retirement	Pub-2010 General Employee Mortality Table adjusted for mortality improvements using projection scale MP-2021.
Healthy post-retirement	Pub-2010 Healthy Retired General Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Rates are multiplied by a factor of 1.04 for males and 1.10 for females.
Disabled	Pub-2010 General/Teacher Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Rates are multiplied by a factor of 1.10 for males and 1.17 for females.
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	Service-related rates based on experience; see table of sample rates.

Summary of Actuarial Assumptions (Continued)

Disability	Age-related rates based on experience; see table of sample rates.
Allowance for combined service annuity	Liabilities for former, vested members are increased by 4.00%, and liabilities for former, non-vested members are increased by 5.00% to account for the effect of some participants having eligibility for a Combined Service Annuity.
Administrative expenses	In the valuation year, equal to prior year administrative expenses expressed as a percent 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.
Commencement of deferred benefits	Members receiving deferred annuities (including current terminated deferred members) are assumed to begin receiving benefits at normal retirement age.
Percentage married	75% of active male members and 65% of female members are assumed to be married. Actual marital status is used for members in payment status.
Age of spouse	Male members are assumed to have a beneficiary two years younger and female members are assumed to have a beneficiary two years older.
Form of payment	<p>Married members retiring from active status are assumed to elect the subsidized Joint and Survivor form of annuity as follows:</p> <p>Males: 10% elect 50% Joint & Survivor option 15% elect 75% Joint & Survivor option 65% elect 100% Joint & Survivor option</p> <p>Females: 20% elect 50% Joint & Survivor option 10% elect 75% Joint & Survivor option 45% elect 100% Joint & Survivor option</p> <p>Remaining married members and unmarried members are assumed to elect the Straight Life option. Members receiving deferred annuities (including current terminated deferred members) are assumed to elect a life annuity.</p>
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	Withdrawal decrements do not operate during retirement eligibility. Decrement are assumed to occur mid-fiscal year.
Service credit accruals	It is assumed that members accrue one year of service credit per year.
Benefit service	Exact fractional service is used to determine the amount of benefit payable.

Summary of Actuarial Assumptions (Continued)

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	<p>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.</p> <p>In cases where submitted data was missing or incomplete, the following assumptions were applied:</p> <p><u>Data for active members:</u></p> <p>There were 266 members reported with zero or invalid salary (<\$100). We used prior year salary (170 members), if available, otherwise, high five salary with a 10% load to account for salary increases (89 members). If neither pay or high five salary was available, we assumed a value of \$56,000 (7 members).</p> <p>There were 11 members reported with zero or negative service. Due to the small number of members with zero service, and based on direction from MSRS, we used service of 0 years for these members.</p> <p>There were 510 members reported without a gender and 6 members reported with an invalid date of birth. We assumed the member was hired at age 37 and female gender.</p> <p><u>Data for terminated members:</u></p> <p>There were 305 members reported with a missing or invalid benefit. If available, we calculated benefits for these members using the reported Average Salary, Credited Service and Termination Date provided. If Average Salary was not reported or invalid (216 members), we assumed a value of \$58,000. If termination date was not reported (4 members), we assumed the member terminated at age 40 (or current age if younger than 40). If credited service was either not reported or invalid (4 members), we assumed a value of 5.0 years.</p> <p>There were no members with a missing date of birth and 10 members with an invalid gender. We assumed female gender for the valuation.</p> <p><u>Data for members receiving benefits:</u></p> <p>There were 102 members reported without a gender. We assumed female gender for retirees and male gender for survivors. No retired members were reported with an invalid date of birth.</p>

Summary of Actuarial Assumptions (Continued)

Unknown data for certain members (Concluded)	<u>Data for members receiving benefits:</u> <p>There were 11 members reported without a benefit. Due to the small number of members with missing benefits, we made no adjustment to the reported data for members receiving benefits.</p> <p>There were 27 survivor members reported with a certain and life option but with a certain end date prior to the valuation date. These members were excluded from the valuation.</p> <p>There were 117 retirees 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 (i.e., bounce back) if applicable.</p> <p>There were 136 retirees reported with a bounceback annuity but were not reported with a reasonable 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.</p> <p>There were retired members reported with a survivor option and an invalid or missing survivor gender (2,863 members) and/or survivor date of birth (2,444 members). We used the valuation assumptions if the survivor gender or date of birth was missing or invalid.</p>
Changes in actuarial assumptions	<p>The adjustments applied to the mortality table rates were modified slightly, and the mortality improvement scale was updated from MP-2019 to MP-2021.</p> <p>Assumed rates of salary increases were modified as recommended in the experience study dated June 29, 2023. The overall impact is a decrease in gross salary increase rates.</p> <p>Assumed rates of retirement were changed as recommended in the recent experience study. The changes result in slightly higher unreduced (Normal) retirement rates, slightly lower Rule of 90 rates, slightly higher early retirement rates for Tier 1 members, and slightly lower early retirement rates for Tier 2 members.</p> <p>Assumed rates of withdrawal were changed as recommended in the recent experience study. The changes result in slightly more assumed terminations for males and fewer terminations for females.</p> <p>Assumed rates of disability were lowered.</p> <p>Assumed percent married for male retirees was changed from 80% to 75% and for female retirees 60% to 65%.</p> <p>Minor changes to form of payment assumptions and missing participant data assumptions were made as recommended in the recent experience study.</p>

Summary of Actuarial Assumptions (Continued)

Age in 2024	Percent of Members Dying Each Year*					
	Healthy		Healthy		Disability	
	Post-Retirement Mortality**		Pre-Retirement Mortality**		Mortality**	
	Male	Female	Male	Female	Male	Female
20	0.04%	0.02%	0.04%	0.01%	0.47%	0.30%
25	0.03%	0.01%	0.03%	0.01%	0.36%	0.24%
30	0.05%	0.02%	0.05%	0.02%	0.55%	0.42%
35	0.08%	0.04%	0.07%	0.03%	0.77%	0.67%
40	0.09%	0.05%	0.09%	0.04%	0.98%	0.89%
45	0.13%	0.07%	0.11%	0.05%	1.22%	1.12%
50	0.29%	0.22%	0.14%	0.08%	1.67%	1.57%
55	0.42%	0.31%	0.21%	0.12%	2.20%	1.98%
60	0.65%	0.43%	0.32%	0.19%	2.79%	2.34%
65	0.95%	0.64%	0.47%	0.28%	3.35%	2.50%
70	1.46%	1.01%	0.65%	0.42%	3.94%	2.90%
75	2.44%	1.79%	0.96%	0.70%	5.01%	4.05%
80	4.38%	3.32%	1.53%	1.20%	7.13%	6.32%
85	8.10%	6.36%	6.55%	4.97%	10.78%	10.17%
90	14.16%	11.97%	13.62%	10.89%	16.60%	15.15%

* 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-2018 from a base year of 2010.

Age	Percent of Members Decrementing Each Year	
	Disability Retirement	
	Male	Female
20	0.01%	0.00%
25	0.01	0.00
30	0.01	0.00
35	0.01	0.01
40	0.03	0.02
45	0.05	0.05
50	0.11	0.11
55	0.16	0.17
60	0.23	0.25
65	0.00	0.00

Summary of Actuarial Assumptions (Continued)

Age	Percent Retiring Each Year		
	Rule of 90 Eligible	Hired prior to 7/1/1989	Hired after 6/30/1989
55	15.0%	3.0%	3.5%
56	15.0	3.0	3.5
57	11.0	3.0	3.5
58	11.0	6.0	4.0
59	12.0	7.0	4.5
60	15.0	8.0	5.0
61	15.0	9.0	6.0
62	22.0	15.0	12.0
63	22.0	15.0	13.0
64	20.0	15.0	14.0
65	35.0	35.0	22.0
66	35.0	35.0	35.0
67	35.0	35.0	35.0
68	30.0	30.0	30.0
69	25.0	25.0	25.0
70	30.0	30.0	30.0
71+	100.0	100.0	100.0

Summary of Actuarial Assumptions (Concluded)

Salary Scale		Percent of Members Terminating (Withdrawing) Each Year		
Year	Increase	Year	Males	Females
1	11.75%	1	20.00%	20.50%
2	7.50	2	15.00	16.50
3	5.65	3	10.50	12.50
4	5.50	4	8.25	9.75
5	5.20	5	7.00	9.00
6	5.00	6	6.50	8.00
7	4.80	7	5.50	7.50
8	4.60	8	4.50	6.25
9	4.50	9	4.25	5.25
10	4.30	10	3.75	4.75
11	4.20	11	3.50	4.50
12	4.10	12	3.25	4.25
13	4.00	13	3.00	4.00
14	3.90	14	2.50	3.75
15	3.70	15	2.40	3.25
16	3.60	16	2.30	3.25
17	3.50	17	2.20	3.00
18	3.40	18	2.10	2.75
19	3.40	19	2.00	2.50
20	3.40	20	1.75	2.50
21	3.30	21	1.75	2.50
22	3.20	22	1.75	2.50
23	3.20	23	1.75	2.25
24	3.20	24	1.50	1.75
25	3.20	25	1.50	1.75
26	3.20	26	1.25	1.75
27	3.00	27	1.00	1.50
28	3.00	28	1.00	1.50
29	3.00	29	1.00	1.00
30+	3.00	30+	1.00	1.00

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 expected 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 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). **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	Employer		Contributions on Future Payroll toward Current UAL ¹	Total Contributions
				Contributions from Current Employees	Contributions for Current Employees		
	(a)	(b)	(c) = (a) + (b)	(d) = (a) * 6.0% ²	(e) = (a) * 6.25%	(f)	(g) = (d) + (e) + (f)
2024	\$ 4,062,909		\$ 4,062,909				
2025	4,109,140	\$ 112,952	4,222,092	\$ 226,003	\$ 256,821	\$ 2,745	\$ 485,569
2026	3,902,351	446,404	4,348,755	234,141	243,897	13,080	491,118
2027	3,716,433	762,785	4,479,218	222,986	232,277	22,350	477,613
2028	3,572,449	1,041,145	4,613,594	214,347	223,278	30,506	468,131
2029	3,440,072	1,311,930	4,752,002	206,404	215,005	38,440	459,849
2030	3,315,659	1,578,903	4,894,562	198,940	207,229	46,262	452,431
2031	3,198,191	1,843,208	5,041,399	191,891	199,887	54,006	445,784
2032	3,086,462	2,106,179	5,192,641	185,188	192,904	61,711	439,803
2033	2,978,473	2,369,947	5,348,420	178,708	186,155	69,439	434,302
2034	2,872,408	2,636,465	5,508,873	172,344	179,525	77,248	429,117
2035	2,767,023	2,907,116	5,674,139	166,021	172,939	85,179	424,139
2036	2,662,640	3,181,723	5,844,363	159,758	166,415	93,224	419,397
2037	2,560,498	3,459,196	6,019,694	153,630	160,031	101,354	415,015
2038	2,460,531	3,739,754	6,200,285	147,632	153,783	109,575	410,990
2039	2,361,828	4,024,465	6,386,293	141,710	147,614	117,917	407,241
2040	2,263,319	4,314,563	6,577,882	135,799	141,457	126,417	403,673
2041	2,163,750	4,611,469	6,775,219	129,825	135,234	135,116	400,175
2042	2,062,990	4,915,485	6,978,475	123,779	128,937	144,024	396,740
2043	1,961,500	5,226,330	7,187,830	117,690	122,594	153,131	393,415
2044	1,858,517	5,544,947	7,403,464	111,511	116,157	162,467	390,135
2045	1,752,929	5,872,639	7,625,568	105,176	109,558	172,068	386,802
2046	1,644,729	6,209,606	7,854,335	98,684	102,796	181,941	383,421
2047	1,535,053	6,554,912	8,089,965	92,103	95,941	192,059	380,103
2048	1,425,210	6,907,454	8,332,664	85,513	89,076	202,388	376,977
2049	1,315,587	7,267,057	8,582,644	78,935	82,224	212,925	374,084
2050	1,206,430	7,633,694	8,840,124	72,386	75,402	223,667	371,455
2051	1,098,751	8,006,576	9,105,327	65,925	68,672	234,593	369,190
2052	994,044	8,384,443	9,378,487	59,643	62,128	245,664	367,435
2053	893,282	8,766,560	9,659,842	53,597	55,830	256,860	366,287
2054	797,228	9,152,409	9,949,637	47,834	49,827	268,166	365,827
2055	706,355	9,541,771	10,248,126	42,381	44,147	279,574	366,102
2056	620,625	9,934,945	10,555,570	37,237	38,789	291,094	367,120
2057	540,046	10,332,191	10,872,237	32,403	33,753	302,733	368,889
2058	465,167	10,733,237	11,198,404	27,910	29,073	314,484	371,467
2059	396,202	11,138,154	11,534,356	23,772	24,763	326,348	374,883
2060	333,306	11,547,081	11,880,387	19,998	20,832	338,329	379,159
2061	276,174	11,960,625	12,236,799	16,570	17,261	350,446	384,277
2062	224,503	12,379,400	12,603,903	13,470	14,031	362,716	390,217
2063	178,609	12,803,411	12,982,020	10,717	11,163	375,140	397,020
2064	138,641	13,232,839	13,371,480	8,318	8,665	387,722	404,705
2065	104,737	13,667,888	13,772,625	6,284	6,546	400,469	413,299
2066	76,648	14,109,155	14,185,803	4,599	4,790	413,398	422,787
2067	53,913	14,557,465	14,611,378	3,235	3,370	426,534	433,139
2068	36,448	15,013,271	15,049,719	2,187	2,278	439,889	444,354
2069	23,820	15,477,390	15,501,210	1,429	1,489	453,488	456,406
2070	14,896	15,951,351	15,966,247	894	931	467,375	469,200
2071	8,761	16,436,473	16,445,234	526	548	481,589	482,663
2072	4,597	16,933,994	16,938,591	276	287	496,166	496,729
2073	2,142	17,444,607	17,446,749	129	134	511,127	511,390
2074	1,029	17,969,122	17,970,151	62	64	526,495	526,621

1. Equal to total contributions (ultimately 12.25% of payroll for new employees) net of normal cost and expenses (9.32% of payroll).
2. Ultimate contribution rate; projected 2024 employee contributions are based on a 5.5% of pay contribution.

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			Projected Contributions			
	Payroll for Current Employees	Payroll for New Employees	Total Employee Payroll	Employer		Contributions on	
				Contributions from Current Employees	Contributions for Current Employees	Future Payroll toward Current UAL ¹	Total Contributions
	(a)	(b)	(c) = (a) + (b)	(d) = (a) * 6.0% ²	(e) = (a) * 6.25%	(f)	(g) = (d) + (e) + (f)
2075	\$ 448	\$ 18,508,808	\$ 18,509,256	\$ 27	\$ 28	\$ 542,308	\$ 542,363
2076	158	19,064,376	19,064,534	9	10	558,586	558,605
2077	42	19,636,428	19,636,470	3	3	575,347	575,353
2078	10	20,225,554	20,225,564	1	1	592,609	592,611
2079	2	20,832,329	20,832,331	-	-	610,387	610,387
2080	-	21,457,300	21,457,300	-	-	628,699	628,699
2081	-	22,101,019	22,101,019	-	-	647,560	647,560
2082	-	22,764,050	22,764,050	-	-	666,987	666,987
2083	-	23,446,972	23,446,972	-	-	686,996	686,996
2084	-	24,150,381	24,150,381	-	-	707,606	707,606
2085	-	24,874,892	24,874,892	-	-	728,834	728,834
2086	-	25,621,139	25,621,139	-	-	750,699	750,699
2087	-	26,389,773	26,389,773	-	-	773,220	773,220
2088	-	27,181,466	27,181,466	-	-	796,417	796,417
2089	-	27,996,910	27,996,910	-	-	820,309	820,309
2090	-	28,836,818	28,836,818	-	-	844,919	844,919
2091	-	29,701,922	29,701,922	-	-	870,266	870,266
2092	-	30,592,980	30,592,980	-	-	896,374	896,374
2093	-	31,510,769	31,510,769	-	-	923,266	923,266
2094	-	32,456,092	32,456,092	-	-	950,964	950,964
2095	-	33,429,775	33,429,775	-	-	979,492	979,492
2096	-	34,432,668	34,432,668	-	-	1,008,877	1,008,877
2097	-	35,465,648	35,465,648	-	-	1,039,143	1,039,143
2098	-	36,529,618	36,529,618	-	-	1,070,318	1,070,318
2099	-	37,625,506	37,625,506	-	-	1,102,427	1,102,427
2100	-	38,754,271	38,754,271	-	-	1,135,500	1,135,500
2101	-	39,916,900	39,916,900	-	-	1,169,565	1,169,565
2102	-	41,114,407	41,114,407	-	-	1,204,652	1,204,652
2103	-	42,347,839	42,347,839	-	-	1,240,792	1,240,792
2104	-	43,618,274	43,618,274	-	-	1,278,015	1,278,015
2105	-	44,926,822	44,926,822	-	-	1,316,356	1,316,356
2106	-	46,274,627	46,274,627	-	-	1,355,847	1,355,847
2107	-	47,662,866	47,662,866	-	-	1,396,522	1,396,522
2108	-	49,092,752	49,092,752	-	-	1,438,418	1,438,418
2109	-	50,565,534	50,565,534	-	-	1,481,570	1,481,570
2110	-	52,082,500	52,082,500	-	-	1,526,017	1,526,017
2111	-	53,644,975	53,644,975	-	-	1,571,798	1,571,798
2112	-	55,254,324	55,254,324	-	-	1,618,952	1,618,952
2113	-	56,911,954	56,911,954	-	-	1,667,520	1,667,520
2114	-	58,619,313	58,619,313	-	-	1,717,546	1,717,546
2115	-	60,377,892	60,377,892	-	-	1,769,072	1,769,072
2116	-	62,189,229	62,189,229	-	-	1,822,144	1,822,144
2117	-	64,054,906	64,054,906	-	-	1,876,809	1,876,809
2118	-	65,976,553	65,976,553	-	-	1,933,113	1,933,113
2119	-	67,955,850	67,955,850	-	-	1,991,106	1,991,106
2120	-	69,994,525	69,994,525	-	-	2,050,840	2,050,840
2121	-	72,094,361	72,094,361	-	-	2,112,365	2,112,365
2122	-	74,257,192	74,257,192	-	-	2,175,736	2,175,736
2123	-	76,484,907	76,484,907	-	-	2,241,008	2,241,008
2124	-	78,779,455	78,779,455	-	-	2,308,238	2,308,238

1. Equal to total contributions (ultimately 12.25% of payroll for new employees) net of normal cost and expenses (9.32% of payroll).
2. Ultimate contribution rate; projected 2024 employee contributions are based on a 5.5% of pay contribution.

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 Net Fiduciary Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Projected Ending Plan Fiduciary Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2025	\$ 18,138,356	\$ 485,569	\$ 1,090,965	\$ 12,738	\$ 1,248,416	\$ 18,768,638
2026	18,768,638	491,118	1,137,746	12,097	1,291,139	19,401,051
2027	19,401,051	477,613	1,184,918	11,521	1,333,340	20,015,565
2028	20,015,565	468,131	1,227,364	11,075	1,374,585	20,619,842
2029	20,619,842	459,849	1,268,559	10,664	1,415,196	21,215,662
2030	21,215,662	452,431	1,307,451	10,279	1,455,323	21,805,686
2031	21,805,686	445,784	1,345,099	9,914	1,495,113	22,391,570
2032	22,391,570	439,803	1,381,430	9,568	1,534,681	22,975,056
2033	22,975,056	434,302	1,415,179	9,233	1,574,186	23,559,133
2034	23,559,133	429,117	1,446,806	8,904	1,613,816	24,146,356
2035	24,146,356	424,139	1,477,081	8,578	1,653,720	24,738,557
2036	24,738,557	419,397	1,506,421	8,254	1,694,013	25,337,293
2037	25,337,293	415,015	1,533,579	7,938	1,734,850	25,945,641
2038	25,945,641	410,990	1,557,834	7,628	1,776,472	26,567,641
2039	26,567,641	407,241	1,579,784	7,322	1,819,138	27,206,915
2040	27,206,915	403,673	1,599,900	7,016	1,863,083	27,866,755
2041	27,866,755	400,175	1,620,663	6,708	1,908,447	28,548,007
2042	28,548,007	396,740	1,640,459	6,395	1,955,347	29,253,240
2043	29,253,240	393,415	1,659,584	6,081	2,003,951	29,984,942
2044	29,984,942	390,135	1,678,193	5,761	2,054,428	30,745,550
2045	30,745,550	386,802	1,697,440	5,434	2,106,905	31,536,383
2046	31,536,383	383,421	1,718,012	5,099	2,161,451	32,358,144
2047	32,358,144	380,103	1,739,327	4,759	2,218,138	33,212,299
2048	33,212,299	376,977	1,760,639	4,418	2,277,100	34,101,318
2049	34,101,318	374,084	1,781,943	4,078	2,338,510	35,027,892
2050	35,027,892	371,455	1,803,533	3,740	2,402,549	35,994,622
2051	35,994,622	369,190	1,824,593	3,406	2,469,429	37,005,242
2052	37,005,242	367,435	1,845,053	3,082	2,539,419	38,063,960
2053	38,063,960	366,287	1,863,823	2,769	2,612,855	39,176,510
2054	39,176,510	365,827	1,880,414	2,471	2,690,157	40,349,608
2055	40,349,608	366,102	1,894,368	2,190	2,771,813	41,590,965
2056	41,590,965	367,120	1,906,053	1,924	2,858,350	42,908,458
2057	42,908,458	368,889	1,915,849	1,674	2,950,307	44,310,130
2058	44,310,130	371,467	1,922,854	1,442	3,048,279	45,805,580
2059	45,805,580	374,883	1,926,966	1,228	3,152,944	47,405,213
2060	47,405,213	379,159	1,927,965	1,033	3,265,038	49,120,412
2061	49,120,412	384,277	1,925,537	856	3,385,368	50,963,664
2062	50,963,664	390,217	1,919,901	696	3,514,799	52,948,084
2063	52,948,084	397,020	1,910,414	554	3,654,274	55,088,410
2064	55,088,410	404,705	1,896,238	430	3,804,853	57,401,301
2065	57,401,301	413,299	1,877,079	325	3,967,714	59,904,911
2066	59,904,911	422,787	1,852,342	238	4,144,147	62,619,266
2067	62,619,266	433,139	1,822,157	167	4,335,549	65,565,629
2068	65,565,629	444,354	1,784,915	113	4,543,464	68,768,419
2069	68,768,419	456,406	1,740,182	74	4,769,615	72,254,183
2070	72,254,183	469,200	1,690,255	46	5,015,777	76,048,858
2071	76,048,858	482,663	1,635,972	27	5,283,736	80,179,256
2072	80,179,256	496,729	1,577,954	14	5,575,345	84,673,362
2073	84,673,362	511,390	1,516,513	7	5,892,551	89,560,782
2074	89,560,782	526,621	1,452,134	3	6,237,410	94,872,676

For purposes of this projection, we assumed the 6.25% 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 Net Fiduciary Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Projected Ending Plan Fiduciary Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2075	\$ 94,872,676	\$ 542,363	\$ 1,385,553	\$ 1	\$ 6,612,075	\$ 100,641,559
2076	100,641,559	558,605	1,317,132	-	7,018,810	106,901,842
2077	106,901,842	575,353	1,247,201	-	7,460,012	113,690,006
2078	113,690,006	592,611	1,176,124	-	7,938,223	121,044,714
2079	121,044,714	610,387	1,104,293	-	8,456,136	129,006,944
2080	129,006,944	628,699	1,032,108	-	9,016,606	137,620,141
2081	137,620,141	647,560	959,990	-	9,622,660	146,930,371
2082	146,930,371	666,987	888,373	-	10,277,508	156,986,493
2083	156,986,493	686,996	817,694	-	10,984,557	167,840,352
2084	167,840,352	707,606	748,380	-	11,747,422	179,547,000
2085	179,547,000	728,834	680,839	-	12,569,941	192,164,937
2086	192,164,937	750,699	615,457	-	13,456,199	205,756,379
2087	205,756,379	773,220	552,586	-	14,410,538	220,387,551
2088	220,387,551	796,417	492,550	-	15,437,584	236,129,002
2089	236,129,002	820,309	435,634	-	16,542,266	253,055,944
2090	253,055,944	844,919	382,091	-	17,729,841	271,248,612
2091	271,248,612	870,266	332,132	-	19,005,919	290,792,665
2092	290,792,665	896,374	285,929	-	20,376,491	311,779,601
2093	311,779,601	923,266	243,608	-	21,847,958	334,307,216
2094	334,307,216	950,964	205,248	-	23,427,164	358,480,096
2095	358,480,096	979,492	170,872	-	25,121,430	384,410,146
2096	384,410,146	1,008,877	140,446	-	26,938,591	412,217,168
2097	412,217,168	1,039,143	113,876	-	28,887,038	442,029,474
2098	442,029,474	1,070,318	91,006	-	30,975,759	473,984,545
2099	473,984,545	1,102,427	71,622	-	33,214,386	508,229,737
2100	508,229,737	1,135,500	55,454	-	35,613,244	544,923,027
2101	544,923,027	1,169,565	42,208	-	38,183,402	584,233,786
2102	584,233,786	1,204,652	31,557	-	40,936,729	626,343,611
2103	626,343,611	1,240,792	23,158	-	43,885,949	671,447,193
2104	671,447,193	1,278,015	16,672	-	47,044,704	719,753,240
2105	719,753,240	1,316,356	11,773	-	50,427,615	771,485,438
2106	771,485,438	1,355,847	8,155	-	54,050,352	826,883,482
2107	826,883,482	1,396,522	5,547	-	57,929,704	886,204,162
2108	886,204,162	1,438,418	3,711	-	62,083,657	949,722,525
2109	949,722,525	1,481,570	2,452	-	66,531,470	1,017,733,113
2110	1,017,733,113	1,526,017	1,609	-	71,293,770	1,090,551,291
2111	1,090,551,291	1,571,798	1,058	-	76,392,636	1,168,514,667
2112	1,168,514,667	1,618,952	706	-	81,851,707	1,251,984,620
2113	1,251,984,620	1,667,520	485	-	87,696,283	1,341,347,938
2114	1,341,347,938	1,717,546	347	-	93,953,441	1,437,018,578
2115	1,437,018,578	1,769,072	260	-	100,652,162	1,539,439,553
2116	1,539,439,553	1,822,144	204	-	107,823,458	1,649,084,951
2117	1,649,084,951	1,876,809	165	-	115,500,518	1,766,462,113
2118	1,766,462,113	1,933,113	137	-	123,718,858	1,892,113,947
2119	1,892,113,947	1,991,106	114	-	132,516,482	2,026,621,421
2120	2,026,621,421	2,050,840	95	-	141,934,062	2,170,606,228
2121	2,170,606,228	2,112,365	78	-	152,015,116	2,324,733,630
2122	2,324,733,630	2,175,736	63	-	162,806,215	2,489,715,517
2123	2,489,715,517	2,241,008	50	-	174,357,193	2,666,313,667
2124	2,666,313,667	2,308,238	118	-	186,721,375	2,855,343,162

For purposes of this projection, we assumed the 6.25% statutory 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	\$ 18,138,356	\$ 1,090,965	\$ 1,090,965	\$ -	\$ 1,054,675	\$ -	\$ 1,054,675
2026	18,768,638	1,137,746	1,137,746	-	1,027,945	-	1,027,945
2027	19,401,051	1,184,918	1,184,918	-	1,000,527	-	1,000,527
2028	20,015,565	1,227,364	1,227,364	-	968,568	-	968,568
2029	20,619,842	1,268,559	1,268,559	-	935,586	-	935,586
2030	21,215,662	1,307,451	1,307,451	-	901,187	-	901,187
2031	21,805,686	1,345,099	1,345,099	-	866,482	-	866,482
2032	22,391,570	1,381,430	1,381,430	-	831,669	-	831,669
2033	22,975,056	1,415,179	1,415,179	-	796,250	-	796,250
2034	23,559,133	1,446,806	1,446,806	-	760,790	-	760,790
2035	24,146,356	1,477,081	1,477,081	-	725,896	-	725,896
2036	24,738,557	1,506,421	1,506,421	-	691,883	-	691,883
2037	25,337,293	1,533,579	1,533,579	-	658,278	-	658,278
2038	25,945,641	1,557,834	1,557,834	-	624,943	-	624,943
2039	26,567,641	1,579,784	1,579,784	-	592,288	-	592,288
2040	27,206,915	1,599,900	1,599,900	-	560,589	-	560,589
2041	27,866,755	1,620,663	1,620,663	-	530,714	-	530,714
2042	28,548,007	1,640,459	1,640,459	-	502,053	-	502,053
2043	29,253,240	1,659,584	1,659,584	-	474,678	-	474,678
2044	29,984,942	1,678,193	1,678,193	-	448,599	-	448,599
2045	30,745,550	1,697,440	1,697,440	-	424,060	-	424,060
2046	31,536,383	1,718,012	1,718,012	-	401,121	-	401,121
2047	32,358,144	1,739,327	1,739,327	-	379,530	-	379,530
2048	33,212,299	1,760,639	1,760,639	-	359,047	-	359,047
2049	34,101,318	1,781,943	1,781,943	-	339,618	-	339,618
2050	35,027,892	1,803,533	1,803,533	-	321,246	-	321,246
2051	35,994,622	1,824,593	1,824,593	-	303,736	-	303,736
2052	37,005,242	1,845,053	1,845,053	-	287,048	-	287,048
2053	38,063,960	1,863,823	1,863,823	-	270,999	-	270,999
2054	39,176,510	1,880,414	1,880,414	-	255,524	-	255,524
2055	40,349,608	1,894,368	1,894,368	-	240,580	-	240,580
2056	41,590,965	1,906,053	1,906,053	-	226,228	-	226,228
2057	42,908,458	1,915,849	1,915,849	-	212,514	-	212,514
2058	44,310,130	1,922,854	1,922,854	-	199,338	-	199,338
2059	45,805,580	1,926,966	1,926,966	-	186,695	-	186,695
2060	47,405,213	1,927,965	1,927,965	-	174,572	-	174,572
2061	49,120,412	1,925,537	1,925,537	-	162,946	-	162,946
2062	50,963,664	1,919,901	1,919,901	-	151,840	-	151,840
2063	52,948,084	1,910,414	1,910,414	-	141,206	-	141,206
2064	55,088,410	1,896,238	1,896,238	-	130,989	-	130,989
2065	57,401,301	1,877,079	1,877,079	-	121,182	-	121,182
2066	59,904,911	1,852,342	1,852,342	-	111,762	-	111,762
2067	62,619,266	1,822,157	1,822,157	-	102,748	-	102,748
2068	65,565,629	1,784,915	1,784,915	-	94,064	-	94,064
2069	68,768,419	1,740,182	1,740,182	-	85,707	-	85,707
2070	72,254,183	1,690,255	1,690,255	-	77,802	-	77,802
2071	76,048,858	1,635,972	1,635,972	-	70,377	-	70,377
2072	80,179,256	1,577,954	1,577,954	-	63,440	-	63,440
2073	84,673,362	1,516,513	1,516,513	-	56,981	-	56,981
2074	89,560,782	1,452,134	1,452,134	-	50,993	-	50,993

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	\$ 94,872,676	\$ 1,385,553	\$ 1,385,553	\$ -	\$ 45,472	\$ -	\$ 45,472
2076	100,641,559	1,317,132	1,317,132	-	40,398	-	40,398
2077	106,901,842	1,247,201	1,247,201	-	35,751	-	35,751
2078	113,690,006	1,176,124	1,176,124	-	31,508	-	31,508
2079	121,044,714	1,104,293	1,104,293	-	27,648	-	27,648
2080	129,006,944	1,032,108	1,032,108	-	24,150	-	24,150
2081	137,620,141	959,990	959,990	-	20,993	-	20,993
2082	146,930,371	888,373	888,373	-	18,156	-	18,156
2083	156,986,493	817,694	817,694	-	15,619	-	15,619
2084	167,840,352	748,380	748,380	-	13,359	-	13,359
2085	179,547,000	680,839	680,839	-	11,359	-	11,359
2086	192,164,937	615,457	615,457	-	9,596	-	9,596
2087	205,756,379	552,586	552,586	-	8,052	-	8,052
2088	220,387,551	492,550	492,550	-	6,708	-	6,708
2089	236,129,002	435,634	435,634	-	5,545	-	5,545
2090	253,055,944	382,091	382,091	-	4,545	-	4,545
2091	271,248,612	332,132	332,132	-	3,692	-	3,692
2092	290,792,665	285,929	285,929	-	2,971	-	2,971
2093	311,779,601	243,608	243,608	-	2,365	-	2,365
2094	334,307,216	205,248	205,248	-	1,863	-	1,863
2095	358,480,096	170,872	170,872	-	1,449	-	1,449
2096	384,410,146	140,446	140,446	-	1,113	-	1,113
2097	412,217,168	113,876	113,876	-	844	-	844
2098	442,029,474	91,006	91,006	-	630	-	630
2099	473,984,545	71,622	71,622	-	463	-	463
2100	508,229,737	55,454	55,454	-	335	-	335
2101	544,923,027	42,208	42,208	-	239	-	239
2102	584,233,786	31,557	31,557	-	167	-	167
2103	626,343,611	23,158	23,158	-	114	-	114
2104	671,447,193	16,672	16,672	-	77	-	77
2105	719,753,240	11,773	11,773	-	51	-	51
2106	771,485,438	8,155	8,155	-	33	-	33
2107	826,883,482	5,547	5,547	-	21	-	21
2108	886,204,162	3,711	3,711	-	13	-	13
2109	949,722,525	2,452	2,452	-	8	-	8
2110	1,017,733,113	1,609	1,609	-	5	-	5
2111	1,090,551,291	1,058	1,058	-	3	-	3
2112	1,168,514,667	706	706	-	2	-	2
2113	1,251,984,620	485	485	-	1	-	1
2114	1,341,347,938	347	347	-	1	-	1
2115	1,437,018,578	260	260	-	1	-	1
2116	1,539,439,553	204	204	-	-	-	-
2117	1,649,084,951	165	165	-	-	-	-
2118	1,766,462,113	137	137	-	-	-	-
2119	1,892,113,947	114	114	-	-	-	-
2120	2,026,621,421	95	95	-	-	-	-
2121	2,170,606,228	78	78	-	-	-	-
2122	2,324,733,630	63	63	-	-	-	-
2123	2,489,715,517	50	50	-	-	-	-
2124	2,666,313,667	118	118	-	-	-	-
Totals					\$ 21,292,814	\$ -	\$ 21,292,814

Totals may not add due to rounding.



SECTION H

GLOSSARY OF TERMS

Glossary of Terms

<i>Accrued Service</i>	Service credited under the system which was rendered before the date of the actuarial valuation.
<i>Actuarial Accrued Liability (AAL)</i>	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.”
<i>Actuarial Assumptions</i>	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.
<i>Actuarial Cost Method</i>	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.
<i>Actuarial Equivalent</i>	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.
<i>Actuarial Gain (Loss)</i>	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.
<i>Actuarial Present Value (APV)</i>	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.
<i>Actuarial Valuation</i>	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.
<i>Actuarial Valuation Date</i>	The date as of which an actuarial valuation is performed.
<i>Actuarially Determined Contribution (ADC)</i>	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

<i>Amortization Method</i>	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).
<i>Amortization Payment</i>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<i>Cost-of-Living Adjustments</i>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i>	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.
<i>Covered-Employee Payroll</i>	The payroll of covered employees, which is typically only the pensionable pay (meets the statutory salary definition) and does not include pay above any pay cap.
<i>Deferred Inflows and Outflows of Resources</i>	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.
<i>Discount Rate or Single Discount Rate</i>	<p>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:</p> <ol style="list-style-type: none">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.
<i>Entry Age Actuarial Cost Method or Entry Age Normal (EAN)</i>	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

<i>Fiduciary Net Position</i>	The fiduciary net position is the value of the net assets of the trust restricted for pension benefits.
<i>GASB</i>	The Governmental Accounting Standards Board is an organization that exists with authority to promulgate accounting standards for state and local governmental entities.
<i>Long-Term Expected Rate of Return</i>	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.
<i>Money-Weighted Rate of Return</i>	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.
<i>Multiple-Employer Defined Benefit Pension Plan</i>	A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
<i>Municipal Bond Rate</i>	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.
<i>Net Pension Liability (NPL)</i>	The NPL is the liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit pension plan.
<i>Non-Employer Contributing Entities</i>	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.
<i>Normal Cost</i>	The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.
<i>Other Postemployment Benefits (OPEB)</i>	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.
<i>Real Rate of Return</i>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<i>Service Cost</i>	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 experience 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 pension liability of the fund. For purposes of the GASB Statement No. 67, the asset valuation method is equal to the market value of assets.