Public Employees Retirement Association of Minnesota

General Employees Retirement Plan
GASB Statements No. 67 and No. 68 Accounting and Financial Reporting for Pensions
June 30, 2023

800.521.0498 | P: 248.799.9000 | www.grsconsulting.com

December 7, 2023

Public Employees Retirement Association of Minnesota
General Employees Retirement Plan
St. Paul, Minnesota

Dear Trustees of the General Employees Retirement Plan:

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 General Employees Retirement Plan, as amended by 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 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 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 obligations. 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. PERA is responsible for preparing the Schedule of Employer Allocations and the Schedule of Pension Amounts by Employer. This report may be provided to parties other than the Public Employees Retirement Association (PERA) only in its entirety and only with the permission of PERA. GRS is not responsible for unauthorized use of this report.

This report is based upon information, furnished to us by PERA, 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 Plan and should be considered in conjunction with that report. Please see the actuarial valuation report as of June 30, 2023 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

277 Coon Rapids Boulevard | Suite 212 | Coon Rapids, Minnesota 55433-2629

To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the General Employees Retirement Plan 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.

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

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

Sheryl Christensen

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

BJW/SLC:rmn

Table of Contents

SECTION A

EXECUTIVE SUMMARY

Executive Summary
as of June 30, 2023 (Dollars in Thousands)

		2023
Actuarial Valuation Date		June 30, 2023
Measurement Date of the Net Pension Liability		June 30, 2023
Employer's Fiscal Year Ending Date (Reporting Date)		Varies by Employer
Membership		
Number of		
- Service Retirements		106,250
- Survivors		9,562
- Disability Retirements		3,268
- Deferred Retirements		70,221
- Terminated Other Non-vested		88,292
- Active Members		154,261
- Total		431,854
Covered Payroll	$	7,493,954 [1]
Net Pension Liability		
Total Pension Liability	$	33,092,665
Plan Fiduciary Net Position	$	27,500,777
Net Pension Liability	$	5,591,888
Plan Fiduciary Net Position as a Percentage of Total Pension Liability		83.10%
Net Pension Liability as a Percentage of Covered Payroll		74.62%
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		3.86% [2]
Last year ending June 30 in the 2024 to 2123 projection period for which projected benefit payments are fully-funded		2123
Total Pension Expense/(Income)	$	839,500

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

		Deferred Outflows of Resources		Deferred Inflows of Resources
Difference between expected and actual experience	$	183,639	$	38,521
Changes in assumptions	$	905,248	$	1,532,689
Net difference between projected and actual earnings on pension plan investments	$	2,293,599	$	2,502,716
Total	$	3,382,486	$	4,073,926

[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 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 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. Governmental Accounting Standards Board (GASB) Statement No. 82, Pension Issues, is an amendment to 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 or local governments 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 General Employees Retirement Plan subsequent to the measurement date of June 30, 2023.

The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of the liability 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.

Both GASB Statement No. 67 and No. 68 require the notes of the financial statements for the employers and pension plans, to include certain additional information. The list of disclosure items should include:

- A description of benefits provided by the plan;
- The type 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 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.

Required Supplementary Information

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

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

Measurement of the Net Pension Liability

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

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

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

1. The normal cost of the plan is expected to remain approximately level as a percent of pay;
2. The funded status of the plan is expected to gradually improve and is expected to be 100% funded within the next 25 years: and
3. The unfunded liability will grow initially as a dollar amount for 3 years (based on the current 25-year amortization period and if contributions are equal to the required contribution 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, 2023 and a measurement date of June 30, 2023.

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 3.86% (based on the weekly rate closest to but not later than the measurement date of the Fidelity "20-Year Municipal GO AA Index"); 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, 2023 (Dollars in Thousands)

A. Expense		
1. Service Cost	$	675,709
2. Interest on the Total Pension Liability	$	2,168,019
3. Current-Period Benefit Changes	$	28,123
4. Employee Contributions (made negative for addition here)	$	(487,107)
5. Projected Earnings on Plan Investments (made negative for addition here)	$	(1,666,028)
6. Pension Plan Administrative Expense	$	14,459
7. Other Changes in Plan Fiduciary Net Position	$	(204)
8. Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability		
Arising from Current Reporting Period	$	46,512
9. Recognition of Outflow (Inflow) of Resources due to assumption changes		
Arising from Current Reporting Period	$	(510,897)
10. Recognition of Outflow (Inflow) of Resources due to the difference between projected (6.50%) and actual earnings on Pension Plan Investments		
Arising from Current Reporting Period	$	(121,307)
11. **Increase/(Decrease) from Experience in Current Reporting Period**	**$**	**147,279**
12. Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability		
Arising from Prior Reporting Periods	$	(24,032)
13. Recognition of Outflow (Inflow) of Resources due to assumption changes		
Arising from Prior Reporting Periods	$	854,986
14. Recognition of Outflow (Inflow) of Resources due to the difference between projected and actual earnings on Pension Plan Investments		
Arising from Prior Reporting Periods	$	(138,733)
15. Total Pension Expense / (Income)	**$**	**839,500**

Recognition of Deferred Outflows and Inflows of Resources

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 1,571,189 years. Additionally, the total plan membership (active employees and inactive employees) was 419,278. 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 4.0000 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, 2023 (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	$	186,049
2. Assumption Changes (gains) or losses	$	(2,043,586)
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		4.0000
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience of the Total Pension Liability	$	46,512
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	$	(510,897)
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	$	(464,385)
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	$	139,537
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	$	(1,532,689)
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	$	(1,393,152)
B. Outflows (Inflows) of Resources due to Assets		
1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	$	(606,535)
2. Recognition period for Assets {in years}		5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	$	(121,307)
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	$	(485,228)

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended June 30, 2023 (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 of Resources
1. Due to Liabilities	$ 955,763	$ 589,194	$ 366,569
2. Due to Assets	$ 870,011	$ 1,130,051	$ (260,040)
3. Total	$ 1,825,774	$ 1,719,245	$ 106,529

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

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	$ 68,564	$ 46,084	$ 22,480
2. Assumption Changes	$ 887,199	$ 543,110	$ 344,089
3. Net Difference between projected and actual earnings on pension plan investments	$ 870,011	$ 1,130,051	$ (260,040)
4. Total	$ 1,825,774	$ 1,719,245	$ 106,529

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 of Resources
1. Differences between expected and actual experience	$ 183,639	$ 38,521	$ 145,118
2. Assumption Changes	$ 905,248	$ 1,532,689	$ (627,441)
3. Net Difference between projected and actual earnings on pension plan investments	$ 2,293,599	$ 2,502,716	$ (209,117)
4. Total	$ 3,382,486	$ 4,073,926	$ (691,440)

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

Year Ending June 30	Net Deferred Outflows of Resources
2024	$ 137,395
2025	$ (838,086)
2026	$ 130,558
2027	$ (121,307)
2028	$ -
Thereafter	$ -
Total	$ (691,440)

Recognition of Deferred Outflows and Inflows of Resources
Fiscal Year Ended June 30, 2023 (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	$ (30,245)	4.0000	$ (7,562)	$ 0	0.0000
2021	$ (154,087)	4.0000	$ (38,522)	$ (38,521)	1.0000
2022	$ 88,206	4.0000	$ 22,052	$ 44,102	2.0000
2023	$ 186,049	4.0000	$ 46,512	$ 139,537	3.0000
Total			**$ 22,480**	**$ 145,118**	
Deferred Outflow (Inflow) Due to Assumption Changes					
2020	$ (128,849)	4.0000	$ (32,213)	$ 0	0.0000
2021	$ 3,476,596	4.0000	$ 869,149	$ 869,149	1.0000
2022	$ 72,199	4.0000	$ 18,050	$ 36,099	2.0000
2023	$ (2,043,586)	4.0000	$ (510,897)	$ (1,532,689)	3.0000
Total			**$ 344,089**	**$ (627,441)**	
Deferred Outflow (Inflow) Due to Differences Between Projected and Actual Earnings on Plan Investments					
2019	$ 44,547	5.0000	$ 8,910	$ 0	0.0000
2020	$ 724,261	5.0000	$ 144,852	$ 144,853	1.0000
2021	$ (5,043,720)	5.0000	$ (1,008,744)	$ (2,017,488)	2.0000
2022	$ 3,581,244	5.0000	$ 716,249	$ 2,148,746	3.0000
2023	$ (606,535)	5.0000	$ (121,307)	$ (485,228)	4.0000
Total			**$ (260,040)**	**$ (209,117)**	
Deferred Outflow (Inflow) Due to All Sources					
Total			**$ 106,529**	**$ (691,440)**	

Statement of Fiduciary Net Position
(Dollars in Thousands)

	Market Value			
Assets in Trust		**June 30, 2023**		**June 30, 2022**
Cash, equivalents, short term securities	$	824,261	$	478,533
Fixed income	$	5,830,410	$	5,965,549
Equity	$	13,887,926	$	13,017,805
Private Markets	$	6,928,404	$	6,547,264
Other	$	5,142	$	5,508
Total Assets in Trust	**$**	**27,476,143**	**$**	**26,014,659**
Assets Receivable*	$	34,310	$	30,670
Amounts Payable	$	(9,676)	$	(11,144)
Net Position Restricted for Pensions	**$**	**27,500,777**	**$**	**26,034,185**

** Includes Employer Supplemental Contribution receivable to be paid by the City of Minneapolis.*

Statement of Changes in Fiduciary Net Position
(Dollars in Thousands)

Change in Assets		**Market Value**			
Year Ending			**June 30, 2023**		**June 30, 2022**
1.	Fund balance at market value at beginning of year	$	26,034,185	$	28,587,653
2.	Contributions				
	a. Member	$	487,107	$	457,740
	b. Employer*	$	581,044	$	546,291
	c. Other sources	$	16,000	$	16,000
	d. Total contributions	$	1,084,151	$	1,020,031
3.	Investment income				
	a. Investment income/(loss)	$	2,281,953	$	(1,719,032)
	b. Investment expenses	$	(9,390)	$	(30,154)
	c. Net subtotal	$	2,272,563	$	(1,749,186)
4.	Other	$	204	$	142
5.	**Total additions:** *(2.d.) + (3.c.) + (4.)*	**$**	**3,356,918**	**$**	**(729,013)**
6.	Benefits Paid				
	a. Annuity benefits	$	(1,808,287)	$	(1,737,905)
	b. Refunds	$	(67,580)	$	(73,152)
	c. Total benefits paid	$	(1,875,867)	$	(1,811,057)
7.	Expenses				
	a. Other	$	-	$	-
	b. Administrative	$	(14,459)	$	(13,398)
	c. Total expenses	$	(14,459)	$	(13,398)
8.	**Total deductions:** *(6.c.) + (7.c.)*	**$**	**(1,890,326)**	**$**	**(1,824,455)**
9.	Net increase (decrease) in net position: *(5) + (8)*	$	1,466,592	$	(2,553,468)
10.	**Net position restricted for pensions**	**$**	**27,500,777**	**$**	**26,034,185**
11.	State Board of Investment calculated investment return#		8.9%		-6.4%

** Includes Employer Supplemental Contribution receivable to be paid by the City of Minneapolis.*
 # Provided by PERA and calculated by the State Board of Investment.

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in Net Pension Liability and Related Ratios
Current Period
Fiscal Year Ended June 30, 2023 (Dollars in Thousands)

A. Total pension liability		
1. Service cost	$	675,709
2. Interest on the total pension liability	$	2,168,019
3. Changes of benefit terms	$	28,123
4. Difference between expected and actual experience of the total pension liability	$	186,049
5. Changes of assumptions	$	(2,043,586)
6. Benefit payments, including refunds of employee contributions	$	(1,875,867)
7. Net change in total pension liability	$	(861,553)
8. Total pension liability – beginning July 1, 2022	$	33,954,218
9. Total pension liability – ending June 30, 2023	**$**	**33,092,665**
B. Plan fiduciary net position		
1. Contributions – employer	$	597,044
2. Contributions – employee	$	487,107
3. Net investment income	$	2,272,563
4. Benefit payments, including refunds of employee contributions	$	(1,875,867)
5. Pension Plan administrative expense	$	(14,459)
6. Other	$	204
7. Net change in plan fiduciary net position	$	1,466,592
8. Plan fiduciary net position – beginning July 1, 2022	$	26,034,185
9. Plan fiduciary net position – ending June 30, 2023	**$**	**27,500,777**
C. Net pension liability	**$**	**5,591,888**
D. Plan fiduciary net position as a percentage of the total pension liability		**83.10%**
E. Covered-employee payroll	**$**	**7,493,954** (1)
F. Net pension liability as a percentage of covered-employee payroll		**74.62%**

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

Schedules of Required Supplementary Information
Schedule of Changes in Net Pension Liability and Related Ratios Multiyear
(Dollars in Thousands)

Last 10 Fiscal Years

Fiscal year ending June 30,	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability										
Service Cost	$ 675,709	$ 648,767	$ 530,547	$ 518,112	$ 494,737	$ 513,422	$ 471,706	$ 434,551	$ 421,602	$ 388,391
Interest on the Total Pension Liability	$ 2,168,019	$ 2,098,002	$ 2,102,259	$ 2,053,793	$ 1,991,061	$ 1,948,853	$ 1,921,869	$ 1,839,388	$ 1,712,534	$ 1,591,756
Benefit Changes	$ 28,123	$ -	$ -	$ (65,850)	$ -	$ (79,217)	$ -	$ -	$ 1,147,198	$ -
Difference Between Expected and Actual Experience	$ 186,049	$ 88,206	$ (154,087)	$ (30,245)	$ 104,946	$ 8,763	$ 280,527	$ (647,197)	$ (348,383)	$ 96,123
Assumption Changes	$ (2,043,586)	$ 72,199	$ 3,476,596	$ (128,849)	$ (120,162)	$ (262,228)	$ (853,320)	$ 2,119,742	$ -	$ 645,499
Benefit Payments	$ (1,808,287)	$ (1,737,905)	$ (1,666,103)	$ (1,604,842)	$ (1,536,071)	$ (1,470,450)	$ (1,413,448)	$ (1,359,176)	$ (1,235,303)	$ (1,109,866)
Refunds	$ (67,580)	$ (73,152)	$ (58,027)	$ (84,947)	$ (65,834)	$ (42,589)	$ (37,234)	$ (37,209)	$ (35,655)	$ (38,264)
Net Change in Total Pension Liability	$ (861,553)	$ 1,096,117	$ 4,231,185	$ 657,172	$ 868,677	$ 616,554	$ 370,100	$ 2,350,099	$ 1,661,993	$ 1,573,639
Total Pension Liability - Beginning	$ 33,954,218	$ 32,858,101	$ 28,626,916	$ 27,969,744	$ 27,101,067	$ 26,484,513	$ 26,114,413	$ 23,764,314	$ 22,102,321	$ 20,528,682
Total Pension Liability - Ending (a)	$ 33,092,665	$ 33,954,218	$ 32,858,101	$ 28,626,916	$ 27,969,744	$ 27,101,067	$ 26,484,513	$ 26,114,413	$ 23,764,314	$ 22,102,321
Plan Fiduciary Net Position										
Employer Contributions	$ 597,044	$ 562,291	$ 540,685	$ 525,821	$ 531,444	$ 504,819	$ 483,888	$ 465,978	$ 435,115	$ 382,251
Employee Contributions	$ 487,107	$ 457,740	$ 439,488	$ 435,419	$ 424,044	$ 409,423	$ 400,204	$ 375,291	$ 353,765	$ 334,495
Pension Plan Net Investment Income	$ 2,272,563	$ (1,749,186)	$ 6,712,710	$ 931,041	$ 1,547,224	$ 2,063,582	$ 2,682,901	$ (20,851)	$ 777,504	$ 2,760,854
Benefit Payments	$ (1,808,287)	$ (1,737,905)	$ (1,666,103)	$ (1,604,842)	$ (1,536,071)	$ (1,470,450)	$ (1,413,448)	$ (1,359,176)	$ (1,235,303)	$ (1,109,866)
Refunds	$ (67,580)	$ (73,152)	$ (58,027)	$ (84,947)	$ (65,834)	$ (42,589)	$ (37,234)	$ (37,209)	$ (35,655)	$ (38,264)
Pension Plan Administrative Expense	$ (14,459)	$ (13,398)	$ (12,741)	$ (12,268)	$ (13,470)	$ (11,943)	$ (11,292)	$ (11,350)	$ (10,367)	$ (9,861)
Other [1]	$ 204	$ 142	$ 182	$ 267	$ 154	$ 56	$ 651	$ 431	$ 891,914	$ 605
Net Change in Plan Fiduciary Net Position	$ 1,466,592	$ (2,553,468)	$ 5,956,194	$ 190,491	$ 887,491	$ 1,452,898	$ 2,105,670	$ (586,886)	$ 1,176,973	$ 2,320,214
Plan Fiduciary Net Position - Beginning	$ 26,034,185	$ 28,587,653	$ 22,631,459	$ 22,440,968	$ 21,553,477	$ 20,100,579	$ 17,994,909	$ 18,581,795	$ 17,404,822	$ 15,084,608
Plan Fiduciary Net Position - Ending (b)	$ 27,500,777	$ 26,034,185	$ 28,587,653	$ 22,631,459	$ 22,440,968	$ 21,553,477	$ 20,100,579	$ 17,994,909	$ 18,581,795	$ 17,404,822
Net Pension Liability - Ending (a) - (b)	$ 5,591,888	$ 7,920,033	$ 4,270,448	$ 5,995,457	$ 5,528,776	$ 5,547,590	$ 6,383,934	$ 8,119,504	$ 5,182,519	$ 4,697,499
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	83.10 %	76.67 %	87.00 %	79.06 %	80.23 %	79.53 %	75.90 %	68.91 %	78.19 %	78.75 %
Covered-Employee Payroll [2]	$ 7,493,954	$ 7,042,154	$ 6,761,354	$ 6,698,754	$ 6,523,754	$ 6,298,815	$ 6,156,985	$ 5,773,708	$ 5,549,255	$ 5,351,920
Net Pension Liability as a Percentage of covered-employee payroll	74.62 %	112.47 %	63.16 %	89.50 %	84.75 %	88.07 %	103.69 %	140.63 %	93.39 %	87.77 %

Notes to Schedule:

N/A

[1] *For fiscal year ending June 30, 2017, includes $411 of other income and $240 due to PERA's restatement of the June 30, 2016 end of year plan fiduciary net position.*

[2] *Assumed equal to actual member contributions divided by member contribution rate.*

Schedules of Required Supplementary Information
Schedule of the Net Pension Liability Multiyear
(Dollars in Thousands)

Last 10 Fiscal Years

FY Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll	Net Pension Liability as a % of Covered Payroll
2014	$ 22,102,321	$ 17,404,822	$ 4,697,499	78.75%	$ 5,351,920	87.77%
2015	$ 23,764,314	$ 18,581,795	$ 5,182,519	78.19%	$ 5,549,255	93.39%
2016	$ 26,114,413	$ 17,994,909	$ 8,119,504	68.91%	$ 5,773,708	140.63%
2017	$ 26,484,513	$ 20,100,579	$ 6,383,934	75.90%	$ 6,156,985	103.69%
2018	$ 27,101,067	$ 21,553,477	$ 5,547,590	79.53%	$ 6,298,815	88.07%
2019	$ 27,969,744	$ 22,440,968	$ 5,528,776	80.23%	$ 6,523,754	84.75%
2020	$ 28,626,916	$ 22,631,459	$ 5,995,457	79.06%	$ 6,698,754	89.50%
2021	$ 32,858,101	$ 28,587,653	$ 4,270,448	87.00%	$ 6,761,354	63.16%
2022	$ 33,954,218	$ 26,034,185	$ 7,920,033	76.67%	$ 7,042,154	112.47%
2023	$ 33,092,665	$ 27,500,777	$ 5,591,888	83.10%	$ 7,493,954	74.62%

Schedule of Contributions Multiyear (Dollars in Thousands)

Last 10 Fiscal Years

FY Ending June 30,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2014	$ 476,321	$ 382,251	$ 94,070	$ 5,351,920	7.14%
2015	$ 523,017	$ 435,115	$ 87,902	$ 5,549,255	7.84
2016	$ 542,151	$ 465,978	$ 76,173	$ 5,773,708	8.07
2017	$ 615,083	$ 483,888	$ 131,195	$ 6,156,985	7.86
2018	$ 609,725	$ 504,819	$ 104,906	$ 6,298,815	8.01
2019	$ 453,401	$ 531,444	$ (78,043)	$ 6,523,754	8.15
2020	$ 455,515	$ 525,821	$ (70,306)	$ 6,698,754	7.85
2021	$ 448,278	$ 540,685	$ (92,407)	$ 6,761,354	8.00
2022	$ 368,305	$ 562,291	$ (193,986)	$ 7,042,154	7.98
2023	$ 355,963	$ 597,044	$ (241,081)	$ 7,493,954	7.97

Notes to Schedule of Contributions

Methods and Assumptions Used to Determine Contribution Rates for the Fiscal Year Ending June 30, 2023:

Valuation Date:	June 30, 2022
Notes	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.
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Closed
Remaining Amortization Period	26 years
Asset Valuation Method	5-year smoothed market; no corridor
Inflation	2.25%
Payroll Growth	3.00%
Salary Increases	3.00% to 10.25% including inflation
Investment Rate of Return	7.50%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2020 valuation pursuant to an experience study of the period 2014 - 2019.
Mortality	Pub-2010 General annuitant generational mortality tables, projected with scale MP-2021 from a base year of 2010. Male rates are multiplied by a factor of 1.02 and female rates are multiplied by a factor of 0.90.

Other Information:

Notes	The plan is assumed to pay a 1.25% post retirement benefit increase for all future years. See separate funding report as of June 30, 2022 for additional detail.

Schedule of Investment Returns Multiyear

Last 10 Fiscal Years

FY Ending June 30,	Annual Return[1]
2014	18.7 %
2015	4.4
2016	(0.1)
2017	15.2
2018	10.5
2019	7.3
2020	4.3
2021	30.3
2022	(6.4)
2023	8.9

[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 PERA for GASB compliance purposes. PERA 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, 2023, the annual money-weighted rate of return for the General Employees Retirement Plan was 8.9%. 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 PERA's defined benefit retirement funds), contact SBI at 60 Empire Drive, Suite 355, 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, 2023, these estimates are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return (geometric)
Domestic Equity	33.5%	5.10%
International Equity	16.5%	5.30%
Private Markets	25.0%	5.90%
Fixed Income	25.0%	0.75%
Unallocated Cash	0.0%	0.00%
Total	100%	

The Minnesota State Board of Investment (SBI) compiled this data and the related investment notes and provided it to PERA for GASB compliance purposes. PERA 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 the expected rate of return on pension plan investments of 7.00%. The projection of cash flows used to determine this single discount rate assumed that plan member, employer, and state contributions will be made at the current statutory contribution rates. Based on these assumptions, the pension plan's fiduciary net position and future contributions were sufficient to finance all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

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

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	$ 37,393,276	$ 33,092,665	$ 29,555,249
Net Position Restricted for Pensions	$ 27,500,777	$ 27,500,777	$ 27,500,777
Net Pension Liability	**$ 9,892,499**	**$ 5,591,888**	**$ 2,054,472**

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)
Current Reporting Period

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)	Current Period Deferred Outflows	Deferred Inflows	Pension Expense*
Balance Beginning of Year	**$ 33,954,218**	**$ 26,034,185**	**$ 7,920,033**			
Changes for the Year:						
Service Cost	$ 675,709		$ 675,709			$ 675,709
Interest on Total Pension Liability	$ 2,168,019		$ 2,168,019			$ 2,168,019
Interest on Fiduciary Net Position		$ 1,666,028	$ (1,666,028)			$ (1,666,028)
Changes in Benefit Terms	$ 28,123		$ 28,123			$ 28,123
Liability Experience Gains and Losses	$ 186,049		$ 186,049	$ 139,537	$ -	$ 46,512
Changes in Assumptions	$ (2,043,586)		$ (2,043,586)	$ -	$ 1,532,689	$ (510,897)
Contributions - Employer		$ 597,044	$ (597,044)			$ -
Contributions - Employees		$ 487,107	$ (487,107)			$ (487,107)
Asset Gain/(Loss)		$ 606,535	$ (606,535)	$ -	$ 485,228	$ (121,307)
Benefit Payouts	$ (1,875,867)	$ (1,875,867)	$ -			$ -
Administrative Expenses		$ (14,459)	$ 14,459			$ 14,459
Other		$ 204	$ (204)			$ (204)
Net Changes	**$ (861,553)**	**$ 1,466,592**	**$ (2,328,145)**	**$ 139,537**	**$ 2,017,917**	**$ 147,279**
Balance End of Year	**$ 33,092,665**	**$ 27,500,777**	**$ 5,591,888**			

** Pension Expense from Experience in the Current Reporting Period.*

GASB Statement No. 68 Reconciliation (Dollars in Thousands)
Current and Prior Reporting Periods

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)	Deferred Outflows	Deferred Inflows	Net Deferred Outflows Prior Year	Total Pension Expense*
Balance Beginning of Year	**$ 33,954,218**	**$ 26,034,185**	**$ 7,920,033**				
Changes for the Year:							
Service Cost	$ 675,709		$ 675,709				$ 675,709
Interest on Total Pension Liability	$ 2,168,019		$ 2,168,019				$ 2,168,019
Interest on Fiduciary Net Position		$ 1,666,028	$ (1,666,028)				$ (1,666,028)
Changes in Benefit Terms	$ 28,123		$ 28,123				$ 28,123
Liability Experience Gains and Losses	$ 186,049		$ 186,049	$ 183,639	$ 38,521	$ (18,451)	$ 22,480
Changes in Assumptions	$ (2,043,586)		$ (2,043,586)	$ 905,248	$ 1,532,689	$ 1,760,234	$ 344,089
Contributions - Employer		$ 597,044	$ (597,044)				$ -
Contributions - Employees		$ 487,107	$ (487,107)				$ (487,107)
Asset Gain/(Loss)		$ 606,535	$ (606,535)	$ 2,293,599	$ 2,502,716	$ 137,378	$ (260,040)
Benefit Payouts	$ (1,875,867)	$ (1,875,867)	$ -				$ -
Administrative Expenses		$ (14,459)	$ 14,459				$ 14,459
Other		$ 204	$ (204)				$ (204)
Net Changes	**$ (861,553)**	**$ 1,466,592**	**$ (2,328,145)**				**$ 839,500**
Balance End of Year	**$ 33,092,665**	**$ 27,500,777**	**$ 5,591,888**	**$ 3,382,486**	**$ 4,073,926**	**$ 1,879,161**	

** Pension Expense from Experience in the Current and Prior Reporting Periods.*

Summary of Population Statistics

	Actives	Terminated		Recipients			Total
		Deferred Retirement	Other Non-Vested	Service Retirement	Disability Retirement	Survivor	
GERP Members on July 1, 2022	**149,987**	**68,636**	**84,675**	**103,121**	**3,489**	**9,370**	**419,278**
New members	22,685	0	0	0	0	0	**22,685**
Return to active	3,025	(1,182)	(1,843)	0	0	0	**0**
Terminated non-vested	(9,053)	0	9,053	0	0	0	**0**
Service retirements	(2,618)	(3,284)	0	5,902	0	0	**0**
Terminated deferred	(6,060)	6,060	0	0	0	0	**0**
Terminated refund/transfer	(3,418)	(1,054)	(5,409)	0	0	0	**(9,881)**
Deaths	(225)	(180)	(362)	(2,966)	(172)	(545)	**(4,450)**
New beneficiary	0	0	0	0	0	774	**774**
Disabled	(63)	0	0	0	63	0	**0**
Data adjustments	1	1,225	2,178	193	(112)	(37)	**3,448**
Net change	4,274	1,585	3,617	3,129	(221)	192	**12,576**
GERP Members on June 30, 2023	**154,261**	**70,221**	**88,292**	**106,250**	**3,268**	**9,562**	**431,854**

SECTION E

SUMMARY OF BENEFITS

Summary of Plan Provisions - Basic

Following is a summary of the major plan provisions used in the valuation of this report. PERA 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. Many of the plan provisions described below are no longer relevant due to the age and/or service of remaining Basic active members.

Plan year	July 1 through June 30
Eligibility	A public employee who is not covered under the Social Security Act. General exceptions are employees covered by other public funds, certain part-time employees and full-time students under age 23.
Contributions	Shown as a percent of salary: Member 9.10% of salary Employer 11.78% of salary Member contributions are "picked up" according to the provisions of Internal Revenue Code 414(h).
Allowable service	Service during which member contributions were made. May also include certain leaves of absence and military service.
Salary	Includes amounts deducted for deferred compensation or supplemental retirement plans, net income from fees and sick leave payments funded by the employer. Excludes unused annual leaves and sick leave payments, severance payments, Workers' Compensation benefits and employer-paid flexible spending accounts and employer-paid deferred compensation deposits, cafeteria plans, healthcare expense accounts, day-care expenses, fringe benefits and the cost of insurance coverage.
Average salary	Average of the five highest successive years of annual salary. Average salary is based on all Allowable Service if less than five years.
Vesting	100% vested after 3 years of Allowable Service.
Retirement	
Normal retirement benefit	
Age/service requirement	Age 65 and vested. Proportionate retirement annuity is available at age 65 and one year of Allowable Service.
Amount	2.70% of Average Salary for each year of Allowable Service.
Early retirement benefit	
Age/service requirement	(a.) Age 55 and vested. (b.) Any age with 30 years of Allowable Service. (c.) Rule of 90: Age plus Allowable Service totals 90.

Retirement (Continued)	
Early retirement benefit (Continued)	
Amount	The greater of (a) and (b): (a.) 2.20% of Average Salary for each of the first ten years of Allowable Service and 2.70% of Average Salary for each subsequent year with reduction of 0.25% for each month if the Member is under age 65 at time of retirement and has less than 30 years of Allowable Service or if the Member is under age 62 and has 30 or more years of Allowable Service. No reduction if age plus years of Allowable Service totals 90. (b.) 2.70% 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.
Form of payment	Life annuity with return on death of any balance of contributions over aggregate monthly payments. Actuarially equivalent options are: 25%, 50%, 75% or 100% Joint and Survivor. If a Joint and Survivor benefit is elected and the beneficiary predeceases the annuitant, the annuitant's benefit increases to the Life Annuity amount. This "bounce back" is subsidized by the plan.
Benefit increases	Benefit recipients will receive increases each year in January based upon 50% of the current Social Security increase, not less than 1.0% and not more than 1.5%, beginning January 1, 2019. A benefit recipient who has been receiving a benefit for at least 12 full months as of June 30 will receive a full increase. Members receiving benefits for at least one month but less than 12 full months as of June 30 will receive a pro rata increase. Members retired under laws in effect before July 1, 1973 receive an additional lump sum payment each year. In 1989, this lump sum payment is the greater of $25 times each full year of Allowable Service or the difference between $400 times each full year of Allowable Service and the sum of benefits paid from any Minnesota public pension plan plus cash payments from the Social Security Administration for the preceding fiscal year July 1, 1988 through June 30, 1989. In each following year, the lump sum payment will increase by the same percentage increase that is applied to regular annuities paid from the fund. Effective January 1, 2002, annual lump sum payment is divided by 12 and paid as a monthly life annuity in the annuity form elected. An additional one-time, non-compounding benefit increase equal to 4.0% minus the actual 2024 adjustment, payable for calendar year 2024 in a lump sum by March 31, 2024, to benefit recipients who have been receiving a benefit for at least 12 months as of June 30, 2023.

Summary of Plan Provisions – Basic (Continued)

Disability

Disability benefit

Age/service requirement	Total and permanent disability before normal retirement age if vested. Since all remaining active Basic members are over normal retirement age, none are eligible for disability benefits.
Amount	Normal Retirement benefit based on Allowable Service and Average Salary at disability without reduction for commencement before Normal Retirement Age. Supplemental benefit of $25 per month payable to the later of the normal retirement age or the five-year anniversary of commencement of disability. The disability benefit is reduced to that amount which, when added to Workers' Compensation, does not exceed the salary the disabled Member received as of the date of the disability or the salary currently payable for the same employment position substantially similar to the one the person held as of the date of the disability, whichever is greater. If a member became disabled prior to July 1, 1997 but did not commence his or her benefit before July 1, 1997, the benefit payable is calculated under the laws in effect at the time the Member became disabled and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%. Payments stop earlier if disability ceases. If death occurs prior to age 65, or within five years of disability, the surviving spouse can receive a refund or a survivor benefit. Dependent children are entitled to dependent child benefits subject to the 70.00% family maximum. Payments revert to a retirement annuity at normal retirement age. Benefits may be reduced on resumption of partial employment.
Form of payment	Same as for retirement.
Benefit increases	Same as for retirement.

Retirement after disability

Age/service requirement	Normal retirement age
Amount	Any optional annuity continues. Otherwise, the larger of the disability benefit paid before normal retirement age or the normal retirement benefit available at normal retirement age, or an actuarially equivalent optional annuity.
Benefit increases	Same as for retirement.

Summary of Plan Provisions - Basic (Continued)

Death	
<u>Surviving spouse benefit</u>	
Age/service requirement	Active Member with 18 months of Allowable Service or while Member is receiving a disability benefit.
Amount	50.00% of salary averaged over last six months. Family benefit is maximum of 70.00% and minimum of 50.00% of average salary. Benefit paid until spouse's death but no payments while spouse is remarried prior to July 1, 1991. If a member died prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit as of July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%. Surviving spouse optional annuity may be elected in lieu of this benefit.
Benefit increases	Same as for retirement.
<u>Surviving dependent children's benefit</u>	
Age/service requirement	Active Member with 18 months of Allowable Service or while Member is receiving a disability benefit.
Amount	10.00% of salary averaged over last six months for each child. Family benefit minimum (including spouse's benefit) of 50.00% of salary and maximum of 70.00% of average salary. Benefits paid until child marries, dies, or attains age 18 (age 22 if full-time student). If a member died prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Benefit increases	Same as for retirement.

Death (Concluded)	
Surviving spouse optional annuity	
Age/service requirement	Member or former Member who dies before retirement benefits commence and other survivor annuity is waived by spouse.
Amount	Survivor's payment of the 100% joint and survivor benefit the Member could have elected if terminated or an actuarial equivalent term certain annuity. If commencement is prior to age 65 (age 62 if 30 years of service), the benefit is reduced the same as early retirement with half the applicable reduction factor used from age 55 to the actual commencement age. If no surviving spouse, then an actuarial equivalent dependent child benefit is paid to age 20 or for five years if longer. If a member died prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit as of July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Benefit increases	Same as for retirement.
Refund of contributions with interest	
Age/service requirement	Member dies before receiving any retirement benefits and survivor benefits are not payable.
Amount	The excess of the Member's contributions with 6.00% interest until June 30, 2011; 4.00% through June 30, 2018; 3.00% thereafter over any disability or survivor benefits paid.
Termination	
Refund of contributions	
Age/service requirement	Termination of public 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	Fully vested.

Termination (Concluded)

<u>Deferred benefit (concluded)</u>

Amount

Benefit computed under law in effect at termination and increased by the following "augmentation" percentage compounded annually for terminations prior to 2012:

(a.) 0.00% before July 1, 1971;

(b.) 5.00% from July 1, 1971 to January 1, 1981;

(c.) 3.00% thereafter until the earlier of January 1 of the year following attainment of age 55 and January 1, 2012;

(d.) 5.00% thereafter until the earlier of the date the annuity begins and January 1, 2012;

(e.) 1.00% from January 1, 2012 through December 31, 2018; and

(f.) 0.00% from January 1, 2019, thereafter.

Members who terminate after 2011 will receive no future augmentation.

Members active with a public employer the day prior to the privatization of the employer become vested immediately.

Members who are privatized after June 30, 2020 will receive no future augmentation.

Members who are privatized before July 1, 2020 receive enhanced augmentation (unless the enhancement results in a net loss to the Plan). Amount is payable at normal or early retirement. Augmentation is compounded annually through benefit commencement, equal to:

Date of Privatization	Augmentation prior to July 1, 2020	July 1, 2020 through December 31, 2023	After December 31, 2023
Prior to January 1, 2007 (or January 1, 2008 for Hutchinson Area Health Care)	5.5% prior to age 55, 7.5% after	2.0%	0.0%
After December 31, 2006 (2007 for Hutchinson Area Health Care) and prior to January 1, 2011	4.0% prior to age 55, 6.0% after	2.0%	0.0%
After December 31, 2010 and prior to July 1, 2020	2.0%*	2.0%*	0.0%

** Reduced to 1% if 2% augmentation resulted in a net loss to the Plan.*

If a member terminated employment prior to July 1, 1997 but was not eligible to commence their pension before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997 and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.

Benefit increases

Same as for retirement.

Summary of Plan Provisions - Basic (Continued)

Actuarial equivalent factors	Effective July 1, 2019, actuarially equivalent factors based on the RP-2014 mortality table for healthy annuitants for a member turning age 62 in 2021, reflecting projected mortality improvements using Scale MP-2017, white collar adjustment, male rates set forward two years, female rates multiplied by 0.90, blended 40% males, 6.17% post-retirement interest, and 7.50% pre-retirement interest. Reflecting statutory requirements, joint and survivor factors are based on an interest assumption of 6.50%.
Combined service annuity	Members are eligible for combined service benefits if they: (a.) Meet minimum retirement age for each plan participated in and total public service meets the vesting requirements of each plan; or (b.) Have three or more years of service under PERA and the covered fund(s) (if hired prior to July 1, 2010). Other requirements for combined service include: (a.) Member must have at least six months of allowable service credit in each plan worked under; and (b.) Member may not be in receipt of a benefit from another plan. Members who meet the above requirements must have their benefits based on the following: (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 consecutive years during their entire service in all covered plans.
Changes in plan provisions	The vesting period for those hired after June 30, 2010 was changed from five years of allowable service to three years of allowable service. A one-time, non-compounding benefit increase of 4.0% minus the actual 2024 adjustment will be payable in a lump sum for calendar year 2024 by March 31, 2024.

Summary of Plan Provisions - Coordinated

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

Plan year	July 1 through June 30		
Eligibility	A public employee who is covered under the Social Security Act. General exceptions are employees covered by other public funds, certain part-time employees and full-time students under age 23. City managers and persons holding certain elective office positions may choose to become Members.		
Contributions	Shown as a percent of salary:		
Effective date	**Member**	**Employer**	**Additional Employer**
January 1, 2015	6.50%	6.50%	1.00%
	Additional Employer Contribution remains in effect until the plan is 100% funded on an actuarial value of assets basis (contribution is repealed the following March 31). Member contributions are "picked up" according to the provisions of Internal Revenue Code 414(h). Additional one-time direct state aid payment of $170,093,422, payable October 1, 2023.		
Allowable service	Service during which member contributions are deducted. May also include certain leaves of absence and military service.		
Salary	Includes amounts deducted for deferred compensation or supplemental retirement plans, net income from fees and sick leave payments funded by the employer. Excludes unused annual leave and sick leave payments, severance payments, Workers' Compensation benefits and employer-paid flexible spending accounts and employer-paid deferred compensation deposits, cafeteria plans, healthcare expense accounts, day-care expenses, fringe benefits and the cost of insurance coverage.		
Average salary	Average of the five highest successive years of annual salary. Average salary is based on all Allowable Service if less than five years.		
Vesting	100% vested after three years of Allowable Service.		

Retirement

Normal retirement benefit

Age/service requirement	First hired before July 1, 1989: (a.) Age 65 and vested. (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 no later than age 66 and vested. (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.

Early retirement benefit

Age/service requirement	First hired before July 1, 1989: (a.) Age 55 and vested. (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 vested.
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 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: (a.) 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.

Summary of Plan Provisions – Coordinated (Continued)

Retirement (Concluded)	
Form of payment	Life annuity with return on death of any balance of contributions over aggregate monthly payments. Actuarially equivalent options are: 25%, 50%, 75% or 100% Joint and Survivor. If a Joint and Survivor benefit is elected and the beneficiary predeceases the annuitant, the annuitant's benefit increases to the Life Annuity amount. This "bounce back" is subsidized by the plan.
Benefit increases	Benefit recipients receive increases each year in January based upon 50% of the current Social Security increase, not less than 1.0% and not more than 1.5%, beginning January 1, 2019. A benefit recipient who has been receiving a benefit for at least 12 full months as of June 30 will receive a full increase. Members receiving benefits for at least one month but less than 12 full months as of June 30 will receive a pro rata increase. Members retired under laws in effect before July 1, 1973 will receive an additional lump sum payment each year. In 1989, this lump sum payment is $25 times each full year of Allowable Service. In each following year, the lump sum payment will increase by the same percentage increase that is applied to regular annuities paid from the fund. An additional one-time, non-compounding benefit increase equal to 2.5% minus the actual 2024 adjustment, payable for calendar year 2024 in a lump sum by March 31, 2024, to benefit recipients who have been receiving a benefit for at least 12 months as of June 30, 2023.
Disability	
Disability benefit	
Age/service requirement	Total and permanent disability before normal retirement age if vested.
Amount	Normal Retirement benefit based on Allowable Service and Average Salary at disability without reduction for commencement before normal retirement age. The disability benefit is reduced to that amount which, when added to Workers' Compensation, does not exceed the salary the disabled Member received as of the date of the disability or the salary currently payable for the same employment position substantially similar to the one the person held as of the date of the disability, whichever is greater. If a Member became disabled prior to July 1, 1997 but did not commence his or her benefit before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%. Payments stop if disability ceases or death occurs. Payments change to a retirement annuity at normal retirement age. Benefits may be reduced on resumption of partial employment.

Summary of Plan Provisions – Coordinated (Continued)

Disability (Concluded)	
Disability benefit (Concluded)	
Form of payment	Same as for retirement.
Benefit increases	Same as for retirement.
Retirement after disability	
Age/service requirement	Normal retirement age.
Amount	Any optional annuity continues. Otherwise, the larger of the disability benefit paid before normal retirement age or the normal retirement benefit available at normal retirement age, or an actuarially equivalent optional annuity.
Benefit increases	Same as for retirement.
Death	
Surviving spouse optional annuity	
Age/service requirement	Member or former Member who dies before retirement or disability benefits commence.
Amount	Survivor's payment of the 100% joint and survivor benefit the Member could have elected if terminated or an actuarial equivalent term certain annuity. If commencement is prior to age 65 (age 62 if 30 years of service), the benefit is reduced the same as early retirement with half the applicable reduction factor used from age 55 to the actual commencement age. If no surviving spouse, then an actuarial equivalent dependent child benefit is paid to age 20 or for five years if longer. If a member died prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Benefit increases	Same as for retirement.
Refund of contributions	
Age/service requirement	Member dies before receiving any retirement benefits and survivor benefits are not payable.
Amount	The excess of the Member's contributions with 6.00% interest until June 30, 2011; 4.00% through June 30, 2018; 3.00% thereafter over any disability or survivor benefits paid.

Summary of Plan Provisions – Coordinated (Continued)

Termination

Refund of contributions

Age/service requirement	Termination of public 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: Fully vested.

Amount: Benefit computed under law in effect at termination and increased by the following percentage (augmentation) compounded annually for terminations prior to 2012:

(a.) 0.00% before July 1, 1971;

(b.) 5.00% from July 1, 1971 to January 1, 1981;

(c.) 3.00% (2.50% if hired after June 30, 2006) thereafter until the earlier of January 1 of the year following attainment of age 55 and January 1, 2012;

(d.) 5.00% (2.50% if hired after June 30, 2006) thereafter until the earlier of the date the annuity begins and January 1, 2012; or

(e.) 1.00% from January 1, 2012 through December 31, 2018; and

(f.) 0.00% from January 1, 2019, thereafter.

Members who terminate after 2011 will receive no future augmentation.

Members active with a public employer the day prior to the privatization of the employer become vested immediately.

Members who are privatized after June 30, 2020 will receive no future augmentation.

Members who are privatized before July 1, 2020 receive enhanced augmentation (unless the enhancement results in a net loss to the Plan). Amount is payable at normal or early retirement. Augmentation is compounded annually through benefit commencement, equal to:

Date of Privatization	Augmentation prior to July 1, 2020	July 1, 2020 through December 31, 2023	After December 31, 2023
Prior to January 1, 2007 (or January 1, 2008 for Hutchinson Area Health Care)	5.5% prior to age 55, 7.5% after	2.0%	0.0%
After December 31, 2006 (2007 for Hutchinson Area Health Care) and prior to January 1, 2011	4.0% prior to age 55, 6.0% after	2.0%	0.0%
After December 31, 2010 and prior to July 1, 2020	2.0%*	2.0%*	0.0%

** Reduced to 1% if 2% augmentation resulted in a net loss to the Plan.*

Summary of Plan Provisions – Coordinated (Continued)

Termination (Concluded)	
Deferred benefit (Concluded)	
Amount (Concluded)	If a member terminated employment prior to July 1, 1997 but was not eligible to commence their pension before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997 and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Form of payment	Same as for retirement.
Actuarial equivalent factors	Effective July 1, 2019, actuarially equivalent factors based on the RP-2014 mortality table for healthy annuitants for a member turning age 62 in 2021, reflecting projected mortality improvements using Scale MP-2017, white collar adjustment, male rates set forward two years, female rates multiplied by 0.90, blended 40% males, 6.17% post-retirement interest, and 7.50% pre-retirement interest. Reflecting statutory requirements, joint and survivor factors are based on an interest assumption of 6.50%.
Combined service annuity	Members are eligible for combined service benefits if they: (a.) Meet minimum retirement age for each plan participated in and total public service meets the vesting requirements of each plan; or (b.) Have three or more years of service under PERA and the covered fund(s) (if hired prior to July 1, 2010). Other requirements for combined service include: (a.) Member must have at least six months of allowable service credit in each plan worked under; and (b.) Member may not be in receipt of a benefit from another plan. Members who meet the above requirements must have their benefit based on the following: (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.
Changes in plan provisions	An additional one-time direct state aid contribution of $170.1 million will be contributed to the Plan on October 1, 2023. The vesting period for those hired after June 30, 2010 was changed from five years of allowable service to three years of allowable service. The benefit increase delay for early retirements on or after January 1, 2024 was eliminated. A one-time, non-compounding benefit increase of 2.5% minus the actual 2024 adjustment will be payable in a lump sum for calendar year 2024 by March 31, 2024.

Summary of Plan Provisions –
Minneapolis Employees Retirement Fund (MERF)

Following is a summary of the major plan provisions used in the valuation of this report. PERA 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/employee rule	An employee of the City of Minneapolis, the Metropolitan Airports Commission, the Met Council/Environmental Services, the Municipal Employees Retirement Fund, and Special School District No. 1 if covered prior to July 1, 1978. Employees covered July 1, 1978 or later are covered by the Public Employees Retirement Association (PERA) Plan. Effective July 1, 1992, licensed peace officers and firefighters who are employed by the Metropolitan Airports Commission and covered by the Minneapolis Employees Retirement Fund will receive the greater of retirement, disability, or survivor benefits under: a) The Minneapolis Employees Retirement Fund; or b) The Public Employees Retirement Association (PERA) Police & Fire Plan.
Full consolidation	The MERF Division fully merged with PERA's General Employees Retirement Plan, effective January 1, 2015. Upon consolidation, state and employer contributions were revised as shown herein.
Contributions	
Member	9.75% of salary
Employer	9.75% of salary (Employer Regular Contributions) Employer Regular and Additional Contributions will be paid as long as there are active members. Employer Supplemental Contributions equal $21,000,000 per year through September 2031.
Contribution allocation	Employer Supplemental Contributions are allocated to the employers in proportion to their share of the actuarial accrued liability of MERF on July 1, 2009, as follows:

Employer	Allocation
City of Minneapolis	54.78%
Minneapolis Park Board	10.33%
Met Council	1.74%
Metropolitan Airport Commission	5.76%
Municipal Building Commission	1.08%
Minneapolis School District No. 1	23.04%
Hennepin County	3.17%
MnSCU	0.10%
Total	100.00%

Summary of Plan Provisions – Minneapolis Employees Retirement Fund (MERF) (Continued)

State contributions	The State's contributions equal $16,000,000 and are payable by September 30 each year through September 15, 2031.
Allowable service	Service during which member contributions were made. Allowable Service may also include certain leaves of absence, military service and service prior to becoming a member. Allowable service also includes time on duty disability provided that the member returns to active service if the disability ceases.
Salary	All amounts of salary, wages or compensation.
Average salary	Average of the five highest calendar years of salary out of the last ten calendar years.
Retirement	
Normal retirement benefit	
Age/service requirement	Age 60 and 10 years of employment. Any age with 30 years of employment. Proportionate retirement annuity is available at age 65 and one year allowable service.
Amount	2.00% of average salary for the first 10 years of allowable service plus 2.50% of average salary for each subsequent year of allowable service.

Summary of Plan Provisions –
Minneapolis Employees Retirement Fund (MERF) (Continued)

Disability	
Disability benefit	
Age/service requirement	Total and permanent disability before age 60 with five years of allowable service, or no allowable service if a work-related disability.
Amount	2.00% of average salary for the first 10 years of disability service plus 2.50% of average salary for each subsequent year of disability service. Disability service is the greater of (a) or (b) where: (a.) equals allowable service plus service projected to age 60, subject to a maximum of 22 years, and (b.) equals allowable service. Benefit is reduced by Workers' Compensation benefits. Payments stop at age 60 or earlier if disability ceases or death occurs. Benefits may be reduced on resumption of partial employment.
Disability after separation	
Age/service requirement	Total and permanent disability after electing to receive a retirement benefit but before age 60.
Amount	Actuarial equivalent of total credit to member's account.
Retirement after disability	
Age/service requirement	Total and permanent disability after electing to receive a retirement benefit but before age 60. Employee is still disabled after age 60.
Amount	Benefit continues according to the option selected.

Summary of Plan Provisions –
Minneapolis Employees Retirement Fund (MERF) (Continued)

Death	
Pre-retirement survivor's spouse benefit	
Age/service requirement	Active member with 18 months of allowable service.
Amount	30% of salary averaged over the last six months to the surviving spouse plus 10% of salary averaged over the last six months to each surviving child. Maximum benefit is $900 per month.
Pre-retirement survivor's spouse annuity	
Age/service requirement	Active member or former member who dies before retirement with 20 years of allowable service.
Amount	Actuarial equivalent of a single life annuity which would have been paid as a retirement benefit on the date of death without regard to eligibility age for retirement benefit. If there is no surviving spouse, the designated beneficiary may be a dependent child or dependent parent.
Refund of accumulated city contributions	
Age/service requirement	Active member or former member dies after 10 years of allowable service and prior to retirement.
Amount	Present value of the City's annual installments of $60 or, in the case of a former member, the net accumulation of city deposits. This benefit is not payable if survivor's benefits are paid.
Lump sum	
Age/service requirement	Death prior to service or disability retirement without an eligible surviving beneficiary.
Amount	$750 with less than 10 years allowable service, or $1,500 with 10 or more years of allowable service.
Refund of member contributions at death	
Age/service requirement	Active member or former member dies before retirement.
Amount	The excess of the member's contributions (exclusive of the contributions to the survivor's account) plus interest to the date of death.

Summary of Plan Provisions –
Minneapolis Employees Retirement Fund (MERF) (Concluded)

Termination	
Deferred benefit	
Age/service requirement	Three years of allowable service.
Amount	Benefit computed under law in effect at termination and increased by the following percentage (augmentation), compounded annually: (a.) 0.00% prior to July 1, 1971, (b.) 5.00% from July 1, 1971 to January 1, 1981, and (c.) 3.00% thereafter until the annuity begins. Amount is payable at or after age 60.
Refund of member contributions upon termination	
Age/service requirement	Termination of public service.
Amount	Member's contributions with interest. A deferred annuity may be elected in lieu of a refund if vested.
Form of payment	▪ Life annuity. ▪ Life annuity with 3, 5, 10 or 15 years guaranteed. ▪ Life annuity with lump sum death benefit. ▪ Joint & Survivor (with or without bounce back feature).
Optional form conversion factors	1986 PET mortality table with a one-year setback, blended 50% male and 50% female, and 5% interest.
Two dollar bill and annuity	Optional Two Dollar Bill money purchase annuity available at age 55 with 20 years of service if member had service prior to June 28, 1973. According to PERA, this option is rarely utilized. We have assumed that remaining active members will not elect this optional benefit.
Benefit increases	Benefit recipients receive increases each year in January based upon 50% of the current Social Security increase, not less than 1.0% and not more than 1.5%, beginning January 1, 2019. An additional one-time, non-compounding benefit increase equal to 4.0% minus the actual 2024 adjustment, payable for calendar year 2024 in a lump sum by March 31, 2024, to benefit recipients who have been receiving a benefit for at least 12 months as of June 30, 2023.
Changes in plan provisions	The benefit increase delay for early retirements on or after January 1, 2024 was eliminated. A one-time non-compounding benefit increase of 4.0% minus the actual 2024 adjustment will be payable in a lump sum for calendar year 2024 by March 31, 2024.

SECTION F

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS USED FOR THE DETERMINATION OF TOTAL PENSION LIABILITY AND RELATED VALUES

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.

Valuation of Future Post-Retirement Benefit Increases

Benefit increases after retirement will equal 50% of the Social Security Cost of Living Adjustment, not less than 1.0% and not more than 1.5%, beginning January 1, 2019. Stochastic modeling was used to determine the assumption that benefit increases will equal 1.25% per year. This is only an assumption; actual increases will depend on actual experience.

Asset Valuation Method

Fair value of assets.

Summary of Actuarial Assumptions – Basic and Coordinated

The following assumptions were used in valuing the liabilities and benefits under the plan. Unless noted otherwise, the assumptions prescribed are based on the experience study dated June 27, 2019, and a review of inflation and investment assumptions dated June 29, 2023. An experience study for the 2018-2022 period was issued on June 29, 2023. This report recommended changes to economic and demographic assumptions, expected to be effective at a future date. 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.
Single Discount Rate	7.00% per annum.
Benefit increases after retirement	1.25% 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 earned during the year.
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. Rates are multiplied by a factor of 1.07 for males and 0.98 for females.
Healthy post-retirement	Pub-2010 Healthy Retired General Mortality Table adjusted for mortality improvements using projection scale MP-2021. Male rates are multiplied by a factor of 1.02 and female rates are multiplied by a factor of 0.90.
Disabled retirees	Pub-2010 General/Teacher Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Rates are set forward two years for males and set forward four years 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 and beneficiaries 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 tables. Members who have attained the highest assumed retirement age are assumed to retire in one year. Note that significant plan changes reflected in this report may result in behavior changes that are not anticipated in the current retirement rates.

Summary of Actuarial Assumptions – Basic and Coordinated (Continued)

Withdrawal	Service-related rates based on experience; see table of sample rates.
Disability	Age-related rates based on experience; see table of sample rates.
Allowance for combined service annuity	Liabilities for former members are increased by 15.0% for vested members and 3.0% for non-vested members 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 percentage of prior year 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 deferred 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.
Percentage married	80% of male and 70% of female active members are assumed to be married. Actual marital status is used for members in payment status.
Age of spouse	Males are assumed to have a beneficiary three years younger, while females are assumed to have a beneficiary one year older. For members in payment status, actual spouse date of birth is used, if provided.
Eligible children	Retiring members are assumed to have no dependent children.
Form of payment	Married members retiring from active status are assumed to elect subsidized joint and survivor form of annuity as follows: Males: 10% elect 25% Joint & Survivor option 15% elect 50% Joint & Survivor option 10% elect 75% Joint & Survivor option 45% elect 100% Joint & Survivor option Females: 10% elect 25% Joint & Survivor option 10% elect 50% Joint & Survivor option 5% elect 75% Joint & Survivor option 30% elect 100% Joint & Survivor option 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 straight life annuity.
Eligibility testing	Eligibility for benefits is determined based upon the age nearest birthday and service on the date the decrement is assumed to occur.
Decrement operation	Withdrawal decrements do not operate during retirement eligibility. Decrements are assumed to occur mid-fiscal year.
Service credit accruals	It is assumed that members accrue one year of service credit per year.

Summary of Actuarial Assumptions – Basic and Coordinated (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.
Unknown data for certain members	To prepare this report, GRS has used and relied on participant data supplied by the Fund. Although GRS has reviewed the data in accordance with Actuarial Standards of Practice No. 23, GRS has not verified or audited any of the data or information provided. In cases where submitted data was missing or incomplete, the following assumptions, based on average results for applicable members at the time of the last experience study, were applied: <u>Data for active members:</u> There were 4,943 members reported with a salary less than $100 after annualization. We used prior year salary (2,706 members), if available; otherwise high five salary with a 10% load to account for salary increases (1,270 members). If neither prior year salary nor high five salary was available, we assumed a value of $30,000 (967 members). There were also 4,341 members reported without a gender. We assumed female gender. There were 300 members reported without a date of birth. We assumed these members were hired at age 36. <u>Data for terminated members:</u> We calculated benefits for these members using the reported Average Salary and credited service. If credited service was not reported (170 members), we used elapsed time from hire date to termination date (118 members); if elapsed time was not available, we assumed six years of service. If termination date was invalid or not reported (160 members), we assumed the termination date was equal to the hire date plus credited service, otherwise the valuation date. If Average Salary was not reported (150 members), we assumed a value of $24,000. If the reported termination date occurs prior to the reported hire date, the two dates were swapped. There were 3,800 members reported without a gender; female was assumed. There were 2,388 members reported without a date of birth, we assumed a birth date of July 1, 1970. <u>Data for retired members:</u> There were 257 members reported without a gender. We assumed retirees are female and beneficiaries are male. There were no members reported with an invalid date of birth.

Summary of Actuarial Assumptions – Basic and Coordinated (Continued)

Unknown data for certain members (Concluded)	<u>Data for retired members (Concluded):</u> Because PERA reclassifies disabled members as retirees once the member reaches Normal Retirement Age, we compare the members that PERA reports as retirees to our disabled group from the last valuation. If a member was disabled in the prior valuation, we reclassify that member as a disabled retiree in this year's valuation. We reclassified 2,130 retirees as disabled retirees in this valuation.
Changes in actuarial assumptions	The investment return assumption and single discount rate were changed from 6.50% to 7.00%.

Summary of Actuarial Assumptions – Basic and Coordinated (Continued)

	Percentage of Members Dying Each Year*					
Age in	Healthy Post-Retirement Mortality**		Healthy Pre-Retirement Mortality**		Disability Mortality**	
2023	Male	Female	Male	Female	Male	Female
20	0.04%	0.01%	0.04%	0.01%	0.36%	0.18%
25	0.03	0.01	0.04	0.01	0.31	0.29
30	0.05	0.02	0.05	0.02	0.55	0.51
35	0.07	0.03	0.08	0.03	0.79	0.81
40	0.09	0.04	0.10	0.04	1.04	1.08
45	0.12	0.06	0.11	0.05	1.33	1.34
50	0.29	0.18	0.15	0.07	1.71	1.54
55	0.42	0.25	0.22	0.12	2.17	1.88
60	0.64	0.36	0.35	0.19	2.74	2.25
65	0.94	0.52	0.50	0.28	3.37	2.57
70	1.44	0.83	0.69	0.42	4.01	3.24
75	2.41	1.48	1.04	0.69	5.23	4.82
80	4.33	2.75	1.65	1.18	7.62	7.75
85	8.00	5.24	7.06	4.90	11.51	11.96
90	13.96	9.84	14.65	10.72	17.85	17.09

* *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. This adjustment has no material effect on results.*

** *Rates are adjusted for mortality improvements using Scale MP-2021, from a base year of 2010.*

	Rates of Disability Retirement	
Age	Male	Female
20	0.01%	0.01%
25	0.01	0.01
30	0.01	0.01
35	0.02	0.02
40	0.04	0.04
45	0.06	0.05
50	0.11	0.10
55	0.26	0.14
60	0.53	0.21
65	0.00	0.00
70	0.00	0.00

Summary of Actuarial Assumptions – Basic and Coordinated (Continued)

	Rates of Service Retirement		
Age	**Rule of 90 Eligible**	**Tier 1**	**Tier 2**
55	20.0%	4.0%	4.0%
56	15.0%	4.0%	4.0%
57	15.0%	5.0%	4.0%
58	15.0%	5.0%	5.0%
59	15.0%	6.0%	5.0%
60	15.0%	8.0%	6.0%
61	15.0%	10.0%	8.0%
62	30.0%	20.0%	15.0%
63	25.0%	20.0%	15.0%
64	25.0%	20.0%	15.0%
65	40.0%	40.0%	25.0%
66	35.0%	35.0%	35.0%
67	25.0%	25.0%	25.0%
68	25.0%	25.0%	25.0%
69	25.0%	25.0%	25.0%
70	25.0%	25.0%	25.0%
71+	100.0%	100.0%	100.0%

Summary of Actuarial Assumptions – Basic and Coordinated (Concluded)

Salary Scale			Rates of Termination	
Year	Increase	Year	Male	Female
1	10.25%	1	21.50%	21.50%
2	7.25	2	16.25	17.25
3	6.00	3	11.00	13.00
4	5.50	4	9.00	11.00
5	5.00	5	8.00	9.00
6	4.70	6	7.00	8.50
7	4.50	7	6.25	8.00
8	4.40	8	5.50	7.50
9	4.30	9	5.00	7.00
10	4.20	10	4.50	6.00
11	4.00	11	4.25	5.50
12	3.90	12	4.00	5.25
13	3.80	13	3.75	5.00
14	3.70	14	3.50	4.75
15	3.65	15	3.00	4.25
16	3.60	16	2.75	3.75
17	3.50	17	2.50	3.50
18	3.40	18	2.25	3.00
19	3.40	19	2.00	2.80
20	3.40	20	1.90	2.70
21	3.30	21	1.85	2.60
22	3.30	22	1.80	2.50
23	3.30	23	1.75	2.40
24	3.20	24	1.70	2.30
25	3.20	25	1.65	2.20
26	3.10	26	1.60	2.10
27	3.00	27	1.55	2.00
28	3.00	28	1.50	1.50
29	3.00	29	1.00	1.50
30+	3.00	30	1.00	1.50

Summary of Actuarial Assumptions - MERF

The following assumptions were used in valuing the liabilities and benefits under the plan for MERF members only. Assumptions regarding investment return, mortality, benefit increases, and Combined Service Annuity (CSA) are the same as shown in the Basic and Coordinated Plan assumption summary.

Salary increases	Total reported pay for prior calendar year increased 1.86% (half year of 3.75%, compounded) to prior fiscal year and 3.75% annually for each future year.
Retirement	Active members are assumed to retire at age 61, or immediately if currently age 61 or older.
Withdrawal	Rates are shown in rate table.
Disability	Age-related rates based on experience; see table of sample rates.
Commencement of deferred benefits	Members receiving deferred annuities (including current terminated deferred members) are assumed to begin receiving benefits at age 60.
Percentage married	66.67% of active members are assumed to be married. Actual marital status is used for members in payment status.
Age of spouse	Females are assumed to be three years younger than their male spouses. For members in payment status, actual spouse date of birth is used, if provided.
Eligible children	Retiring members are assumed to have no dependent children.
Form of payment	Members are assumed to elect a life annuity.
Unknown data for certain members	To prepare this report, GRS has used and relied on participant data supplied by the Fund. Although GRS has reviewed the data in accordance with Actuarial Standards of Practice No. 23, GRS has not verified or audited any of the data or information provided. In cases where submitted data was missing or incomplete, the following assumptions were applied: There were no members with missing or invalid dates of birth. <u>Data for active members:</u> There were 2 active members with missing salary and service. We used expected salary and service based on the prior valuation for these members. <u>Data for terminated members:</u> Benefits were provided by PERA for all members. <u>Data for retired members:</u> There were 5 members reported without a gender. We assumed male gender. Because PERA reclassifies disabled members as retirees once the member reaches Normal Retirement Age, we compare the members that PERA reports as retirees to our disabled group from the last valuation. If a member was disabled in the prior valuation, we reclassify that member as a disabled retiree in this year's valuation. We reclassified 49 retirees as disabled retirees in this valuation.

Summary of Actuarial Assumptions – MERF (Concluded)

Age	Rates of Termination		Rates of Disability Retirement	
	Male	Female	Male	Female
20	21.00%	21.00%	0.21%	0.21%
25	11.00	11.00	0.21	0.21
30	5.00	5.00	0.23	0.23
35	1.50	1.50	0.30	0.30
40	1.00	1.00	0.41	0.41
45	1.00	1.00	0.61	0.61
50	1.00	1.00	0.93	0.93
55	1.00	1.00	1.60	1.60
60	1.00	1.00	0.00	0.00
65	0.00	0.00	0.00	0.00
70	0.00	0.00	0.00	0.00

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 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 assumed long-term expected rate of return is used. 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 3.86%; and **the resulting single discount rate is 7.00%**.

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)

	Payroll			Projected Contributions				
Fiscal Year Ending	Payroll for Current Employees	Payroll for New Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees*	Contributions on Future Payroll toward Current UAL**	Additional State Contributions	Total Contributions
2023	$ 7,493,954	$ -	$ 7,493,954					
2024	$ 7,297,859	$ 238,829	$ 7,536,688	$ 474,361	$ 547,339	$ 12,611	$ 207,093	$ 1,241,404
2025	$ 6,889,525	$ 873,263	$ 7,762,788	$ 447,819	$ 516,714	$ 46,109	$ 37,000	$ 1,047,642
2026	$ 6,520,131	$ 1,475,541	$ 7,995,672	$ 423,808	$ 489,010	$ 77,909	$ 37,000	$ 1,027,727
2027	$ 6,216,926	$ 2,018,616	$ 8,235,542	$ 404,100	$ 466,269	$ 106,584	$ 37,000	$ 1,013,953
2028	$ 5,938,334	$ 2,544,274	$ 8,482,608	$ 385,992	$ 445,375	$ 134,337	$ 37,000	$ 1,002,704
2029	$ 5,676,754	$ 3,060,333	$ 8,737,087	$ 368,989	$ 425,757	$ 161,585	$ 37,000	$ 993,331
2030	$ 5,430,461	$ 3,568,738	$ 8,999,199	$ 352,980	$ 407,285	$ 188,429	$ 37,000	$ 985,694
2031	$ 5,197,508	$ 4,071,667	$ 9,269,175	$ 337,838	$ 389,813	$ 214,984	$ 37,000	$ 979,635
2032	$ 4,976,558	$ 4,570,692	$ 9,547,250	$ 323,476	$ 373,242	$ 241,333	$ -	$ 938,051
2033	$ 4,764,636	$ 5,069,032	$ 9,833,668	$ 309,701	$ 357,348	$ 267,645	$ -	$ 934,694
2034	$ 4,559,844	$ 5,568,834	$ 10,128,678	$ 296,390	$ 341,988	$ 294,035	$ -	$ 932,413
2035	$ 4,362,029	$ 6,070,509	$ 10,432,538	$ 283,532	$ 327,152	$ 320,523	$ -	$ 931,207
2036	$ 4,170,298	$ 6,575,217	$ 10,745,515	$ 271,069	$ 312,772	$ 347,172	$ -	$ 931,013
2037	$ 3,983,566	$ 7,084,314	$ 11,067,880	$ 258,932	$ 298,767	$ 374,052	$ -	$ 931,751
2038	$ 3,802,773	$ 7,597,143	$ 11,399,916	$ 247,180	$ 285,208	$ 401,129	$ -	$ 933,517
2039	$ 3,626,785	$ 8,115,129	$ 11,741,914	$ 235,741	$ 272,009	$ 428,479	$ -	$ 936,229
2040	$ 3,452,557	$ 8,641,614	$ 12,094,171	$ 224,416	$ 258,942	$ 456,277	$ -	$ 939,635
2041	$ 3,278,552	$ 9,178,444	$ 12,456,996	$ 213,106	$ 245,891	$ 484,622	$ -	$ 943,619
2042	$ 3,104,338	$ 9,726,368	$ 12,830,706	$ 201,782	$ 201,782	$ 416,288	$ -	$ 819,852
2043	$ 2,930,231	$ 10,285,397	$ 13,215,628	$ 190,465	$ 190,465	$ 440,215	$ -	$ 821,145
2044	$ 2,756,707	$ 10,855,389	$ 13,612,096	$ 179,186	$ 179,186	$ 464,611	$ -	$ 822,983
2045	$ 2,583,620	$ 11,436,839	$ 14,020,459	$ 167,935	$ 167,935	$ 489,497	$ -	$ 825,367
2046	$ 2,410,527	$ 12,030,546	$ 14,441,073	$ 156,684	$ 156,684	$ 514,908	$ -	$ 828,276
2047	$ 2,237,727	$ 12,636,578	$ 14,874,305	$ 145,452	$ 145,452	$ 540,846	$ -	$ 831,750
2048	$ 2,066,791	$ 13,253,743	$ 15,320,534	$ 134,341	$ 134,341	$ 567,261	$ -	$ 835,943
2049	$ 1,898,906	$ 13,881,244	$ 15,780,150	$ 123,429	$ 123,429	$ 594,117	$ -	$ 840,975
2050	$ 1,734,965	$ 14,518,590	$ 16,253,555	$ 112,773	$ 112,773	$ 621,395	$ -	$ 846,941
2051	$ 1,575,676	$ 15,165,486	$ 16,741,162	$ 102,419	$ 102,419	$ 649,083	$ -	$ 853,921
2052	$ 1,421,542	$ 15,821,854	$ 17,243,396	$ 92,400	$ 92,400	$ 677,176	$ -	$ 861,976
2053	$ 1,273,615	$ 16,487,083	$ 17,760,698	$ 82,785	$ 82,785	$ 705,647	$ -	$ 871,217
2054	$ 1,132,960	$ 17,160,559	$ 18,293,519	$ 73,642	$ 73,642	$ 734,473	$ -	$ 881,757
2055	$ 1,000,071	$ 17,842,254	$ 18,842,325	$ 65,005	$ 65,005	$ 763,648	$ -	$ 893,658
2056	$ 875,060	$ 18,532,535	$ 19,407,595	$ 56,879	$ 56,879	$ 793,192	$ -	$ 906,950
2057	$ 758,650	$ 19,231,172	$ 19,989,822	$ 49,312	$ 49,312	$ 823,095	$ -	$ 921,719
2058	$ 651,152	$ 19,938,365	$ 20,589,517	$ 42,325	$ 42,325	$ 853,362	$ -	$ 938,012
2059	$ 552,697	$ 20,654,506	$ 21,207,203	$ 35,925	$ 35,925	$ 884,013	$ -	$ 955,863
2060	$ 463,346	$ 21,380,073	$ 21,843,419	$ 30,118	$ 30,118	$ 915,066	$ -	$ 975,302
2061	$ 383,201	$ 22,115,520	$ 22,498,721	$ 24,908	$ 24,908	$ 946,544	$ -	$ 996,360
2062	$ 312,073	$ 22,861,610	$ 23,173,683	$ 20,285	$ 20,285	$ 978,476	$ -	$ 1,019,046
2063	$ 249,578	$ 23,619,315	$ 23,868,893	$ 16,223	$ 16,223	$ 1,010,906	$ -	$ 1,043,352
2064	$ 195,732	$ 24,389,228	$ 24,584,960	$ 12,723	$ 12,723	$ 1,043,858	$ -	$ 1,069,304
2065	$ 149,952	$ 25,172,557	$ 25,322,509	$ 9,747	$ 9,747	$ 1,077,385	$ -	$ 1,096,879
2066	$ 111,976	$ 25,970,208	$ 26,082,184	$ 7,278	$ 7,278	$ 1,111,526	$ -	$ 1,126,082
2067	$ 81,628	$ 26,783,022	$ 26,864,650	$ 5,306	$ 5,306	$ 1,146,313	$ -	$ 1,156,925
2068	$ 57,819	$ 27,612,770	$ 27,670,589	$ 3,758	$ 3,758	$ 1,181,827	$ -	$ 1,189,343
2069	$ 39,413	$ 28,461,294	$ 28,500,707	$ 2,562	$ 2,562	$ 1,218,143	$ -	$ 1,223,267
2070	$ 25,648	$ 29,330,080	$ 29,355,728	$ 1,667	$ 1,667	$ 1,255,328	$ -	$ 1,258,662
2071	$ 15,854	$ 30,220,546	$ 30,236,400	$ 1,031	$ 1,031	$ 1,293,438	$ -	$ 1,295,500
2072	$ 9,377	$ 31,134,115	$ 31,143,492	$ 610	$ 610	$ 1,332,539	$ -	$ 1,333,759
2073	$ 5,268	$ 32,072,529	$ 32,077,797	$ 342	$ 342	$ 1,372,705	$ -	$ 1,373,389

* *Employer contributions are 7.5% of payroll until 100% funded on an actuarial value of assets basis and 6.5% of payroll after. The employer contributions are assumed to change after 18 years.*

** *Equal to total contributions (14.00% of payroll for new employees; 13.00% of payroll after 18 years) net of normal cost and expenses (8.72% of payroll).*

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

	Payroll			Projected Contributions				
Fiscal Year Ending	Payroll for Current Employees	Payroll for New Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees*	Contributions on Future Payroll toward Current UAL**	Additional State Contributions	Total Contributions
2074	$ 2,589	$ 33,037,542	$ 33,040,131	$ 168	$ 168	$ 1,414,007	$ -	$ 1,414,343
2075	$ 942	$ 34,030,392	$ 34,031,334	$ 61	$ 61	$ 1,456,501	$ -	$ 1,456,623
2076	$ 243	$ 35,052,032	$ 35,052,275	$ 16	$ 16	$ 1,500,227	$ -	$ 1,500,259
2077	$ 67	$ 36,103,776	$ 36,103,843	$ 4	$ 4	$ 1,545,242	$ -	$ 1,545,250
2078	$ 16	$ 37,186,942	$ 37,186,958	$ 1	$ 1	$ 1,591,601	$ -	$ 1,591,603
2079	$ 3	$ 38,302,564	$ 38,302,567	$ -	$ -	$ 1,639,350	$ -	$ 1,639,350
2080	$ -	$ 39,451,644	$ 39,451,644	$ -	$ -	$ 1,688,530	$ -	$ 1,688,530
2081	$ -	$ 40,635,193	$ 40,635,193	$ -	$ -	$ 1,739,186	$ -	$ 1,739,186
2082	$ -	$ 41,854,249	$ 41,854,249	$ -	$ -	$ 1,791,362	$ -	$ 1,791,362
2083	$ -	$ 43,109,876	$ 43,109,876	$ -	$ -	$ 1,845,103	$ -	$ 1,845,103
2084	$ -	$ 44,403,173	$ 44,403,173	$ -	$ -	$ 1,900,456	$ -	$ 1,900,456
2085	$ -	$ 45,735,268	$ 45,735,268	$ -	$ -	$ 1,957,469	$ -	$ 1,957,469
2086	$ -	$ 47,107,326	$ 47,107,326	$ -	$ -	$ 2,016,194	$ -	$ 2,016,194
2087	$ -	$ 48,520,546	$ 48,520,546	$ -	$ -	$ 2,076,679	$ -	$ 2,076,679
2088	$ -	$ 49,976,162	$ 49,976,162	$ -	$ -	$ 2,138,980	$ -	$ 2,138,980
2089	$ -	$ 51,475,447	$ 51,475,447	$ -	$ -	$ 2,203,149	$ -	$ 2,203,149
2090	$ -	$ 53,019,710	$ 53,019,710	$ -	$ -	$ 2,269,244	$ -	$ 2,269,244
2091	$ -	$ 54,610,302	$ 54,610,302	$ -	$ -	$ 2,337,321	$ -	$ 2,337,321
2092	$ -	$ 56,248,611	$ 56,248,611	$ -	$ -	$ 2,407,441	$ -	$ 2,407,441
2093	$ -	$ 57,936,069	$ 57,936,069	$ -	$ -	$ 2,479,664	$ -	$ 2,479,664
2094	$ -	$ 59,674,151	$ 59,674,151	$ -	$ -	$ 2,554,054	$ -	$ 2,554,054
2095	$ -	$ 61,464,376	$ 61,464,376	$ -	$ -	$ 2,630,675	$ -	$ 2,630,675
2096	$ -	$ 63,308,307	$ 63,308,307	$ -	$ -	$ 2,709,596	$ -	$ 2,709,596
2097	$ -	$ 65,207,556	$ 65,207,556	$ -	$ -	$ 2,790,883	$ -	$ 2,790,883
2098	$ -	$ 67,163,783	$ 67,163,783	$ -	$ -	$ 2,874,610	$ -	$ 2,874,610
2099	$ -	$ 69,178,696	$ 69,178,696	$ -	$ -	$ 2,960,848	$ -	$ 2,960,848
2100	$ -	$ 71,254,057	$ 71,254,057	$ -	$ -	$ 3,049,674	$ -	$ 3,049,674
2101	$ -	$ 73,391,679	$ 73,391,679	$ -	$ -	$ 3,141,164	$ -	$ 3,141,164
2102	$ -	$ 75,593,429	$ 75,593,429	$ -	$ -	$ 3,235,399	$ -	$ 3,235,399
2103	$ -	$ 77,861,232	$ 77,861,232	$ -	$ -	$ 3,332,461	$ -	$ 3,332,461
2104	$ -	$ 80,197,069	$ 80,197,069	$ -	$ -	$ 3,432,435	$ -	$ 3,432,435
2105	$ -	$ 82,602,981	$ 82,602,981	$ -	$ -	$ 3,535,408	$ -	$ 3,535,408
2106	$ -	$ 85,081,070	$ 85,081,070	$ -	$ -	$ 3,641,470	$ -	$ 3,641,470
2107	$ -	$ 87,633,503	$ 87,633,503	$ -	$ -	$ 3,750,714	$ -	$ 3,750,714
2108	$ -	$ 90,262,508	$ 90,262,508	$ -	$ -	$ 3,863,235	$ -	$ 3,863,235
2109	$ -	$ 92,970,383	$ 92,970,383	$ -	$ -	$ 3,979,132	$ -	$ 3,979,132
2110	$ -	$ 95,759,494	$ 95,759,494	$ -	$ -	$ 4,098,506	$ -	$ 4,098,506
2111	$ -	$ 98,632,279	$ 98,632,279	$ -	$ -	$ 4,221,462	$ -	$ 4,221,462
2112	$ -	$ 101,591,248	$ 101,591,248	$ -	$ -	$ 4,348,105	$ -	$ 4,348,105
2113	$ -	$ 104,638,985	$ 104,638,985	$ -	$ -	$ 4,478,549	$ -	$ 4,478,549
2114	$ -	$ 107,778,155	$ 107,778,155	$ -	$ -	$ 4,612,905	$ -	$ 4,612,905
2115	$ -	$ 111,011,499	$ 111,011,499	$ -	$ -	$ 4,751,292	$ -	$ 4,751,292
2116	$ -	$ 114,341,844	$ 114,341,844	$ -	$ -	$ 4,893,831	$ -	$ 4,893,831
2117	$ -	$ 117,772,099	$ 117,772,099	$ -	$ -	$ 5,040,646	$ -	$ 5,040,646
2118	$ -	$ 121,305,262	$ 121,305,262	$ -	$ -	$ 5,191,865	$ -	$ 5,191,865
2119	$ -	$ 124,944,420	$ 124,944,420	$ -	$ -	$ 5,347,621	$ -	$ 5,347,621
2120	$ -	$ 128,692,753	$ 128,692,753	$ -	$ -	$ 5,508,050	$ -	$ 5,508,050
2121	$ -	$ 132,553,536	$ 132,553,536	$ -	$ -	$ 5,673,291	$ -	$ 5,673,291
2122	$ -	$ 136,530,142	$ 136,530,142	$ -	$ -	$ 5,843,490	$ -	$ 5,843,490
2123	$ -	$ 140,626,046	$ 140,626,046	$ -	$ -	$ 6,018,795	$ -	$ 6,018,795

* *Employer contributions are 7.5% of payroll until 100% funded on an actuarial value of assets basis and 6.5% of payroll after. The employer contributions are assumed to change after 18 years.*

** *Equal to total contributions (14.00% of payroll for new employees; 13.00% of payroll after 18 years) net of normal cost and expenses (8.72% of payroll).*

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

Fiscal Year Ending	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2024	$ 27,500,777	$ 1,241,404	$ 1,941,559	$ 14,596	$ 1,900,461	$ 28,686,487
2025	$ 28,686,487	$ 1,047,642	$ 1,990,741	$ 13,779	$ 1,975,130	$ 29,704,739
2026	$ 29,704,739	$ 1,027,727	$ 2,066,211	$ 13,040	$ 2,043,151	$ 30,696,366
2027	$ 30,696,366	$ 1,013,953	$ 2,145,175	$ 12,434	$ 2,109,395	$ 31,662,105
2028	$ 31,662,105	$ 1,002,704	$ 2,223,896	$ 11,877	$ 2,173,920	$ 32,602,956
2029	$ 32,602,956	$ 993,331	$ 2,299,086	$ 11,354	$ 2,236,888	$ 33,522,735
2030	$ 33,522,735	$ 985,694	$ 2,372,288	$ 10,861	$ 2,298,508	$ 34,423,788
2031	$ 34,423,788	$ 979,635	$ 2,442,406	$ 10,395	$ 2,358,976	$ 35,309,598
2032	$ 35,309,598	$ 938,051	$ 2,510,258	$ 9,953	$ 2,417,233	$ 36,144,671
2033	$ 36,144,671	$ 934,694	$ 2,576,006	$ 9,529	$ 2,473,325	$ 36,967,155
2034	$ 36,967,155	$ 932,413	$ 2,639,745	$ 9,120	$ 2,528,641	$ 37,779,344
2035	$ 37,779,344	$ 931,207	$ 2,700,703	$ 8,724	$ 2,583,369	$ 38,584,493
2036	$ 38,584,493	$ 931,013	$ 2,761,106	$ 8,341	$ 2,637,657	$ 39,383,716
2037	$ 39,383,716	$ 931,751	$ 2,819,754	$ 7,967	$ 2,691,623	$ 40,179,369
2038	$ 40,179,369	$ 933,517	$ 2,874,645	$ 7,606	$ 2,745,504	$ 40,976,139
2039	$ 40,976,139	$ 936,229	$ 2,924,965	$ 7,254	$ 2,799,652	$ 41,779,801
2040	$ 41,779,801	$ 939,635	$ 2,972,737	$ 6,905	$ 2,854,393	$ 42,594,187
2041	$ 42,594,187	$ 943,619	$ 3,017,959	$ 6,557	$ 2,909,993	$ 43,423,283
2042	$ 43,423,283	$ 819,852	$ 3,061,439	$ 6,209	$ 2,962,288	$ 44,137,775
2043	$ 44,137,775	$ 821,145	$ 3,102,335	$ 5,860	$ 3,010,951	$ 44,861,676
2044	$ 44,861,676	$ 822,983	$ 3,141,182	$ 5,513	$ 3,060,363	$ 45,598,327
2045	$ 45,598,327	$ 825,367	$ 3,178,035	$ 5,167	$ 3,110,754	$ 46,351,246
2046	$ 46,351,246	$ 828,276	$ 3,213,326	$ 4,821	$ 3,162,356	$ 47,123,731
2047	$ 47,123,731	$ 831,750	$ 3,247,287	$ 4,475	$ 3,215,393	$ 47,919,112
2048	$ 47,919,112	$ 835,943	$ 3,279,492	$ 4,134	$ 3,270,118	$ 48,741,547
2049	$ 48,741,547	$ 840,975	$ 3,308,726	$ 3,798	$ 3,326,867	$ 49,596,865
2050	$ 49,596,865	$ 846,941	$ 3,334,574	$ 3,470	$ 3,386,066	$ 50,491,828
2051	$ 50,491,828	$ 853,921	$ 3,357,635	$ 3,151	$ 3,448,172	$ 51,433,135
2052	$ 51,433,135	$ 861,976	$ 3,378,067	$ 2,843	$ 3,513,648	$ 52,427,849
2053	$ 52,427,849	$ 871,217	$ 3,394,773	$ 2,547	$ 3,583,031	$ 53,484,777
2054	$ 53,484,777	$ 881,757	$ 3,407,375	$ 2,266	$ 3,656,955	$ 54,613,848
2055	$ 54,613,848	$ 893,658	$ 3,415,785	$ 2,000	$ 3,736,119	$ 55,825,840
2056	$ 55,825,840	$ 906,950	$ 3,420,202	$ 1,750	$ 3,821,272	$ 57,132,110
2057	$ 57,132,110	$ 921,719	$ 3,419,812	$ 1,517	$ 3,913,241	$ 58,545,741
2058	$ 58,545,741	$ 938,012	$ 3,415,072	$ 1,302	$ 4,012,926	$ 60,080,305
2059	$ 60,080,305	$ 955,863	$ 3,404,566	$ 1,105	$ 4,121,328	$ 61,751,825
2060	$ 61,751,825	$ 975,302	$ 3,388,570	$ 927	$ 4,239,560	$ 63,577,190
2061	$ 63,577,190	$ 996,360	$ 3,366,362	$ 766	$ 4,368,829	$ 65,575,251
2062	$ 65,575,251	$ 1,019,046	$ 3,337,365	$ 624	$ 4,510,477	$ 67,766,785
2063	$ 67,766,785	$ 1,043,352	$ 3,302,198	$ 499	$ 4,665,935	$ 70,173,375
2064	$ 70,173,375	$ 1,069,304	$ 3,260,076	$ 391	$ 4,836,742	$ 72,818,954
2065	$ 72,818,954	$ 1,096,879	$ 3,211,075	$ 300	$ 5,024,571	$ 75,729,029
2066	$ 75,729,029	$ 1,126,082	$ 3,154,706	$ 224	$ 5,231,223	$ 78,931,404
2067	$ 78,931,404	$ 1,156,925	$ 3,088,791	$ 163	$ 5,458,721	$ 82,458,096
2068	$ 82,458,096	$ 1,189,343	$ 3,013,642	$ 116	$ 5,709,292	$ 86,342,973
2069	$ 86,342,973	$ 1,223,267	$ 2,931,401	$ 79	$ 5,985,232	$ 90,619,992
2070	$ 90,619,992	$ 1,258,662	$ 2,842,293	$ 51	$ 6,288,908	$ 95,325,218
2071	$ 95,325,218	$ 1,295,500	$ 2,745,326	$ 32	$ 6,622,878	$ 100,498,238
2072	$ 100,498,238	$ 1,333,759	$ 2,642,041	$ 19	$ 6,989,860	$ 106,179,797
2073	$ 106,179,797	$ 1,373,389	$ 2,534,875	$ 11	$ 7,392,621	$ 112,410,921

For purposes of this projection, we assumed the 13.0% statutory contribution rate would continue after the plan becomes fully funded.

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

Fiscal Year Ending	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2074	$ 112,410,921	$ 1,414,343	$ 2,424,938	$ 5	$ 7,833,991	$ 119,234,312
2075	$ 119,234,312	$ 1,456,623	$ 2,312,755	$ 2	$ 8,316,944	$ 126,695,122
2076	$ 126,695,122	$ 1,500,259	$ 2,198,604	$ -	$ 8,844,630	$ 134,841,407
2077	$ 134,841,407	$ 1,545,250	$ 2,083,096	$ -	$ 9,420,392	$ 143,723,953
2078	$ 143,723,953	$ 1,591,603	$ 1,966,854	$ -	$ 10,047,765	$ 153,396,467
2079	$ 153,396,467	$ 1,639,350	$ 1,850,320	$ -	$ 10,730,493	$ 163,915,990
2080	$ 163,915,990	$ 1,688,530	$ 1,733,938	$ -	$ 11,472,557	$ 175,343,139
2081	$ 175,343,139	$ 1,739,186	$ 1,618,177	$ -	$ 12,278,183	$ 187,742,331
2082	$ 187,742,331	$ 1,791,362	$ 1,503,539	$ -	$ 13,151,866	$ 201,182,020
2083	$ 201,182,020	$ 1,845,103	$ 1,390,544	$ -	$ 14,098,382	$ 215,734,961
2084	$ 215,734,961	$ 1,900,456	$ 1,279,722	$ -	$ 15,122,805	$ 231,478,500
2085	$ 231,478,500	$ 1,957,469	$ 1,171,602	$ -	$ 16,230,535	$ 248,494,902
2086	$ 248,494,902	$ 2,016,194	$ 1,066,705	$ -	$ 17,427,313	$ 266,871,704
2087	$ 266,871,704	$ 2,076,679	$ 965,526	$ -	$ 18,719,252	$ 286,702,109
2088	$ 286,702,109	$ 2,138,980	$ 868,531	$ -	$ 20,112,861	$ 308,085,419
2089	$ 308,085,419	$ 2,203,149	$ 776,148	$ -	$ 21,615,079	$ 331,127,499
2090	$ 331,127,499	$ 2,269,244	$ 688,753	$ -	$ 23,233,306	$ 355,941,296
2091	$ 355,941,296	$ 2,337,321	$ 606,672	$ -	$ 24,975,439	$ 382,647,384
2092	$ 382,647,384	$ 2,407,441	$ 530,167	$ -	$ 26,849,910	$ 411,374,568
2093	$ 411,374,568	$ 2,479,664	$ 459,438	$ -	$ 28,865,731	$ 442,260,525
2094	$ 442,260,525	$ 2,554,054	$ 394,612	$ -	$ 31,032,539	$ 475,452,506
2095	$ 475,452,506	$ 2,630,675	$ 335,744	$ -	$ 33,360,639	$ 511,108,076
2096	$ 511,108,076	$ 2,709,596	$ 282,813	$ -	$ 35,861,066	$ 549,395,925
2097	$ 549,395,925	$ 2,790,883	$ 235,717	$ -	$ 38,545,633	$ 590,496,724
2098	$ 590,496,724	$ 2,874,610	$ 194,279	$ -	$ 41,426,995	$ 634,604,050
2099	$ 634,604,050	$ 2,960,848	$ 158,246	$ -	$ 44,518,715	$ 681,925,367
2100	$ 681,925,367	$ 3,049,674	$ 127,302	$ -	$ 47,835,328	$ 732,683,067
2101	$ 732,683,067	$ 3,141,164	$ 101,078	$ -	$ 51,392,418	$ 787,115,571
2102	$ 787,115,571	$ 3,235,399	$ 79,161	$ -	$ 55,206,689	$ 845,478,498
2103	$ 845,478,498	$ 3,332,461	$ 61,108	$ -	$ 59,296,055	$ 908,045,906
2104	$ 908,045,906	$ 3,432,435	$ 46,464	$ -	$ 63,679,718	$ 975,111,595
2105	$ 975,111,595	$ 3,535,408	$ 34,778	$ -	$ 68,378,261	$ 1,046,990,486
2106	$ 1,046,990,486	$ 3,641,470	$ 25,610	$ -	$ 73,413,748	$ 1,124,020,094
2107	$ 1,124,020,094	$ 3,750,714	$ 18,543	$ -	$ 78,809,823	$ 1,206,562,088
2108	$ 1,206,562,088	$ 3,863,235	$ 13,195	$ -	$ 84,591,818	$ 1,295,003,946
2109	$ 1,295,003,946	$ 3,979,132	$ 9,226	$ -	$ 90,786,872	$ 1,389,760,724
2110	$ 1,389,760,724	$ 4,098,506	$ 6,338	$ -	$ 97,424,054	$ 1,491,276,946
2111	$ 1,491,276,946	$ 4,221,462	$ 4,277	$ -	$ 104,534,491	$ 1,600,028,622
2112	$ 1,600,028,622	$ 4,348,105	$ 2,837	$ -	$ 112,151,515	$ 1,716,525,405
2113	$ 1,716,525,405	$ 4,478,549	$ 1,851	$ -	$ 120,310,812	$ 1,841,312,915
2114	$ 1,841,312,915	$ 4,612,905	$ 1,189	$ -	$ 129,050,584	$ 1,974,975,215
2115	$ 1,974,975,215	$ 4,751,292	$ 753	$ -	$ 138,411,721	$ 2,118,137,475
2116	$ 2,118,137,475	$ 4,893,831	$ 472	$ -	$ 148,437,994	$ 2,271,468,828
2117	$ 2,271,468,828	$ 5,040,646	$ 293	$ -	$ 159,176,246	$ 2,435,685,427
2118	$ 2,435,685,427	$ 5,191,865	$ 181	$ -	$ 170,676,615	$ 2,611,553,726
2119	$ 2,611,553,726	$ 5,347,621	$ 111	$ -	$ 182,992,758	$ 2,799,893,994
2120	$ 2,799,893,994	$ 5,508,050	$ 68	$ -	$ 196,182,098	$ 3,001,584,074
2121	$ 3,001,584,074	$ 5,673,291	$ 41	$ -	$ 210,306,090	$ 3,217,563,414
2122	$ 3,217,563,414	$ 5,843,490	$ 25	$ -	$ 225,430,501	$ 3,448,837,380
2123	$ 3,448,837,380	$ 6,018,795	$ 34	$ -	$ 241,625,710	$ 3,696,481,851

For purposes of this projection, we assumed the 13.0% statutory contribution rate would continue after the plan becomes fully funded.

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

Fiscal Year Ending	Projected Beginning Plan 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)
2024	$ 27,500,777	$ 1,941,559	$ 1,941,559	$ -	$ 1,876,976	$ -	$ 1,876,976
2025	$ 28,686,487	$ 1,990,741	$ 1,990,741	$ -	$ 1,798,619	$ -	$ 1,798,619
2026	$ 29,704,738	$ 2,066,211	$ 2,066,211	$ -	$ 1,744,678	$ -	$ 1,744,678
2027	$ 30,696,365	$ 2,145,175	$ 2,145,175	$ -	$ 1,692,854	$ -	$ 1,692,854
2028	$ 31,662,104	$ 2,223,896	$ 2,223,896	$ -	$ 1,640,165	$ -	$ 1,640,165
2029	$ 32,602,955	$ 2,299,086	$ 2,299,086	$ -	$ 1,584,690	$ -	$ 1,584,690
2030	$ 33,522,734	$ 2,372,288	$ 2,372,288	$ -	$ 1,528,174	$ -	$ 1,528,174
2031	$ 34,423,787	$ 2,442,406	$ 2,442,406	$ -	$ 1,470,414	$ -	$ 1,470,414
2032	$ 35,309,597	$ 2,510,258	$ 2,510,258	$ -	$ 1,412,395	$ -	$ 1,412,395
2033	$ 36,144,669	$ 2,576,006	$ 2,576,006	$ -	$ 1,354,569	$ -	$ 1,354,569
2034	$ 36,967,153	$ 2,639,745	$ 2,639,745	$ -	$ 1,297,276	$ -	$ 1,297,276
2035	$ 37,779,341	$ 2,700,703	$ 2,700,703	$ -	$ 1,240,405	$ -	$ 1,240,405
2036	$ 38,584,490	$ 2,761,106	$ 2,761,106	$ -	$ 1,185,184	$ -	$ 1,185,184
2037	$ 39,383,714	$ 2,819,754	$ 2,819,754	$ -	$ 1,131,176	$ -	$ 1,131,176
2038	$ 40,179,368	$ 2,874,645	$ 2,874,645	$ -	$ 1,077,753	$ -	$ 1,077,753
2039	$ 40,976,138	$ 2,924,965	$ 2,924,965	$ -	$ 1,024,878	$ -	$ 1,024,878
2040	$ 41,779,800	$ 2,972,737	$ 2,972,737	$ -	$ 973,474	$ -	$ 973,474
2041	$ 42,594,187	$ 3,017,959	$ 3,017,959	$ -	$ 923,628	$ -	$ 923,628
2042	$ 43,423,283	$ 3,061,439	$ 3,061,439	$ -	$ 875,640	$ -	$ 875,640
2043	$ 44,137,775	$ 3,102,335	$ 3,102,335	$ -	$ 829,287	$ -	$ 829,287
2044	$ 44,861,675	$ 3,141,182	$ 3,141,182	$ -	$ 784,740	$ -	$ 784,740
2045	$ 45,598,325	$ 3,178,035	$ 3,178,035	$ -	$ 742,006	$ -	$ 742,006
2046	$ 46,351,244	$ 3,213,326	$ 3,213,326	$ -	$ 701,164	$ -	$ 701,164
2047	$ 47,123,729	$ 3,247,287	$ 3,247,287	$ -	$ 662,219	$ -	$ 662,219
2048	$ 47,919,110	$ 3,279,492	$ 3,279,492	$ -	$ 625,035	$ -	$ 625,035
2049	$ 48,741,545	$ 3,308,726	$ 3,308,726	$ -	$ 589,352	$ -	$ 589,352
2050	$ 49,596,863	$ 3,334,574	$ 3,334,574	$ -	$ 555,099	$ -	$ 555,099
2051	$ 50,491,827	$ 3,357,635	$ 3,357,635	$ -	$ 522,372	$ -	$ 522,372
2052	$ 51,433,133	$ 3,378,067	$ 3,378,067	$ -	$ 491,169	$ -	$ 491,169
2053	$ 52,427,847	$ 3,394,773	$ 3,394,773	$ -	$ 461,306	$ -	$ 461,306
2054	$ 53,484,774	$ 3,407,375	$ 3,407,375	$ -	$ 432,728	$ -	$ 432,728
2055	$ 54,613,844	$ 3,415,785	$ 3,415,785	$ -	$ 405,417	$ -	$ 405,417
2056	$ 55,825,835	$ 3,420,202	$ 3,420,202	$ -	$ 379,384	$ -	$ 379,384
2057	$ 57,132,105	$ 3,419,812	$ 3,419,812	$ -	$ 354,524	$ -	$ 354,524
2058	$ 58,545,735	$ 3,415,072	$ 3,415,072	$ -	$ 330,872	$ -	$ 330,872
2059	$ 60,080,299	$ 3,404,566	$ 3,404,566	$ -	$ 308,275	$ -	$ 308,275
2060	$ 61,751,819	$ 3,388,570	$ 3,388,570	$ -	$ 286,753	$ -	$ 286,753
2061	$ 63,577,185	$ 3,366,362	$ 3,366,362	$ -	$ 266,237	$ -	$ 266,237
2062	$ 65,575,246	$ 3,337,365	$ 3,337,365	$ -	$ 246,677	$ -	$ 246,677
2063	$ 67,766,780	$ 3,302,198	$ 3,302,198	$ -	$ 228,110	$ -	$ 228,110
2064	$ 70,173,370	$ 3,260,076	$ 3,260,076	$ -	$ 210,467	$ -	$ 210,467
2065	$ 72,818,949	$ 3,211,075	$ 3,211,075	$ -	$ 193,742	$ -	$ 193,742
2066	$ 75,729,025	$ 3,154,706	$ 3,154,706	$ -	$ 177,889	$ -	$ 177,889
2067	$ 78,931,400	$ 3,088,791	$ 3,088,791	$ -	$ 162,777	$ -	$ 162,777
2068	$ 82,458,091	$ 3,013,642	$ 3,013,642	$ -	$ 148,427	$ -	$ 148,427
2069	$ 86,342,968	$ 2,931,401	$ 2,931,401	$ -	$ 134,931	$ -	$ 134,931
2070	$ 90,619,987	$ 2,842,293	$ 2,842,293	$ -	$ 122,271	$ -	$ 122,271
2071	$ 95,325,212	$ 2,745,326	$ 2,745,326	$ -	$ 110,373	$ -	$ 110,373
2072	$ 100,498,232	$ 2,642,041	$ 2,642,041	$ -	$ 99,272	$ -	$ 99,272
2073	$ 106,179,792	$ 2,534,875	$ 2,534,875	$ -	$ 89,014	$ -	$ 89,014

Single Discount Rate Development
Present Values of Projected Benefit Payments
(Dollars in Thousands) (Concluded)

Fiscal Year Ending	Projected Beginning Plan 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)
2074	$ 112,410,916	$ 2,424,938	$ 2,424,938	$ -	$ 79,583	$ -	$ 79,583
2075	$ 119,234,308	$ 2,312,755	$ 2,312,755	$ -	$ 70,936	$ -	$ 70,936
2076	$ 126,695,118	$ 2,198,604	$ 2,198,604	$ -	$ 63,023	$ -	$ 63,023
2077	$ 134,841,402	$ 2,083,096	$ 2,083,096	$ -	$ 55,806	$ -	$ 55,806
2078	$ 143,723,948	$ 1,966,854	$ 1,966,854	$ -	$ 49,244	$ -	$ 49,244
2079	$ 153,396,462	$ 1,850,320	$ 1,850,320	$ -	$ 43,296	$ -	$ 43,296
2080	$ 163,915,985	$ 1,733,938	$ 1,733,938	$ -	$ 37,918	$ -	$ 37,918
2081	$ 175,343,134	$ 1,618,177	$ 1,618,177	$ -	$ 33,072	$ -	$ 33,072
2082	$ 187,742,326	$ 1,503,539	$ 1,503,539	$ -	$ 28,719	$ -	$ 28,719
2083	$ 201,182,015	$ 1,390,544	$ 1,390,544	$ -	$ 24,823	$ -	$ 24,823
2084	$ 215,734,956	$ 1,279,722	$ 1,279,722	$ -	$ 21,350	$ -	$ 21,350
2085	$ 231,478,496	$ 1,171,602	$ 1,171,602	$ -	$ 18,267	$ -	$ 18,267
2086	$ 248,494,897	$ 1,066,705	$ 1,066,705	$ -	$ 15,544	$ -	$ 15,544
2087	$ 266,871,699	$ 965,526	$ 965,526	$ -	$ 13,149	$ -	$ 13,149
2088	$ 286,702,104	$ 868,531	$ 868,531	$ -	$ 11,054	$ -	$ 11,054
2089	$ 308,085,414	$ 776,148	$ 776,148	$ -	$ 9,232	$ -	$ 9,232
2090	$ 331,127,495	$ 688,753	$ 688,753	$ -	$ 7,657	$ -	$ 7,657
2091	$ 355,941,291	$ 606,672	$ 606,672	$ -	$ 6,303	$ -	$ 6,303
2092	$ 382,647,379	$ 530,167	$ 530,167	$ -	$ 5,148	$ -	$ 5,148
2093	$ 411,374,562	$ 459,438	$ 459,438	$ -	$ 4,169	$ -	$ 4,169
2094	$ 442,260,519	$ 394,612	$ 394,612	$ -	$ 3,347	$ -	$ 3,347
2095	$ 475,452,500	$ 335,744	$ 335,744	$ -	$ 2,661	$ -	$ 2,661
2096	$ 511,108,070	$ 282,813	$ 282,813	$ -	$ 2,095	$ -	$ 2,095
2097	$ 549,395,918	$ 235,717	$ 235,717	$ -	$ 1,632	$ -	$ 1,632
2098	$ 590,496,717	$ 194,279	$ 194,279	$ -	$ 1,257	$ -	$ 1,257
2099	$ 634,604,043	$ 158,246	$ 158,246	$ -	$ 957	$ -	$ 957
2100	$ 681,925,360	$ 127,302	$ 127,302	$ -	$ 719	$ -	$ 719
2101	$ 732,683,060	$ 101,078	$ 101,078	$ -	$ 534	$ -	$ 534
2102	$ 787,115,563	$ 79,161	$ 79,161	$ -	$ 391	$ -	$ 391
2103	$ 845,478,491	$ 61,108	$ 61,108	$ -	$ 282	$ -	$ 282
2104	$ 908,045,899	$ 46,464	$ 46,464	$ -	$ 200	$ -	$ 200
2105	$ 975,111,587	$ 34,778	$ 34,778	$ -	$ 140	$ -	$ 140
2106	$ 1,046,990,477	$ 25,610	$ 25,610	$ -	$ 96	$ -	$ 96
2107	$ 1,124,020,085	$ 18,543	$ 18,543	$ -	$ 65	$ -	$ 65
2108	$ 1,206,562,079	$ 13,195	$ 13,195	$ -	$ 43	$ -	$ 43
2109	$ 1,295,003,937	$ 9,226	$ 9,226	$ -	$ 28	$ -	$ 28
2110	$ 1,389,760,715	$ 6,338	$ 6,338	$ -	$ 18	$ -	$ 18
2111	$ 1,491,276,937	$ 4,277	$ 4,277	$ -	$ 11	$ -	$ 11
2112	$ 1,600,028,612	$ 2,837	$ 2,837	$ -	$ 7	$ -	$ 7
2113	$ 1,716,525,396	$ 1,851	$ 1,851	$ -	$ 4	$ -	$ 4
2114	$ 1,841,312,906	$ 1,189	$ 1,189	$ -	$ 3	$ -	$ 3
2115	$ 1,974,975,206	$ 753	$ 753	$ -	$ 2	$ -	$ 2
2116	$ 2,118,137,466	$ 472	$ 472	$ -	$ 1	$ -	$ 1
2117	$ 2,271,468,818	$ 293	$ 293	$ -	$ 1	$ -	$ 1
2118	$ 2,435,685,417	$ 181	$ 181	$ -	$ -	$ -	$ -
2119	$ 2,611,553,717	$ 111	$ 111	$ -	$ -	$ -	$ -
2120	$ 2,799,893,985	$ 68	$ 68	$ -	$ -	$ -	$ -
2121	$ 3,001,584,065	$ 41	$ 41	$ -	$ -	$ -	$ -
2122	$ 3,217,563,405	$ 25	$ 25	$ -	$ -	$ -	$ -
2123	$ 3,448,837,371	$ 34	$ 34	$ -	$ -	$ -	$ -
				Totals	$ 38,097,625	$ -	$ 38,097,625

SECTION H

GLOSSARY OF TERMS

Glossary of Terms

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

Glossary of Terms

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

Glossary of Terms

Entry Age Actuarial Cost Method (EAN)	The EAN is a funding method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit age(s). The portion of the actuarial present value allocated to a valuation year is the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.
GASB	The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.
Fiduciary Net Position	The fiduciary net position is the value of the assets of the trust.
Long-Term Expected Rate of Return	The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.
Money-Weighted Rate of Return	The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.
Multiple-Employer Defined Benefit Pension Plan	A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
Municipal Bond Rate	The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.
Net Pension Liability (NPL)	The NPL is the liability of employers and non-employer contribution entities to plan members for benefits provided through a defined benefit pension plan.
Non-Employer Contribution Entities	Non-employer contribution 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 Statement plan members are not considered non-employer contribution entities.
Normal Cost	The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.

Glossary of Terms

Other Postemployment Benefits (OPEB)	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other postemployment benefits do not include termination benefits.
Real Rate of Return	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
Service Cost	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
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 Benefit Changes 4. Employee Contributions (made negative for addition here) 5. Projected Earnings on Plan Investments (made negative for addition here) 6. Pension Plan Administrative Expense 7. Other Changes in Plan Fiduciary Net Position 8. Recognition of Outflow (Inflow) of Resources due to Liabilities 9. Recognition of Outflow (Inflow) of Resources due to Assets
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 assets used in determining the unfunded liability of the plan. For purposes of the GASB Statement No. 67, the valuation asset is equal to the market value of assets.

Public Employees Retirement Association of Minnesota

Public Employees Police and Fire Plan
GASB Statements No. 67 and No. 68 Accounting and Financial Reporting for Pensions
June 30, 2023

| P: 800.521.0498 | www.grsconsulting.com

December 7, 2023

Public Employees Retirement Association of Minnesota
Public Employees Police and Fire Plan
St. Paul, Minnesota

Dear Trustees of the Public Employees Police and Fire Plan:

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 Public Employees Police and Fire Plan, as amended by 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 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 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 obligations. 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. PERA is responsible for preparing the Schedule of Employer Allocations and the Schedule of Pension Amounts by Employer. This report may be provided to parties other than the Public Employees Retirement Association (PERA) only in its entirety and only with the permission of PERA. GRS is not responsible for unauthorized use of this report.

This report is based upon information, furnished to us by PERA, 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 Plan and should be considered in conjunction with that report. Please see the actuarial valuation report as of June 30, 2023 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

277 Coon Rapids Boulevard | Suite 212 | Coon Rapids, Minnesota 55433-2629

To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the Public Employees Police and Fire Plan 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

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

Sheryl Christensen

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

Table of Contents

SECTION A

EXECUTIVE SUMMARY

Executive Summary
as of June 30, 2023 (Dollars in Thousands)

		2023
Actuarial Valuation Date		June 30, 2023
Measurement Date of the Net Pension Liability		June 30, 2023
Employer's Fiscal Year Ending Date (Reporting Date)		Varies by Employer
Membership		
Number of		
- Service Retirements		8,492
- Survivors		1,998
- Disability Retirements		2,111
- Deferred Retirements		1,966
- Terminated Other Non-Vested		941
- Active Members		11,635
- Total		27,143
Covered Payroll	$	1,224,322
Net Pension Liability		
Total Pension Liability	$	12,765,798
Plan Fiduciary Net Position	$	11,038,928
Net Pension Liability	$	1,726,870
Plan Fiduciary Net Position as a Percentage of Total Pension Liability		86.47%
Net Pension Liability as a Percentage of Covered Payroll		141.05%
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*		3.86%
Last year ending June 30 in the 2024 to 2123 projection period for which projected benefit payments are fully funded		2123
Total Pension Expense/(Income)	**$**	**506,966**

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

		Deferred Outflows of Resources		Deferred Inflows of Resources
Difference between expected and actual experience	$	476,156	$	-
Changes in assumptions	$	2,003,891	$	2,428,000
Net difference between projected and actual earnings on pension plan investments	$	916,677	$	999,574
Total	$	3,396,724	$	3,427,574

* Source: *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. Governmental Accounting Standards Board (GASB) Statement No. 82, *Pension Issues*, is an amendment to 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 Public Employees Police and Fire Plan subsequent to the measurement date of June 30, 2023.

The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of the liability and investment experience.

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

Notes to Financial Statements

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

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

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

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

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

Required Supplementary Information

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

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

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, 2023 and a measurement date of June 30, 2023.

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 7.50% on an actuarial value of assets basis, as prescribed by statutes), then the following outcomes are expected:

1. The normal cost of the plan is expected to remain approximately level as a percent of pay,
2. The funded status of the plan is expected to gradually improve and is expected to be 100% funded within the next 25 years, and
3. The unfunded liability will grow initially as a dollar 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.

Single Discount Rate

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

For the purpose of this valuation, the long-term expected rate of return on pension plan investments is 7.00%; the municipal bond rate is 3.86% (based on the weekly rate closest to but not later than the measurement date of the Fidelity "20-Year Municipal GO AA Index") 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, 2023 (Dollars in Thousands)

A. Expense

1. Service Cost	$	385,544
2. Interest on the Total Pension Liability	$	789,647
3. Current-Period Benefit Changes	$	67,743
4. Employee Contributions (made negative for addition here)	$	(144,470)
5. Projected Earnings on Plan Investments (made negative for addition here)	$	(667,612)
6. Pension Plan Administrative Expense	$	1,247
7. Other Changes in Plan Fiduciary Net Position	$	61
8. Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability		
Arising from Current Reporting Period	$	54,837
9. Recognition of Outflow (Inflow) of Resources due to assumption changes		
Arising from Current Reporting Period	$	(483,284)
10. Recognition of Outflow (Inflow) of Resources due to the difference between projected (7.50%) and actual earnings on Pension Plan Investments		
Arising from Current Reporting Period	$	(48,981)
11. **Increase/(Decrease) from Experience in the Current Reporting Period**	**$**	**(45,268)**
12. Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability		
Arising from Prior Reporting Periods	$	63,819
13. Recognition of Outflow (Inflow) of Resources due to assumption changes		
Arising from Prior Reporting Periods	$	543,116
14. Recognition of Outflow (Inflow) of Resources due to the difference between projected and actual earnings on Pension Plan Investments		
Arising from Prior Reporting Periods	$	(54,701)
15. Total Pension Expense / (Income)	**$**	**506,966**

Recognition of Deferred Outflows and Inflows of Resources

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 153,824 years. Additionally, the total plan membership (active employees and inactive employees) was 26,557. 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 6.00 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, 2023 (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	$	329,023
2. Assumption Changes (gains) or losses	$	(2,899,706)
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		6.0000
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience of the Total Pension Liability	$	54,837
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	$	(483,284)
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	$	(428,447)
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	$	274,186
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	$	(2,416,422)
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	$	(2,142,236)
B. Outflows (Inflows) of Resources due to Assets		
1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	$	(244,907)
2. Recognition period for Assets {in years}		5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	$	(48,981)
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	$	(195,926)

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended June 30, 2023 (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 of Resources
1. Due to Liabilities	$ 676,354	$ 497,866	$ 178,488
2. Due to Assets	347,124	450,806	(103,682)
3. Total	$ 1,023,478	$ 948,672	$ 74,806

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

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	$ 118,656	$ -	$ 118,656
2. Assumption Changes	557,698	497,866	59,832
3. Net Difference between projected and actual earnings on pension plan investments	347,124	450,806	(103,682)
4. Total	$ 1,023,478	$ 948,672	$ 74,806

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 of Resources
1. Differences between expected and actual experience	$ 476,156	$ -	$ 476,156
2. Assumption Changes	2,003,891	2,428,000	(424,109)
3. Net Difference between projected and actual earnings on pension plan investments	916,677	999,574	(82,897)
4. Total	$ 3,396,724	$ 3,427,574	$ (30,850)

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

Year Ending June 30	Net Deferred Outflows of Resources
2024	$ 74,809
2025	18,631
2026	419,525
2027	(115,368)
2028	(428,447)
Thereafter	0
Total	$ (30,850)

Recognition of Deferred Outflows and Inflows of Resources
Fiscal Year Ended June 30, 2023 (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					
2018	$ 21,720	6.0000	$ 3,620	$ 0	0.0000
2019	14,491	6.0000	2,415	2,416	1.0000
2020	30,348	6.0000	5,058	10,116	2.0000
2021	128,782	6.0000	21,464	64,390	3.0000
2022	187,572	6.0000	31,262	125,048	4.0000
2023	329,023	6.0000	54,837	274,186	5.0000
Total			**$ 118,656**	**$ 476,156**	
Deferred Outflow (Inflow) Due to Assumption Changes					
2018	$ (42,807)	6.0000	$ (7,134)	$ 0	0.0000
2019	(19,898)	6.0000	(3,317)	(3,317)	1.0000
2020	(24,785)	6.0000	(4,131)	(8,261)	2.0000
2021	1,361,379	6.0000	226,897	680,688	3.0000
2022	1,984,805	6.0000	330,801	1,323,203	4.0000
2023	(2,899,706)	6.0000	(483,284)	(2,416,422)	5.0000
Total			**$ 59,832**	**$ (424,109)**	
Deferred Outflow (Inflow) Due to Differences Between Projected and Actual Earnings on Plan Investments					
2019	$ 17,561	5.0000	$ 3,513	$ 0	0.0000
2020	285,391	5.0000	57,078	57,079	1.0000
2021	(2,009,123)	5.0000	(401,825)	(803,648)	2.0000
2022	1,432,664	5.0000	286,533	859,598	3.0000
2023	(244,907)	5.0000	(48,981)	(195,926)	4.0000
Total			**$ (103,682)**	**$ (82,897)**	
Deferred Outflow (Inflow) Due to All Sources					
Total			**$ 74,806**	**$ (30,850)**	

Statement of Fiduciary Net Position
(Dollars in Thousands)

	Market Value			
Assets in Trust	**June 30, 2023**		**June 30, 2022**	
Cash, Equivalents, Short Term Securities	$	328,611	$	198,592
Fixed Income	$	2,337,364	$	2,385,899
Equity	$	5,576,844	$	5,210,590
SBI Alternative	$	2,782,680	$	2,621,319
Other	$	-	$	-
Total Assets in Trust	**$**	**11,025,499**	**$**	**10,416,400**
Assets Receivable	$	19,787	$	5,652
Amounts Payable	$	(6,358)	$	(6,559)
Net Position Restricted for Pensions	**$**	**11,038,928**	**$**	**10,415,493**

Statement of Changes in Fiduciary Net Position
(Dollars in Thousands)

Change in Assets	Market Value	
Year Ending	**June 30, 2023**	**June 30, 2022**
1. Fund balance at market value at beginning of year	$ 10,415,493	$ 11,398,101
2. Contributions		
a. Member	$ 144,470	$ 133,023
b. Employer	$ 223,305	$ 206,416
c. Other sources	$ 18,000	$ 18,000
d. Total contributions	$ 385,775	$ 357,439
3. Investment income		
a. Investment income/(loss)	$ 916,285	$ (688,884)
b. Investment expenses	$ (3,766)	$ (12,058)
c. Net subtotal	$ 912,519	$ (700,942)
4. Other	$ (61)	$ (20)
5. Total additions: *(2.d.) + (3.c.) + (4.)*	**$ 1,298,233**	**$ (343,523)**
6. Benefits Paid		
a. Annuity benefits	$ (669,804)	$ (633,255)
b. Refunds	$ (3,747)	$ (4,196)
c. Total benefits paid	**$ (673,551)**	$ (637,451)
7. Expenses		
a. Other	$ -	$ -
b. Administrative	$ (1,247)	$ (1,634)
c. Total expenses	$ (1,247)	$ (1,634)
8. Total deductions: *(6.c.) + (7.c.)*	**$ (674,798)**	**$ (639,085)**
9. Net increase (decrease) in net position: *(5) + (8)*	$ 623,435	$ (982,608)
10. Net position restricted for pensions	**$ 11,038,928**	**$ 10,415,493**
11. State Board of Investment calculated investment return#	8.9%	-6.2%

 # Provided by PERA and calculated by the State Board of Investment.

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in Net Pension Liability and Related Ratios
Current Period
Fiscal Year Ended June 30, 2023 (Dollars in Thousands)

A. Total pension liability		
1. Service cost	$	385,544
2. Interest on the total pension liability	$	789,647
3. Changes of benefit terms	$	67,743
4. Difference between expected and actual experience of the total pension liability	$	329,023
5. Changes of assumptions	$	(2,899,706)
6. Benefit payments, including refunds of employee contributions	$	(673,551)
7. Net change in total pension liability	$	(2,001,300)
8. Total pension liability – beginning	$	14,767,098
9. Total pension liability – ending	**$**	**12,765,798**
B. Plan fiduciary net position		
1. Contributions – employer	$	241,305
2. Contributions – employee	$	144,470
3. Net investment income	$	912,519
4. Benefit payments, including refunds of employee contributions	$	(673,551)
5. Pension Plan administrative expense	$	(1,247)
6. Other	$	(61)
7. Net change in plan fiduciary net position	$	623,435
8. Plan fiduciary net position – beginning	$	10,415,493
9. Plan fiduciary net position – ending	**$**	**11,038,928**
C. Net pension liability	**$**	**1,726,870**
D. Plan fiduciary net position as a percentage of the total pension liability		**86.47%**
E. Covered-employee payroll*	**$**	**1,224,322**
F. Net pension liability as a percentage of covered-employee payroll		**141.05%**

**Assumed equal to actual member contributions divided by employee contribution rate.*

Schedules of Required Supplementary Information
Schedule of Changes in Net Pension Liability and Related Ratios Multiyear
(Dollars in Thousands)

Last 10 Fiscal Years

Fiscal year ending June 30,	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability										
Service Cost	$ 385,544	$ 282,658	$ 226,012	$ 217,127	$ 209,098	$ 203,131	$ 318,401	$ 194,352	$ 187,959	$ 169,124
Interest on the Total Pension Liability	$ 789,647	$ 779,519	$ 758,002	$ 729,945	$ 703,640	$ 682,903	$ 616,740	$ 658,198	$ 648,233	$ 598,165
Benefit Changes	$ 67,743	$ -	$ -	$ -	$ -	$ (50,771)	$ -	$ -	$ -	$ -
Difference between Expected and Actual Experience	$ 329,023	$ 187,572	$ 128,782	$ 30,348	$ 14,491	$ 21,720	$ 37,292	$ (375,575)	$ (221,112)	$ 1,813
Assumption Changes	$ (2,899,706)	$ 1,984,805	$ 1,361,379	$ (24,785)	$ (19,898)	$ (42,807)	$ (2,300,201)	$ 2,650,350	$ -	$ 323,945
Benefit Payments	$ (669,804)	$ (633,255)	$ (592,687)	$ (567,040)	$ (547,699)	$ (528,468)	$ (512,379)	$ (498,608)	$ (481,330)	$ (452,462)
Refunds	$ (3,747)	$ (4,196)	$ (3,060)	$ (3,181)	$ (3,283)	$ (1,902)	$ (2,119)	$ (2,391)	$ (1,953)	$ (1,633)
Net Change in Total Pension Liability	$ (2,001,300)	$ 2,597,103	$ 1,878,428	$ 382,414	$ 356,349	$ 283,806	$ (1,842,266)	$ 2,626,326	$ 131,797	$ 638,952
Total Pension Liability - Beginning	$ 14,767,098	$ 12,169,995	$ 10,291,567	$ 9,909,153	$ 9,552,804	$ 9,268,998	$ 11,111,264	$ 8,484,938	$ 8,353,141	$ 7,714,189
Total Pension Liability - Ending (a)	$ 12,765,798	$ 14,767,098	$ 12,169,995	$ 10,291,567	$ 9,909,153	$ 9,552,804	$ 9,268,998	$ 11,111,264	$ 8,484,938	$ 8,353,141
Plan Fiduciary Net Position										
Employer Contributions	$ 241,305	$ 224,416	$ 219,129	$ 207,319	$ 188,317	$ 179,781	$ 175,329	$ 165,065	$ 153,317	$ 141,632
Employee Contributions	$ 144,470	$ 133,023	$ 129,351	$ 123,525	$ 111,762	$ 105,479	$ 101,984	$ 95,172	$ 88,733	$ 81,213
Pension Plan Net Investment Income	$ 912,519	$ (700,942)	$ 2,672,826	$ 368,949	$ 609,512	$ 813,966	$ 1,058,942	$ (8,949)	$ 317,556	$ 1,158,389
Benefit Payments	$ (669,804)	$ (633,255)	$ (592,687)	$ (567,040)	$ (547,699)	$ (528,468)	$ (512,379)	$ (498,608)	$ (481,330)	$ (452,462)
Refunds	$ (3,747)	$ (4,196)	$ (3,060)	$ (3,181)	$ (3,283)	$ (1,902)	$ (2,119)	$ (2,391)	$ (1,953)	$ (1,633)
Pension Plan Administrative Expense	$ (1,247)	$ (1,634)	$ (941)	$ (924)	$ (1,018)	$ (886)	$ (992)	$ (906)	$ (803)	$ (798)
Other	$ (61)	$ (20)	$ 23	$ 260	$ 54	$ 58	$ 24	$ 3	$ 84	$ 18
Net Change in Plan Fiduciary Net Position	$ 623,435	$ (982,608)	$ 2,424,641	$ 128,908	$ 357,645	$ 568,028	$ 820,789	$ (250,614)	$ 75,604	$ 926,359
Plan Fiduciary Net Position - Beginning	$ 10,415,493	$ 11,398,101	$ 8,973,460	$ 8,844,552	$ 8,486,907	$ 7,918,879	$ 7,098,090	$ 7,348,704	$ 7,273,100	$ 6,346,741
Plan Fiduciary Net Position - Ending (b)	$ 11,038,928	$ 10,415,493	$ 11,398,101	$ 8,973,460	$ 8,844,552	$ 8,486,907	$ 7,918,879	$ 7,098,090	$ 7,348,704	$ 7,273,100
Net Pension Liability - Ending (a) - (b)	$ 1,726,870	$ 4,351,605	$ 771,894	$ 1,318,107	$ 1,064,601	$ 1,065,897	$ 1,350,119	$ 4,013,174	$ 1,136,234	$ 1,080,041
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	86.47 %	70.53 %	93.66 %	87.19 %	89.26 %	88.84 %	85.43 %	63.88 %	86.61 %	87.07 %
Covered Employee Payroll	$ 1,224,322	$ 1,127,314	$ 1,096,195	$ 1,069,481	$ 1,011,421	$ 976,657	$ 944,296	$ 881,222	$ 845,076	$ 820,333
Net Pension Liability as a Percentage of Covered Employee Payroll	141.05 %	386.02 %	70.42 %	123.25 %	105.26 %	109.14 %	142.98 %	455.41 %	134.45 %	131.66 %

Notes to Schedule:

N/A

Schedules of Required Supplementary Information
Schedule of the Net Pension Liability Multiyear
(Dollars in Thousands)

Last 10 Fiscal Years

FY Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll	Net Pension Liability as a % of Covered Payroll
2014	$ 8,353,141	$ 7,273,100	$ 1,080,041	87.07%	$ 820,333	131.66%
2015	$ 8,484,938	$ 7,348,704	$ 1,136,234	86.61%	$ 845,076	134.45%
2016	$ 11,111,264	$ 7,098,090	$ 4,013,174	63.88%	$ 881,222	455.41%
2017	$ 9,268,998	$ 7,918,879	$ 1,350,119	85.43%	$ 944,296	142.98%
2018	$ 9,552,804	$ 8,486,907	$ 1,065,897	88.84%	$ 976,657	109.14%
2019	$ 9,909,153	$ 8,844,552	$ 1,064,601	89.26%	$ 1,011,421	105.26%
2020	$ 10,291,567	$ 8,973,460	$ 1,318,107	87.19%	$ 1,069,481	123.25%
2021	$ 12,169,995	$ 11,398,101	$ 771,894	93.66%	$ 1,096,195	70.42%
2022	$ 14,767,098	$ 10,415,493	$ 4,351,605	70.53%	$ 1,127,314	386.02%
2023	$ 12,765,798	$ 11,038,928	$ 1,726,870	86.47%	$ 1,224,322	141.05%

Schedule of Contributions Multiyear
(Dollars in Thousands)

Last 10 Fiscal Years

FY Ending June 30,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2014	$ 163,985	$ 141,632	$ 22,353	$ 820,333	17.27%
2015	$ 197,325	$ 153,317	$ 44,008	$ 845,076	18.14
2016	$ 189,375	$ 165,065	$ 24,310	$ 881,222	18.73
2017	$ 165,252	$ 175,329	$ (10,077)	$ 944,296	18.57
2018	$ 193,183	$ 179,781	$ 13,402	$ 976,657	18.41
2019	$ 173,459	$ 188,317	$ (14,858)	$ 1,011,421	18.62
2020	$ 177,855	$ 207,319	$ (29,464)	$ 1,069,481	19.39
2021	$ 174,405	$ 219,129	$ (44,724)	$ 1,096,195	19.99
2022	$ 153,766	$ 224,416	$ (70,650)	$ 1,127,314	19.91
2023	$ 161,733	$ 241,305	$ (79,572)	$ 1,224,322	19.71

Notes to Schedule of Contributions

Methods and Assumptions Used to Determine Contribution Rates for Fiscal Year Ending June 30, 2023:

Valuation Date	June 30, 2022
Notes	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.
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Closed
Remaining Amortization Period	26 years
Asset Valuation Method	5-Year smoothed market; no corridor
Inflation	2.25%
Payroll Growth	3.00%
Salary Increases	3.00% to 11.75% including inflation
Investment Rate of Return	7.50%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2021 valuation pursuant to an experience study of the period 2015 - 2019.
Mortality	Pub-2010 Public Safety Mortality Tables projected with mortality improvement scale MP-2021, from a base year of 2010. Male retiree rates adjusted by a factor of 0.98.

Other Information:

Notes	The plan is assumed to pay a 1.00% post retirement benefit increase for all future years.
	See separate funding report as of June 30, 2022 for additional detail.

Schedule of Investment Returns Multiyear

Last 10 Fiscal Years

FY Ending June 30,	Annual Return[1]
2014	18.7 %
2015	4.5
2016	(0.1)
2017	15.2
2018	10.5
2019	7.3
2020	4.2
2021	30.3
2022	(6.4)
2023	8.9

[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 PERA for GASB compliance purposes. PERA 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, 2023, the annual money-weighted rate of return for the Public Employees Police and Fire Plan was 8.9%. 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 PERA's defined benefit retirement funds), contact SBI at 60 Empire Drive, Suite 355, 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, 2023, these estimates are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return (geometric)
Domestic Equity	33.5%	5.10%
International Equity	16.5%	5.30%
Private Markets	25.0%	5.90%
Fixed Income	25.0%	0.75%
Unallocated Cash	0.0%	0.00%
Total	100%	

The Minnesota State Board of Investment (SBI) compiled this data and the related investment notes and provided it to PERA for GASB compliance purposes. PERA 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 reviews of inflation and investment return assumptions included in the General Employees Retirement Plan 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 the expected rate of return on pension plan investments of 7.00%. The projection of cash flows used to determine this single discount rate assumed that plan member and employer contributions will be made at the current statutory rates. Based on these assumptions, the pension plan's fiduciary net position and future contributions were sufficient to finance all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

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

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	$ 14,465,244	$ 12,765,798	$ 11,368,626
Net Position Restricted for Pensions	$ 11,038,928	$ 11,038,928	$ 11,038,928
Net Pension Liability	**$ 3,426,316**	**$ 1,726,870**	**$ 329,698**

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 the Actuarial Standards of Practice.

GASB Statement No. 68 Reconciliation (Dollars in Thousands)
Current Reporting Period

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)	Current Period Deferred Outflows	Deferred Inflows	Pension Expense*
Balance Beginning of Year	**$ 14,767,098**	**$ 10,415,493**	**$ 4,351,605**			
Changes for the Year:						
Service Cost	$ 385,544		$ 385,544			$ 385,544
Interest on Total Pension Liability	$ 789,647		$ 789,647			$ 789,647
Interest on Fiduciary Net Position		$ 667,612	$ (667,612)			$ (667,612)
Changes in Benefit Terms	$ 67,743		$ 67,743			$ 67,743
Liability Experience Gains and Losses	$ 329,023		$ 329,023	$ 274,186	$ -	$ 54,837
Changes in Assumptions	$ (2,899,706)		$ (2,899,706)	$ -	$ 2,416,422	$ (483,284)
Contributions - Employer		$ 241,305	$ (241,305)			
Contributions - Employees		$ 144,470	$ (144,470)			$ (144,470)
Asset Gain/(Loss)		$ 244,907	$ (244,907)	$ -	$ 195,926	$ (48,981)
Benefit Payouts	$ (673,551)	$ (673,551)				
Administrative Expenses		$ (1,247)	$ 1,247			$ 1,247
Other		$ (61)	$ 61			$ 61
Net Changes	**$ (2,001,300)**	**$ 623,435**	**$ (2,624,735)**	**$ 274,186**	**$ 2,612,348**	**$ (45,268)**
Balance End of Year	**$ 12,765,798**	**$ 11,038,928**	**$ 1,726,870**			

** Pension Expense from Experience in the Current Reporting Period.*

GASB Statement No. 68 Reconciliation (Dollars in Thousands)
Current and Prior Reporting Periods

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)	Deferred Outflows	Deferred Inflows	Net Deferred Outflows Prior Year	Total Pension Expense*
Balance Beginning of Year	**$ 14,767,098**	**$ 10,415,493**	**$ 4,351,605**				
Changes for the Year:							
Service Cost	$ 385,544		$ 385,544				$ 385,544
Interest on Total Pension Liability	$ 789,647		$ 789,647				$ 789,647
Interest on Fiduciary Net Position		$ 667,612	$ (667,612)				$ (667,612)
Changes in Benefit Terms	$ 67,743		$ 67,743				$ 67,743
Liability Experience Gains and Losses	$ 329,023		$ 329,023	$ 476,156	$ -	$ 265,789	$ 118,656
Changes in Assumptions	$ (2,899,706)		$ (2,899,706)	$ 2,003,891	$ 2,428,000	$ 2,535,429	$ 59,832
Contributions - Employer		$ 241,305	$ (241,305)				
Contributions - Employees		$ 144,470	$ (144,470)				$ (144,470)
Asset Gain/(Loss)		$ 244,907	$ (244,907)	$ 916,677	$ 999,574	$ 58,328	$ (103,682)
Benefit Payouts	$ (673,551)	$ (673,551)	$ -				$ -
Administrative Expenses		$ (1,247)	$ 1,247				$ 1,247
Other		$ (61)	$ 61				$ 61
Net Changes	**$ (2,001,300)**	**$ 623,435**	**$ (2,624,735)**				**$ 506,966**
Balance End of Year	**$ 12,765,798**	**$ 11,038,928**	**$ 1,726,870**	**$ 3,396,724**	**$ 3,427,574**	**$ 2,859,546**	

** Pension Expense from Experience in the Current and Prior Reporting Period.*

Summary of Population Statistics

		Terminated		Recipients			
	Actives	Deferred Retirement	Other Non-Vested	Service Retirement	Disability Retirement	Survivor	Total
Members on July 1, 2022	**11,629**	**1,864**	**957**	**8,236**	**1,912**	**1,959**	**26,557**
New members	859						859
Return to active	97	(41)	(56)	0	0	0	0
Terminated non-vested	(116)	0	116	0	0	0	0
Service retirements	(276)	(150)	0	426	0	0	0
Terminated deferred	(297)	297	0	0	0	0	0
Terminated refund/transfer	(54)	(15)	(86)	0	0	0	(155)
Deaths	(9)	(3)	(2)	(187)	(42)	(106)	(349)
New beneficiary	0	0	0	0	0	145	145
Disabled	(198)	0	0	0	198	0	0
Data adjustments	0	14	12	17	43	0	86
Net change	6	102	(16)	256	199	39	586
Members on June 30, 2023	**11,635**	**1,966**	**941**	**8,492**	**2,111**	**1,998**	**27,143**

SECTION E

SUMMARY OF BENEFITS

Summary of Plan Provisions – Police and Fire Plan

Following is a summary of the major plan provisions used in the valuation of this report. PERA 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	All full-time and certain part-time police officers and fire fighters, and certain paramedics, who are not contributing to any other local retirement fund.
Contributions	**Effective as of** / **Member** / **Employer** / **Total**: January 1, 2020 and later / 11.80% / 17.70% / 29.50% Member contributions are "picked up" according to the provisions of Internal Revenue Code 414(h).
State contributions	$9 million paid annually on October 1 until both PERA P&F and MSRS State Patrol become 90% funded (on an actuarial value of assets basis), or July 1, 2048, if earlier. In addition, $4.5 million in fiscal years 2019 and 2020, and $9.0 million thereafter, until the plan reaches 100% funding on an actuarial value of assets basis, or July 1, 2048, if earlier. Additional one-time direct state aid payment of $19,397,371, payable October 1, 2023.
Allowable service	Police and Fire service during which member contributions were made. May also include certain leaves of absence and military service.
Salary	Includes amounts deducted for deferred compensation or supplemental retirement plans, net income from fees and sick leave payments funded by the employer. Excludes unused annual leaves and sick leave payments, severance payments, Workers' Compensation benefits and employer-paid flexible spending accounts, cafeteria plans, healthcare expense accounts, day-care expenses, fringe benefits and the cost of insurance coverage.
Average salary	Average of the five highest successive years of salary. Average Salary is based on all Allowable Service if less than five years.
Vesting	

Years of Service	Vesting if First Hired Before 7/1/2010	Vesting if First Hired After 6/30/2010
<3	0%	0%
3 – 4	100	0
5	100	50
6	100	60
7	100	70
8	100	80
9	100	90
10+	100	100

Summary of Plan Provisions – Police and Fire Plan (Continued)

Retirement

Normal retirement benefit

Age/service requirement	Age 55 and at least partially vested. Proportionate Retirement Annuity is available at age 65 and one year of Allowable Service.
Amount	3.00% of Average Salary for each year of Allowable Service (up to 33 years if hired after June 30, 2014), pro-rata for completed months, adjusted for partial vesting if applicable. A pro-rata share of member contributions will be refunded at retirement for excess service.

Early Retirement

Age/service requirement	Age 50 and at least partially vested.
Amount	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date and 0.10% (0.20% for members enrolled in the plan after June 30, 2007) reduction for each month the member is under age 55. If the effective date of retirement is after June 30, 2019, the reduction is 5/12% for each month that the member is under age 55 at the time of retirement.

Form of payment

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

25%, 50%, 75% or 100% Joint and Survivor with bounce back feature. The Joint and Survivor options are determined on an actuarially equivalent basis, but with no actuarial reduction for the bounce back feature.

Benefit increases

Benefit recipients receive 1.00% increases each year in January.

A benefit recipient who has been receiving a benefit for at least 12 full months as of June 30 will receive a full increase. Members receiving benefits for at least one month but less than 12 full months as of June 30 will receive a pro rata increase. For retirements after May 31, 2014, the first increase will be delayed two years.

Members retired under laws in effect before July 1, 1973 receive an additional lump sum payment each year. In 1989, this lump sum payment is the greater of $25 times each full year of Allowable Service or the difference between $400 times each full year of Allowable Service and the sum of benefits paid from any Minnesota public pension plan plus cash payments from the Social Security Administration for the preceding fiscal year July 1, 1988 through June 30, 1989. In each following year, the lump sum payment will increase by the same percentage increase that is applied to regular annuities paid from the Fund. Effective January 1, 2002, annual lump sum payment is divided by 12 and paid as a monthly life annuity in the annuity form elected.

An additional one-time, non-compounding benefit increase of 3.00%, payable for calendar year 2024 in a lump sum by March 31, 2024, to benefit recipients who have been receiving benefits for at least 12 full months as of June 30, 2023. Retirees currently subject to the two-year benefit increase delay will be eligible to receive this one-time, non-compounding benefit increase.

Disability	
Duty disability benefit	
Age/service requirement	Physically or mentally unable to perform normal duties as a police officer or fire fighter as a direct result of an act of duty specific to protecting property and personal safety of others. Psychological treatment is required prior to approval for a duty disability benefit for a psychological condition relating to the member's occupation. Members age 55 or older with 20 or more years of Allowable Service are not eligible to apply for duty disability benefits.
Amount	60.00%, plus an additional 3.00% for each year of service in excess of 20 years, of Average Salary paid until Normal Retirement Age, or for 60 months, whichever is later. The retirement benefit is then recalculated but is never lower than the disability benefit. If a member became disabled prior to July 1, 1997 but did not commence their benefit before July 1, 1997, the benefit is calculated under the laws in effect before July 1, 1997, and an actuarial increase shall be made for the change in post-retirement interest rates from 5.00% to 6.00%.
Regular disability benefit	
Age/service requirement	Physically or mentally unable to perform normal duties as a police officer or fire fighter with one year of Allowable Service. Members age 55 or older with 15 or more years of Allowable Service are not eligible to apply for regular disability benefits.
Amount	45.00% of Average Salary, paid until Normal Retirement Age, or for 60 months, whichever is later. The retirement benefit is then recalculated but is never lower than the disability benefit. Benefits for total and permanent regular disability are calculated as 3.00% of Average Salary for each year of Allowable Service, with a minimum of 45.00% of Average Salary. If a member became disabled prior to July 1, 1997 but did not commence his or her benefit before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and an actuarial increase shall be made for the change in post-retirement interest rates from 5.00% to 6.00%.
Total and permanent duty disability benefit	
Age/service requirement	Member who cannot perform any substantial gainful activity as a direct result of a disability (physical or psychological) relating to an act of duty, which is expected to persist for a period of 12 months or more. If condition no longer qualifies as total and permanent, benefit will be recalculated under the duty disability benefit provisions.
Amount	99% of member's average monthly salary.

Disability (Concluded)	
Retirement benefit	
Age/service requirement	Upon cessation of disability benefits.
Amount	Any optional annuity continues. Otherwise, the larger of the disability benefit paid before age 55 or the normal retirement benefit available at age 55, or an actuarially equivalent optional annuity.
Form of payment	Same as for retirement.
Benefit increases	Same as for retirement.
Death	
Surviving spouse benefit	
Age/service requirement	Death of active member or regular disabled member with surviving spouse whose disability benefit accrued before July 1, 2007, who is vested at death (service requirement is waived if death occurs in the line of duty).
Amount	50.00% of salary (60.00% if death occurs in the line of duty after June 30, 2007) averaged over last six months. Benefit paid until spouse's death but no payments while spouse is remarried prior to July 1, 1991. If a member died prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefits before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Surviving dependent children's benefit	
Age/service requirement	Non-duty related death of active member or regular disabled member with eligible dependent child.
Amount	10.00% of salary averaged over last six months for each child. Family benefit minimum (including spouse's benefit) of 50.00% of salary and maximum of 70.00% of salary. Benefits paid until child marries, dies, or attains age 18 (age 23 if full-time student).
Duty disability surviving spouse benefit	
Age/service requirement	Member who is totally and permanently disabled who dies before age 55 or within five years of the effective date of the disability benefit, whichever is later.
Amount	60.00% of salary averaged over last six months. Benefits paid until spouse's death but no payments while spouse is remarried prior to July 1, 1991.

Summary of Plan Provisions – Police and Fire Plan (Continued)

Death (Concluded)

Duty disability surviving dependent children's benefit

Age/service requirement	Death of a member with an eligible dependent child who was disabled in the line of duty and died as a direct result of the disability.
Amount	10.00% of salary averaged over last six months for each child. Family benefit minimum (including spouse's benefit) of 60.00% of salary and maximum of 80.00% of salary. Benefits paid until child marries, dies, or attains age 18 (age 23 if full-time student). If a member died prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefits before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.

Surviving spouse optional annuity

Age/service requirement	Active member dies before age 55. Benefits commence when member would have been age 55 or as early as age 50 if qualified for early retirement, benefits commence immediately if member had 30 years of service.
Amount	Survivor's payment of the 100% joint and survivor benefit the member could have elected if terminated. Alternatively, spouse may elect refund of deceased's contributions with interest if there are no dependent children. If a member died prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefits before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.

Benefit increases	Same as for retirement.

Summary of Plan Provisions – Police and Fire Plan (Continued)

Termination	
Refund of contributions	
Age/service requirement	Termination of public 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	Partially or fully vested.
Amount	Benefit computed under law in effect at termination and increased by the following percentage (augmentation) compounded annually for terminations prior to 2012: (a.) 0.00% before July 1, 1971; (b.) 5.00% from July 1, 1971 to January 1, 1981; (c.) 3.00% (2.50% if hired after June 30, 2006) thereafter until the earlier of January 1 of the year following attainment of age 55 and January 1, 2012; (d.) 5.00% (2.50% if hired after June 30, 2006) thereafter until the earlier of the date the annuity begins and January 1, 2012; (e.) 1.00% from January 1, 2012 through December 31, 2018; and (f.) 0.00% from January 1, 2019, thereafter. Members who terminate after 2011 will receive no future augmentation. If a member terminated employment prior to July 1, 1997 but was not eligible to commence their pension before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997 and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Form of payment	Same as for retirement.
Actuarial equivalent factors	Effective July 1, 2019, actuarially equivalent factors based on the RP-2014 mortality table for healthy annuitants for a member turning age 55 in 2021, reflecting projected mortality improvements using Scale MP-2017, male rates multiplied by 0.96, blended 90% males, and 6.50% interest.

Summary of Plan Provisions – Police and Fire Plan (Concluded)

Combined service annuity	Members are eligible for combined service benefits if they: (a.) Meet minimum retirement age for each plan participated in and total public service meets the vesting requirements of each plan; or (b.) Have three or more years of service under PERA and the covered fund(s) (if hired prior to July 1, 2010). Other requirements for combined service include: (a.) Member must have at least six months of allowable service credit in each plan worked under; and (b.) Member may not be in receipt of a benefit from another plan. Members who meet the above requirements must have their benefits based on the following: (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.
Changes in plan provisions	Additional one-time direct state aid contribution of $19.4 million will be contributed to the Plan on October 1, 2023. Vesting requirement for new hires after June 30, 2014 was changed from a graded 20-year vesting schedule to a graded 10-year vesting schedule, with 50% vesting after five years, increasing incrementally to 100% after 10 years. A one-time, non-compounding benefit increase of 3.00% will be payable in a lump sum for calendar year 2024 by March 31, 2024. Psychological treatment is required effective July 1, 2023 prior to approval for a duty disability benefit for a psychological condition relating to the member's occupation. A total and permanent duty disability benefit was added, effective July 1, 2023.

Summary of Plan Provisions – Minneapolis Police Relief Association

Normal retirement benefit	Monthly benefits are equal to the number of units multiplied by the unit values described herein. Units are based on service, as follows: **Service** / **Units** 20 — 35.0 units 21 — 36.6 units 22 — 38.2 units 23 — 39.8 units 24 — 41.4 units 25 or more — 43.0 units Members must be at least age 50 with 5 years of service to receive this benefit.
Unit values	**Calendar Year** / **Unit Value** 2012 — $ 104.651 2013 — 109.011 2014 — 114.825 2015 — 124.031 Unit values after 2015 are assumed to increase the same percentage as the post-retirement benefit increase.
Surviving spouse's benefit	Annual benefit based on 23 units for the surviving spouse of an active or retired member. Upon retirement, members may choose an alternative form of payment that provides 50%, 75%, or 100% of their benefit to their spouse after their death. The units are adjusted if one of these alternate forms is selected.
Surviving children's benefit	Annual benefit based on 8 units for each surviving child of an active or retired member. Benefits continue to age 18 or if the child is a full-time student, to age 22. The total benefit for surviving children and spouse combined is limited to 41 units.
Contributions	Member and employer contributions equal to 8.00% of the monthly unit value multiplied by 80 are required for each member. After 25 years of service, member contributions are paid to a separate health insurance account. Until July 15, 2018, the employer contributed annually an amount to amortize the unfunded liability by December 31, 2031. Beginning July 15, 2019, the employer will contribute $4,489,837 each July 15 through 2031.
Benefit increases	Benefit recipients receive 1.00% increases each year in January. A one-time, non-compounding benefit increase of 3.00% will be payable in a lump sum for calendar year 2024 by March 31, 2024.

Summary of Plan Provisions – Minneapolis Firefighters' Relief Association

Normal retirement benefit	Monthly benefits are equal to the number of units multiplied by the unit values described herein. Units are based on service, as follows:

Service	Units
15	25.0 units
16	26.6 units
17	28.2 units
18	29.8 units
19	31.4 units
20	35.0 units
21	36.6 units
22	38.2 units
23	39.8 units
24	41.4 units
25 or more	43.0 units

Members must be at least age 50 with 5 years of service to receive this benefit.

Members may choose among alternative survivor payment forms which modify the number of units payable to the member and their spouse. A member who is single at the time of retirement and who has at least 25 years of service may choose to receive 43.3 units on the condition of a reduced survivor payment to any future spouse.

Unit values

Calendar Year	Unit Value
2013	$100.775
2014	104.264
2015	124.031

Unit values after 2015 are assumed to increase the same percentage as the post-retirement benefit increase.

Disability benefit	Annual benefit based on 41 units for the disabled member.
Surviving spouse's benefit	Annual benefit based on 23 units for the surviving spouse of an active or retired member and 22 units for the surviving spouse of a disabled member. Upon retirement, members may choose an alternative form of payment that provides 50%, 75% or 100% of their benefit to their spouse after their death. The units are adjusted if one of these alternate forms is selected.
Surviving children's benefit	Annual benefit based on 8 units for each surviving child of an active or retired member. Benefits continue to age 18 or if the child is a full-time student, to age 22. The total benefit for surviving children and spouse combined is limited to 43 units.
Contributions	Member and employer contributions equal to 8.00% of the monthly unit value multiplied by 80 are required for each member. After 25 years of service, member contributions are paid to a separate health insurance account. Until July 15, 2018, the employer contributed annually an amount to amortize the unfunded liability by December 31, 2031. Beginning July 15, 2019, the employer will contribute $3,188,735 each July 15 through 2031.
Benefit increases	Benefit recipients receive 1.00% increases each year in January. A one-time, non-compounding benefit increase of 3.00% will be payable in a lump sum for calendar year 2024 by March 31, 2024.

SECTION F

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS USED FOR THE DETERMINATION OF TOTAL PENSION LIABILITY AND RELATED VALUES

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

The following assumptions were used in valuing the liabilities and benefits under the plan. The assumptions are based on the last experience study dated July 14, 2020, and a review of inflation and investment assumptions in the General Employees Retirement Plan 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.
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 earned during the year.
Inflation	2.25% per year.
Payroll growth	3.00% per year.
Mortality rates	
Healthy pre-retirement	Pub-2010 Public Safety Employee Mortality Table adjusted for mortality improvements using projection scale MP-2021.
Healthy post-retirement	Pub-2010 Healthy Retired Public Safety Mortality Table adjusted for mortality improvements using projection scale MP-2021. Male rates are multiplied by a factor of 0.98.
Disabled	Pub-2010 Public Safety Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Male rates are multiplied by a factor of 1.05.
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 and beneficiaries 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. Note that plan changes reflected in this report may ultimately result in behavior changes that are not anticipated in the current retirement rates.
Withdrawal	Service-related rates based on actual experience; see table of sample rates

Summary of Actuarial Assumptions (Continued)

Disability	Age-related rates based on experience; see table of sample rates. All incidences are assumed to be duty-related. There is no assumed incidence of the total and permanent duty disability benefit; actual incidence of this benefit will be monitored and may be included in future valuations.
Allowance for combined service annuity	Liabilities for former members are increased by 33.0% for vested members and 2.0% for non-vested members 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 percentage of prior year projected payroll. In each subsequent year, equal to the initial administrative expense percentage applied to payroll for the closed group.
Refund of contributions	For non-vested members, account balances accumulate interest until the assumed commencement date and are discounted back to the valuation date. Active members decrementing after becoming eligible for a benefit are assumed to take the contributions accumulated with interest if larger than the value of the benefit.
Commencement of deferred benefits	Members receiving deferred annuities (including current terminated deferred members) are assumed to begin receiving benefits at age 55.
Percentage married	85% of male and 70% of female active members are assumed to be married. Actual marital status is used for members in payment status.
Age of spouse	Males are assumed to be two years older than females. For members in payment status, actual spouse date of birth is used, if provided.
Eligible children	Retiring members are assumed to have no dependent children.
Form of payment	Married members retiring from active status are assumed to elect subsidized joint and survivor form of annuity as follows: Males: 7.5% elect 25% Joint & Survivor option 15.0% elect 50% Joint & Survivor option 12.5% elect 75% Joint & Survivor option 55.0% elect 100% Joint & Survivor option Females: 15.0% elect 25% Joint & Survivor option 30.0% elect 50% Joint & Survivor option 5.0% elect 75% Joint & Survivor option 20.0% elect 100% Joint & Survivor option 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 straight life annuity.
Eligibility testing	Eligibility for benefits is determined based upon the age nearest birthday and service on the date the decrement is assumed to occur.
Decrement operation	Withdrawal decrements do not operate during retirement eligibility. Decrements 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	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. In cases where submitted data was missing or incomplete, the following assumptions, based on average results for applicable members at the time of the last experience study, were applied: <u>Data for active members:</u> There were 38 members reported with a salary less than $100 after annualization. We used prior year salary (31 members), if available; otherwise high five salary with a 10% load to account for salary increases (7 members). If neither prior year salary nor high five salary was available, we assumed a value of $60,000 (0 members). There were also 239 members reported without a gender. We assumed male gender. There were 2 members reported without a date of birth. We assumed these members were hired at age 30. <u>Data for terminated members:</u> We calculated benefits for these members using the reported Average Salary and credited service. If credited service was not reported (15 members), we used elapsed time from hire date to termination date (6 members); if elapsed time was not available, we assumed nine years of service. If termination date was invalid or not reported (8 members), we assumed the termination date was equal to the hire date plus credited service, otherwise the valuation date. If the reported termination date occurs prior to the reported hire date, the two dates were swapped. There were 33 members reported without a gender; male was assumed. There were 23 members reported without a date of birth. <u>Data for retired members:</u> There were no members with missing or invalid dates of birth. There were no members reported with a $0 benefit amount. There were 30 members reported without a gender. We assumed retirees are male and beneficiaries are female.

Summary of Actuarial Assumptions (Continued)

Unknown data for certain members (Concluded)	Data for retired members (Concluded): Because PERA reclassifies disabled members as retirees once the member reaches Normal Retirement Age, we compare the members that PERA reports as retirees to our disabled group from the last valuation. If a member was disabled in the prior valuation, we reclassify that member as a disabled retiree in this year's valuation. We reclassified 318 retirees as disabled retirees in this valuation.
Changes in actuarial assumptions since the prior valuation	The investment return assumption was changed from 6.5% to 7.0%. The single discount rate changed from 5.4% to 7.0%.

Summary of Actuarial Assumptions (Continued)

	Percentage of Members Dying Each Year*					
Age in	Healthy Post-Retirement Mortality**		Healthy Pre-Retirement Mortality**		Disability Mortality**	
2023	Males	Females	Males	Females	Males	Females
20	0.04%	0.02%	0.04%	0.02%	0.13%	0.06%
25	0.04	0.02	0.04	0.02	0.13	0.08
30	0.06	0.04	0.06	0.04	0.18	0.12
35	0.07	0.05	0.07	0.05	0.22	0.17
40	0.09	0.06	0.08	0.06	0.25	0.20
45	0.13	0.08	0.09	0.07	0.28	0.22
50	0.18	0.14	0.11	0.08	0.35	0.28
55	0.29	0.25	0.17	0.12	0.48	0.45
60	0.51	0.46	0.27	0.17	0.79	0.72
65	0.87	0.73	0.41	0.22	1.25	1.01
70	1.42	1.16	0.71	0.40	1.85	1.40
75	2.45	2.00	1.27	0.79	3.01	2.13
80	4.45	3.60	2.38	1.63	5.23	3.60
85	8.17	6.42	7.47	5.62	8.83	6.42
90	14.50	11.25	14.80	11.25	15.54	11.25

* *Generally, mortality rates are expected to increase as age increases. These standard mortality rates have been adjusted slightly to prevent decreasing mortality rates. The adjustment has no material effect on results.*

** *Rates are adjusted for mortality improvement using Scale MP-2021, from a base year of 2010.*

	Rates of Disability Retirement	
Age	Males	Females
20	0.11%	0.11%
25	0.14	0.14
30	0.21	0.21
35	0.34	0.34
40	0.54	0.54
45	0.62	0.62
50	0.95	0.95
55	1.30	1.30
60	1.30	1.30

Summary of Actuarial Assumptions (Concluded)

Age	Rates of Service Retirement	Year	Withdrawal Rates	Salary Scale Year	Salary Scale Increase
50	7.50%	1	6.00%	1	11.75%
51	5.00	2	4.00	2	9.25%
52	5.00	3	2.75	3	8.00%
53	7.50	4	2.50	4	7.00%
54	10.00	5	2.50	5	5.50%
55	30.00	6	2.25	6	4.80%
56	20.00	7	2.25	7	4.60%
57	22.50	8	2.00	8	4.30%
58	25.00	9	2.00	9	4.10%
59	25.00	10	2.00	10	4.00%
60	20.00	11	1.75	11	3.90%
61	25.00	12	1.50	12	3.80%
62	30.00	13	1.50	13	3.70%
63	27.50	14	1.50	14	3.60%
64	27.50	15	1.50	15	3.50%
65	50.00	16	1.50	16	3.50%
66	40.00	17	1.50	17	3.50%
67	50.00	18	1.25	18	3.50%
68	50.00	19	1.25	19	3.40%
69	50.00	20	1.25	20	3.40%
70+	100.00	21+	1.00	21	3.40%
				22	3.30%
				23	3.15%
				24	3.00%
				25+	3.00%

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 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 assumed long-term rate of return is used. 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 3.86%; and **the resulting single discount rate is 7.00%**.

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)

	Payroll			Projected Contributions					
Fiscal Year Ending	Payroll for Current Employees	Payroll for New Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Contributions on Future Payroll toward Current UAL*	Contributions due from Mergers	Additional State Contributions**	Total Contributions
2023	$ 1,224,322	$ 0	$ 1,224,322						
2024	1,173,793	12,132	1,185,925	$ 138,508	$ 207,761	$ 742	$ 7,679	$ 37,397	$ 392,087
2025	1,160,966	60,536	1,221,502	136,994	205,491	3,702	7,679	18,000	371,866
2026	1,143,600	114,547	1,258,147	134,945	202,417	7,006	7,679	18,000	370,047
2027	1,122,034	173,858	1,295,892	132,400	198,600	10,634	7,679	18,000	367,313
2028	1,097,042	237,727	1,334,769	129,451	194,176	14,540	7,679	18,000	363,846
2029	1,070,842	303,970	1,374,812	126,359	189,539	18,592	7,679	9,000	351,169
2030	1,043,759	372,297	1,416,056	123,164	184,745	22,770	7,679	9,000	347,358
2031	1,015,258	443,280	1,458,538	119,800	179,701	27,112	7,679	9,000	343,292
2032	985,778	516,516	1,502,294	116,322	174,483	31,591	7,679	9,000	339,075
2033	955,048	592,315	1,547,363	112,696	169,043	36,227	0	9,000	326,966
2034	923,008	670,775	1,593,783	108,915	163,372	41,026	0	9,000	322,313
2035	889,483	752,114	1,641,597	104,959	157,438	46,001	0	9,000	317,398
2036	854,432	836,413	1,690,845	100,823	151,235	51,156	0	9,000	312,214
2037	817,585	923,985	1,741,570	96,475	144,713	56,512	0	9,000	306,700
2038	779,143	1,014,674	1,793,817	91,939	137,908	62,060	0	9,000	300,907
2039	739,651	1,107,981	1,847,632	87,279	130,918	67,766	0	9,000	294,963
2040	699,191	1,203,870	1,903,061	82,505	123,757	73,631	0	9,000	288,893
2041	658,149	1,302,004	1,960,153	77,662	116,492	79,633	0	9,000	282,787
2042	616,696	1,402,261	2,018,957	72,770	109,155	85,766	0	9,000	276,691
2043	574,834	1,504,692	2,079,526	67,830	101,746	92,030	0	9,000	270,606
2044	532,483	1,609,429	2,141,912	62,833	94,250	98,436	0	9,000	264,519
2045	489,622	1,716,547	2,206,169	57,775	86,663	104,988	0	9,000	258,426
2046	446,304	1,826,050	2,272,354	52,664	78,996	111,685	0	9,000	252,345
2047	402,409	1,938,116	2,340,525	47,484	71,226	118,540	0	9,000	246,250
2048	358,406	2,052,334	2,410,740	42,292	63,438	125,525	0	9,000	240,255
2049	315,392	2,167,671	2,483,063	37,216	55,824	132,580	0	0	225,620
2050	274,170	2,283,385	2,557,555	32,352	48,528	139,657	0	0	220,537
2051	234,943	2,399,338	2,634,281	27,723	41,585	146,749	0	0	216,057
2052	197,885	2,515,425	2,713,310	23,350	35,026	153,849	0	0	212,225
2053	163,501	2,631,208	2,794,709	19,293	28,940	160,930	0	0	209,163
2054	132,355	2,746,195	2,878,550	15,618	23,427	167,963	0	0	207,008
2055	104,941	2,859,966	2,964,907	12,383	18,575	174,921	0	0	205,879
2056	81,679	2,972,175	3,053,854	9,638	14,457	181,785	0	0	205,880
2057	62,544	3,082,926	3,145,470	7,380	11,070	188,558	0	0	207,008
2058	47,249	3,192,585	3,239,834	5,575	8,363	195,265	0	0	209,203
2059	35,257	3,301,772	3,337,029	4,160	6,240	201,944	0	0	212,344
2060	25,901	3,411,238	3,437,139	3,056	4,584	208,639	0	0	216,279
2061	18,661	3,521,593	3,540,254	2,202	3,303	215,388	0	0	220,893
2062	13,107	3,633,354	3,646,461	1,547	2,320	222,223	0	0	226,090
2063	8,903	3,746,952	3,755,855	1,051	1,576	229,171	0	0	231,798
2064	5,801	3,862,730	3,868,531	685	1,027	236,252	0	0	237,964
2065	3,606	3,980,981	3,984,587	426	638	243,485	0	0	244,549
2066	2,125	4,101,999	4,104,124	251	376	250,887	0	0	251,514
2067	1,172	4,226,076	4,227,248	138	207	258,476	0	0	258,821
2068	600	4,353,465	4,354,065	71	106	266,267	0	0	266,444
2069	285	4,484,402	4,484,687	34	50	274,275	0	0	274,359
2070	122	4,619,106	4,619,228	14	22	282,514	0	0	282,550
2071	45	4,757,760	4,757,805	5	8	290,995	0	0	291,008
2072	13	4,900,526	4,900,539	2	2	299,726	0	0	299,730
2073	2	5,047,553	5,047,555	0	-	308,719	0	0	308,719

* *Equal to contributions (29.50% of payroll for new employees) net of normal cost and expenses (23.37% of payroll).*

** *State contributions equal to $9.0 million are assumed to end after 5 years. Additional state contributions of $9.0 million until 100% funded (or until 2048 if earlier) on an actuarial value of assets basis are assumed to stop after 25 years. Actual end dates will depend on the funding status of this plan and the MSRS State Patrol Plan.*

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

	Payroll			Projected Contributions					
Fiscal Year Ending	Payroll for Current Employees	Payroll for New Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Contributions on Future Payroll toward Current UAL*	Contributions due from Mergers	Additional State Contributions**	Total Contributions
2074	$ 0	$ 5,198,982	$ 5,198,982	$ 0	$ 0	$ 317,981	$ 0	$ 0	$ 317,981
2075	0	5,354,951	5,354,951	0	0	327,520	0	0	327,520
2076	0	5,515,600	5,515,600	0	0	337,345	0	0	337,345
2077	0	5,681,068	5,681,068	0	0	347,466	0	0	347,466
2078	0	5,851,500	5,851,500	0	0	357,890	0	0	357,890
2079	0	6,027,045	6,027,045	0	0	368,627	0	0	368,627
2080	0	6,207,856	6,207,856	0	0	379,685	0	0	379,685
2081	0	6,394,092	6,394,092	0	0	391,076	0	0	391,076
2082	0	6,585,915	6,585,915	0	0	402,808	0	0	402,808
2083	0	6,783,492	6,783,492	0	0	414,892	0	0	414,892
2084	0	6,986,997	6,986,997	0	0	427,339	0	0	427,339
2085	0	7,196,607	7,196,607	0	0	440,159	0	0	440,159
2086	0	7,412,505	7,412,505	0	0	453,364	0	0	453,364
2087	0	7,634,880	7,634,880	0	0	466,965	0	0	466,965
2088	0	7,863,927	7,863,927	0	0	480,974	0	0	480,974
2089	0	8,099,844	8,099,844	0	0	495,403	0	0	495,403
2090	0	8,342,840	8,342,840	0	0	510,265	0	0	510,265
2091	0	8,593,125	8,593,125	0	0	525,573	0	0	525,573
2092	0	8,850,919	8,850,919	0	0	541,340	0	0	541,340
2093	0	9,116,446	9,116,446	0	0	557,581	0	0	557,581
2094	0	9,389,940	9,389,940	0	0	574,308	0	0	574,308
2095	0	9,671,638	9,671,638	0	0	591,537	0	0	591,537
2096	0	9,961,787	9,961,787	0	0	609,283	0	0	609,283
2097	0	10,260,640	10,260,640	0	0	627,562	0	0	627,562
2098	0	10,568,460	10,568,460	0	0	646,389	0	0	646,389
2099	0	10,885,513	10,885,513	0	0	665,780	0	0	665,780
2100	0	11,212,079	11,212,079	0	0	685,754	0	0	685,754
2101	0	11,548,441	11,548,441	0	0	706,327	0	0	706,327
2102	0	11,894,895	11,894,895	0	0	727,516	0	0	727,516
2103	0	12,251,741	12,251,741	0	0	749,342	0	0	749,342
2104	0	12,619,294	12,619,294	0	0	771,822	0	0	771,822
2105	0	12,997,872	12,997,872	0	0	794,977	0	0	794,977
2106	0	13,387,809	13,387,809	0	0	818,826	0	0	818,826
2107	0	13,789,443	13,789,443	0	0	843,391	0	0	843,391
2108	0	14,203,126	14,203,126	0	0	868,693	0	0	868,693
2109	0	14,629,220	14,629,220	0	0	894,753	0	0	894,753
2110	0	15,068,096	15,068,096	0	0	921,596	0	0	921,596
2111	0	15,520,139	15,520,139	0	0	949,244	0	0	949,244
2112	0	15,985,744	15,985,744	0	0	977,721	0	0	977,721
2113	0	16,465,316	16,465,316	0	0	1,007,053	0	0	1,007,053
2114	0	16,959,275	16,959,275	0	0	1,037,264	0	0	1,037,264
2115	0	17,468,054	17,468,054	0	0	1,068,382	0	0	1,068,382
2116	0	17,992,095	17,992,095	0	0	1,100,434	0	0	1,100,434
2117	0	18,531,858	18,531,858	0	0	1,133,447	0	0	1,133,447
2118	0	19,087,814	19,087,814	0	0	1,167,450	0	0	1,167,450
2119	0	19,660,448	19,660,448	0	0	1,202,474	0	0	1,202,474
2120	0	20,250,262	20,250,262	0	0	1,238,548	0	0	1,238,548
2121	0	20,857,770	20,857,770	0	0	1,275,704	0	0	1,275,704
2122	0	21,483,503	21,483,503	0	0	1,313,975	0	0	1,313,975
2123	0	22,128,008	22,128,008	0	0	1,353,395	0	0	1,353,395

* *Equal to contributions (29.50% of payroll for new employees) net of normal cost and expenses (23.37% of payroll).*

** *State contributions equal to $9.0 million are assumed to end after 5 years. Additional state contributions of $9.0 million until 100% funded (or until 2048 if earlier) on an actuarial value of assets basis are assumed to stop after 25 years. Actual end dates will depend on the funding status of this plan and the MSRS State Patrol Plan.*

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

Fiscal Year Ending	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2024	$ 11,038,928	$ 392,087	$ 728,477	$ 1,291	$ 761,106	$ 11,462,353
2025	11,462,353	371,866	734,164	1,277	789,855	11,888,633
2026	11,888,633	370,047	761,625	1,258	818,688	12,314,485
2027	12,314,485	367,313	790,628	1,234	847,406	12,737,342
2028	12,737,342	363,846	820,496	1,207	875,860	13,155,345
2029	13,155,345	351,169	850,204	1,178	903,663	13,558,795
2030	13,558,795	347,358	881,475	1,148	930,698	13,954,228
2031	13,954,228	343,292	912,548	1,117	957,171	14,341,026
2032	14,341,026	339,075	943,505	1,084	983,037	14,718,549
2033	14,718,549	326,966	974,846	1,051	1,007,970	15,077,588
2034	15,077,588	322,313	1,006,527	1,015	1,031,854	15,424,213
2035	15,424,213	317,398	1,038,917	978	1,054,835	15,756,551
2036	15,756,551	312,214	1,071,989	940	1,076,784	16,072,620
2037	16,072,620	306,700	1,105,595	899	1,097,564	16,370,390
2038	16,370,390	300,907	1,139,396	857	1,117,047	16,648,091
2039	16,648,091	294,963	1,173,536	814	1,135,108	16,903,812
2040	16,903,812	288,893	1,207,929	769	1,151,618	17,135,625
2041	17,135,625	282,787	1,241,838	724	1,166,470	17,342,320
2042	17,342,320	276,691	1,275,210	678	1,179,582	17,522,705
2043	17,522,705	270,606	1,308,076	632	1,190,870	17,675,473
2044	17,675,473	264,519	1,340,059	586	1,200,256	17,799,603
2045	17,799,603	258,426	1,372,311	539	1,207,627	17,892,806
2046	17,892,806	252,345	1,404,294	491	1,212,843	17,953,209
2047	17,953,209	246,250	1,436,298	443	1,215,762	17,978,480
2048	17,978,480	240,255	1,468,119	394	1,216,232	17,966,454
2049	17,966,454	225,620	1,498,400	347	1,213,846	17,907,173
2050	17,907,173	220,537	1,526,196	302	1,208,566	17,809,778
2051	17,809,778	216,057	1,551,699	258	1,200,719	17,674,597
2052	17,674,597	212,225	1,574,652	218	1,190,336	17,502,288
2053	17,502,288	209,163	1,594,295	180	1,177,494	17,294,470
2054	17,294,470	207,008	1,609,682	146	1,162,345	17,053,995
2055	17,053,995	205,879	1,619,948	115	1,145,120	16,784,931
2056	16,784,931	205,880	1,624,406	90	1,126,133	16,492,448
2057	16,492,448	207,008	1,623,025	69	1,105,747	16,182,109
2058	16,182,109	209,203	1,616,015	52	1,084,340	15,859,585
2059	15,859,585	212,344	1,603,995	39	1,062,286	15,530,181
2060	15,530,181	216,279	1,587,775	28	1,039,921	15,198,578
2061	15,198,578	220,893	1,567,859	21	1,017,553	14,869,144
2062	14,869,144	226,090	1,544,634	14	995,471	14,546,057
2063	14,546,057	231,798	1,518,420	10	973,953	14,233,378
2064	14,233,378	237,964	1,489,476	6	953,274	13,935,134
2065	13,935,134	244,549	1,458,034	4	933,705	13,655,350
2066	13,655,350	251,514	1,424,344	2	915,519	13,398,037
2067	13,398,037	258,821	1,388,661	1	898,987	13,167,183
2068	13,167,183	266,444	1,351,202	1	884,378	12,966,802
2069	12,966,802	274,359	1,312,169	0	871,967	12,800,959
2070	12,800,959	282,550	1,271,739	0	862,031	12,673,801
2071	12,673,801	291,008	1,230,042	0	854,856	12,589,623
2072	12,589,623	299,730	1,187,183	0	850,738	12,552,908
2073	12,552,908	308,719	1,143,246	0	849,989	12,568,370

For purposes of this projection, we assumed the 29.50% statutory contribution rate would continue after the plan becomes fully funded.

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

Fiscal Year Ending	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2074	$ 12,568,370	$ 317,981	$ 1,098,306	$ 0	$ 852,936	$ 12,640,981
2075	12,640,981	327,520	1,052,435	0	859,926	12,775,992
2076	12,775,992	337,345	1,005,710	0	871,322	12,978,949
2077	12,978,949	347,466	958,218	0	887,512	13,255,709
2078	13,255,709	357,890	910,057	0	908,901	13,612,443
2079	13,612,443	368,627	861,338	0	935,918	14,055,650
2080	14,055,650	379,685	812,186	0	969,014	14,592,163
2081	14,592,163	391,076	762,740	0	1,008,663	15,229,162
2082	15,229,162	402,808	713,154	0	1,055,363	15,974,179
2083	15,974,179	414,892	663,600	0	1,109,635	16,835,106
2084	16,835,106	427,339	614,272	0	1,172,025	17,820,198
2085	17,820,198	440,159	565,386	0	1,243,105	18,938,076
2086	18,938,076	453,364	517,178	0	1,323,469	20,197,731
2087	20,197,731	466,965	469,905	0	1,413,740	21,608,531
2088	21,608,531	480,974	423,840	0	1,514,563	23,180,228
2089	23,180,228	495,403	379,267	0	1,626,612	24,922,976
2090	24,922,976	510,265	336,474	0	1,750,588	26,847,355
2091	26,847,355	525,573	295,748	0	1,887,222	28,964,402
2092	28,964,402	541,340	257,361	0	2,037,279	31,285,660
2093	31,285,660	557,581	221,562	0	2,201,558	33,823,237
2094	33,823,237	574,308	188,560	0	2,380,899	36,589,884
2095	36,589,884	591,537	158,517	0	2,576,191	39,599,095
2096	39,599,095	609,283	131,535	0	2,788,375	42,865,218
2097	42,865,218	627,562	107,645	0	3,018,454	46,403,589
2098	46,403,589	646,389	86,811	0	3,267,505	50,230,672
2099	50,230,672	665,780	68,931	0	3,536,683	54,364,204
2100	54,364,204	685,754	53,843	0	3,827,237	58,823,352
2101	58,823,352	706,327	41,336	0	4,140,515	63,628,858
2102	63,628,858	727,516	31,165	0	4,477,980	68,803,189
2103	68,803,189	749,342	23,058	0	4,841,213	74,370,686
2104	74,370,686	771,822	16,732	0	5,231,929	80,357,705
2105	80,357,705	794,977	11,904	0	5,651,983	86,792,761
2106	86,792,761	818,826	8,304	0	6,103,381	93,706,664
2107	93,706,664	843,391	5,682	0	6,588,290	101,132,663
2108	101,132,663	868,693	3,819	0	7,109,044	109,106,581
2109	109,106,581	894,753	2,527	0	7,668,160	117,666,967
2110	117,666,967	921,596	1,652	0	8,268,341	126,855,252
2111	126,855,252	949,244	1,073	0	8,912,492	136,715,915
2112	136,715,915	977,721	698	0	9,603,731	147,296,669
2113	147,296,669	1,007,053	459	0	10,345,401	158,648,664
2114	158,648,664	1,037,264	308	0	11,141,085	170,826,705
2115	170,826,705	1,068,382	212	0	11,994,622	183,889,497
2116	183,889,497	1,100,434	150	0	12,910,123	197,899,904
2117	197,899,904	1,133,447	109	0	13,891,989	212,925,231
2118	212,925,231	1,167,450	81	0	14,944,932	229,037,532
2119	229,037,532	1,202,474	61	0	16,073,999	246,313,944
2120	246,313,944	1,238,548	45	0	17,284,590	264,837,037
2121	264,837,037	1,275,704	33	0	18,582,485	284,695,193
2122	284,695,193	1,313,975	24	0	19,973,873	305,983,017
2123	305,983,017	1,353,395	46	0	21,465,377	328,801,743

For purposes of this projection, we assumed the 29.50% statutory contribution rate would continue after the plan becomes fully funded.

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

Fiscal Year Ending	Projected Beginning Plan 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)
2024	$ 11,038,928	$ 728,477	$ 728,477	$ 0	$ 704,245	$ 0	$ 704,245
2025	11,462,354	734,164	734,164	0	663,311	0	663,311
2026	11,888,634	761,625	761,625	0	643,105	0	643,105
2027	12,314,486	790,628	790,628	0	623,920	0	623,920
2028	12,737,342	820,496	820,496	0	605,131	0	605,131
2029	13,155,345	850,204	850,204	0	586,020	0	586,020
2030	13,558,795	881,475	881,475	0	567,826	0	567,826
2031	13,954,229	912,548	912,548	0	549,386	0	549,386
2032	14,341,026	943,505	943,505	0	530,863	0	530,863
2033	14,718,549	974,846	974,846	0	512,614	0	512,614
2034	15,077,588	1,006,527	1,006,527	0	494,648	0	494,648
2035	15,424,213	1,038,917	1,038,917	0	477,164	0	477,164
2036	15,756,551	1,071,989	1,071,989	0	460,143	0	460,143
2037	16,072,621	1,105,595	1,105,595	0	443,522	0	443,522
2038	16,370,390	1,139,396	1,139,396	0	427,179	0	427,179
2039	16,648,091	1,173,536	1,173,536	0	411,195	0	411,195
2040	16,903,813	1,207,929	1,207,929	0	395,557	0	395,557
2041	17,135,626	1,241,838	1,241,838	0	380,057	0	380,057
2042	17,342,321	1,275,210	1,275,210	0	364,739	0	364,739
2043	17,522,706	1,308,076	1,308,076	0	349,663	0	349,663
2044	17,675,474	1,340,059	1,340,059	0	334,778	0	334,778
2045	17,799,603	1,372,311	1,372,311	0	320,407	0	320,407
2046	17,892,806	1,404,294	1,404,294	0	306,424	0	306,424
2047	17,953,209	1,436,298	1,436,298	0	292,904	0	292,904
2048	17,978,480	1,468,119	1,468,119	0	279,807	0	279,807
2049	17,966,453	1,498,400	1,498,400	0	266,896	0	266,896
2050	17,907,172	1,526,196	1,526,196	0	254,062	0	254,062
2051	17,809,778	1,551,699	1,551,699	0	241,409	0	241,409
2052	17,674,596	1,574,652	1,574,652	0	228,953	0	228,953
2053	17,502,287	1,594,295	1,594,295	0	216,644	0	216,644
2054	17,294,470	1,609,682	1,609,682	0	204,425	0	204,425
2055	17,053,994	1,619,948	1,619,948	0	192,270	0	192,270
2056	16,784,930	1,624,406	1,624,406	0	180,186	0	180,186
2057	16,492,447	1,623,025	1,623,025	0	168,255	0	168,255
2058	16,182,108	1,616,015	1,616,015	0	156,569	0	156,569
2059	15,859,584	1,603,995	1,603,995	0	145,238	0	145,238
2060	15,530,180	1,587,775	1,587,775	0	134,363	0	134,363
2061	15,198,576	1,567,859	1,567,859	0	123,998	0	123,998
2062	14,869,142	1,544,634	1,544,634	0	114,170	0	114,170
2063	14,546,054	1,518,420	1,518,420	0	104,890	0	104,890
2064	14,233,376	1,489,476	1,489,476	0	96,159	0	96,159
2065	13,935,131	1,458,034	1,458,034	0	87,971	0	87,971
2066	13,655,348	1,424,344	1,424,344	0	80,316	0	80,316
2067	13,398,035	1,388,661	1,388,661	0	73,182	0	73,182
2068	13,167,181	1,351,202	1,351,202	0	66,549	0	66,549
2069	12,966,800	1,312,169	1,312,169	0	60,399	0	60,399
2070	12,800,958	1,271,739	1,271,739	0	54,708	0	54,708
2071	12,673,800	1,230,042	1,230,042	0	49,453	0	49,453
2072	12,589,622	1,187,183	1,187,183	0	44,607	0	44,607
2073	12,552,907	1,143,246	1,143,246	0	40,146	0	40,146

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

Fiscal Year Ending	Projected Beginning Plan 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)
2074	$ 12,568,369	$ 1,098,306	$ 1,098,306	$ 0	$ 36,045	$ 0	$ 36,045
2075	12,640,980	1,052,435	1,052,435	0	32,280	0	32,280
2076	12,775,991	1,005,710	1,005,710	0	28,829	0	28,829
2077	12,978,948	958,218	958,218	0	25,670	0	25,670
2078	13,255,708	910,057	910,057	0	22,785	0	22,785
2079	13,612,441	861,338	861,338	0	20,155	0	20,155
2080	14,055,647	812,186	812,186	0	17,761	0	17,761
2081	14,592,159	762,740	762,740	0	15,589	0	15,589
2082	15,229,158	713,154	713,154	0	13,622	0	13,622
2083	15,974,175	663,600	663,600	0	11,846	0	11,846
2084	16,835,102	614,272	614,272	0	10,248	0	10,248
2085	17,820,193	565,386	565,386	0	8,815	0	8,815
2086	18,938,071	517,178	517,178	0	7,536	0	7,536
2087	20,197,726	469,905	469,905	0	6,399	0	6,399
2088	21,608,526	423,840	423,840	0	5,394	0	5,394
2089	23,180,222	379,267	379,267	0	4,511	0	4,511
2090	24,922,970	336,474	336,474	0	3,741	0	3,741
2091	26,847,349	295,748	295,748	0	3,073	0	3,073
2092	28,964,396	257,361	257,361	0	2,499	0	2,499
2093	31,285,654	221,562	221,562	0	2,011	0	2,011
2094	33,823,231	188,560	188,560	0	1,599	0	1,599
2095	36,589,878	158,517	158,517	0	1,256	0	1,256
2096	39,599,089	131,535	131,535	0	974	0	974
2097	42,865,213	107,645	107,645	0	745	0	745
2098	46,403,584	86,811	86,811	0	562	0	562
2099	50,230,666	68,931	68,931	0	417	0	417
2100	54,364,198	53,843	53,843	0	304	0	304
2101	58,823,346	41,336	41,336	0	218	0	218
2102	63,628,851	31,165	31,165	0	154	0	154
2103	68,803,182	23,058	23,058	0	106	0	106
2104	74,370,678	16,732	16,732	0	72	0	72
2105	80,357,697	11,904	11,904	0	48	0	48
2106	86,792,752	8,304	8,304	0	31	0	31
2107	93,706,656	5,682	5,682	0	20	0	20
2108	101,132,654	3,819	3,819	0	13	0	13
2109	109,106,573	2,527	2,527	0	8	0	8
2110	117,666,959	1,652	1,652	0	5	0	5
2111	126,855,244	1,073	1,073	0	3	0	3
2112	136,715,906	698	698	0	2	0	2
2113	147,296,660	459	459	0	1	0	1
2114	158,648,655	308	308	0	1	0	1
2115	170,826,697	212	212	0	0	0	0
2116	183,889,490	150	150	0	0	0	0
2117	197,899,896	109	109	0	0	0	0
2118	212,925,222	81	81	0	0	0	0
2119	229,037,523	61	61	0	0	0	0
2120	246,313,936	45	45	0	0	0	0
2121	264,837,028	33	33	0	0	0	0
2122	284,695,184	24	24	0	0	0	0
2123	305,983,009	46	46	0	0	0	0
				Totals	$ 15,395,775	$ 0	$ 15,395,775

SECTION H

GLOSSARY OF TERMS

Glossary of Terms

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

Glossary of Terms

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

Glossary of Terms

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

Glossary of Terms

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

Public Employees Retirement Association of Minnesota

Local Government Correctional Service Retirement Plan
GASB Statements No. 67 and No. 68
Accounting and Financial Reporting for Pensions
June 30, 2023

| P: 800.521.0498 | www.grsconsulting.com

December 7, 2023

Public Employees Retirement Association of Minnesota
Local Government Correctional Service Retirement Plan
St. Paul, Minnesota

Dear Trustees of the Local Government Correctional Service Retirement Plan:

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 Local Government Correctional Service Retirement Plan, 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 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 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 obligations. 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. PERA is responsible for preparing the Schedule of Employer Allocations and the Schedule of Pension Amounts by Employer. This report may be provided to parties other than the Public Employees Retirement Association (PERA) only in its entirety and only with the permission of PERA. GRS is not responsible for unauthorized use of this report.

This report is based upon information, furnished to us by PERA, 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 Plan and should be considered in conjunction with that report. Please see the actuarial valuation report as of June 30, 2023 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

277 Coon Rapids Boulevard | Suite 212 | Coon Rapids, Minnesota 55433-2629

To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the Local Government Correctional Service Retirement Plan 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

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

Sheryl Christensen

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

BJW/SLC:rmn

Table of Contents

SECTION A

EXECUTIVE SUMMARY

Executive Summary
as of June 30, 2023 (Dollars in Thousands)

		2023	
Actuarial Valuation Date		June 30, 2023	
Measurement Date of the Net Pension Liability		June 30, 2023	
Employer's Fiscal Year Ending Date (Reporting Date)		Varies by Employer	
Membership			
Number of			
- Service Retirements		1,506	
- Survivors		100	
- Disability Retirements		237	
- Deferred Retirements		4,378	
- Terminated Other Non-Vested		2,604	
- Active Members		3,786	
- Total		12,611	
Covered Payroll	$	238,319	(1)
Net Pension Liability			
Total Pension Liability	$	1,112,405	
Plan Fiduciary Net Position		1,067,200	
Net Pension Liability	$	45,205	
Plan Fiduciary Net Position as a Percentage of Total Pension Liability		95.94%	
Net Pension Liability as a Percentage of Covered Payroll		18.97%	
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		3.86%	(2)
Last year ending June 30 in the 2024 to 2123 projection period for which projected benefit payments are fully funded		2123	
Total Pension Expense/(Income)	**$**	**37,261**	

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

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ 17,411	$ 3,969
Changes in assumptions	$ 107,636	$ 206,231
Net difference between projected and actual earnings on pension plan investments	$ 85,006	$ 90,784
Total	$ 210,053	$ 300,984

(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. Governmental Accounting Standards Board (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 Local Government Correctional Service Retirement Plan subsequent to the measurement date of June 30, 2023.

The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of the liability and investment experience.

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

Notes to Financial Statements

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

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

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

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

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

Required Supplementary Information

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

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

Measurement of the Net Pension Liability

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

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

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

(1) The normal cost of the plan is expected to remain approximately level as a percent of pay;
(2) The funded status of the plan is expected to gradually improve and is expected to be 100% funded within the next 30 years; and
(3) The unfunded liability will grow initially as a dollar amount for 8 years (based on the current 30-year amortization period and if contributions are equal to the required contribution 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, 2023 and a measurement date of June 30, 2023.

Single Discount Rate

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

For the purpose of this valuation, the long-term expected rate of return on pension plan investments is 7.00%; the municipal bond rate is 3.86% (based on the weekly rate closest to but not later than the measurement date of Fidelity's "20-Year Municipal GO AA Index"); and the resulting single discount rate is 7.00%. PERA staff selected the long-term expected rate of investment return of 7.00% based on input from GRS that the proposed selection would be reasonable for the purpose of the measurement.

SECTION B

FINANCIAL STATEMENTS

Statement of Pension Expense under GASB Statement No. 68 Fiscal Year Ended June 30, 2023 (Dollars in Thousands)

A. Expense

1.	Service Cost	$	45,941
2.	Interest on the Total Pension Liability	$	71,324
3.	Current-Period Benefit Changes	$	141
4.	Employee Contributions (made negative for addition here)	$	(13,894)
5.	Projected Earnings on Plan Investments (made negative for addition here)	$	(63,541)
6.	Pension Plan Administrative Expense	$	434
7.	Other Changes in Plan Fiduciary Net Position	$	-
8.	Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability		
	Arising from Current Reporting Period	$	8,705
9.	Recognition of Outflow (Inflow) of Resources due to assumption changes		
	Arising from Current Reporting Period	$	(103,115)
10.	Recognition of Outflow (Inflow) of Resources due to the difference between projected (7.50%) and actual earnings on Pension Plan Investments		
	Arising from Current Reporting Period	$	(4,770)
11.	**Increase/(Decrease) from Experience in the Current Reporting Period**	**$**	**(58,775)**
12.	Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability		
	Arising from Prior Reporting Periods	$	(6,989)
13.	Recognition of Outflow (Inflow) of Resources due to assumption changes		
	Arising from Prior Reporting Periods	$	107,141
14.	Recognition of Outflow (Inflow) of Resources due to the difference between projected and actual earnings on Pension Plan Investments		
	Arising from Prior Reporting Periods	$	(4,116)
15.	**Total Pension Expense / (Income)**	**$**	**37,261**

Recognition of Deferred Outflows and Inflows of Resources

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 32,566 years. Additionally, the total plan membership (active employees and inactive employees) was 11,890. 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 3.00 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, 2023 (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	$	26,116
2. Assumption Changes (gains) or losses	$	(309,346)
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		3.0000
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience of the Total Pension Liability	$	8,705
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	$	(103,115)
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	$	(94,410)
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	$	17,411
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	$	(206,231)
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	$	(188,820)
B. Outflows (Inflows) of Resources due to Assets		
1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	$	(23,852)
2. Recognition period for Assets {in years}		5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	$	(4,770)
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	$	(19,082)

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended June 30, 2023 (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 of Resources
1. Due to Liabilities	$ 116,341	$ 110,599	$ 5,742
2. Due to Assets	$ 31,734	$ 40,620	$ (8,886)
3. Total	$ 148,075	$ 151,219	$ (3,144)

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

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	$ 8,705	$ 6,989	$ 1,716
2. Assumption Changes	$ 107,636	$ 103,610	$ 4,026
3. Net Difference between projected and actual earnings on pension plan investments	$ 31,734	$ 40,620	$ (8,886)
4. Total	$ 148,075	$ 151,219	$ (3,144)

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 of Resources
1. Differences between expected and actual experience	$ 17,411	$ 3,969	$ 13,442
2. Assumption Changes	$ 107,636	$ 206,231	$ (98,595)
3. Net Difference between projected and actual earnings on pension plan investments	$ 85,006	$ 90,784	$ (5,778)
4. Total	$ 210,053	$ 300,984	$ (90,931)

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

Year Ending June 30	Net Deferred Outflows of Resources
2024	$ 235
2025	$ (108,327)
2026	$ 21,932
2027	$ (4,771)
2028	$ -
Thereafter	$ -
Total	$ (90,931)

Recognition of Deferred Outflows and Inflows of Resources
Fiscal Year Ended June 30, 2023 (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	$ (12,083)	4.0000	$ (3,020)	$ 0	0.0000
2021	$ (3,822)	4.0000	$ (955)	$ (955)	1.0000
2022	$ (9,042)	3.0000	$ (3,014)	$ (3,014)	1.0000
2023	$ 26,116	3.0000	$ 8,705	$ 17,411	2.0000
Total			**$ 1,716**	**$ 13,442**	
Deferred Outflow (Inflow) Due to Assumption Changes					
2020	$ (1,977)	4.0000	$ (495)	$ 0	0.0000
2021	$ 137,113	4.0000	$ 34,278	$ 34,279	1.0000
2022	$ 220,073	3.0000	$ 73,358	$ 73,357	1.0000
2023	$ (309,346)	3.0000	$ (103,115)	$ (206,231)	2.0000
Total			**$ 4,026**	**$ (98,595)**	
Deferred Outflow (Inflow) Due to Differences Between Projected and Actual Earnings on Plan Investments					
2019	$ 671	5.0000	$ 135	$ 0	0.0000
2020	$ 24,475	5.0000	$ 4,895	$ 4,895	1.0000
2021	$ (179,252)	5.0000	$ (35,850)	$ (71,702)	2.0000
2022	$ 133,519	5.0000	$ 26,704	$ 80,111	3.0000
2023	$ (23,852)	5.0000	$ (4,770)	$ (19,082)	4.0000
Total			**$ (8,886)**	**$ (5,778)**	
Deferred Outflow (Inflow) Due to All Sources					
Total			**$ (3,144)**	**$ (90,931)**	

Statement of Fiduciary Net Position
(Dollars in Thousands)

	Market Value			
Assets in Trust	**June 30, 2023**		**June 30, 2022**	
Cash, equivalents, short term securities	$	31,869	$	16,177
Fixed income	$	223,184	$	222,439
Equity	$	541,314	$	489,555
Private Markets	$	270,615	$	247,026
Other	$	-	$	-
Total Assets in Trust	**$**	**1,066,982**	**$**	**975,197**
Assets Receivable	$	884	$	743
Amounts Payable	$	(666)	$	625
Net Position Restricted for Pensions	**$**	**1,067,200**	**$**	**975,315**

Statement of Changes in Fiduciary Net Position
(Dollars in Thousands)

Change in Assets			**Market Value**		
Year Ending			**June 30, 2023**		**June 30, 2022**
1.	Fund balance at market value at beginning of year	$	975,315	$	1,035,716
2.	Adjustment to match beginning of year asset statement	$	-	$	-
3.	Fund balance at market value at beginning of year	$	975,315	$	1,035,716
4.	Contributions				
	a. Member	$	13,894	$	12,843
	b. Employer	$	20,518	$	19,227
	c. Other sources	$	-	$	-
	d. Total contributions	$	34,412	$	32,070
5.	Investment income				
	a. Investment income/(loss)	$	87,753	$	(62,508)
	b. Investment expenses	$	(360)	$	(3,507)
	c. Net subtotal	$	87,393	$	(66,015)
6.	Other	$	-	$	-
7.	**Total additions:** *(4.d.) + (5.c.) + (6.)*	**$**	**121,805**	**$**	**(33,945)**
8.	Benefits Paid				
	a. Annuity benefits	$	(27,117)	$	(23,372)
	b. Refunds	$	(2,369)	$	(2,713)
	c. Total benefits paid	$	(29,486)	$	(26,085)
9.	Expenses				
	a. Other	$	-	$	-
	b. Administrative	$	(434)	$	(371)
	c. Total expenses	$	(434)	$	(371)
10.	**Total deductions:** *(8.c.) + (9.c.)*	**$**	**(29,920)**	**$**	**(26,456)**
11.	Net increase (decrease) in net position: *(7.) + (10.)*	$	91,885	$	(60,401)
12.	**Net position restricted for pensions**	**$**	**1,067,200**	**$**	**975,315**
13.	State Board of Investment calculated investment return[#]		9.0%		-6.4%

[#] *Provided by PERA and calculated by the State Board of Investment.*

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in Net Pension Liability and Related Ratios
Current Period
Fiscal Year Ended June 30, 2023 (Dollars in Thousands)

A. Total pension liability		
1. Service Cost	$	45,941
2. Interest on the Total Pension Liability	$	71,324
3. Changes of benefit terms	$	141
4. Difference between expected and actual experience of the Total Pension Liability**	$	26,116
5. Changes of assumptions	$	(309,346)
6. Benefit payments, including refunds of employee contributions	$	(29,486)
7. Net change in total pension liability	$	(195,310)
8. Total pension liability – beginning	$	1,307,715
9. Total pension liability – ending	**$**	**1,112,405**
B. Plan fiduciary net position		
1. Contributions – employer	$	20,518
2. Contributions – employee	$	13,894
3. Net investment income	$	87,393
4. Benefit payments, including refunds of employee contributions	$	(29,486)
5. Pension Plan Administrative Expense	$	(434)
6. Other	$	-
7. Net change in plan fiduciary net position	$	91,885
8. Plan fiduciary net position – beginning	$	975,315
9. Plan fiduciary net position – ending	**$**	**1,067,200**
C. Net pension liability	**$**	**45,205**
D. Plan fiduciary net position as a percentage of the total pension liability		**95.94%**
E. Covered-employee payroll*	**$**	**238,319**
F. Net pension liability as a percentage of covered-employee payroll		**18.97%**

** Assumed equal to actual member contributions divided by employee contribution rate.*
*** Includes impact of changes in expected timing of future post-retirement benefit increases.*

Schedules of Required Supplementary Information
Schedule of Changes in Net Pension Liability and Related Ratios Multiyear
(Dollars in Thousands)

Last 10 Fiscal Years

Fiscal year ending June 30,	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability										
Service Cost	$ 45,941	$ 36,877	$ 32,307	$ 33,172	$ 30,362	$ 45,378	$ 49,202	$ 25,950	$ 25,098	$ 26,488
Interest on the Total Pension Liability	$ 71,324	$ 66,604	$ 61,462	$ 57,354	$ 52,741	$ 53,811	$ 47,336	$ 40,605	$ 37,043	$ 33,955
Benefit Changes	$ 141	$ -	$ -	$ -	$ -	$ (66,822)	$ -	$ -	$ -	$ -
Difference between Expected and Actual Experience	$ 26,116	$ (9,042)	$ (3,822)	$ (12,083)	$ (1,846)	$ 1,018	$ (3,516)	$ 382	$ (7,892)	$ (5,327)
Assumption Changes	$ (309,346)	$ 220,073	$ 137,113	$ (1,977)	$ (2,206)	$ (209,457)	$ (66,147)	$ 310,332	$ -	$ (34,168)
Benefit Payments	$ (27,117)	$ (23,372)	$ (20,088)	$ (17,569)	$ (15,381)	$ (13,183)	$ (11,033)	$ (9,381)	$ (7,777)	$ (6,711)
Refunds	$ (2,369)	$ (2,713)	$ (2,140)	$ (2,709)	$ (2,244)	$ (1,364)	$ (1,478)	$ (982)	$ (1,057)	$ (1,105)
Net Change in Total Pension Liability	$ (195,310)	$ 288,427	$ 204,832	$ 56,188	$ 61,426	$ (190,619)	$ 14,364	$ 366,906	$ 45,415	$ 13,132
Total Pension Liability - Beginning	$ 1,307,715	$ 1,019,288	$ 814,456	$ 758,268	$ 696,842	$ 887,461	$ 873,097	$ 506,191	$ 460,776	$ 447,644
Total Pension Liability - Ending (a)	$ 1,112,405	$ 1,307,715	$1,019,288	$ 814,456	$ 758,268	$ 696,842	$ 887,461	$ 873,097	$ 506,191	$ 460,776
Plan Fiduciary Net Position										
Employer Contributions	$ 20,518	$ 19,227	$ 19,351	$ 19,043	$ 18,676	$ 17,871	$ 17,489	$ 16,490	$ 15,736	$ 15,054
Employee Contributions	$ 13,894	$ 12,843	$ 12,948	$ 12,692	$ 12,485	$ 11,956	$ 11,666	$ 11,008	$ 10,472	$ 10,030
Pension Plan Net Investment Income	$ 87,393	$ (66,015)	$ 238,666	$ 31,774	$ 50,853	$ 62,962	$ 78,363	$ 209	$ 20,373	$ 69,451
Benefit Payments	$ (27,117)	$ (23,372)	$ (20,088)	$ (17,569)	$ (15,381)	$ (13,183)	$ (11,033)	$ (9,381)	$ (7,777)	$ (6,711)
Refunds	$ (2,369)	$ (2,713)	$ (2,140)	$ (2,709)	$ (2,244)	$ (1,364)	$ (1,478)	$ (982)	$ (1,057)	$ (1,105)
Pension Plan Administrative Expense	$ (434)	$ (371)	$ (344)	$ (332)	$ (361)	$ (308)	$ (330)	$ (290)	$ (247)	$ (236)
Other	$ -	$ -	$ 1	$ -	$ -	$ 1	$ -	$ (2)	$ (1)	$ (1)
Net Change in Plan Fiduciary Net Position	$ 91,885	$ (60,401)	$ 248,394	$ 42,899	$ 64,028	$ 77,935	$ 94,677	$ 17,052	$ 37,499	$ 86,482
Plan Fiduciary Net Position - Beginning	$ 975,315	$ 1,035,716	$ 787,322	$ 744,423	$ 680,395	$ 602,460	$ 507,783	$ 490,731	$ 453,232	$ 366,750
Plan Fiduciary Net Position - Ending (b)	$ 1,067,200	$ 975,315	$1,035,716	$ 787,322	$ 744,423	$ 680,395	$ 602,460	$ 507,783	$ 490,731	$ 453,232
Net Pension Liability - Ending (a) - (b)	$ 45,205	$ 332,400	$ (16,428)	$ 27,134	$ 13,845	$ 16,447	$ 285,001	$ 365,314	$ 15,460	$ 7,544
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	95.94 %	74.58 %	101.61 %	96.67 %	98.17 %	97.64 %	67.89 %	58.16 %	96.95 %	98.36 %
Covered Employee Payroll	$ 238,319	$ 220,292	$ 222,093	$ 217,702	$ 214,151	$ 205,077	$ 200,103	$ 188,816	$ 179,623	$ 172,041
Net Pension Liability as a Percentage of Covered Employee Payroll	18.97 %	150.89 %	(7.40)%	12.46 %	6.47 %	8.02 %	142.43 %	193.48 %	8.61 %	4.39 %

Notes to Schedule:

N/A

Schedules of Required Supplementary Information
Schedule of Net Pension Liability Multiyear
(Dollars in Thousands)

Last 10 Fiscal Years

FY Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll	Net Pension Liability as a % of Covered Payroll
2014	$ 460,776	$ 453,232	$ 7,544	98.36%	$ 172,041	4.39%
2015	$ 506,191	$ 490,731	$ 15,460	96.95%	$ 179,623	8.61%
2016	$ 873,097	$ 507,783	$ 365,314	58.16%	$ 188,816	193.48%
2017	$ 887,461	$ 602,460	$ 285,001	67.89%	$ 200,103	142.43%
2018	$ 696,842	$ 680,395	$ 16,447	97.64%	$ 205,077	8.02%
2019	$ 758,268	$ 744,423	$ 13,845	98.17%	$ 214,151	6.47%
2020	$ 814,456	$ 787,322	$ 27,134	96.67%	$ 217,702	12.46%
2021	$ 1,019,288	$ 1,035,716	$ (16,428)	101.61%	$ 222,093	-7.40%
2022	$ 1,307,715	$ 975,315	$ 332,400	74.58%	$ 220,292	150.89%
2023	$ 1,112,405	$ 1,067,200	$ 45,205	95.94%	$ 238,319	18.97%

Schedule of Contributions Multiyear (Dollars in Thousands)

Last 10 Fiscal Years

FY Ending June 30,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2014	$ 14,606	$ 15,054	$ (448)	$ 172,041	8.75%
2015	$ 13,759	$ 15,736	$ (1,977)	$ 179,623	8.76
2016	$ 16,446	$ 16,490	$ (44)	$ 188,816	8.73
2017	$ 17,269	$ 17,489	$ (220)	$ 200,103	8.74
2018	$ 19,031	$ 17,871	$ 1,160	$ 205,077	8.71
2019	$ 19,466	$ 18,676	$ 790	$ 214,151	8.72
2020	$ 19,593	$ 19,043	$ 550	$ 217,702	8.75
2021	$ 19,167	$ 19,351	$ (184)	$ 222,093	8.71
2022	$ 13,063	$ 19,227	$ (6,164)	$ 220,292	8.73
2023	$ 13,251	$ 20,518	$ (7,267)	$ 238,319	8.61

Notes to Schedule of Contributions

Methods and Assumptions Used to Determine Contribution Rates for Fiscal Year Ending June 30, 2023:

Valuation Date	June 30, 2022
Notes	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.
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Closed
Remaining Amortization Period	26 years (30 years when plan is fully funded)
Asset Valuation Method	5-Year smoothed market; no corridor
Inflation	2.25%
Payroll Growth	3.00%
Salary Increases	3.00% to 11.00% including inflation
Investment Rate of Return	7.50%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2021 valuation pursuant to an experience study of the period 2015 - 2019.
Mortality	PUB-2010 annuitant generational Public Safety mortality table projected with mortality improvement scale MP-2021, from a base year of 2010. Male rates adjusted by a factor of 0.98.

Other Information:

Notes	The plan is assumed to pay a 2.00% post-retirement benefit increase for all years. See separate funding report as of June 30, 2022 for additional detail.

Schedule of Investment Returns Multiyear

Last 10 Fiscal Years

FY Ending June 30,	Annual Return[1]
2014	18.6 %
2015	4.4
2016	0.1
2017	15.2
2018	10.4
2019	7.4
2020	4.2
2021	30.2
2022	(6.4)
2023	9.0

[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 PERA for GASB compliance purposes. PERA 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, 2023, the annual money-weighted rate of return for the Local Government Correctional Service Retirement Plan was 9.0%. 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 PERA's defined benefit retirement funds), contact SBI at 60 Empire Drive, Suite 355, 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, 2023, these estimates are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return (geometric)
Domestic Equity	33.5%	5.10%
International Equity	16.5%	5.30%
Private Markets	25.0%	5.90%
Fixed Income	25.0%	0.75%
Unallocated Cash	0.0%	0.00%
Total	100%	

The Minnesota State Board of Investment (SBI) compiled this data and the related investment notes and provided it to PERA for GASB compliance purposes. PERA 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 reviews of inflation and investment return assumptions included in the General Employees Retirement Plan 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 the expected rate of return on pension plan investments of 7.00%. The projection of cash flows used to determine this single discount rate assumed that plan member, employer, and state contributions will be made at the current statutory contribution rates. Based on these assumptions, the pension plan's fiduciary net position and future contributions were sufficient to finance all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

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

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	$ 1,305,481	$ 1,112,405	$ 958,355
Net Position Restricted for Pensions	$ 1,067,200	$ 1,067,200	$ 1,067,200
Net Pension Liability	**$ 238,281**	**$ 45,205**	**$ (108,845)**

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 the Actuarial Standards of Practice.

GASB Statement No. 68 Reconciliation (Dollars in Thousands)
Current Reporting Period

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)	Current Period		
				Deferred Outflows	Deferred Inflows	Pension Expense*
Balance Beginning of Year	**$ 1,307,715**	**$ 975,315**	**$ 332,400**			
Changes for the Year:						
Service Cost	$ 45,941		$ 45,941			$ 45,941
Interest on Total Pension Liability	71,324		71,324			71,324
Interest on Fiduciary Net Position		$ 63,541	(63,541)			(63,541)
Changes in Benefit Terms	141		141			141
Liability Experience Gains and Losses	26,116		26,116	$ 17,411	$ -	8,705
Changes in Assumptions	(309,346)		(309,346)	-	206,231	(103,115)
Contributions - Employer		20,518	(20,518)			
Contributions - Employees		13,894	(13,894)			(13,894)
Asset Gain/(Loss)		23,852	(23,852)	-	19,082	(4,770)
Benefit Payouts	(29,486)	(29,486)				
Administrative Expenses		(434)	434			434
Other		-	-			-
Net Changes	**$ (195,310)**	**$ 91,885**	**$ (287,195)**	**$ 17,411**	**$ 225,313**	**$ (58,775)**
Balance End of Year	**$ 1,112,405**	**$ 1,067,200**	**$ 45,205**			

** Pension Expense from Experience in the Current Reporting Period.*

GASB Statement No. 68 Reconciliation (Dollars in Thousands)
Current and Prior Reporting Periods

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)	Deferred Outflows	Deferred Inflows	Net Deferred Outflows Prior Year	Total Pension Expense*
Balance Beginning of Year	**$ 1,307,715**	**$ 975,315**	**$ 332,400**				
Changes for the Year:							
Service Cost	$ 45,941		$ 45,941				$ 45,941
Interest on Total Pension Liability	71,324		71,324				71,324
Interest on Fiduciary Net Position		$ 63,541	(63,541)				(63,541)
Changes in Benefit Terms	141		141				141
Liability Experience Gains and Losses	26,116		26,116	$ 17,411	$ 3,969	$ (10,958)	1,716
Changes in Assumptions	(309,346)		(309,346)	107,636	206,231	214,777	4,026
Contributions - Employer		20,518	(20,518)				
Contributions - Employees		13,894	(13,894)				(13,894)
Asset Gain/(Loss)		23,852	(23,852)	85,006	90,784	9,188	(8,886)
Benefit Payouts	(29,486)	(29,486)					
Administrative Expenses		(434)	434				434
Other		-	-				-
Net Changes	**$ (195,310)**	**$ 91,885**	**$ (287,195)**				**$ 37,261**
Balance End of Year	**$ 1,112,405**	**$ 1,067,200**	**$ 45,205**	**$ 210,053**	**$ 300,984**	**$ 213,007**	

** Pension Expense from Experience in the Current and Prior Reporting Periods.*

Summary of Population Statistics

		Terminated		Recipients			
	Actives	Deferred Retirement	Other Non-Vested	Service Retirement	Disability Retirement	Survivor	Total
Members on July 1, 2022	**3,564**	**4,129**	**2,480**	**1,407**	**223**	**87**	**11,890**
New members	838						**838**
Return to active	57	(25)	(32)	0	0	0	**0**
Terminated non-vested	(351)	0	351	0	0	0	**0**
Service retirements	(49)	(68)	0	117	0	0	**0**
Terminated deferred	(176)	176	0	0	0	0	**0**
Terminated refund/transfer	(84)	(45)	(208)	0	0	0	**(337)**
Deaths	(3)	(4)	(3)	(18)	(1)	(1)	**(30)**
New beneficiary	0	0	0	0	0	16	**16**
Disabled	(10)	0	0	0	10	0	**0**
Data adjustments	0	215	16	0	5	(2)	**234**
Net change	222	249	124	99	14	13	**721**
Members on June 30, 2023	**3,786**	**4,378**	**2,604**	**1,506**	**237**	**100**	**12,611**

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. PERA 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	Local government employees in covered correctional service for a county administered jail or correctional facility or in a regional correctional facility administered by multiple counties, who are directly responsible for security, custody and control of persons confined in jail or facility, who are expected to respond to incidents within the jail or facility, and who are not members of the Public Employees Police and Fire Fund.
Contributions	Shown as a percent of salary: Member 5.83% Employer 8.75% Member contributions are "picked up" according to the provisions of Internal Revenue Code 414(h). Additional one-time direct state aid payment of $5,255,535, payable October 1, 2023.
Allowable service	Local Government Correctional Service during which member contributions were made (effective July 1, 1999). May also include certain leaves of absence, military service and periods while temporary Worker's Compensation is paid.
Salary	Includes amounts deducted for deferred compensation or supplemental retirement plans, net income from fees and sick leave payments funded by the employer. Excludes unused annual leaves and sick leave payments, severance payments, Workers' Compensation benefits and employer-paid flexible spending accounts, cafeteria plans, healthcare expense accounts, day-care expenses, fringe benefits and the cost of insurance coverage.
Average salary	Average of the five highest successive years of salary. Average Salary is based on all Allowable Service if less than five years.
Vesting	Hired before July 1, 2010: 100% vested after 3 years of Allowable Service. Hired after June 30, 2010: 50% vested after 5 years of Allowable Service; 60% vested after 6 years of Allowable Service; 70% vested after 7 years of Allowable Service; 80% vested after 8 years of Allowable Service; 90% vested after 9 years of Allowable Service; and 100% vested after 10 years of Allowable Service.
Retirement Normal retirement benefit	
Age/service requirement	Age 55 and vested. Proportionate Retirement Annuity is available at age 65 and one year of Allowable Service.
Amount	1.9% of Average Salary for each year of Allowable Service, pro rata for completed months, adjusted for partial vesting if applicable.

Summary of Plan Provisions (Continued)

Retirement (Concluded)	
Early Retirement	
Age/service requirement	Age 50 and vested.
Amount	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with actuarial reduction to commencement age assuming 3% augmentation to age 55 (2.50% if hired after June 30, 2006). 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. Actuarially equivalent options are: 25%, 50%, 75% or 100% Joint and Survivor. If a Joint and Survivor benefit is elected and the beneficiary predeceases the annuitant, the annuitant's benefit increases to the Life Annuity amount. This "bounce back" is subsidized by the plan.
Benefit increases	Benefit recipients receive increases each year in January based upon 100% of the current Social Security increase, not less than 1.0% and not more than 2.5%, beginning January 1, 2019. If the funding status declines to 85% for two consecutive years or 80% for one year on a market value of assets basis, the maximum increase will be lowered to 1.5%. If the maximum increase is 1.5%, and the Plans' funding ratio improves to 85% for two consecutive years on a market value of assets basis, then the maximum increase will revert to 2.5%. A benefit recipient who has been receiving a benefit for at least 12 full months as of June 30 will receive a full increase. Members receiving benefits for at least one month but less than 12 full months as of June 30 will receive a pro rata increase. An additional one-time, non-compounding benefit increase of 2.5% minus the actual 2024 adjustment, is payable for calendar year 2024 in a lump sum by March 31, 2024, to benefit recipients who have been receiving a benefit for at least 12 full months as of June 30, 2023.
Disability	
Duty Disability	
Age/service requirement	Member who cannot perform duties as a direct result of a disability relating to an act of duty specific to protecting the property and personal safety of others.
Amount	47.50% of Average Salary plus 1.90% of Average Salary for each year in excess of 25 years of Allowable Service (pro rata for completed months). Payment begins at disability and ends at age 65 or earlier if disability ceases or death occurs. Benefits may be paid upon re-employment but salary plus benefit cannot exceed current salary of position held at time of disability.
Regular Disability	
Age/service requirement	At least one year of Allowable Service and a disability preventing member from performing normal duties that arise out of activities not related to covered employment or while at work; activities related to duties that do not present inherent dangers specific to occupation.

Summary of Plan Provisions (Continued)

Disability (Concluded)	
Amount	Normal Retirement Benefit based on Allowable Service (minimum of 10 years) and Average Salary at disability. Payment begins at disability and ends at age 65 or earlier if disability ceases or death occurs. Benefits may be paid upon re-employment but salary plus benefit cannot exceed current salary of position held at time of disability.
<u>Retirement benefit</u>	
Age/service requirement	Age 65 with continued disability.
Amount	Any optional annuity continues. Otherwise, the larger of the disability benefit paid before age 65 or the normal retirement benefit available at age 65, or an actuarially equivalent optional annuity.
<u>Form of payment</u>	Same as for retirement.
<u>Benefit increases</u>	Same as for retirement.
Death	
<u>Surviving spouse benefit</u>	
Age/service requirement	Vested active member at any age or vested former member age 50 or older who dies before retirement or disability benefit commences. If an active member dies, benefits may commence immediately, regardless of age.
Amount	Surviving spouse receives the 100% joint and survivor benefit 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 50 to the commencement age. In lieu of this benefit, the surviving spouse may elect a refund of contributions with interest or an actuarially equivalent term certain annuity (lump sum payable to estate at death).
Benefit increases	Same as for retirement.
<u>Surviving dependent children's benefit</u>	
Age/service requirement	If no surviving spouse, all dependent children (biological or adopted) below age 20 who are dependent for more than half of their support on deceased member.
Amount	Actuarially equivalent to surviving spouse 100% joint and survivor annuity payable to the later of age 20 or five years. The amount is to be proportionally divided among surviving children.

Summary of Plan Provisions (Continued)

Death (Concluded)	
Refund of contributions	
Age/service requirement	Active employee dies and survivor benefits paid are less than member's contributions or a former employee dies before annuity begins.
Amount	If no survivor benefits are paid, the member's contributions with 6.00% interest until June 30, 2011; 4.00% to June 30, 2018; 3.00% thereafter. If survivor benefits are paid and accumulated contributions exceed total payments to the surviving spouse and children, then the remaining contributions are paid out.
Termination	
Refund of contributions	
Age/service requirement	Termination of local government 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	Partially or fully vested.
Amount	Benefit computed under law in effect at termination and increased by the following percentage (augmentation), compounded annually, if termination of employment is prior to January 1, 2012: (a.) 3.00% (2.50% if hired after June 30, 2006) until the earlier of January 1 of the year following attainment of age 55 and January 1, 2012; (b.) 5.00% (2.50% if hired after June 30, 2006) thereafter until the earlier of the date the annuity begins and January 1, 2012; (c.) 1.00% from January 1, 2012 through December 31, 2018; and (d.) 0.00% thereafter. If a member terminates employment after 2011, they are not eligible for augmentation.
Form of payment	Same as for retirement.
Actuarial equivalent factors	Effective July 1, 2019, actuarially equivalent factors based on the RP-2014 mortality table for healthy annuitants for a member turning age 55 in 2021, reflecting projected mortality improvements using Scale MP-2017, male rates multiplied by 0.96, blended 65% males, 4.88% post-retirement interest, and 7.5% pre-retirement interest. Reflecting statutory requirements, joint and survivor factors are based on an interest assumption of 6.50%.

Summary of Plan Provisions (Concluded)

Combined service annuity	Members are eligible for combined service benefits if they: (a.) Meet minimum retirement age for each plan participated in and total public service meets the vesting requirements of each plan; or (b.) Have three or more years of service under PERA and the covered fund(s) (if hired prior to July 1, 2010). Other requirements for combined service include: (a.) Member must have at least six months of allowable service credit in each plan worked under; and (b.) Member may not be in receipt of a benefit from another plan. Members who meet the above requirements must have their benefit based on the following: (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.
Changes in plan provisions	Additional one-time direct state aid contribution of $5.3 million will be contributed to the Plan on October 1, 2023. A one-time, non-compounding benefit increase of 2.5% minus the actual 2024 adjustment will be payable in a lump sum for calendar year 2024 by March 31, 2024. The maximum benefit increase will revert back to 2.5%, if the maximum increase is 1.5% and the Plan's funding ratio improves to 85% for two consecutive years on a market value of assets basis.

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.

Valuation of Future Post-Retirement Benefit Increases

Benefit increases after retirement will equal 100% of the Social Security Cost of Living Adjustment, not less than 1.0% and not more than 2.50%, beginning January 1, 2019. Stochastic modeling was used to determine the assumption that benefit increases will equal 2.00% per year. This is only an assumption; actual increases will depend on actual experience. If the funding status on a market value basis declines to 85% for two consecutive years or 80% for one year, the maximum increase will be lowered to 1.50%. Effective July 1, 2023, the maximum benefit increase will revert back to 2.5%, if the maximum increase is 1.5% and the Plan's funding ratio improves to 85% for two consecutive years on a market value of assets basis.

To determine an assumption regarding a future change in the post-retirement benefit increase, we performed a projection of liabilities and assets based on the following methods and assumptions:

- Future investment returns of 7.00%.
- Liabilities and normal cost based on statutory funding assumptions.
- Open group; stable active population (new member profile based on average new members hired in recent years).

Based on these assumptions and methods, the projection indicates that this plan is not expected to deteriorate to the funding ratio threshold required to lower the maximum benefit increase to 1.50%.

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. Unless noted otherwise, the assumptions prescribed are based on the experience study dated July 10, 2020, and a review of inflation and investment assumptions in the General Employees Retirement Plan 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.
Single Discount Rate	7.00% per annum.
Benefit increases after retirement	2.00% 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 earned during the year.
Inflation	2.25% per year.
Payroll growth	3.00% per year.
Mortality rates	
Healthy pre-retirement	Pub-2010 Public Safety Mortality Table adjusted for mortality improvements using projection scale MP-2021.
Healthy post-retirement	Pub-2010 Healthy Retired Public Safety Mortality Table adjusted for mortality improvements using projection scale MP-2021. Male rates are adjusted by a factor of 0.98.
Disabled	Pub-2010 Public Safety Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Male rates are adjusted by a factor of 1.05.
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 and beneficiaries 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. Note that plan changes reflected in this report may result in behavior changes that are not anticipated in the current retirement rates.
Withdrawal	Select and Ultimate rates based on actual experience. Ultimate rates after the third year are shown in the rate table. Select rates in the first three years are:

Year	Select Withdrawal Rates
1	27%
2	23%
3	17%

Summary of Actuarial Assumptions (Continued)

Disability	Age-related rates based on experience; see table of sample rates. All incidences are assumed to be duty-related.
Allowance for combined service annuity	Liabilities for former members are increased by 35.0% for vested members and 1.0% for non-vested members 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 percentage of prior year projected payroll. In each subsequent year, equal to the initial administrative expense percentage applied to payroll for the closed group.
Refund of contributions	For non-vested members, account balances accumulate interest until the assumed commencement date and are discounted back to the valuation date. Active members decrementing after becoming eligible for a benefit are assumed to take the contributions accumulated with interest if larger than the value of the benefit.
Commencement of deferred benefits	Members receiving deferred annuities (including current terminated deferred members) are assumed to begin receiving benefits at age 55.
Percentage married	75% of active members are assumed to be married. Actual marital status is used for members in payment status.
Age of spouse	Females are assumed to be three years younger than their male spouses. For members in payment status, actual spouse date of birth is used, if provided.
Eligible children	Retiring members are assumed to have no dependent children.
Form of payment	Married members retiring from active status are assumed to elect subsidized joint and survivor form of annuity as follows: Males: 10% elect 25% Joint & Survivor option 15% elect 50% Joint & Survivor option 5% elect 75% Joint & Survivor option 50% elect 100% Joint & Survivor option Females: 10% elect 25% Joint & Survivor option 10% elect 50% Joint & Survivor option 5% elect 75% Joint & Survivor option 25% elect 100% Joint & Survivor option 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 straight life annuity.
Eligibility testing	Eligibility for benefits is determined based upon the age nearest birthday and service on the date the decrement is assumed to occur.
Decrement operation	Withdrawal decrements do not operate during retirement eligibility. Decrements are assumed to occur mid-fiscal year.
Service credit accruals	It is assumed that members accrue one year of service credit per year.
Pay increases	Pay increases are assumed to happen at the beginning of the fiscal year. This is equivalent to assuming that reported earnings are pensionable earnings for the year ending on the valuation date.

Summary of Actuarial Assumptions (Continued)

Unknown data for certain members	To prepare this report, GRS has used and relied on participant data supplied by the Fund. Although GRS has reviewed the data in accordance with Actuarial Standards of Practice No. 23, GRS has not verified or audited any of the data or information provided. In cases where submitted data was missing or incomplete, the following assumptions, based on average results for applicable members, were applied: <u>Data for active members:</u> There were 128 members reported with a salary less than $100 after annualization. We used prior year salary (63 members), if available; otherwise high five salary with a 10% load to account for salary increases (61 members). If neither prior year salary nor high five salary was available, we assumed a value of $43,000 (4 members). There were also 162 members reported without a gender. We assumed male gender. There were also 8 members reported without a date of birth. We assumed these members were hired at age 30. <u>Data for terminated members:</u> We calculated benefits for these members using the reported Average Salary and credited service. If credited service was not reported (35 members), we used elapsed time from hire date to termination date (18 members); if elapsed time was not available, we assumed four years of service. If termination date was invalid or not reported (18 members), we assumed the termination date was equal to the hire date plus credited service, otherwise the valuation date. If Average Salary was not reported (27 members), we assumed a value of $24,000. If the reported termination date occurs prior to the reported hire date, the two dates were swapped. <u>Data for retired members:</u> There were 4 members reported without a gender; male was assumed. There were no members reported without a date of birth or benefit. Because PERA reclassifies disabled members as retirees once the member reaches Normal Retirement Age, we compare the members that PERA reports as retirees to our disabled group from the last valuation. If a member was disabled in the prior valuation, we reclassify that member as a disabled retiree in this year's valuation. We reclassified 104 retirees as disabled retirees in this valuation.
Changes in actuarial assumptions	The investment return rate was changed from 6.50% to 7.00%. The Single Discount Rate was changed from 5.42% to 7.00%.

Summary of Actuarial Assumptions (Continued)

	Percentage of Members Dying Each Year*					
Age in	Healthy Post-Retirement Mortality**		Healthy Pre-Retirement Mortality**		Disability Mortality**	
2023	Male	Female	Male	Female	Male	Female
20	0.04%	0.02%	0.04%	0.02%	0.13%	0.06%
25	0.04	0.02	0.04	0.02	0.13	0.08
30	0.06	0.04	0.06	0.04	0.18	0.12
35	0.07	0.05	0.07	0.05	0.22	0.17
40	0.09	0.06	0.08	0.06	0.25	0.20
45	0.13	0.08	0.09	0.07	0.28	0.22
50	0.18	0.14	0.11	0.08	0.35	0.28
55	0.29	0.25	0.17	0.12	0.48	0.45
60	0.51	0.46	0.27	0.17	0.79	0.72
65	0.87	0.73	0.41	0.22	1.25	1.01
70	1.42	1.16	0.71	0.40	1.85	1.40
75	2.45	2.00	1.27	0.79	3.01	2.13
80	4.45	3.60	2.38	1.63	5.23	3.60
85	8.17	6.42	7.47	5.62	8.83	6.42
90	14.50	11.25	14.80	11.25	15.54	11.25

* *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 these results.*

** *Rates are adjusted for mortality improvement using Scale MP-2021, from a base year of 2010.*

	Withdrawal Rates		Rates of Disability Retirement	
Age	Male	Female	Male	Female
20	17.00%	17.00%	0.04%	0.04%
25	17.00	17.00	0.06	0.06
30	11.00	13.00	0.10	0.08
35	7.50	9.00	0.18	0.17
40	5.50	6.50	0.21	0.18
45	3.50	4.75	0.31	0.39
50	3.00	3.00	0.55	0.70
55	0.00	0.00	0.78	0.93
60	0.00	0.00	0.92	1.30
65	0.00	0.00	1.00	1.30

Summary of Actuarial Assumptions (Concluded)

Age	Retirement Rate
50	5%
51	5
52	5
53	5
54	7
55	15
56	10
57	11
58	11
59	11
60	15
61	15
62	25
63	25
64	30
65	40
66	50
67	40
68	30
69	40
70+	100

Salary Scale	
Age	Increase
20	11.00%
25	7.75
30	6.00
35	5.50
40	4.75
45	4.00
50	3.75
55	3.50
60	3.00
65	3.00
70+	3.00

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 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. 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 calculation, the expected rate of return on pension plan investments is 7.00%; the municipal bond rate is 3.86%; and **the resulting single discount rate is 7.00%**.

If the funding status based on the market value of assets declines to 85% for two consecutive years or 80% for one year, the maximum increase of 2.50% will be lowered to 1.50%. Effective July 1, 2023, the maximum benefit increase will revert back to 2.5%, if the maximum increase is 1.5% and the Plan's funding ratio improves to 85% for two consecutive years on a market value of assets basis. The benefit payments in this projection are based on the assumption that benefit increases (currently subject to a maximum of 2.50%) will equal 2.00% per year.

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)

	Payroll			Projected Contributions			
Fiscal Year Ending	Payroll for Current Employees	Payroll for New Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Contributions on Future Payroll Toward Current UAL*	Total Contributions
2023	$ 238,319	$ -	$ 238,319				
2024	$ 237,915	$ 10,921	$ 248,836	$ 13,870	$ 26,073	$ 72	$ 40,015
2025	$ 219,605	$ 36,696	$ 256,301	$ 12,803	$ 19,215	$ 242	$ 32,260
2026	$ 206,187	$ 57,804	$ 263,991	$ 12,021	$ 18,041	$ 382	$ 30,444
2027	$ 195,321	$ 76,589	$ 271,910	$ 11,387	$ 17,091	$ 505	$ 28,983
2028	$ 185,457	$ 94,611	$ 280,068	$ 10,812	$ 16,227	$ 624	$ 27,663
2029	$ 176,377	$ 112,093	$ 288,470	$ 10,283	$ 15,433	$ 740	$ 26,456
2030	$ 167,891	$ 129,233	$ 297,124	$ 9,788	$ 14,690	$ 853	$ 25,331
2031	$ 159,786	$ 146,251	$ 306,037	$ 9,316	$ 13,981	$ 965	$ 24,262
2032	$ 151,984	$ 163,234	$ 315,218	$ 8,861	$ 13,299	$ 1,077	$ 23,237
2033	$ 144,536	$ 180,139	$ 324,675	$ 8,426	$ 12,647	$ 1,189	$ 22,262
2034	$ 137,335	$ 197,080	$ 334,415	$ 8,007	$ 12,017	$ 1,301	$ 21,325
2035	$ 130,297	$ 214,151	$ 344,448	$ 7,596	$ 11,401	$ 1,413	$ 20,410
2036	$ 123,432	$ 231,349	$ 354,781	$ 7,196	$ 10,800	$ 1,527	$ 19,523
2037	$ 116,745	$ 248,680	$ 365,425	$ 6,806	$ 10,215	$ 1,641	$ 18,662
2038	$ 110,291	$ 266,096	$ 376,387	$ 6,430	$ 9,650	$ 1,756	$ 17,836
2039	$ 104,000	$ 283,679	$ 387,679	$ 6,063	$ 9,100	$ 1,872	$ 17,035
2040	$ 97,779	$ 301,530	$ 399,309	$ 5,701	$ 8,556	$ 1,990	$ 16,247
2041	$ 91,636	$ 319,653	$ 411,289	$ 5,342	$ 8,018	$ 2,110	$ 15,470
2042	$ 85,564	$ 338,063	$ 423,627	$ 4,988	$ 7,487	$ 2,231	$ 14,706
2043	$ 79,635	$ 356,701	$ 436,336	$ 4,643	$ 6,968	$ 2,354	$ 13,965
2044	$ 73,787	$ 375,639	$ 449,426	$ 4,302	$ 6,456	$ 2,479	$ 13,237
2045	$ 67,971	$ 394,938	$ 462,909	$ 3,963	$ 5,947	$ 2,607	$ 12,517
2046	$ 62,279	$ 414,517	$ 476,796	$ 3,631	$ 5,449	$ 2,736	$ 11,816
2047	$ 56,685	$ 434,415	$ 491,100	$ 3,305	$ 4,960	$ 2,867	$ 11,132
2048	$ 51,270	$ 454,563	$ 505,833	$ 2,989	$ 4,486	$ 3,000	$ 10,475
2049	$ 46,086	$ 474,922	$ 521,008	$ 2,687	$ 4,032	$ 3,134	$ 9,853
2050	$ 41,120	$ 495,518	$ 536,638	$ 2,397	$ 3,598	$ 3,270	$ 9,265
2051	$ 36,398	$ 516,339	$ 552,737	$ 2,122	$ 3,185	$ 3,408	$ 8,715
2052	$ 31,889	$ 537,431	$ 569,320	$ 1,859	$ 2,790	$ 3,547	$ 8,196
2053	$ 27,676	$ 558,723	$ 586,399	$ 1,613	$ 2,422	$ 3,688	$ 7,723
2054	$ 23,743	$ 580,248	$ 603,991	$ 1,384	$ 2,078	$ 3,830	$ 7,292
2055	$ 20,080	$ 602,031	$ 622,111	$ 1,171	$ 1,757	$ 3,973	$ 6,901
2056	$ 16,754	$ 624,020	$ 640,774	$ 977	$ 1,466	$ 4,119	$ 6,562
2057	$ 13,781	$ 646,216	$ 659,997	$ 803	$ 1,206	$ 4,265	$ 6,274
2058	$ 11,178	$ 668,619	$ 679,797	$ 652	$ 978	$ 4,413	$ 6,043
2059	$ 8,924	$ 691,267	$ 700,191	$ 520	$ 781	$ 4,562	$ 5,863
2060	$ 7,000	$ 714,197	$ 721,197	$ 408	$ 612	$ 4,714	$ 5,734
2061	$ 5,380	$ 737,453	$ 742,833	$ 314	$ 471	$ 4,867	$ 5,652
2062	$ 4,022	$ 761,096	$ 765,118	$ 234	$ 352	$ 5,023	$ 5,609
2063	$ 2,919	$ 785,152	$ 788,071	$ 170	$ 255	$ 5,182	$ 5,607
2064	$ 2,052	$ 809,662	$ 811,714	$ 120	$ 180	$ 5,344	$ 5,644
2065	$ 1,385	$ 834,680	$ 836,065	$ 81	$ 121	$ 5,509	$ 5,711
2066	$ 892	$ 860,255	$ 861,147	$ 52	$ 78	$ 5,678	$ 5,808
2067	$ 548	$ 886,433	$ 886,981	$ 32	$ 48	$ 5,850	$ 5,930
2068	$ 323	$ 913,268	$ 913,591	$ 19	$ 28	$ 6,028	$ 6,075
2069	$ 180	$ 940,819	$ 940,999	$ 10	$ 16	$ 6,209	$ 6,235
2070	$ 93	$ 969,136	$ 969,229	$ 5	$ 8	$ 6,396	$ 6,409
2071	$ 45	$ 998,260	$ 998,305	$ 3	$ 4	$ 6,589	$ 6,596
2072	$ 20	$ 1,028,235	$ 1,028,255	$ 1	$ 2	$ 6,786	$ 6,789
2073	$ 7	$ 1,059,095	$ 1,059,102	$ -	$ 1	$ 6,990	$ 6,991

* *Equal to total contributions (14.58% of payroll for new employees) net of normal cost and expenses (13.92% of payroll for members hired after June 30, 2023), not less than 0.00%.*

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

	Payroll			Projected Contributions			
Fiscal Year Ending	Payroll for Current Employees	Payroll for New Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Contributions on Future Payroll Toward Current UAL*	Total Contributions
2074	$ 2	$ 1,090,873	$ 1,090,875	$ -	$ -	$ 7,200	$ 7,200
2075	$ -	$ 1,123,602	$ 1,123,602	$ -	$ -	$ 7,416	$ 7,416
2076	$ -	$ 1,157,310	$ 1,157,310	$ -	$ -	$ 7,638	$ 7,638
2077	$ -	$ 1,192,029	$ 1,192,029	$ -	$ -	$ 7,867	$ 7,867
2078	$ -	$ 1,227,790	$ 1,227,790	$ -	$ -	$ 8,103	$ 8,103
2079	$ -	$ 1,264,623	$ 1,264,623	$ -	$ -	$ 8,347	$ 8,347
2080	$ -	$ 1,302,562	$ 1,302,562	$ -	$ -	$ 8,597	$ 8,597
2081	$ -	$ 1,341,639	$ 1,341,639	$ -	$ -	$ 8,855	$ 8,855
2082	$ -	$ 1,381,888	$ 1,381,888	$ -	$ -	$ 9,120	$ 9,120
2083	$ -	$ 1,423,345	$ 1,423,345	$ -	$ -	$ 9,394	$ 9,394
2084	$ -	$ 1,466,045	$ 1,466,045	$ -	$ -	$ 9,676	$ 9,676
2085	$ -	$ 1,510,026	$ 1,510,026	$ -	$ -	$ 9,966	$ 9,966
2086	$ -	$ 1,555,327	$ 1,555,327	$ -	$ -	$ 10,265	$ 10,265
2087	$ -	$ 1,601,987	$ 1,601,987	$ -	$ -	$ 10,573	$ 10,573
2088	$ -	$ 1,650,047	$ 1,650,047	$ -	$ -	$ 10,890	$ 10,890
2089	$ -	$ 1,699,548	$ 1,699,548	$ -	$ -	$ 11,217	$ 11,217
2090	$ -	$ 1,750,535	$ 1,750,535	$ -	$ -	$ 11,554	$ 11,554
2091	$ -	$ 1,803,051	$ 1,803,051	$ -	$ -	$ 11,900	$ 11,900
2092	$ -	$ 1,857,142	$ 1,857,142	$ -	$ -	$ 12,257	$ 12,257
2093	$ -	$ 1,912,856	$ 1,912,856	$ -	$ -	$ 12,625	$ 12,625
2094	$ -	$ 1,970,242	$ 1,970,242	$ -	$ -	$ 13,004	$ 13,004
2095	$ -	$ 2,029,349	$ 2,029,349	$ -	$ -	$ 13,394	$ 13,394
2096	$ -	$ 2,090,230	$ 2,090,230	$ -	$ -	$ 13,796	$ 13,796
2097	$ -	$ 2,152,937	$ 2,152,937	$ -	$ -	$ 14,209	$ 14,209
2098	$ -	$ 2,217,525	$ 2,217,525	$ -	$ -	$ 14,636	$ 14,636
2099	$ -	$ 2,284,051	$ 2,284,051	$ -	$ -	$ 15,075	$ 15,075
2100	$ -	$ 2,352,572	$ 2,352,572	$ -	$ -	$ 15,527	$ 15,527
2101	$ -	$ 2,423,149	$ 2,423,149	$ -	$ -	$ 15,993	$ 15,993
2102	$ -	$ 2,495,844	$ 2,495,844	$ -	$ -	$ 16,473	$ 16,473
2103	$ -	$ 2,570,719	$ 2,570,719	$ -	$ -	$ 16,967	$ 16,967
2104	$ -	$ 2,647,841	$ 2,647,841	$ -	$ -	$ 17,476	$ 17,476
2105	$ -	$ 2,727,276	$ 2,727,276	$ -	$ -	$ 18,000	$ 18,000
2106	$ -	$ 2,809,094	$ 2,809,094	$ -	$ -	$ 18,540	$ 18,540
2107	$ -	$ 2,893,367	$ 2,893,367	$ -	$ -	$ 19,096	$ 19,096
2108	$ -	$ 2,980,168	$ 2,980,168	$ -	$ -	$ 19,669	$ 19,669
2109	$ -	$ 3,069,573	$ 3,069,573	$ -	$ -	$ 20,259	$ 20,259
2110	$ -	$ 3,161,660	$ 3,161,660	$ -	$ -	$ 20,867	$ 20,867
2111	$ -	$ 3,256,510	$ 3,256,510	$ -	$ -	$ 21,493	$ 21,493
2112	$ -	$ 3,354,205	$ 3,354,205	$ -	$ -	$ 22,138	$ 22,138
2113	$ -	$ 3,454,831	$ 3,454,831	$ -	$ -	$ 22,802	$ 22,802
2114	$ -	$ 3,558,476	$ 3,558,476	$ -	$ -	$ 23,486	$ 23,486
2115	$ -	$ 3,665,231	$ 3,665,231	$ -	$ -	$ 24,191	$ 24,191
2116	$ -	$ 3,775,187	$ 3,775,187	$ -	$ -	$ 24,916	$ 24,916
2117	$ -	$ 3,888,443	$ 3,888,443	$ -	$ -	$ 25,664	$ 25,664
2118	$ -	$ 4,005,096	$ 4,005,096	$ -	$ -	$ 26,434	$ 26,434
2119	$ -	$ 4,125,249	$ 4,125,249	$ -	$ -	$ 27,227	$ 27,227
2120	$ -	$ 4,249,007	$ 4,249,007	$ -	$ -	$ 28,043	$ 28,043
2121	$ -	$ 4,376,477	$ 4,376,477	$ -	$ -	$ 28,885	$ 28,885
2122	$ -	$ 4,507,771	$ 4,507,771	$ -	$ -	$ 29,751	$ 29,751
2123	$ -	$ 4,643,004	$ 4,643,004	$ -	$ -	$ 30,644	$ 30,644

* *Equal to total contributions (14.58% of payroll for new employees) net of normal cost and expenses (13.92% of payroll for members hired after June 30, 2023), not less than 0.00%.*

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

Fiscal Year Ending	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2024	$ 1,067,200	$ 40,015	$ 35,797	$ 452	$ 74,834	$ 1,145,800
2025	$ 1,145,800	$ 32,260	$ 39,319	$ 417	$ 79,949	$ 1,218,273
2026	$ 1,218,273	$ 30,444	$ 43,245	$ 392	$ 84,825	$ 1,289,905
2027	$ 1,289,905	$ 28,983	$ 47,018	$ 371	$ 89,660	$ 1,361,159
2028	$ 1,361,159	$ 27,663	$ 51,069	$ 352	$ 94,464	$ 1,431,865
2029	$ 1,431,865	$ 26,456	$ 55,853	$ 335	$ 99,208	$ 1,501,341
2030	$ 1,501,341	$ 25,331	$ 60,626	$ 319	$ 103,868	$ 1,569,595
2031	$ 1,569,595	$ 24,262	$ 65,704	$ 304	$ 108,435	$ 1,636,284
2032	$ 1,636,284	$ 23,237	$ 70,776	$ 289	$ 112,894	$ 1,701,350
2033	$ 1,701,350	$ 22,262	$ 76,487	$ 275	$ 117,219	$ 1,764,069
2034	$ 1,764,069	$ 21,325	$ 82,195	$ 261	$ 121,382	$ 1,824,320
2035	$ 1,824,320	$ 20,410	$ 87,843	$ 248	$ 125,374	$ 1,882,013
2036	$ 1,882,013	$ 19,523	$ 93,713	$ 235	$ 129,180	$ 1,936,768
2037	$ 1,936,768	$ 18,662	$ 99,808	$ 222	$ 132,774	$ 1,988,174
2038	$ 1,988,174	$ 17,836	$ 105,807	$ 210	$ 136,138	$ 2,036,131
2039	$ 2,036,131	$ 17,035	$ 111,888	$ 198	$ 139,259	$ 2,080,339
2040	$ 2,080,339	$ 16,247	$ 117,976	$ 186	$ 142,117	$ 2,120,541
2041	$ 2,120,541	$ 15,470	$ 123,982	$ 174	$ 144,699	$ 2,156,554
2042	$ 2,156,554	$ 14,706	$ 129,750	$ 163	$ 146,995	$ 2,188,342
2043	$ 2,188,342	$ 13,965	$ 135,152	$ 151	$ 149,009	$ 2,216,013
2044	$ 2,216,013	$ 13,237	$ 140,689	$ 140	$ 150,731	$ 2,239,152
2045	$ 2,239,152	$ 12,517	$ 146,384	$ 129	$ 152,131	$ 2,257,287
2046	$ 2,257,287	$ 11,816	$ 151,940	$ 118	$ 153,185	$ 2,270,230
2047	$ 2,270,230	$ 11,132	$ 157,502	$ 108	$ 153,876	$ 2,277,628
2048	$ 2,277,628	$ 10,475	$ 162,748	$ 97	$ 154,192	$ 2,279,450
2049	$ 2,279,450	$ 9,853	$ 167,609	$ 88	$ 154,131	$ 2,275,737
2050	$ 2,275,737	$ 9,265	$ 172,165	$ 78	$ 153,694	$ 2,266,453
2051	$ 2,266,453	$ 8,715	$ 176,344	$ 69	$ 152,882	$ 2,251,637
2052	$ 2,251,637	$ 8,196	$ 180,165	$ 61	$ 151,696	$ 2,231,303
2053	$ 2,231,303	$ 7,723	$ 183,504	$ 53	$ 150,142	$ 2,205,611
2054	$ 2,205,611	$ 7,292	$ 186,391	$ 45	$ 148,229	$ 2,174,696
2055	$ 2,174,696	$ 6,901	$ 188,891	$ 38	$ 145,966	$ 2,138,634
2056	$ 2,138,634	$ 6,562	$ 190,792	$ 32	$ 143,365	$ 2,097,737
2057	$ 2,097,737	$ 6,274	$ 192,028	$ 26	$ 140,450	$ 2,052,407
2058	$ 2,052,407	$ 6,043	$ 192,570	$ 21	$ 137,250	$ 2,003,109
2059	$ 2,003,109	$ 5,863	$ 192,448	$ 17	$ 133,798	$ 1,950,305
2060	$ 1,950,305	$ 5,734	$ 191,664	$ 13	$ 130,124	$ 1,894,486
2061	$ 1,894,486	$ 5,652	$ 190,311	$ 10	$ 126,260	$ 1,836,077
2062	$ 1,836,077	$ 5,609	$ 188,488	$ 8	$ 122,233	$ 1,775,423
2063	$ 1,775,423	$ 5,607	$ 186,202	$ 6	$ 118,066	$ 1,712,888
2064	$ 1,712,888	$ 5,644	$ 183,466	$ 4	$ 113,784	$ 1,648,846
2065	$ 1,648,846	$ 5,711	$ 180,308	$ 3	$ 109,412	$ 1,583,658
2066	$ 1,583,658	$ 5,808	$ 176,749	$ 2	$ 104,975	$ 1,517,690
2067	$ 1,517,690	$ 5,930	$ 172,813	$ 1	$ 100,497	$ 1,451,303
2068	$ 1,451,303	$ 6,075	$ 168,530	$ 1	$ 96,002	$ 1,384,849
2069	$ 1,384,849	$ 6,235	$ 163,934	$ -	$ 91,514	$ 1,318,664
2070	$ 1,318,664	$ 6,409	$ 159,057	$ -	$ 87,055	$ 1,253,071
2071	$ 1,253,071	$ 6,596	$ 153,923	$ -	$ 82,646	$ 1,188,390
2072	$ 1,188,390	$ 6,789	$ 148,559	$ -	$ 78,310	$ 1,124,930
2073	$ 1,124,930	$ 6,991	$ 142,988	$ -	$ 74,066	$ 1,062,999

For the purposes of this projection, we assumed the 14.58% statutory contribution rate would continue after the plan becomes fully funded.

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

Fiscal Year Ending	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2074	$ 1,062,999	$ 7,200	$ 137,232	$ -	$ 69,936	$ 1,002,903
2075	$ 1,002,903	$ 7,416	$ 131,311	$ -	$ 65,941	$ 944,949
2076	$ 944,949	$ 7,638	$ 125,249	$ -	$ 62,100	$ 889,438
2077	$ 889,438	$ 7,867	$ 119,071	$ -	$ 58,435	$ 836,669
2078	$ 836,669	$ 8,103	$ 112,799	$ -	$ 54,965	$ 786,938
2079	$ 786,938	$ 8,347	$ 106,459	$ -	$ 51,710	$ 740,536
2080	$ 740,536	$ 8,597	$ 100,077	$ -	$ 48,690	$ 697,746
2081	$ 697,746	$ 8,855	$ 93,678	$ -	$ 45,924	$ 658,847
2082	$ 658,847	$ 9,120	$ 87,291	$ -	$ 43,430	$ 624,106
2083	$ 624,106	$ 9,394	$ 80,944	$ -	$ 41,226	$ 593,782
2084	$ 593,782	$ 9,676	$ 74,669	$ -	$ 39,329	$ 568,118
2085	$ 568,118	$ 9,966	$ 68,495	$ -	$ 37,755	$ 547,344
2086	$ 547,344	$ 10,265	$ 62,458	$ -	$ 36,518	$ 531,669
2087	$ 531,669	$ 10,573	$ 56,590	$ -	$ 35,634	$ 521,286
2088	$ 521,286	$ 10,890	$ 50,924	$ -	$ 35,113	$ 516,365
2089	$ 516,365	$ 11,217	$ 45,491	$ -	$ 34,967	$ 517,058
2090	$ 517,058	$ 11,554	$ 40,322	$ -	$ 35,204	$ 523,494
2091	$ 523,494	$ 11,900	$ 35,442	$ -	$ 35,835	$ 535,787
2092	$ 535,787	$ 12,257	$ 30,876	$ -	$ 36,865	$ 554,033
2093	$ 554,033	$ 12,625	$ 26,643	$ -	$ 38,300	$ 578,315
2094	$ 578,315	$ 13,004	$ 22,759	$ -	$ 40,147	$ 608,707
2095	$ 608,707	$ 13,394	$ 19,234	$ -	$ 42,409	$ 645,276
2096	$ 645,276	$ 13,796	$ 16,073	$ -	$ 45,091	$ 688,090
2097	$ 688,090	$ 14,209	$ 13,271	$ -	$ 48,199	$ 737,227
2098	$ 737,227	$ 14,636	$ 10,821	$ -	$ 51,737	$ 792,779
2099	$ 792,779	$ 15,075	$ 8,706	$ -	$ 55,714	$ 854,862
2100	$ 854,862	$ 15,527	$ 6,907	$ -	$ 60,137	$ 923,619
2101	$ 923,619	$ 15,993	$ 5,399	$ -	$ 65,018	$ 999,231
2102	$ 999,231	$ 16,473	$ 4,154	$ -	$ 70,370	$ 1,081,920
2103	$ 1,081,920	$ 16,967	$ 3,144	$ -	$ 76,210	$ 1,171,953
2104	$ 1,171,953	$ 17,476	$ 2,338	$ -	$ 82,558	$ 1,269,649
2105	$ 1,269,649	$ 18,000	$ 1,707	$ -	$ 89,436	$ 1,375,378
2106	$ 1,375,378	$ 18,540	$ 1,222	$ -	$ 96,872	$ 1,489,568
2107	$ 1,489,568	$ 19,096	$ 858	$ -	$ 104,897	$ 1,612,703
2108	$ 1,612,703	$ 19,669	$ 590	$ -	$ 113,546	$ 1,745,328
2109	$ 1,745,328	$ 20,259	$ 397	$ -	$ 122,857	$ 1,888,047
2110	$ 1,888,047	$ 20,867	$ 262	$ -	$ 132,872	$ 2,041,524
2111	$ 2,041,524	$ 21,493	$ 169	$ -	$ 143,641	$ 2,206,489
2112	$ 2,206,489	$ 22,138	$ 106	$ -	$ 155,212	$ 2,383,733
2113	$ 2,383,733	$ 22,802	$ 66	$ -	$ 167,644	$ 2,574,113
2114	$ 2,574,113	$ 23,486	$ 40	$ -	$ 180,995	$ 2,778,554
2115	$ 2,778,554	$ 24,191	$ 24	$ -	$ 195,330	$ 2,998,051
2116	$ 2,998,051	$ 24,916	$ 14	$ -	$ 210,721	$ 3,233,674
2117	$ 3,233,674	$ 25,664	$ 8	$ -	$ 227,240	$ 3,486,570
2118	$ 3,486,570	$ 26,434	$ 5	$ -	$ 244,969	$ 3,757,968
2119	$ 3,757,968	$ 27,227	$ 3	$ -	$ 263,995	$ 4,049,187
2120	$ 4,049,187	$ 28,043	$ 1	$ -	$ 284,408	$ 4,361,637
2121	$ 4,361,637	$ 28,885	$ 1	$ -	$ 306,309	$ 4,696,830
2122	$ 4,696,830	$ 29,751	$ -	$ -	$ 329,802	$ 5,056,383
2123	$ 5,056,383	$ 30,644	$ -	$ -	$ 355,001	$ 5,442,028

For the purposes of this projection, we assumed the 14.58% statutory contribution rate would continue after the plan becomes fully funded.

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

Fiscal Year Ending	Projected Beginning Plan 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)
2024	$ 1,067,200	$ 35,797	$ 35,797	$ 0	$ 34,606	$ 0	$ 34,606
2025	1,145,800	39,319	39,319	0	35,524	0	35,524
2026	1,218,273	43,245	43,245	0	36,515	0	36,515
2027	1,289,905	47,018	47,018	0	37,104	0	37,104
2028	1,361,159	51,069	51,069	0	37,664	0	37,664
2029	1,431,866	55,853	55,853	0	38,497	0	38,497
2030	1,501,341	60,626	60,626	0	39,054	0	39,054
2031	1,569,596	65,704	65,704	0	39,556	0	39,556
2032	1,636,286	70,776	70,776	0	39,822	0	39,822
2033	1,701,352	76,487	76,487	0	40,220	0	40,220
2034	1,764,071	82,195	82,195	0	40,394	0	40,394
2035	1,824,321	87,843	87,843	0	40,345	0	40,345
2036	1,882,015	93,713	93,713	0	40,226	0	40,226
2037	1,936,771	99,808	99,808	0	40,039	0	40,039
2038	1,988,178	105,807	105,807	0	39,669	0	39,669
2039	2,036,136	111,888	111,888	0	39,204	0	39,204
2040	2,080,345	117,976	117,976	0	38,633	0	38,633
2041	2,120,547	123,982	123,982	0	37,944	0	37,944
2042	2,156,560	129,750	129,750	0	37,111	0	37,111
2043	2,188,349	135,152	135,152	0	36,128	0	36,128
2044	2,216,020	140,689	140,689	0	35,147	0	35,147
2045	2,239,159	146,384	146,384	0	34,178	0	34,178
2046	2,257,293	151,940	151,940	0	33,154	0	33,154
2047	2,270,236	157,502	157,502	0	32,119	0	32,119
2048	2,277,634	162,748	162,748	0	31,018	0	31,018
2049	2,279,456	167,609	167,609	0	29,855	0	29,855
2050	2,275,744	172,165	172,165	0	28,660	0	28,660
2051	2,266,461	176,344	176,344	0	27,435	0	27,435
2052	2,251,645	180,165	180,165	0	26,196	0	26,196
2053	2,231,312	183,504	183,504	0	24,936	0	24,936
2054	2,205,619	186,391	186,391	0	23,671	0	23,671
2055	2,174,704	188,891	188,891	0	22,419	0	22,419
2056	2,138,643	190,792	190,792	0	21,164	0	21,164
2057	2,097,745	192,028	192,028	0	19,907	0	19,907
2058	2,052,414	192,570	192,570	0	18,657	0	18,657
2059	2,003,116	192,448	192,448	0	17,426	0	17,426
2060	1,950,312	191,664	191,664	0	16,219	0	16,219
2061	1,894,492	190,311	190,311	0	15,051	0	15,051
2062	1,836,083	188,488	188,488	0	13,932	0	13,932
2063	1,775,430	186,202	186,202	0	12,862	0	12,862
2064	1,712,896	183,466	183,466	0	11,844	0	11,844
2065	1,648,853	180,308	180,308	0	10,879	0	10,879
2066	1,583,665	176,749	176,749	0	9,967	0	9,967
2067	1,517,697	172,813	172,813	0	9,107	0	9,107
2068	1,451,310	168,530	168,530	0	8,300	0	8,300
2069	1,384,856	163,934	163,934	0	7,546	0	7,546
2070	1,318,671	159,057	159,057	0	6,842	0	6,842
2071	1,253,078	153,923	153,923	0	6,188	0	6,188
2072	1,188,395	148,559	148,559	0	5,582	0	5,582
2073	1,124,935	142,988	142,988	0	5,021	0	5,021

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

Fiscal Year Ending	Projected Beginning Plan 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)
2074	$ 1,063,004	$ 137,232	$ 137,232	$ 0	$ 4,504	$ 0	$ 4,504
2075	1,002,908	131,311	131,311	0	4,028	0	4,028
2076	944,954	125,249	125,249	0	3,590	0	3,590
2077	889,443	119,071	119,071	0	3,190	0	3,190
2078	836,674	112,799	112,799	0	2,824	0	2,824
2079	786,943	106,459	106,459	0	2,491	0	2,491
2080	740,541	100,077	100,077	0	2,189	0	2,189
2081	697,751	93,678	93,678	0	1,915	0	1,915
2082	658,851	87,291	87,291	0	1,667	0	1,667
2083	624,110	80,944	80,944	0	1,445	0	1,445
2084	593,786	74,669	74,669	0	1,246	0	1,246
2085	568,122	68,495	68,495	0	1,068	0	1,068
2086	547,347	62,458	62,458	0	910	0	910
2087	531,673	56,590	56,590	0	771	0	771
2088	521,290	50,924	50,924	0	648	0	648
2089	516,369	45,491	45,491	0	541	0	541
2090	517,062	40,322	40,322	0	448	0	448
2091	523,498	35,442	35,442	0	368	0	368
2092	535,791	30,876	30,876	0	300	0	300
2093	554,037	26,643	26,643	0	242	0	242
2094	578,319	22,759	22,759	0	193	0	193
2095	608,710	19,234	19,234	0	152	0	152
2096	645,278	16,073	16,073	0	119	0	119
2097	688,092	13,271	13,271	0	92	0	92
2098	737,229	10,821	10,821	0	70	0	70
2099	792,782	8,706	8,706	0	53	0	53
2100	854,864	6,907	6,907	0	39	0	39
2101	923,621	5,399	5,399	0	29	0	29
2102	999,233	4,154	4,154	0	21	0	21
2103	1,081,921	3,144	3,144	0	15	0	15
2104	1,171,954	2,338	2,338	0	10	0	10
2105	1,269,650	1,707	1,707	0	7	0	7
2106	1,375,379	1,222	1,222	0	5	0	5
2107	1,489,569	858	858	0	3	0	3
2108	1,612,705	590	590	0	2	0	2
2109	1,745,330	397	397	0	1	0	1
2110	1,888,048	262	262	0	1	0	1
2111	2,041,526	169	169	0	0	0	0
2112	2,206,491	106	106	0	0	0	0
2113	2,383,735	66	66	0	0	0	0
2114	2,574,115	40	40	0	0	0	0
2115	2,778,556	24	24	0	0	0	0
2116	2,998,053	14	14	0	0	0	0
2117	3,233,676	8	8	0	0	0	0
2118	3,486,572	5	5	0	0	0	0
2119	3,757,970	3	3	0	0	0	0
2120	4,049,189	1	1	0	0	0	0
2121	4,361,639	1	1	0	0	0	0
2122	4,696,832	0	0	0	0	0	0
2123	5,056,384	0	0	0	0	0	0
				Totals	$ 1,368,737	$ 0	$ 1,368,737

SECTION H

GLOSSARY OF TERMS

Glossary of Terms

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

Glossary of Terms

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

Glossary of Terms

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

Glossary of Terms

Total Pension Expense	The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year: 1. Service Cost 2. Interest on the Total Pension Liability 3. Current-Period Changes in Benefit Terms 4. Employee Contributions 5. Projected Earnings on Plan Investments 6. Pension Plan Administrative Expense 7. Other Changes in Plan Fiduciary Net Position 8. Recognition of Outflow (Inflow) of Resources due to the difference between expected and actual 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 in 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 plan. For purposes of the GASB Statement No. 67, the asset valuation method is equal to the market value of assets.