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, 2022

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November 8, 2022

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, 2022 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

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To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the 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 reflects the impact of COVID-19 through June 30, 2022. It does not reflect the ongoing impact of COVID-19, which is likely to influence demographic and investment experience, at least in the short term. We will continue to monitor these developments and their impact on the plan.

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.

Brian B. Murphy, 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

Brian B. Murphy

Brian B. Murphy, FSA, EA, FCA, MAAA, PhD

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

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SECTION A

EXECUTIVE SUMMARY

Executive Summary
as of June 30, 2022 (Dollars in Thousands)

		2022
Actuarial Valuation Date		June 30, 2022
Measurement Date of the Net Pension Liability		June 30, 2022
Employer's Fiscal Year Ending Date (Reporting Date)		Varies by Employer
Membership		
Number of		
- Service Retirements		8,236
- Survivors		1,959
- Disability Retirements		1,912
- Deferred Retirements		1,864
- Terminated Other Non-Vested		957
- Active Members		11,629
- Total		26,557
Covered Payroll	$	1,127,314
Net Pension Liability		
Total Pension Liability	$	14,767,098
Plan Fiduciary Net Position	$	10,415,493
Net Pension Liability	$	4,351,605
Plan Fiduciary Net Position as a Percentage of Total Pension Liability		70.53%
Net Pension Liability as a Percentage of Covered Payroll		386.02%
Development of the Single Discount Rate		
Single Discount Rate		5.40%
Long-Term Expected Rate of Investment Return		6.50%
Long-Term Municipal Bond Rate*		3.69%
Last year ending June 30 in the 2023 to 2122 projection period for which projected benefit payments are fully funded		2060
Total Pension Expense/(Income)	**$**	**328,316**

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	$	265,789	$	-
Changes in assumptions	$	2,561,589	$	26,160
Net difference between projected and actual earnings on pension plan investments	$	1,263,801	$	1,205,473
Total	$	4,091,179	$	1,231,633

* 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, 2022.

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, 2022 and a measurement date of June 30, 2022.

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 26 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 6.50%; the municipal bond rate is 3.69% (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 5.40%. PERA staff selected the long-term expected rate of investment return of 6.50% 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, 2022 (Dollars in Thousands)

A. Expense		
1. Service Cost	$	282,658
2. Interest on the Total Pension Liability	$	779,519
3. Current-Period Benefit Changes	$	-
4. Employee Contributions (made negative for addition here)	$	(133,023)
5. Projected Earnings on Plan Investments (made negative for addition here)	$	(731,722)
6. Pension Plan Administrative Expense	$	1,634
7. Other Changes in Plan Fiduciary Net Position	$	20
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	$	31,262
9. Recognition of Outflow (Inflow) of Resources due to assumption changes		
Arising from Current Reporting Period	$	330,801
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	$	286,533
11. **Increase/(Decrease) from Experience in the Current Reporting Period**	**$**	**847,682**
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	$	38,773
13. Recognition of Outflow (Inflow) of Resources due to assumption changes		
Arising from Prior Reporting Periods	$	(171,050)
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	$	(387,089)
15. Total Pension Expense / (Income)	**$**	**328,316**

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 153,114 years. Additionally, the total plan membership (active employees and inactive employees) was 26,086. 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, 2022 (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	$	187,572
2. Assumption Changes (gains) or losses		1,984,805
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	$	31,262
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes		330,801
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities		362,063
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	$	156,310
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes		1,654,004
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities		1,810,314
B. Outflows (Inflows) of Resources due to Assets		
1. Net difference between projected and actual earnings on pension plan investments (gains) or losses		1,432,664
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		286,533
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets		1,146,131

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended June 30, 2022 (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	$ 627,733	$ 397,947	$ 229,786
2. Due to Assets	347,123	447,679	(100,556)
3. Total	$ 974,856	$ 845,626	$ 129,230

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	$ 70,035	$ -	$ 70,035
2. Assumption Changes	557,698	397,947	159,751
3. Net Difference between projected and actual earnings on pension plan investments	347,123	447,679	(100,556)
4. Total	$ 974,856	$ 845,626	$ 129,230

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	$ 265,789	$ -	$ 265,789
2. Assumption Changes	2,561,589	26,160	2,535,429
3. Net Difference between projected and actual earnings on pension plan investments	1,263,801	1,205,473	58,328
4. Total	$ 4,091,179	$ 1,231,633	$ 2,859,546

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
2023	$ 552,234
2024	552,237
2025	496,059
2026	896,954
2027	362,062
Thereafter	0
Total	$ 2,859,546

Recognition of Deferred Outflows and Inflows of Resources
Fiscal Year Ended June 30, 2022 (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					
2017	$ 37,292	6.0000	$ 6,216	$ 0	0.0000
2018	21,720	6.0000	3,620	3,620	1.0000
2019	14,491	6.0000	2,415	4,831	2.0000
2020	30,348	6.0000	5,058	15,174	3.0000
2021	128,782	6.0000	21,464	85,854	4.0000
2022	187,572	6.0000	31,262	156,310	5.0000
Total			**$ 70,035**	**$ 265,789**	
Deferred Outflow (Inflow) Due to Assumption Changes					
2017	$ (2,300,201)	6.0000	$ (383,366)	$ 0	0.0000
2018	(42,807)	6.0000	(7,134)	(7,134)	1.0000
2019	(19,898)	6.0000	(3,316)	(6,634)	2.0000
2020	(24,785)	6.0000	(4,131)	(12,392)	3.0000
2021	1,361,379	6.0000	226,897	907,585	4.0000
2022	1,984,805	6.0000	330,801	1,654,004	5.0000
Total			**$ 159,751**	**$ 2,535,429**	
Deferred Outflow (Inflow) Due to Differences Between Projected and Actual Earnings on Plan Investments					
2018	$ (229,273)	5.0000	$ (45,854)	$ 0	0.0000
2019	17,561	5.0000	3,512	3,513	1.0000
2020	285,391	5.0000	57,078	114,157	2.0000
2021	(2,009,123)	5.0000	(401,825)	(1,205,473)	3.0000
2022	1,432,664	5.0000	286,533	1,146,131	4.0000
Total			**$ (100,556)**	**$ 58,328**	
Deferred Outflow (Inflow) Due to All Sources					
Total			**$ 129,230**	**$ 2,859,546**	

Statement of Fiduciary Net Position
(Dollars in Thousands)

	Market Value				
Assets in Trust	**June 30, 2022**		**June 30, 2021**		
Cash, Equivalents, Short Term Securities	$	198,592	$	181,935	
Fixed Income	$	2,385,899	$	2,585,324	
Equity	$	5,210,590	$	6,647,336	
SBI Alternative	$	2,621,319	$	1,978,079	
Other	$	-	$	-	
Total Assets in Trust	**$**	**10,416,400**	**$**	**11,392,674**	
Assets Receivable	$	5,652	$	12,147	*
Amounts Payable	$	6,559	$	6,720	
Net Position Restricted for Pensions	**$**	**10,415,493**	**$**	**11,398,101**	

** Includes $7.679 million contribution receivable from Minneapolis to be paid July 15, 2022.*

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

Change in Assets	**Market Value**			
Year Ending		**June 30, 2022**		**June 30, 2021**
1. Fund balance at market value at beginning of year	$	11,398,101	$	8,973,460
2. Contributions				
a. Member	$	133,023	$	129,351
b. Employer	$	206,416	$	201,129 *
c. Other sources	$	18,000	$	18,000
d. Total contributions	$	357,439	$	348,480
3. Investment income				
a. Investment income/(loss)	$	(688,884)	$	2,683,628
b. Investment expenses	$	(12,058)	$	(10,802)
c. Net subtotal	$	(700,942)	$	2,672,826
4. Other	$	(20)	$	23
5. Total additions: *(2.d.) + (3.c.) + (4.)*	**$**	**(343,523)**	**$**	**3,021,329**
6. Benefits Paid				
a. Annuity benefits	$	(633,255)	$	(592,687)
b. Refunds	$	(4,196)	$	(3,060)
c. Total benefits paid	$	(637,451)	$	(595,747)
7. Expenses				
a. Other	$	-	$	-
b. Administrative	$	(1,634)	$	(941)
c. Total expenses	$	(1,634)	$	(941)
8. Total deductions: *(6.c.) + (7.c.)*	**$**	**(639,085)**	**$**	**(596,688)**
9. Net increase (decrease) in net position: *(5) + (8)*	$	(982,608)	$	2,424,641
10. Net position restricted for pensions	**$**	**10,415,493**	**$**	**11,398,101**
11. State Board of Investment calculated investment return		-6.2%		30.3%

** Includes $7.679 million contribution receivable from Minneapolis to be paid July 15, 2022.*

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in Net Pension Liability and Related Ratios
Current Period
Fiscal Year Ended June 30, 2022 (Dollars in Thousands)

A. Total pension liability		
1. Service cost	$	282,658
2. Interest on the total pension liability	$	779,519
3. Changes of benefit terms	$	-
4. Difference between expected and actual experience of the total pension liability	$	187,572
5. Changes of assumptions	$	1,984,805
6. Benefit payments, including refunds of employee contributions	$	(637,451)
7. Net change in total pension liability	$	2,597,103
8. Total pension liability – beginning	$	12,169,995
9. Total pension liability – ending	**$**	**14,767,098**
B. Plan fiduciary net position		
1. Contributions – employer	$	224,416
2. Contributions – employee	$	133,023
3. Net investment income	$	(700,942)
4. Benefit payments, including refunds of employee contributions	$	(637,451)
5. Pension Plan administrative expense	$	(1,634)
6. Other	$	(20)
7. Net change in plan fiduciary net position	$	(982,608)
8. Plan fiduciary net position – beginning	$	11,398,101
9. Plan fiduciary net position – ending	**$**	**10,415,493**
C. Net pension liability	**$**	**4,351,605**
D. Plan fiduciary net position as a percentage of the total pension liability		**70.53%**
E. Covered-employee payroll*	**$**	**1,127,314**
F. Net pension liability as a percentage of covered-employee payroll		**386.02%**

**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 (which may be built prospectively)

Fiscal year ending June 30,	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Total Pension Liability										
Service Cost	$ 282,658	$ 226,012	$ 217,127	$ 209,098	$ 203,131	$ 318,401	$ 194,352	$ 187,959	$ 169,124	
Interest on the Total Pension Liability	$ 779,519	$ 758,002	$ 729,945	$ 703,640	$ 682,903	$ 616,740	$ 658,198	$ 648,233	$ 598,165	
Benefit Changes	$ -	$ -	$ -	$ -	$ (50,771)	$ -	$ -	$ -	$ -	
Difference between Expected and Actual Experience	$ 187,572	$ 128,782	$ 30,348	$ 14,491	$ 21,720	$ 37,292	$ (375,575)	$ (221,112)	$ 1,813	
Assumption Changes	$ 1,984,805	$ 1,361,379	$ (24,785)	$ (19,898)	$ (42,807)	$ (2,300,201)	$ 2,650,350	$ -	$ 323,945	
Benefit Payments	$ (633,255)	$ (592,687)	$ (567,040)	$ (547,699)	$ (528,468)	$ (512,379)	$ (498,608)	$ (481,330)	$ (452,462)	
Refunds	$ (4,196)	$ (3,060)	$ (3,181)	$ (3,283)	$ (1,902)	$ (2,119)	$ (2,391)	$ (1,953)	$ (1,633)	
Net Change in Total Pension Liability	$ 2,597,103	$ 1,878,428	$ 382,414	$ 356,349	$ 283,806	$ (1,842,266)	$ 2,626,326	$ 131,797	$ 638,952	
Total Pension Liability - Beginning	$ 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)	$ 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	$ 224,416	$ 219,129	$ 207,319	$ 188,317	$ 179,781	$ 175,329	$ 165,065	$ 153,317	$ 141,632	
Employee Contributions	$ 133,023	$ 129,351	$ 123,525	$ 111,762	$ 105,479	$ 101,984	$ 95,172	$ 88,733	$ 81,213	
Pension Plan Net Investment Income	$ (700,942)	$ 2,672,826	$ 368,949	$ 609,512	$ 813,966	$ 1,058,942	$ (8,949)	$ 317,556	$ 1,158,389	
Benefit Payments	$ (633,255)	$ (592,687)	$ (567,040)	$ (547,699)	$ (528,468)	$ (512,379)	$ (498,608)	$ (481,330)	$ (452,462)	
Refunds	$ (4,196)	$ (3,060)	$ (3,181)	$ (3,283)	$ (1,902)	$ (2,119)	$ (2,391)	$ (1,953)	$ (1,633)	
Pension Plan Administrative Expense	$ (1,634)	$ (941)	$ (924)	$ (1,018)	$ (886)	$ (992)	$ (906)	$ (803)	$ (798)	
Other	$ (20)	$ 23	$ 260	$ 54	$ 58	$ 24	$ 3	$ 84	$ 18	
Net Change in Plan Fiduciary Net Position	$ (982,608)	$ 2,424,641	$ 128,908	$ 357,645	$ 568,028	$ 820,789	$ (250,614)	$ 75,604	$ 926,359	
Plan Fiduciary Net Position - Beginning	$ 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)	$ 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)	$ 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	70.53 %	93.66 %	87.19 %	89.26 %	88.84 %	85.43 %	63.88 %	86.61 %	87.07 %	
Covered Employee Payroll	$ 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	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 (which may be built prospectively)

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
2013						
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%

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
2013	$ 189,254	$ 125,995	$ 63,259	$ 796,188	15.82%
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

Notes to Schedule of Contributions

Methods and Assumptions Used to Determine Contribution Rates for Fiscal Year Ending June 30, 2022:

Valuation Date	June 30, 2021
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	27 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-2020, 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, 2021 for additional detail.

Schedule of Investment Returns Multiyear

Last 10 Fiscal Years

FY Ending June 30,	Annual Return[1]
2013	
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)

[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, 2022, the annual money-weighted rate of return for the Public Employees Police and Fire Plan was -6.4%. 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.

Ten-Year Schedule of Money-Weighted Investment Return

Ten-year data is not available. Additional years will be provided when they become available.
To request additional information about the computation of the annual money-weighted rate of return and the investments for the Public Employees Retirement Association of Minnesota (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, 2022, 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 6.50%. This assumption is based on reviews of inflation and investment return assumptions in our report dated July 12, 2022.

Single Discount Rate

A single discount rate of 5.40% 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 6.50% and the municipal bond rate of 3.69%. 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 the benefit payments through the year ending June 30, 2060. As a result, the long-term expected rate of return on pension plan investments was applied to projected benefit payments through the year ending June 30, 2060, and the municipal bond rate was applied to all benefit payments after the point of asset depletion.

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 5.40%, 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 4.40%	Current Single Discount Rate Assumption 5.40%	1% Increase 6.40%
Total Pension Liability	$ 17,001,089	$ 14,767,098	$ 12,961,050
Net Position Restricted for Pensions	$ 10,415,493	$ 10,415,493	$ 10,415,493
Net Pension Liability	**$ 6,585,596**	**$ 4,351,605**	**$ 2,545,557**

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	Current Period Deferred Inflows	Current Period Pension Expense*
Balance Beginning of Year	**$ 12,169,995**	**$ 11,398,101**	**$ 771,894**			
Changes for the Year:						
Service Cost	$ 282,658		$ 282,658			$ 282,658
Interest on Total Pension Liability	$ 779,519		$ 779,519			$ 779,519
Interest on Fiduciary Net Position		$ 731,722	$ (731,722)			$ (731,722)
Changes in Benefit Terms	$ -		$ -			$ -
Liability Experience Gains and Losses	$ 187,572		$ 187,572	$ 156,310	$ -	$ 31,262
Changes in Assumptions	$ 1,984,805		$ 1,984,805	$ 1,654,004	$ -	$ 330,801
Contributions - Employer		$ 224,416	$ (224,416)			
Contributions - Employees		$ 133,023	$ (133,023)			$ (133,023)
Asset Gain/(Loss)		$ (1,432,664)	$ 1,432,664	$ 1,146,131	$ -	$ 286,533
Benefit Payouts	$ (637,451)	$ (637,451)				
Administrative Expenses		$ (1,634)	$ 1,634			$ 1,634
Other		$ (20)	$ 20			$ 20
Net Changes	**$ 2,597,103**	**$ (982,608)**	**$ 3,579,711**	**$ 2,956,445**	**$ -**	**$ 847,682**
Balance End of Year	**$ 14,767,098**	**$ 10,415,493**	**$ 4,351,605**			

** 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	**$ 12,169,995**	**$ 11,398,101**	**$ 771,894**				
Changes for the Year:							
Service Cost	$ 282,658		$ 282,658				$ 282,658
Interest on Total Pension Liability	$ 779,519		$ 779,519				$ 779,519
Interest on Fiduciary Net Position		$ 731,722	$ (731,722)				$ (731,722)
Changes in Benefit Terms	$ -		$ -				$ -
Liability Experience Gains and Losses	$ 187,572		$ 187,572	$ 265,789	$ -	$ 148,252	$ 70,035
Changes in Assumptions	$ 1,984,805		$ 1,984,805	$ 2,561,589	$ 26,160	$ 710,375	$ 159,751
Contributions - Employer		$ 224,416	$ (224,416)				
Contributions - Employees		$ 133,023	$ (133,023)				$ (133,023)
Asset Gain/(Loss)		$ (1,432,664)	$ 1,432,664	$ 1,263,801	$ 1,205,473	$ (1,474,892)	$ (100,556)
Benefit Payouts	$ (637,451)	$ (637,451)					
Administrative Expenses		$ (1,634)	$ 1,634				$ 1,634
Other		$ (20)	$ 20				$ 20
Net Changes	**$ 2,597,103**	**$ (982,608)**	**$ 3,579,711**				**$ 328,316**
Balance End of Year	**$ 14,767,098**	**$ 10,415,493**	**$ 4,351,605**	**$ 4,091,179**	**$ 1,231,633**	**$ (616,265)**	

** 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, 2021	**11,705**	**1,813**	**912**	**8,021**	**1,684**	**1,951**	**26,086**
New members	822						822
Return to active	63	(28)	(35)	0	0	0	0
Terminated non-vested	(129)	0	129	0	0	0	0
Service retirements	(279)	(137)	0	416	0	0	0
Terminated deferred	(269)	269	0	0	0	0	0
Terminated refund/transfer	(60)	(27)	(83)	0	0	0	(170)
Deaths	(10)	(7)	(3)	(220)	(42)	(119)	(401)
New beneficiary	0	0	0	0	0	127	127
Disabled	(214)	0	0	0	214	0	0
Data adjustments	0	(19)	37	19	56	0	93
Net change	(76)	51	45	215	228	8	471
Members on July 1, 2022	**11,629**	**1,864**	**957**	**8,236**	**1,912**	**1,959**	**26,557**

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.
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.

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

Vesting

Years of Service	Vesting Percent if First Hired: Before 7/1/2010	After 6/30/2010 & before 7/1/2014	After 6/30/2014
<3	0%	0%	0%
3 – 4	100	0	0
5	100	50	0
6	100	60	0
7	100	70	0
8	100	80	0
9	100	90	0
10	100	100	50
11	100	100	55
12	100	100	60
13	100	100	65
14	100	100	70
15	100	100	75
16	100	100	80
17	100	100	85
18	100	100	90
19	100	100	95
20+	100	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.

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

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. Members age 55 or older with 20 or more years of Allowable Service are not eligible to apply for duty disability benefits.
Amount	60.0%, 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%.
Benefit increases	Same as for retirement.

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.

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

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%.
Benefit increases	Same as for retirement.
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.
Benefit increases	Same as for retirement.

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

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.

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.

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 dated July 12, 2022. PERA staff selected the long term expected rate of return on assets of 6.50% based on input from GRS that the proposed selection would be reasonable for the purpose of the measurement.

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	6.50% per annum.
Single Discount Rate	5.40% 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.
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 33 members reported with a salary less than $100 after annualization. We used prior year salary (22 members), if available; otherwise high five salary with a 10% load to account for salary increases (9 members). If neither prior year salary nor high five salary was available, we assumed a value of $60,000. There were also 209 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 Average Salary was not reported (no members), we assumed a value of $24,000. If credited service was not reported (15 members), we used elapsed time from hire date to termination date (15 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 11 members reported without a gender; male was assumed. There were no members reported without a date of birth. <u>Data for retired members:</u> There was 1 member with missing or invalid dates of birth or benefit amounts. There were 14 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)	<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 268 retirees as disabled retirees in this valuation.
Changes in actuarial assumptions since the prior valuation	The mortality improvement scale was changed from MP-2020 to MP-2021. The single discount rate changed from 6.5% to 5.4%.

Summary of Actuarial Assumptions (Continued)

	Percentage of Members Dying Each Year*					
	Healthy Post-Retirement Mortality		Healthy Pre-Retirement Mortality		Disability Mortality	
Age in 2022	**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	0.08	0.06	0.08	0.06	0.24	0.19
45	0.13	0.08	0.09	0.07	0.27	0.22
50	0.18	0.14	0.11	0.08	0.35	0.28
55	0.29	0.26	0.17	0.12	0.48	0.46
60	0.51	0.46	0.27	0.18	0.80	0.73
65	0.87	0.74	0.41	0.22	1.26	1.01
70	1.42	1.17	0.71	0.40	1.86	1.41
75	2.46	2.02	1.27	0.80	3.03	2.16
80	4.49	3.63	2.40	1.65	5.28	3.63
85	8.23	6.46	7.52	5.66	8.90	6.46
90	14.58	11.29	14.87	11.29	15.62	11.29

* *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 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
50	7.50%
51	5.00
52	5.00
53	7.50
54	10.00
55	30.00
56	20.00
57	22.50
58	25.00
59	25.00
60	20.00
61	25.00
62	30.00
63	27.50
64	27.50
65	50.00
66	40.00
67	50.00
68	50.00
69	50.00
70+	100.00

Year	Withdrawal Rates
1	6.00%
2	4.00
3	2.75
4	2.50
5	2.50
6	2.25
7	2.25
8	2.00
9	2.00
10	2.00
11	1.75
12	1.50
13	1.50
14	1.50
15	1.50
16	1.50
17	1.50
18	1.25
19	1.25
20	1.25
21+	1.00

Salary Scale	
Year	Increase
1	11.75%
2	9.25%
3	8.00%
4	7.00%
5	5.50%
6	4.80%
7	4.60%
8	4.30%
9	4.10%
10	4.00%
11	3.90%
12	3.80%
13	3.70%
14	3.60%
15	3.50%
16	3.50%
17	3.50%
18	3.50%
19	3.40%
20	3.40%
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 6.50%, the municipal bond rate is 3.69%; and **the resulting single discount rate is 5.40%**.

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
2022	$ 1,127,314	$ 0	$ 1,127,314						
2023	1,103,230	12,522	1,115,752	$ 130,181	$ 195,272	$ 446	$ 7,679	$ 18,000	$ 351,578
2024	1,090,276	58,949	1,149,225	128,653	192,979	2,098	7,679	18,000	349,409
2025	1,072,965	110,737	1,183,702	126,610	189,915	3,942	7,679	18,000	346,146
2026	1,051,709	167,504	1,219,213	124,102	186,153	5,962	7,679	18,000	341,896
2027	1,027,201	228,588	1,255,789	121,210	181,815	8,137	7,679	18,000	336,841
2028	1,000,895	292,568	1,293,463	118,106	177,158	10,415	7,679	18,000	331,358
2029	974,063	358,204	1,332,267	114,939	172,409	12,753	7,679	18,000	325,780
2030	946,050	426,185	1,372,235	111,634	167,451	15,172	7,679	9,000	310,936
2031	916,433	496,969	1,413,402	108,139	162,209	17,692	7,679	9,000	304,719
2032	885,801	570,003	1,455,804	104,525	156,787	20,292	7,679	9,000	298,283
2033	853,982	645,496	1,499,478	100,770	151,155	22,979	0	9,000	283,904
2034	821,091	723,371	1,544,462	96,889	145,333	25,752	0	9,000	276,974
2035	787,059	803,737	1,590,796	92,873	139,309	28,613	0	9,000	269,795
2036	751,933	886,587	1,638,520	88,728	133,092	31,563	0	9,000	262,383
2037	715,489	972,187	1,687,676	84,428	126,641	34,610	0	9,000	254,679
2038	677,831	1,060,475	1,738,306	79,984	119,976	37,753	0	9,000	246,713
2039	639,400	1,151,055	1,790,455	75,449	113,174	40,978	0	9,000	238,601
2040	600,214	1,243,955	1,844,169	70,825	106,238	44,285	0	9,000	230,348
2041	560,663	1,338,831	1,899,494	66,158	99,237	47,663	0	9,000	222,058
2042	520,904	1,435,575	1,956,479	61,467	92,200	51,106	0	9,000	213,773
2043	480,952	1,534,221	2,015,173	56,752	85,129	54,618	0	9,000	205,499
2044	441,029	1,634,599	2,075,628	52,041	78,062	58,192	0	9,000	197,295
2045	401,109	1,736,788	2,137,897	47,331	70,996	61,830	0	9,000	189,157
2046	361,150	1,840,884	2,202,034	42,616	63,924	65,535	0	9,000	181,075
2047	321,139	1,946,956	2,268,095	37,894	56,842	69,312	0	9,000	173,048
2048	281,609	2,054,529	2,336,138	33,230	49,845	73,141	0	9,000	165,216
2049	243,696	2,162,526	2,406,222	28,756	43,134	76,986	0	0	148,876
2050	207,965	2,270,444	2,478,409	24,540	36,810	80,827	0	0	142,177
2051	174,520	2,378,241	2,552,761	20,593	30,890	84,666	0	0	136,149
2052	143,628	2,485,716	2,629,344	16,948	25,422	88,492	0	0	130,862
2053	115,784	2,592,440	2,708,224	13,663	20,494	92,290	0	0	126,447
2054	91,508	2,697,963	2,789,471	10,798	16,197	96,047	0	0	123,042
2055	71,033	2,802,122	2,873,155	8,382	12,573	99,755	0	0	120,710
2056	54,285	2,905,065	2,959,350	6,406	9,609	103,419	0	0	119,434
2057	40,929	3,007,201	3,048,130	4,830	7,244	107,056	0	0	119,130
2058	30,465	3,109,109	3,139,574	3,595	5,392	110,684	0	0	119,671
2059	22,288	3,211,473	3,233,761	2,630	3,945	114,328	0	0	120,903
2060	15,979	3,314,795	3,330,774	1,885	2,828	118,007	0	0	122,720
2061	11,167	3,419,530	3,430,697	1,318	1,977	121,735	0	0	125,030
2062	7,546	3,526,072	3,533,618	890	1,336	125,528	0	0	127,754
2063	4,878	3,634,749	3,639,627	576	863	129,397	0	0	130,836
2064	3,006	3,745,810	3,748,816	355	532	133,351	0	0	134,238
2065	1,757	3,859,523	3,861,280	207	311	137,399	0	0	137,917
2066	962	3,976,156	3,977,118	114	170	141,551	0	0	141,835
2067	489	4,095,943	4,096,432	58	87	145,815	0	0	145,960
2068	230	4,219,095	4,219,325	27	41	150,200	0	0	150,268
2069	96	4,345,809	4,345,905	11	17	154,711	0	0	154,739
2070	35	4,476,247	4,476,282	4	6	159,355	0	0	159,365
2071	10	4,610,560	4,610,570	1	2	164,136	0	0	164,139
2072	2	4,748,885	4,748,887	0	-	169,061	0	0	169,061

* *Equal to contributions (29.50% of payroll for new employees) net of normal cost and expenses (25.94% of payroll).*

** *State contributions equal to $9.0 million are assumed to end after 7 years. Additional state contributions of $9.0 million until 100% funded on an actuarial value of assets basis are assumed to stop after 26 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
2073	$ 0	$ 4,891,354	$ 4,891,354	$ 0	$ 0	$ 174,132	$ 0	$ 0	$ 174,132
2074	0	5,038,095	5,038,095	0	0	179,356	0	0	179,356
2075	0	5,189,238	5,189,238	0	0	184,737	0	0	184,737
2076	0	5,344,915	5,344,915	0	0	190,279	0	0	190,279
2077	0	5,505,262	5,505,262	0	0	195,987	0	0	195,987
2078	0	5,670,420	5,670,420	0	0	201,867	0	0	201,867
2079	0	5,840,533	5,840,533	0	0	207,923	0	0	207,923
2080	0	6,015,749	6,015,749	0	0	214,161	0	0	214,161
2081	0	6,196,221	6,196,221	0	0	220,585	0	0	220,585
2082	0	6,382,108	6,382,108	0	0	227,203	0	0	227,203
2083	0	6,573,571	6,573,571	0	0	234,019	0	0	234,019
2084	0	6,770,778	6,770,778	0	0	241,040	0	0	241,040
2085	0	6,973,901	6,973,901	0	0	248,271	0	0	248,271
2086	0	7,183,118	7,183,118	0	0	255,719	0	0	255,719
2087	0	7,398,612	7,398,612	0	0	263,391	0	0	263,391
2088	0	7,620,570	7,620,570	0	0	271,292	0	0	271,292
2089	0	7,849,187	7,849,187	0	0	279,431	0	0	279,431
2090	0	8,084,663	8,084,663	0	0	287,814	0	0	287,814
2091	0	8,327,203	8,327,203	0	0	296,448	0	0	296,448
2092	0	8,577,019	8,577,019	0	0	305,342	0	0	305,342
2093	0	8,834,330	8,834,330	0	0	314,502	0	0	314,502
2094	0	9,099,359	9,099,359	0	0	323,937	0	0	323,937
2095	0	9,372,340	9,372,340	0	0	333,655	0	0	333,655
2096	0	9,653,510	9,653,510	0	0	343,665	0	0	343,665
2097	0	9,943,116	9,943,116	0	0	353,975	0	0	353,975
2098	0	10,241,409	10,241,409	0	0	364,594	0	0	364,594
2099	0	10,548,651	10,548,651	0	0	375,532	0	0	375,532
2100	0	10,865,111	10,865,111	0	0	386,798	0	0	386,798
2101	0	11,191,064	11,191,064	0	0	398,402	0	0	398,402
2102	0	11,526,796	11,526,796	0	0	410,354	0	0	410,354
2103	0	11,872,600	11,872,600	0	0	422,665	0	0	422,665
2104	0	12,228,778	12,228,778	0	0	435,345	0	0	435,345
2105	0	12,595,642	12,595,642	0	0	448,405	0	0	448,405
2106	0	12,973,511	12,973,511	0	0	461,857	0	0	461,857
2107	0	13,362,716	13,362,716	0	0	475,713	0	0	475,713
2108	0	13,763,598	13,763,598	0	0	489,984	0	0	489,984
2109	0	14,176,506	14,176,506	0	0	504,684	0	0	504,684
2110	0	14,601,801	14,601,801	0	0	519,824	0	0	519,824
2111	0	15,039,855	15,039,855	0	0	535,419	0	0	535,419
2112	0	15,491,050	15,491,050	0	0	551,481	0	0	551,481
2113	0	15,955,782	15,955,782	0	0	568,026	0	0	568,026
2114	0	16,434,455	16,434,455	0	0	585,067	0	0	585,067
2115	0	16,927,489	16,927,489	0	0	602,619	0	0	602,619
2116	0	17,435,314	17,435,314	0	0	620,697	0	0	620,697
2117	0	17,958,373	17,958,373	0	0	639,318	0	0	639,318
2118	0	18,497,124	18,497,124	0	0	658,498	0	0	658,498
2119	0	19,052,038	19,052,038	0	0	678,253	0	0	678,253
2120	0	19,623,599	19,623,599	0	0	698,600	0	0	698,600
2121	0	20,212,307	20,212,307	0	0	719,558	0	0	719,558
2122	0	20,818,676	20,818,676	0	0	741,145	0	0	741,145

* *Equal to contributions (29.50% of payroll for new employees) net of normal cost and expenses (25.94% of payroll).*

** *State contributions equal to $9.0 million are assumed to end after 7 years. Additional state contributions of $9.0 million until 100% funded on an actuarial value of assets basis are assumed to stop after 26 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 6.50%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2023	$ 10,415,493	$ 351,578	$ 670,167	$ 1,655	$ 666,763	$ 10,762,012
2024	10,762,012	349,409	695,139	1,635	688,419	11,103,066
2025	11,103,066	346,146	721,476	1,609	709,642	11,435,769
2026	11,435,769	341,896	749,436	1,578	730,238	11,756,889
2027	11,756,889	336,841	778,355	1,541	750,025	12,063,859
2028	12,063,859	331,358	808,045	1,501	768,854	12,354,525
2029	12,354,525	325,780	836,287	1,461	786,667	12,629,224
2030	12,629,224	310,936	865,197	1,419	803,124	12,876,668
2031	12,876,668	304,719	894,334	1,375	818,079	13,103,757
2032	13,103,757	298,283	923,301	1,329	831,708	13,309,118
2033	13,309,118	283,904	953,185	1,281	843,643	13,482,199
2034	13,482,199	276,974	983,466	1,232	853,704	13,628,179
2035	13,628,179	269,795	1,013,857	1,181	861,993	13,744,929
2036	13,744,929	262,383	1,044,612	1,128	868,362	13,829,934
2037	13,829,934	254,679	1,076,252	1,073	872,631	13,879,919
2038	13,879,919	246,713	1,107,618	1,017	874,623	13,892,620
2039	13,892,620	238,601	1,139,108	959	874,184	13,865,338
2040	13,865,338	230,348	1,170,823	900	871,134	13,795,097
2041	13,795,097	222,058	1,201,810	841	865,314	13,679,818
2042	13,679,818	213,773	1,231,937	781	856,594	13,517,467
2043	13,517,467	205,499	1,261,369	721	844,837	13,305,713
2044	13,305,713	197,295	1,289,640	662	829,908	13,042,614
2045	13,042,614	189,157	1,317,500	602	811,657	12,725,326
2046	12,725,326	181,075	1,344,827	542	789,902	12,350,934
2047	12,350,934	173,048	1,371,742	482	764,451	11,916,209
2048	11,916,209	165,216	1,397,763	422	735,113	11,418,353
2049	11,418,353	148,876	1,421,630	366	701,468	10,846,701
2050	10,846,701	142,177	1,442,763	312	663,422	10,209,225
2051	10,209,225	136,149	1,461,217	262	621,204	9,505,099
2052	9,505,099	130,862	1,476,588	215	574,777	8,733,935
2053	8,733,935	126,447	1,488,099	174	524,143	7,896,252
2054	7,896,252	123,042	1,494,900	137	469,368	6,993,625
2055	6,993,625	120,710	1,496,536	107	410,572	6,028,264
2056	6,028,264	119,434	1,493,024	81	347,896	5,002,489
2057	5,002,489	119,130	1,484,644	61	281,479	3,918,393
2058	3,918,393	119,671	1,471,893	46	211,439	2,777,564
2059	2,777,564	120,903	1,455,426	33	137,851	1,580,859
2060	1,580,859	122,720	1,435,610	24	60,758	328,703
2061	328,703	125,030	1,412,779	17	-	-
2062	-	127,754	1,387,227	11	-	-
2063	-	130,836	1,359,201	7	-	-
2064	-	134,238	1,328,900	5	-	-
2065	-	137,917	1,296,557	3	-	-
2066	-	141,835	1,262,415	1	-	-
2067	-	145,960	1,226,691	1	-	-
2068	-	150,268	1,189,579	0	-	-
2069	-	154,739	1,151,251	0	-	-
2070	-	159,365	1,111,839	0	-	-
2071	-	164,139	1,071,453	0	-	-
2072	-	169,061	1,030,181	0	-	-

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 6.50%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2073	$ -	$ 174,132	$ 988,099	$ 0	$ -	$ -
2074	-	179,356	945,280	0	-	-
2075	-	184,737	901,799	0	-	-
2076	-	190,279	857,737	0	-	-
2077	-	195,987	813,184	0	-	-
2078	-	201,867	768,245	0	-	-
2079	-	207,923	723,040	0	-	-
2080	-	214,161	677,699	0	-	-
2081	-	220,585	632,369	0	-	-
2082	-	227,203	587,211	0	-	-
2083	-	234,019	542,402	0	-	-
2084	-	241,040	498,138	0	-	-
2085	-	248,271	454,629	0	-	-
2086	-	255,719	412,105	0	-	-
2087	-	263,391	370,804	0	-	-
2088	-	271,292	330,976	0	-	-
2089	-	279,431	292,870	0	-	-
2090	-	287,814	256,733	0	-	-
2091	-	296,448	222,794	0	-	-
2092	-	305,342	191,254	0	-	-
2093	-	314,502	162,284	0	-	-
2094	-	323,937	136,004	0	-	-
2095	-	333,655	112,484	0	-	-
2096	-	343,665	91,735	0	-	-
2097	-	353,975	73,706	0	-	-
2098	-	364,594	58,291	0	-	-
2099	-	375,532	45,334	0	-	-
2100	-	386,798	34,639	0	-	-
2101	-	398,402	25,978	0	-	-
2102	-	410,354	19,107	0	-	-
2103	-	422,665	13,771	0	-	-
2104	-	435,345	9,719	0	-	-
2105	-	448,405	6,714	0	-	-
2106	-	461,857	4,539	0	-	-
2107	-	475,713	3,003	0	-	-
2108	-	489,984	1,946	0	-	-
2109	-	504,684	1,236	0	-	-
2110	-	519,824	772	0	-	-
2111	-	535,419	476	0	-	-
2112	-	551,481	291	0	-	-
2113	-	568,026	178	0	-	-
2114	-	585,067	110	0	-	-
2115	-	602,619	69	0	-	-
2116	-	620,697	44	0	-	-
2117	-	639,318	29	0	-	-
2118	-	658,498	20	0	-	-
2119	-	678,253	13	0	-	-
2120	-	698,600	9	0	-	-
2121	-	719,558	6	0	-	-
2122	-	741,145	11	0	-	-

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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)
2023	$ 10,415,493	$ 670,167	$ 670,167	$ 0	$ 649,394	$ 0	$ 652,762
2024	10,762,012	695,139	695,139	0	632,481	0	642,373
2025	11,103,066	721,476	721,476	0	616,379	0	632,530
2026	11,435,768	749,436	749,436	0	601,189	0	623,358
2027	11,756,888	778,355	778,355	0	586,279	0	614,220
2028	12,063,858	808,045	808,045	0	571,495	0	604,958
2029	12,354,525	836,287	836,287	0	555,371	0	594,003
2030	12,629,224	865,197	865,197	0	539,502	0	583,031
2031	12,876,668	894,334	894,334	0	523,634	0	571,768
2032	13,103,757	923,301	923,301	0	507,601	0	560,025
2033	13,309,119	953,185	953,185	0	492,047	0	548,511
2034	13,482,199	983,466	983,466	0	476,693	0	536,921
2035	13,628,179	1,013,857	1,013,857	0	461,431	0	525,136
2036	13,744,929	1,044,612	1,044,612	0	446,411	0	513,326
2037	13,829,934	1,076,252	1,076,252	0	431,862	0	501,760
2038	13,879,919	1,107,618	1,107,618	0	417,322	0	489,909
2039	13,892,621	1,139,108	1,139,108	0	402,992	0	478,007
2040	13,865,338	1,170,823	1,170,823	0	388,932	0	466,127
2041	13,795,097	1,201,810	1,201,810	0	374,859	0	453,933
2042	13,679,817	1,231,937	1,231,937	0	360,804	0	441,457
2043	13,517,466	1,261,369	1,261,369	0	346,877	0	428,830
2044	13,305,711	1,289,640	1,289,640	0	333,006	0	415,964
2045	13,042,612	1,317,500	1,317,500	0	319,436	0	403,163
2046	12,725,324	1,344,827	1,344,827	0	306,161	0	390,428
2047	12,350,933	1,371,742	1,371,742	0	293,229	0	377,825
2048	11,916,208	1,397,763	1,397,763	0	280,555	0	365,254
2049	11,418,351	1,421,630	1,421,630	0	267,930	0	352,445
2050	10,846,700	1,442,763	1,442,763	0	255,318	0	339,347
2051	10,209,224	1,461,217	1,461,217	0	242,801	0	326,067
2052	9,505,099	1,476,588	1,476,588	0	230,381	0	312,604
2053	8,733,934	1,488,099	1,488,099	0	218,006	0	298,890
2054	7,896,251	1,494,900	1,494,900	0	205,636	0	284,862
2055	6,993,625	1,496,536	1,496,536	0	193,297	0	270,554
2056	6,028,264	1,493,024	1,493,024	0	181,073	0	256,081
2057	5,002,489	1,484,644	1,484,644	0	169,068	0	241,588
2058	3,918,393	1,471,893	1,471,893	0	157,386	0	227,234
2059	2,777,564	1,455,426	1,455,426	0	146,127	0	213,172
2060	1,580,860	1,435,610	1,435,610	0	135,340	0	199,490
2061	328,705	1,412,779	328,705	1,084,073	29,097	268,651	186,252
2062	-	1,387,227	-	1,387,227	-	331,544	173,508
2063	-	1,359,201	-	1,359,201	-	313,286	161,287
2064	-	1,328,900	-	1,328,900	-	295,401	149,607
2065	-	1,296,557	-	1,296,557	-	277,955	138,482
2066	-	1,262,415	-	1,262,415	-	261,005	127,923
2067	-	1,226,691	-	1,226,691	-	244,593	117,930
2068	-	1,189,579	-	1,189,579	-	228,752	108,499
2069	-	1,151,251	-	1,151,251	-	213,504	99,620
2070	-	1,111,839	-	1,111,839	-	198,857	91,277
2071	-	1,071,453	-	1,071,453	-	184,814	83,452
2072	-	1,030,181	-	1,030,181	-	171,371	76,124

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)
2073	$ -	$ 988,099	$ -	$ 988,099	$ 0	$ 158,521	$ 69,271
2074	-	945,280	-	945,280	0	146,255	62,872
2075	-	901,799	-	901,799	0	134,563	56,905
2076	-	857,737	-	857,737	0	123,433	51,349
2077	-	813,184	-	813,184	0	112,857	46,186
2078	-	768,245	-	768,245	0	102,826	41,397
2079	-	723,040	-	723,040	0	93,332	36,964
2080	-	677,699	-	677,699	0	84,366	32,869
2081	-	632,369	-	632,369	0	75,921	29,098
2082	-	587,211	-	587,211	0	67,991	25,635
2083	-	542,402	-	542,402	0	60,568	22,465
2084	-	498,138	-	498,138	0	53,645	19,574
2085	-	454,629	-	454,629	0	47,217	16,949
2086	-	412,105	-	412,105	0	41,278	14,576
2087	-	370,804	-	370,804	0	35,819	12,442
2088	-	330,976	-	330,976	0	30,834	10,537
2089	-	292,870	-	292,870	0	26,313	8,846
2090	-	256,733	-	256,733	0	22,246	7,357
2091	-	222,794	-	222,794	0	18,618	6,057
2092	-	191,254	-	191,254	0	15,413	4,933
2093	-	162,284	-	162,284	0	12,613	3,971
2094	-	136,004	-	136,004	0	10,194	3,157
2095	-	112,484	-	112,484	0	8,131	2,477
2096	-	91,735	-	91,735	0	6,395	1,917
2097	-	73,706	-	73,706	0	4,956	1,461
2098	-	58,291	-	58,291	0	3,780	1,096
2099	-	45,334	-	45,334	0	2,835	809
2100	-	34,639	-	34,639	0	2,089	586
2101	-	25,978	-	25,978	0	1,511	417
2102	-	19,107	-	19,107	0	1,072	291
2103	-	13,771	-	13,771	0	745	199
2104	-	9,719	-	9,719	0	507	133
2105	-	6,714	-	6,714	0	338	87
2106	-	4,539	-	4,539	0	220	56
2107	-	3,003	-	3,003	0	141	35
2108	-	1,946	-	1,946	0	88	22
2109	-	1,236	-	1,236	0	54	13
2110	-	772	-	772	0	32	8
2111	-	476	-	476	0	19	5
2112	-	291	-	291	0	11	3
2113	-	178	-	178	0	7	2
2114	-	110	-	110	0	4	1
2115	-	69	-	69	0	2	1
2116	-	44	-	44	0	1	0
2117	-	29	-	29	0	1	0
2118	-	20	-	20	0	1	0
2119	-	13	-	13	0	0	0
2120	-	9	-	9	0	0	0
2121	-	6	-	6	0	0	0
2122	-	11	-	11	0	0	0
				Totals	$ 14,347,483	$ 4,497,498	$ 18,844,981

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.