Public Employees Retirement Association of Minnesota

Local Government Correctional Service Retirement Plan
GASB Statements No. 67 and No. 68
Accounting and Financial Reporting for Pensions
June 30, 2022

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November 8, 2022

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

Dear Trustees of the Local Government Correctional Service Retirement Plan:

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

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

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

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

This report complements the actuarial valuation report for funding purposes that was or will be provided to the Plan and should be considered in conjunction with that report. Please see the actuarial valuation report as of June 30, 2022 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

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

This report 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

Bonita J. Wurst

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

Sheryl Christensen

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		1,407
- Survivors		87
- Disability Retirements		223
- Deferred Retirements		4,129
- Terminated Other Non-Vested		2,480
- Active Members		3,564
- Total		11,890
Covered Payroll	$	220,292
Net Pension Liability		
Total Pension Liability	$	1,307,715
Plan Fiduciary Net Position		975,315
Net Pension Liability	$	332,400
Plan Fiduciary Net Position as a Percentage of Total Pension Liability		74.58%
Net Pension Liability as a Percentage of Covered Payroll		150.89%
Development of the Single Discount Rate		
Single Discount Rate		5.42%
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		2061
Total Pension Expense/(Income)	**$**	**115,083**

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	$ -	$ 10,958
Changes in assumptions	$ 215,272	$ 495
Net difference between projected and actual earnings on pension plan investments	$ 116,740	$ 107,552
Total	$ 332,012	$ 119,005

* *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 GASB Statements No. 67, No. 68, and No. 73, intended to improve consistency in the application of the accounting standards.

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

Financial Statements

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

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

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

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

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; and
(2) The plan is expected to remain fully funded.

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 Fidelity's "20-Year Municipal GO AA Index"); and the resulting single discount rate is 5.42%. 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	$	36,877
2.	Interest on the Total Pension Liability	$	66,604
3.	Current-Period Benefit Changes	$	-
4.	Employee Contributions (made negative for addition here)	$	(12,843)
5.	Projected Earnings on Plan Investments (made negative for addition here)	$	(67,504)
6.	Pension Plan Administrative Expense	$	371
7.	Other Changes in Plan Fiduciary Net Position	$	-
8.	Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability		
	Arising from Current Reporting Period	$	(3,014)
9.	Recognition of Outflow (Inflow) of Resources due to assumption changes		
	Arising from Current Reporting Period	$	73,358
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	$	26,704
11.	**Increase/(Decrease) from Experience in the Current Reporting Period**	**$**	**120,553**
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	$	(4,438)
13.	Recognition of Outflow (Inflow) of Resources due to assumption changes		
	Arising from Prior Reporting Periods	$	33,233
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	$	(34,265)
15.	**Total Pension Expense / (Income)**	**$**	**115,083**

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 34,917 years. Additionally, the total plan membership (active employees and inactive employees) was 11,392. As a result, the average of the expected remaining service lives for purposes of recognizing the applicable deferred outflows and inflows of resources established in the current measurement period is 3.00 years (rounded).

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

Statement of Outflows and Inflows Arising from Current Reporting Period Fiscal Year Ended June 30, 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	$	(9,042)
2. Assumption Changes (gains) or losses	$	220,073
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		3.0000
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience of the Total Pension Liability	$	(3,014)
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	$	73,358
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	$	70,344
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	$	(6,028)
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	$	146,715
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	$	140,687
B. Outflows (Inflows) of Resources due to Assets		
1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	$	133,519
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	$	26,704
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	$	106,815

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	$ 107,636	$ 8,497	$ 99,139
2. Due to Assets	$ 31,733	$ 39,294	$ (7,561)
3. Total	$ 139,369	$ 47,791	$ 91,578

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	$ -	$ 7,452	$ (7,452)
2. Assumption Changes	$ 107,636	$ 1,045	$ 106,591
3. Net Difference between projected and actual earnings on pension plan investments	$ 31,733	$ 39,294	$ (7,561)
4. Total	$ 139,369	$ 47,791	$ 91,578

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	$ -	$ 10,958	$ (10,958)
2. Assumption Changes	$ 215,272	$ 495	$ 214,777
3. Net Difference between projected and actual earnings on pension plan investments	$ 116,740	$ 107,552	$ 9,188
4. Total	$ 332,012	$ 119,005	$ 213,007

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	$ 96,036
2024	$ 99,415
2025	$ (9,147)
2026	$ 26,703
2027	.
Thereafter	$ -
Total	$ 213,007

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					
2019	$ (1,846)	4.0000	$ (461)	$ 0	0.0000
2020	(12,083)	4.0000	(3,021)	(3,020)	1.0000
2021	(3,822)	4.0000	(956)	(1,910)	2.0000
2022	(9,042)	3.0000	(3,014)	(6,028)	2.0000
Total			**$ (7,452)**	**$ (10,958)**	
Deferred Outflow (Inflow) Due to Assumption Changes					
2019	$ (2,206)	4.0000	$ (551)	$ 0	0.0000
2020	(1,977)	4.0000	(494)	(495)	1.0000
2021	137,113	4.0000	34,278	68,557	2.0000
2022	220,073	3.0000	73,358	146,715	2.0000
Total			**$ 106,591**	**$ 214,777**	
Deferred Outflow (Inflow) Due to Differences Between Projected and Actual Earnings on Plan Investments					
2018	$ (17,216)	5.0000	$ (3,444)	$ 0	0.0000
2019	671	5.0000	134	135	1.0000
2020	24,475	5.0000	4,895	9,790	2.0000
2021	(179,252)	5.0000	(35,850)	(107,552)	3.0000
2022	133,519	5.0000	26,704	106,815	4.0000
Total			**$ (7,561)**	**$ 9,188**	
Deferred Outflow (Inflow) Due to All Sources					
Total			**$ 91,578**	**$ 213,007**	

Statement of Fiduciary Net Position
(Dollars in Thousands)

	Market Value	
Assets in Trust	**June 30, 2022**	**June 30, 2021**
Cash, equivalents, short term securities	$ 16,177	$ 16,480
Fixed income	$ 222,439	$ 234,762
Equity	$ 489,555	$ 604,051
Private Markets	$ 247,026	$ 180,490
Other	$ -	$ -
Total Assets in Trust	**$ 975,197**	**$ 1,035,783**
Assets Receivable	$ 743	$ 555
Amounts Payable	$ 625	$ 622
Net Position Restricted for Pensions	**$ 975,315**	**$ 1,035,716**

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	$ 1,035,716	$ 787,322
2.	Adjustment to match beginning of year asset statement	$ -	$ -
3.	Fund balance at market value at beginning of year	$ 1,035,716	$ 787,322
4.	Contributions		
	a. Member	$ 12,843	$ 12,948
	b. Employer	$ 19,227	$ 19,351
	c. Other sources	$ -	$ -
	d. Total contributions	$ 32,070	$ 32,299
5.	Investment income		
	a. Investment income/(loss)	$ (62,508)	$ 239,635
	b. Investment expenses	$ (3,507)	$ (969)
	c. Net subtotal	$ (66,015)	$ 238,666
6.	Other	$ -	$ 1
7.	**Total additions:** *(4.d.) + (5.c.) + (6.)*	**$ (33,945)**	**$ 270,966**
8.	Benefits Paid		
	a. Annuity benefits	$ (23,372)	$ (20,088)
	b. Refunds	$ (2,713)	$ (2,140)
	c. Total benefits paid	$ (26,085)	$ (22,228)
9.	Expenses		
	a. Other	$ -	$ -
	b. Administrative	$ (371)	$ (344)
	c. Total expenses	$ (371)	$ (344)
10.	**Total deductions:** *(8.c.) + (9.c.)*	**$ (26,456)**	**$ (22,572)**
11.	Net increase (decrease) in net position: *(7.) + (10.)*	$ (60,401)	$ 248,394
12.	**Net position restricted for pensions**	**$ 975,315**	**$ 1,035,716**
13.	State Board of Investment calculated investment return	-6.4%	30.2%

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	$	36,877
2. Interest on the Total Pension Liability	$	66,604
3. Changes of benefit terms	$	-
4. Difference between expected and actual experience of the Total Pension Liability**	$	(9,042)
5. Changes of assumptions	$	220,073
6. Benefit payments, including refunds of employee contributions	$	(26,085)
7. Net change in total pension liability	$	288,427
8. Total pension liability – beginning	$	1,019,288
9. Total pension liability – ending	**$**	**1,307,715**
B. Plan fiduciary net position		
1. Contributions – employer	$	19,227
2. Contributions – employee	$	12,843
3. Net investment income	$	(66,015)
4. Benefit payments, including refunds of employee contributions	$	(26,085)
5. Pension Plan Administrative Expense	$	(371)
6. Other	$	-
7. Net change in plan fiduciary net position	$	(60,401)
8. Plan fiduciary net position – beginning	$	1,035,716
9. Plan fiduciary net position – ending	**$**	**975,315**
C. Net pension liability	**$**	**332,400**
D. Plan fiduciary net position as a percentage of the total pension liability		**74.58%**
E. Covered-employee payroll*	**$**	**220,292**
F. Net pension liability as a percentage of covered-employee payroll		**150.89%**

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

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

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

Notes to Schedule:

N/A

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

Last 10 Fiscal Years (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	$ 460,776	$ 453,232	$ 7,544	98.36%	$ 172,041	4.39%
2015	$ 506,191	$ 490,731	$ 15,460	96.95%	$ 179,623	8.61%
2016	$ 873,097	$ 507,783	$ 365,314	58.16%	$ 188,816	193.48%
2017	$ 887,461	$ 602,460	$ 285,001	67.89%	$ 200,103	142.43%
2018	$ 696,842	$ 680,395	$ 16,447	97.64%	$ 205,077	8.02%
2019	$ 758,268	$ 744,423	$ 13,845	98.17%	$ 214,151	6.47%
2020	$ 814,456	$ 787,322	$ 27,134	96.67%	$ 217,702	12.46%
2021	$ 1,019,288	$ 1,035,716	$ (16,428)	101.61%	$ 222,093	-7.40%
2022	$ 1,307,715	$ 975,315	$ 332,400	74.58%	$ 220,292	150.89%

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	$ 14,207	$ 14,498	$ (291)	$ 164,820	8.80%
2014	$ 14,606	$ 15,054	$ (448)	$ 172,041	8.75
2015	$ 13,759	$ 15,736	$ (1,977)	$ 179,623	8.76
2016	$ 16,446	$ 16,490	$ (44)	$ 188,816	8.73
2017	$ 17,269	$ 17,489	$ (220)	$ 200,103	8.74
2018	$ 19,031	$ 17,871	$ 1,160	$ 205,077	8.71
2019	$ 19,466	$ 18,676	$ 790	$ 214,151	8.72
2020	$ 19,593	$ 19,043	$ 550	$ 217,702	8.75
2021	$ 19,167	$ 19,351	$ (184)	$ 222,093	8.71
2022	$ 13,063	$ 19,227	$ (6,164)	$ 220,292	8.73

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 (30 years when plan is fully funded)
Asset Valuation Method	5-Year smoothed market; no corridor
Inflation	2.25%
Payroll Growth	3.00%
Salary Increases	3.00% to 11.00% including inflation
Investment Rate of Return	7.50%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2021 valuation pursuant to an experience study of the period 2015 - 2019.
Mortality	PUB-2010 annuitant generational Public Safety mortality table projected with mortality improvement scale MP-2020, from a base year of 2010. Male rates adjusted by a factor of 0.98.

Other Information:

Notes	The plan is assumed to pay a 2.00% post-retirement benefit increase for all years. See separate funding report as of June 30, 2021 for additional detail.

Schedule of Investment Returns Multiyear

Last 10 Fiscal Years

FY Ending June 30,	Annual Return[1]
2013	
2014	18.6 %
2015	4.4
2016	0.1
2017	15.2
2018	10.4
2019	7.4
2020	4.2
2021	30.2
2022	(6.4)

[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 Local Government Correctional Service Retirement 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 5.42% 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, employer, and state contributions will be made at the current statutory contribution rates. Based on these assumptions, the pension plan's fiduciary net position and future contributions were sufficient to finance the benefit payments through the year ending June 30, 2061. 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, 2061, 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 5.42%, 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 4.42%	Current Single Discount Rate Assumption 5.42%	1% Increase 6.42%
Total Pension Liability	$ 1,560,821	$ 1,307,715	$ 1,108,717
Net Position Restricted for Pensions	$ 975,315	$ 975,315	$ 975,315
Net Pension Liability	**$ 585,506**	**$ 332,400**	**$ 133,402**

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	**$ 1,019,288**	**$ 1,035,716**	**$ (16,428)**			
Changes for the Year:						
Service Cost	$ 36,877		$ 36,877			$ 36,877
Interest on Total Pension Liability	66,604		66,604			66,604
Interest on Fiduciary Net Position		$ 67,504	(67,504)			(67,504)
Changes in Benefit Terms	-		-			-
Liability Experience Gains and Losses	(9,042)		(9,042)	$ -	$ 6,028	(3,014)
Changes in Assumptions	220,073		220,073	146,715	-	73,358
Contributions - Employer		19,227	(19,227)			
Contributions - Employees		12,843	(12,843)			(12,843)
Asset Gain/(Loss)		(133,519)	133,519	106,815	-	26,704
Benefit Payouts	(26,085)	(26,085)				
Administrative Expenses		(371)	371			371
Other		-	-			-
Net Changes	**$ 288,427**	**$ (60,401)**	**$ 348,828**	**$ 253,530**	**$ 6,028**	**$ 120,553**
Balance End of Year	**$ 1,307,715**	**$ 975,315**	**$ 332,400**			

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

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

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)	Deferred Outflows	Deferred Inflows	Net Deferred Outflows Prior Year	Total Pension Expense*
Balance Beginning of Year	**$ 1,019,288**	**$ 1,035,716**	**$ (16,428)**				
Changes for the Year:							
Service Cost	$ 36,877		$ 36,877				$ 36,877
Interest on Total Pension Liability	66,604		66,604				66,604
Interest on Fiduciary Net Position		$ 67,504	(67,504)				(67,504)
Changes in Benefit Terms	-		-				-
Liability Experience Gains and Losses	(9,042)		(9,042)	$ -	$ 10,958	$ (9,368)	(7,452)
Changes in Assumptions	220,073		220,073	215,272	495	101,295	106,591
Contributions - Employer		19,227	(19,227)				
Contributions - Employees		12,843	(12,843)				(12,843)
Asset Gain/(Loss)		(133,519)	133,519	116,740	107,552	(131,892)	(7,561)
Benefit Payouts	(26,085)	(26,085)					
Administrative Expenses		(371)	371				371
Other		-	-				-
Net Changes	**$ 288,427**	**$ (60,401)**	**$ 348,828**				**$ 115,083**
Balance End of Year	**$ 1,307,715**	**$ 975,315**	**$ 332,400**	**$ 332,012**	**$ 119,005**	**$ (39,965)**	

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

Summary of Population Statistics

		Terminated		Recipients			
	Actives	Deferred Retirement	Other Non-Vested	Service Retirement	Disability Retirement	Survivor	Total
Members on July 1, 2021	**3,788**	**3,832**	**2,200**	**1,277**	**216**	**79**	**11,392**
New members	697						**697**
Return to active	43	(15)	(28)	0	0	0	**0**
Terminated non-vested	(448)	0	448	0	0	0	**0**
Service retirements	(97)	(53)	0	150	0	0	**0**
Terminated deferred	(266)	266	0	0	0	0	**0**
Terminated refund/transfer	(136)	(45)	(178)	0	0	0	**(359)**
Deaths	(7)	(10)	(3)	(20)	(4)	(1)	**(45)**
New beneficiary	0	0	0	0	0	9	**9**
Disabled	(10)	0	0	0	10	0	**0**
Data adjustments	0	154	41	0	1	0	**196**
Net change	(224)	297	280	130	7	8	**498**
Members on July 1, 2022	**3,564**	**4,129**	**2,480**	**1,407**	**223**	**87**	**11,890**

SECTION E

SUMMARY OF BENEFITS

Summary of Plan Provisions

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

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

Summary of Plan Provisions (Continued)

Retirement (Concluded)	
<u>Early retirement</u>	
Age/service requirement	Age 50 and vested.
Amount	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with actuarial reduction to commencement age assuming 3% augmentation to age 55 (2.50% if hired after June 30, 2006). Augmentation adjustment is phased out over a five-year period starting July 1, 2019, resulting in no augmentation adjustment after June 30, 2024.
<u>Form of payment</u>	Life annuity. Actuarially equivalent options are: 25%, 50%, 75% or 100% Joint and Survivor. If a Joint and Survivor benefit is elected and the beneficiary predeceases the annuitant, the annuitant's benefit increases to the Life Annuity amount. This "bounce back" is subsidized by the plan.
<u>Benefit increases</u>	Benefit recipients receive increases each year in January based upon 100% of the current Social Security increase, not less than 1.0% and not more than 2.5%, beginning January 1, 2019. If the funding status on a market value basis declines to 85% for two consecutive years or 80% for one year, the maximum increase will be lowered to 1.5%. A benefit recipient who has been receiving a benefit for at least 12 full months as of June 30 will receive a full increase. Members receiving benefits for at least one month but less than 12 full months as of June 30 will receive a pro rata increase.
Disability	
<u>Duty disability</u>	
Age/service requirement	Member who cannot perform his duties as a direct result of a disability relating to an act of duty specific to protecting the property and personal safety of others.
Amount	47.50% of Average Salary plus 1.90% of Average Salary for each year in excess of 25 years of Allowable Service (pro rata for completed months). Payment begins at disability and ends at age 65 or earlier if disability ceases or death occurs. Benefits may be paid upon re-employment but salary plus benefit cannot exceed current salary of position held at time of disability.
<u>Regular disability</u>	
Age/service requirement	At least one year of Allowable Service and a disability preventing member from performing normal duties that arise out of activities not related to covered employment or while at work, activities related to duties that do not present inherent dangers specific to occupation.

Summary of Plan Provisions (Continued)

Disability (Concluded)	
Amount	Normal Retirement Benefit based on Allowable Service (minimum of 10 years) and Average Salary at disability. Payment begins at disability and ends at age 65 or earlier if disability ceases or death occurs. Benefits may be paid upon re-employment but salary plus benefit cannot exceed current salary of position held at time of disability.
<u>Retirement benefit</u>	
Age/service requirement	Age 65 with continued disability.
Amount	Any optional annuity continues. Otherwise, the larger of the disability benefit paid before age 65 or the normal retirement benefit available at age 65, or an actuarially equivalent optional annuity.
<u>Form of payment</u>	Same as for retirement.
<u>Benefit increases</u>	Same as for retirement.
Death	
<u>Surviving spouse benefit</u>	
Age/service requirement	Vested active member at any age or vested former member age 50 or older who dies before retirement or disability benefit commences. If an active member dies, benefits may commence immediately, regardless of age.
Amount	Surviving spouse receives the 100% joint and survivor benefit using the Normal Retirement formula above. If commencement is prior to age 55, the appropriate early retirement formula described above applies except that one-half the monthly reduction factor is used from age 50 to the commencement age. In lieu of this benefit, the surviving spouse may elect a refund of contributions with interest or an actuarially equivalent term certain annuity (lump sum payable to estate at death).
Benefit increases	Same as for retirement.
<u>Surviving dependent children's benefit</u>	
Age/service requirement	If no surviving spouse, all dependent children (biological or adopted) below age 20 who are dependent for more than half of their support on deceased member.
Amount	Actuarially equivalent to surviving spouse 100% joint and survivor annuity payable to the later of age 20 or five years. The amount is to be proportionally divided among surviving children.

Summary of Plan Provisions (Continued)

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

Summary of Plan Provisions (Concluded)

Combined service annuity	Members are eligible for combined service benefits if they: (a.) Meet minimum retirement age for each plan participated in and total public service meets the vesting requirements of each plan; or (b.) Have three or more years of service under PERA and the covered fund(s) (if hired prior to July 1, 2010). Other requirements for combined service include: (a.) Member must have at least six months of allowable service credit in each plan worked under; and (b.) Member may not be in receipt of a benefit from another plan. Members who meet the above requirements must have their benefit based on the following: (a.) Allowable service in all covered plans is combined in order to determine eligibility for early retirement. (b.) Average salary is based on the high five consecutive years during their entire service in all covered plans.
Changes in plan provisions	There were no changes in plan provisions since the prior valuation.

SECTION F

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

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

Actuarial Cost Method

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

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

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

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

Valuation of Future Post-Retirement Benefit Increases

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

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

- Future investment returns of 6.50%.
- Liabilities and normal cost based on statutory funding assumptions.
    - Specifically, a discount rate of 7.50% was used.
- Open group; stable active population (new member profile based on average new members hired in recent years).

Based on these assumptions and methods, the projection indicates that this plan is expected to deteriorate to the funding ratio threshold required to lower the maximum benefit increase to 1.50% in 2055. This COLA change is reflected in the calculations in this report.

Asset Valuation Method

Fair value of assets.

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

The following assumptions were used in valuing the liabilities and benefits under the plan. The assumptions are based on the last experience study dated July 10, 2020, and a review of inflation and investment assumptions dated July 12, 2022. 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.

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	5.42% per annum.
Benefit increases after retirement	2.00% per annum through December 31, 2054; 1.50% per annum thereafter.
Salary increases	Reported salary at valuation date increased according to the rate table to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for members with less than one year of service earned during the year.
Inflation	2.25% per year.
Payroll growth	3.00% per year.
Mortality rates	
Healthy pre-retirement	Pub-2010 Public Safety Mortality Table adjusted for mortality improvements using projection scale MP-2021.
Healthy post-retirement	Pub-2010 Healthy Retired Public Safety Mortality Table adjusted for mortality improvements using projection scale MP-2021. Male rates are adjusted by a factor of 0.98.
Disabled	Pub-2010 Public Safety Disabled Retiree Mortality Table, adjusted for mortality improvements using projection scale MP-2021. Male rates are adjusted by a factor of 1.05.
Notes	The Pub-2010 employee mortality table as published by the Society of Actuaries (SOA) contains mortality rates for ages 18 to 80 and the annuitant mortality table contains mortality rates for ages 50 to 120. We have extended the annuitant mortality table as needed for members and beneficiaries younger than age 50 who are receiving a benefit by deriving rates based on the employee table and the juvenile table. Similarly, we have extended the employee table as needed for members older than age 80 by deriving rates based on the annuitant table.
Retirement	Members retiring from active status are assumed to retire according to the age related rates shown in the rate table. Members who have attained the highest assumed retirement age are assumed to retire in one year. Note that plan changes reflected in this report may result in behavior changes that are not anticipated in the current retirement rates.
Withdrawal	Select and Ultimate rates based on actual experience. Ultimate rates after the third year are shown in the rate table. Select rates in the first three years are:

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

Summary of Actuarial Assumptions (Continued)

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

Summary of Actuarial Assumptions (Continued)

Unknown data for certain members	To prepare this report, GRS has used and relied on participant data supplied by the Fund. Although GRS has reviewed the data in accordance with Actuarial Standards of Practice No. 23, GRS has not verified or audited any of the data or information provided. In cases where submitted data was missing or incomplete, the following assumptions, based on average results for applicable members, were applied: <u>Data for active members:</u> There were 88 members reported with a salary less than or equal to $100 (after annualization). We used prior year salary (37 members), if available; otherwise high five salary with a 10% load to account for salary increases (47 members). If neither prior year salary or high five salary was available, we assumed a value of $43,000. There were three members reported without a date of birth; we assumed the members were hired at age 30. There were 114 members reported without a gender; male was assumed. <u>Data for terminated members:</u> We calculated benefits for these members using the reported Average Salary and credited service. There were no members reported without Average Salary. If credited service was not reported (37 members), we used elapsed time from hire date to termination date (19 members), otherwise we assumed nine years of service. If termination date was not reported (21 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 no members reported without a date of birth. There were nine members reported without a gender; male was assumed. <u>Data for retired members:</u> There were three members reported without a gender; male was assumed. There were no members reported without a date of birth or benefit. Because PERA reclassifies disabled members as retirees once the member reaches Normal Retirement Age, we compare the members that PERA reports as retirees to our disabled group from the last valuation. If a member was disabled in the prior valuation, we reclassify that member as a disabled retiree in this year's valuation. We reclassified 92 retirees as disabled retirees in this valuation.
Changes in actuarial assumptions	The mortality improvement scale was changed from MP-2020 to MP-2021. The Single Discount Rate was changed from 6.50% to 5.42%. The benefit increase assumption was changed from 2.00% per annum to 2.00% per annum through December 31, 2054 and 1.50% per annum thereafter.

Summary of Actuarial Assumptions (Continued)

	Percentage of Members Dying Each Year*					
Age in	Healthy Post-Retirement Mortality**		Healthy Pre-Retirement Mortality**		Disability Mortality**	
2022	Male	Female	Male	Female	Male	Female
20	0.04%	0.02%	0.04%	0.02%	0.11%	0.05%
25	0.04	0.02	0.04	0.02	0.12	0.08
30	0.06	0.04	0.06	0.04	0.18	0.13
35	0.07	0.05	0.07	0.05	0.21	0.16
40	0.08	0.06	0.07	0.05	0.22	0.18
45	0.12	0.08	0.08	0.06	0.25	0.20
50	0.17	0.14	0.11	0.08	0.33	0.28
55	0.28	0.25	0.17	0.12	0.48	0.45
60	0.50	0.44	0.26	0.16	0.77	0.69
65	0.81	0.68	0.39	0.20	1.17	0.93
70	1.30	1.08	0.65	0.37	1.70	1.31
75	2.26	1.89	1.17	0.75	2.77	2.02
80	4.16	3.43	2.22	1.56	4.89	3.43
85	7.73	6.14	7.06	5.38	8.35	6.14
90	13.90	10.83	14.19	10.83	14.90	10.83

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

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

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

Summary of Actuarial Assumptions (Concluded)

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

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

SECTION G

CALCULATION OF THE SINGLE DISCOUNT RATE

Calculation of the Single Discount Rate

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

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

For the purpose of this calculation, the expected rate of return on pension plan investments is 6.50%; the municipal bond rate is 3.69%; and **the resulting single discount rate is 5.42%**.

If the funding status based on the market value of assets declines to 85% for two consecutive years or 80% for one year, the maximum increase of 2.50% will be lowered to 1.50%. The benefit payments in this projection are based on the assumption that benefit increases (currently subject to a maximum of 2.50%) will equal 2.00% per year through 2054 and 1.50% per year thereafter.

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

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

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

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

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

	Payroll			Projected Contributions			
Fiscal Year Ending	Payroll for Current Employees	Payroll for New Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Contributions on Future Payroll Toward Current UAL*	Total Contributions
2022	$ 220,292	$ -	$ 220,292				
2023	$ 214,814	$ 9,199	$ 224,013	$ 12,524	$ 18,796	$ -	$ 31,320
2024	$ 199,474	$ 31,259	$ 230,733	$ 11,629	$ 17,454	$ -	$ 29,083
2025	$ 187,736	$ 49,919	$ 237,655	$ 10,945	$ 16,427	$ -	$ 27,372
2026	$ 178,011	$ 66,774	$ 244,785	$ 10,378	$ 15,576	$ -	$ 25,954
2027	$ 169,093	$ 83,035	$ 252,128	$ 9,858	$ 14,796	$ -	$ 24,654
2028	$ 160,740	$ 98,952	$ 259,692	$ 9,371	$ 14,065	$ -	$ 23,436
2029	$ 152,976	$ 114,507	$ 267,483	$ 8,918	$ 13,385	$ -	$ 22,303
2030	$ 145,605	$ 129,902	$ 275,507	$ 8,489	$ 12,740	$ -	$ 21,229
2031	$ 138,461	$ 145,312	$ 283,773	$ 8,072	$ 12,115	$ -	$ 20,187
2032	$ 131,511	$ 160,775	$ 292,286	$ 7,667	$ 11,507	$ -	$ 19,174
2033	$ 124,803	$ 176,251	$ 301,054	$ 7,276	$ 10,920	$ -	$ 18,196
2034	$ 118,288	$ 191,798	$ 310,086	$ 6,896	$ 10,350	$ -	$ 17,246
2035	$ 111,902	$ 207,487	$ 319,389	$ 6,524	$ 9,791	$ -	$ 16,315
2036	$ 105,665	$ 223,305	$ 328,970	$ 6,160	$ 9,246	$ -	$ 15,406
2037	$ 99,592	$ 239,247	$ 338,839	$ 5,806	$ 8,714	$ -	$ 14,520
2038	$ 93,712	$ 255,292	$ 349,004	$ 5,463	$ 8,200	$ -	$ 13,663
2039	$ 88,001	$ 271,474	$ 359,475	$ 5,130	$ 7,700	$ -	$ 12,830
2040	$ 82,383	$ 287,876	$ 370,259	$ 4,803	$ 7,209	$ -	$ 12,012
2041	$ 76,859	$ 304,508	$ 381,367	$ 4,481	$ 6,725	$ -	$ 11,206
2042	$ 71,430	$ 321,378	$ 392,808	$ 4,164	$ 6,250	$ -	$ 10,414
2043	$ 66,143	$ 338,449	$ 404,592	$ 3,856	$ 5,787	$ -	$ 9,643
2044	$ 60,923	$ 355,807	$ 416,730	$ 3,552	$ 5,331	$ -	$ 8,883
2045	$ 55,717	$ 373,514	$ 429,231	$ 3,248	$ 4,875	$ -	$ 8,123
2046	$ 50,630	$ 391,478	$ 442,108	$ 2,952	$ 4,430	$ -	$ 7,382
2047	$ 45,658	$ 409,714	$ 455,372	$ 2,662	$ 3,995	$ -	$ 6,657
2048	$ 40,870	$ 428,163	$ 469,033	$ 2,383	$ 3,576	$ -	$ 5,959
2049	$ 36,323	$ 446,781	$ 483,104	$ 2,118	$ 3,178	$ -	$ 5,296
2050	$ 32,017	$ 465,580	$ 497,597	$ 1,867	$ 2,802	$ -	$ 4,669
2051	$ 27,981	$ 484,544	$ 512,525	$ 1,631	$ 2,448	$ -	$ 4,079
2052	$ 24,160	$ 503,741	$ 527,901	$ 1,409	$ 2,114	$ -	$ 3,523
2053	$ 20,616	$ 523,122	$ 543,738	$ 1,202	$ 1,804	$ -	$ 3,006
2054	$ 17,356	$ 542,694	$ 560,050	$ 1,012	$ 1,519	$ -	$ 2,531
2055	$ 14,359	$ 562,492	$ 576,851	$ 837	$ 1,256	$ -	$ 2,093
2056	$ 11,684	$ 582,473	$ 594,157	$ 681	$ 1,022	$ -	$ 1,703
2057	$ 9,346	$ 602,635	$ 611,981	$ 545	$ 818	$ -	$ 1,363
2058	$ 7,353	$ 622,988	$ 630,341	$ 429	$ 643	$ -	$ 1,072
2059	$ 5,672	$ 643,579	$ 649,251	$ 331	$ 496	$ -	$ 827
2060	$ 4,276	$ 664,453	$ 668,729	$ 249	$ 374	$ -	$ 623
2061	$ 3,148	$ 685,643	$ 688,791	$ 184	$ 275	$ -	$ 459
2062	$ 2,247	$ 707,207	$ 709,454	$ 131	$ 197	$ -	$ 328
2063	$ 1,547	$ 729,191	$ 730,738	$ 90	$ 135	$ -	$ 225
2064	$ 1,027	$ 751,633	$ 752,660	$ 60	$ 90	$ -	$ 150
2065	$ 653	$ 774,587	$ 775,240	$ 38	$ 57	$ -	$ 95
2066	$ 397	$ 798,100	$ 798,497	$ 23	$ 35	$ -	$ 58
2067	$ 229	$ 822,223	$ 822,452	$ 13	$ 20	$ -	$ 33
2068	$ 126	$ 846,999	$ 847,125	$ 7	$ 11	$ -	$ 18
2069	$ 66	$ 872,473	$ 872,539	$ 4	$ 6	$ -	$ 10
2070	$ 31	$ 898,684	$ 898,715	$ 2	$ 3	$ -	$ 5
2071	$ 13	$ 925,664	$ 925,677	$ 1	$ 1	$ -	$ 2
2072	$ 5	$ 953,442	$ 953,447	$ -	$ -	$ -	$ -

* *Equal to total contributions (14.58% of payroll for new employees) net of normal cost and expenses (15.56% of payroll), not less than 0.00%.*

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

	Payroll			Projected Contributions			
Fiscal Year Ending	Payroll for Current Employees	Payroll for New Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Contributions on Future Payroll Toward Current UAL*	Total Contributions
2073	$ 1	$ 982,050	$ 982,051	$ -	$ -	$ -	$ -
2074	$ -	$ 1,011,512	$ 1,011,512	$ -	$ -	$ -	$ -
2075	$ -	$ 1,041,857	$ 1,041,857	$ -	$ -	$ -	$ -
2076	$ -	$ 1,073,113	$ 1,073,113	$ -	$ -	$ -	$ -
2077	$ -	$ 1,105,307	$ 1,105,307	$ -	$ -	$ -	$ -
2078	$ -	$ 1,138,466	$ 1,138,466	$ -	$ -	$ -	$ -
2079	$ -	$ 1,172,620	$ 1,172,620	$ -	$ -	$ -	$ -
2080	$ -	$ 1,207,798	$ 1,207,798	$ -	$ -	$ -	$ -
2081	$ -	$ 1,244,032	$ 1,244,032	$ -	$ -	$ -	$ -
2082	$ -	$ 1,281,353	$ 1,281,353	$ -	$ -	$ -	$ -
2083	$ -	$ 1,319,794	$ 1,319,794	$ -	$ -	$ -	$ -
2084	$ -	$ 1,359,388	$ 1,359,388	$ -	$ -	$ -	$ -
2085	$ -	$ 1,400,169	$ 1,400,169	$ -	$ -	$ -	$ -
2086	$ -	$ 1,442,174	$ 1,442,174	$ -	$ -	$ -	$ -
2087	$ -	$ 1,485,440	$ 1,485,440	$ -	$ -	$ -	$ -
2088	$ -	$ 1,530,003	$ 1,530,003	$ -	$ -	$ -	$ -
2089	$ -	$ 1,575,903	$ 1,575,903	$ -	$ -	$ -	$ -
2090	$ -	$ 1,623,180	$ 1,623,180	$ -	$ -	$ -	$ -
2091	$ -	$ 1,671,875	$ 1,671,875	$ -	$ -	$ -	$ -
2092	$ -	$ 1,722,032	$ 1,722,032	$ -	$ -	$ -	$ -
2093	$ -	$ 1,773,693	$ 1,773,693	$ -	$ -	$ -	$ -
2094	$ -	$ 1,826,903	$ 1,826,903	$ -	$ -	$ -	$ -
2095	$ -	$ 1,881,710	$ 1,881,710	$ -	$ -	$ -	$ -
2096	$ -	$ 1,938,162	$ 1,938,162	$ -	$ -	$ -	$ -
2097	$ -	$ 1,996,307	$ 1,996,307	$ -	$ -	$ -	$ -
2098	$ -	$ 2,056,196	$ 2,056,196	$ -	$ -	$ -	$ -
2099	$ -	$ 2,117,882	$ 2,117,882	$ -	$ -	$ -	$ -
2100	$ -	$ 2,181,418	$ 2,181,418	$ -	$ -	$ -	$ -
2101	$ -	$ 2,246,861	$ 2,246,861	$ -	$ -	$ -	$ -
2102	$ -	$ 2,314,267	$ 2,314,267	$ -	$ -	$ -	$ -
2103	$ -	$ 2,383,695	$ 2,383,695	$ -	$ -	$ -	$ -
2104	$ -	$ 2,455,205	$ 2,455,205	$ -	$ -	$ -	$ -
2105	$ -	$ 2,528,861	$ 2,528,861	$ -	$ -	$ -	$ -
2106	$ -	$ 2,604,727	$ 2,604,727	$ -	$ -	$ -	$ -
2107	$ -	$ 2,682,869	$ 2,682,869	$ -	$ -	$ -	$ -
2108	$ -	$ 2,763,355	$ 2,763,355	$ -	$ -	$ -	$ -
2109	$ -	$ 2,846,256	$ 2,846,256	$ -	$ -	$ -	$ -
2110	$ -	$ 2,931,644	$ 2,931,644	$ -	$ -	$ -	$ -
2111	$ -	$ 3,019,593	$ 3,019,593	$ -	$ -	$ -	$ -
2112	$ -	$ 3,110,181	$ 3,110,181	$ -	$ -	$ -	$ -
2113	$ -	$ 3,203,486	$ 3,203,486	$ -	$ -	$ -	$ -
2114	$ -	$ 3,299,591	$ 3,299,591	$ -	$ -	$ -	$ -
2115	$ -	$ 3,398,578	$ 3,398,578	$ -	$ -	$ -	$ -
2116	$ -	$ 3,500,536	$ 3,500,536	$ -	$ -	$ -	$ -
2117	$ -	$ 3,605,552	$ 3,605,552	$ -	$ -	$ -	$ -
2118	$ -	$ 3,713,718	$ 3,713,718	$ -	$ -	$ -	$ -
2119	$ -	$ 3,825,130	$ 3,825,130	$ -	$ -	$ -	$ -
2120	$ -	$ 3,939,884	$ 3,939,884	$ -	$ -	$ -	$ -
2121	$ -	$ 4,058,080	$ 4,058,080	$ -	$ -	$ -	$ -
2122	$ -	$ 4,179,823	$ 4,179,823	$ -	$ -	$ -	$ -

* *Equal to total contributions (14.58% of payroll for new employees) net of normal cost and expenses (15.56% of payroll), not less than 0.00%.*

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

Fiscal Year Ending	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 6.50%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2023	$ 975,315	$ 31,320	$ 31,667	$ 344	$ 63,373	$ 1,037,997
2024	$ 1,037,997	$ 29,083	$ 34,746	$ 319	$ 67,278	$ 1,099,293
2025	$ 1,099,293	$ 27,372	$ 38,314	$ 300	$ 71,094	$ 1,159,145
2026	$ 1,159,145	$ 25,954	$ 42,164	$ 285	$ 74,817	$ 1,217,467
2027	$ 1,217,467	$ 24,654	$ 46,085	$ 271	$ 78,441	$ 1,274,206
2028	$ 1,274,206	$ 23,436	$ 50,344	$ 257	$ 81,955	$ 1,328,996
2029	$ 1,328,996	$ 22,303	$ 54,988	$ 245	$ 85,332	$ 1,381,398
2030	$ 1,381,398	$ 21,229	$ 59,713	$ 233	$ 88,553	$ 1,431,234
2031	$ 1,431,234	$ 20,187	$ 64,672	$ 222	$ 91,600	$ 1,478,127
2032	$ 1,478,127	$ 19,174	$ 69,562	$ 210	$ 94,460	$ 1,521,989
2033	$ 1,521,989	$ 18,196	$ 75,122	$ 200	$ 97,102	$ 1,561,965
2034	$ 1,561,965	$ 17,246	$ 80,696	$ 189	$ 99,492	$ 1,597,818
2035	$ 1,597,818	$ 16,315	$ 86,224	$ 179	$ 101,616	$ 1,629,346
2036	$ 1,629,346	$ 15,406	$ 91,833	$ 169	$ 103,458	$ 1,656,208
2037	$ 1,656,208	$ 14,520	$ 97,668	$ 159	$ 104,989	$ 1,677,890
2038	$ 1,677,890	$ 13,663	$ 103,377	$ 150	$ 106,189	$ 1,694,215
2039	$ 1,694,215	$ 12,830	$ 109,222	$ 141	$ 107,036	$ 1,704,718
2040	$ 1,704,718	$ 12,012	$ 114,891	$ 132	$ 107,512	$ 1,709,219
2041	$ 1,709,219	$ 11,206	$ 120,492	$ 123	$ 107,600	$ 1,707,410
2042	$ 1,707,410	$ 10,414	$ 125,790	$ 114	$ 107,288	$ 1,699,208
2043	$ 1,699,208	$ 9,643	$ 130,759	$ 106	$ 106,571	$ 1,684,557
2044	$ 1,684,557	$ 8,883	$ 135,773	$ 97	$ 105,434	$ 1,663,004
2045	$ 1,663,004	$ 8,123	$ 140,970	$ 89	$ 103,843	$ 1,633,911
2046	$ 1,633,911	$ 7,382	$ 145,950	$ 81	$ 101,769	$ 1,597,031
2047	$ 1,597,031	$ 6,657	$ 150,903	$ 73	$ 99,191	$ 1,551,903
2048	$ 1,551,903	$ 5,959	$ 155,525	$ 65	$ 96,088	$ 1,498,360
2049	$ 1,498,360	$ 5,296	$ 159,737	$ 58	$ 92,452	$ 1,436,313
2050	$ 1,436,313	$ 4,669	$ 163,562	$ 51	$ 88,276	$ 1,365,645
2051	$ 1,365,645	$ 4,079	$ 166,887	$ 45	$ 83,558	$ 1,286,350
2052	$ 1,286,350	$ 3,523	$ 169,841	$ 39	$ 78,292	$ 1,198,285
2053	$ 1,198,285	$ 3,006	$ 172,321	$ 33	$ 72,472	$ 1,101,409
2054	$ 1,101,409	$ 2,531	$ 174,268	$ 28	$ 66,097	$ 995,741
2055	$ 995,741	$ 2,093	$ 175,692	$ 23	$ 59,170	$ 881,289
2056	$ 881,289	$ 1,703	$ 175,753	$ 19	$ 51,716	$ 758,936
2057	$ 758,936	$ 1,363	$ 174,717	$ 15	$ 43,785	$ 629,352
2058	$ 629,352	$ 1,072	$ 173,103	$ 12	$ 35,405	$ 492,714
2059	$ 492,714	$ 827	$ 170,950	$ 9	$ 26,585	$ 349,167
2060	$ 349,167	$ 623	$ 168,317	$ 7	$ 17,332	$ 198,798
2061	$ 198,798	$ 459	$ 165,273	$ 5	$ 7,650	$ 41,629
2062	$ 41,629	$ 328	$ 161,855	$ 4	$ -	$ -
2063	$ -	$ 225	$ 158,087	$ 2	$ -	$ -
2064	$ -	$ 150	$ 153,992	$ 2	$ -	$ -
2065	$ -	$ 95	$ 149,605	$ 1	$ -	$ -
2066	$ -	$ 58	$ 144,960	$ 1	$ -	$ -
2067	$ -	$ 33	$ 140,091	$ -	$ -	$ -
2068	$ -	$ 18	$ 135,032	$ -	$ -	$ -
2069	$ -	$ 10	$ 129,812	$ -	$ -	$ -
2070	$ -	$ 5	$ 124,461	$ -	$ -	$ -
2071	$ -	$ 2	$ 119,004	$ -	$ -	$ -
2072	$ -	$ -	$ 113,462	$ -	$ -	$ -

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

Fiscal Year Ending	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 6.50%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2073	$ -	$ -	$ 107,857	$ -	$ -	$ -
2074	$ -	$ -	$ 102,209	$ -	$ -	$ -
2075	$ -	$ -	$ 96,539	$ -	$ -	$ -
2076	$ -	$ -	$ 90,867	$ -	$ -	$ -
2077	$ -	$ -	$ 85,215	$ -	$ -	$ -
2078	$ -	$ -	$ 79,602	$ -	$ -	$ -
2079	$ -	$ -	$ 74,051	$ -	$ -	$ -
2080	$ -	$ -	$ 68,582	$ -	$ -	$ -
2081	$ -	$ -	$ 63,214	$ -	$ -	$ -
2082	$ -	$ -	$ 57,969	$ -	$ -	$ -
2083	$ -	$ -	$ 52,867	$ -	$ -	$ -
2084	$ -	$ -	$ 47,931	$ -	$ -	$ -
2085	$ -	$ -	$ 43,181	$ -	$ -	$ -
2086	$ -	$ -	$ 38,638	$ -	$ -	$ -
2087	$ -	$ -	$ 34,325	$ -	$ -	$ -
2088	$ -	$ -	$ 30,259	$ -	$ -	$ -
2089	$ -	$ -	$ 26,456	$ -	$ -	$ -
2090	$ -	$ -	$ 22,929	$ -	$ -	$ -
2091	$ -	$ -	$ 19,688	$ -	$ -	$ -
2092	$ -	$ -	$ 16,738	$ -	$ -	$ -
2093	$ -	$ -	$ 14,080	$ -	$ -	$ -
2094	$ -	$ -	$ 11,714	$ -	$ -	$ -
2095	$ -	$ -	$ 9,632	$ -	$ -	$ -
2096	$ -	$ -	$ 7,822	$ -	$ -	$ -
2097	$ -	$ -	$ 6,271	$ -	$ -	$ -
2098	$ -	$ -	$ 4,959	$ -	$ -	$ -
2099	$ -	$ -	$ 3,866	$ -	$ -	$ -
2100	$ -	$ -	$ 2,969	$ -	$ -	$ -
2101	$ -	$ -	$ 2,245	$ -	$ -	$ -
2102	$ -	$ -	$ 1,669	$ -	$ -	$ -
2103	$ -	$ -	$ 1,220	$ -	$ -	$ -
2104	$ -	$ -	$ 875	$ -	$ -	$ -
2105	$ -	$ -	$ 617	$ -	$ -	$ -
2106	$ -	$ -	$ 426	$ -	$ -	$ -
2107	$ -	$ -	$ 289	$ -	$ -	$ -
2108	$ -	$ -	$ 192	$ -	$ -	$ -
2109	$ -	$ -	$ 125	$ -	$ -	$ -
2110	$ -	$ -	$ 80	$ -	$ -	$ -
2111	$ -	$ -	$ 50	$ -	$ -	$ -
2112	$ -	$ -	$ 31	$ -	$ -	$ -
2113	$ -	$ -	$ 19	$ -	$ -	$ -
2114	$ -	$ -	$ 11	$ -	$ -	$ -
2115	$ -	$ -	$ 7	$ -	$ -	$ -
2116	$ -	$ -	$ 4	$ -	$ -	$ -
2117	$ -	$ -	$ 2	$ -	$ -	$ -
2118	$ -	$ -	$ 1	$ -	$ -	$ -
2119	$ -	$ -	$ 1	$ -	$ -	$ -
2120	$ -	$ -	$ -	$ -	$ -	$ -
2121	$ -	$ -	$ -	$ -	$ -	$ -
2122	$ -	$ -	$ -	$ -	$ -	$ -

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	$ 975,315	$ 31,667	$ 31,667	$ 0	$ 30,685	$ 0	$ 30,842
2024	1,037,998	34,746	34,746	0	31,614	0	32,100
2025	1,099,294	38,314	38,314	0	32,733	0	33,575
2026	1,159,146	42,164	42,164	0	33,824	0	35,049
2027	1,217,468	46,085	46,085	0	34,712	0	36,337
2028	1,274,208	50,344	50,344	0	35,606	0	37,653
2029	1,328,997	54,988	54,988	0	36,517	0	39,011
2030	1,381,400	59,713	59,713	0	37,235	0	40,184
2031	1,431,236	64,672	64,672	0	37,866	0	41,282
2032	1,478,131	69,562	69,562	0	38,243	0	42,120
2033	1,521,992	75,122	75,122	0	38,779	0	43,146
2034	1,561,969	80,696	80,696	0	39,114	0	43,963
2035	1,597,823	86,224	86,224	0	39,243	0	44,559
2036	1,629,352	91,833	91,833	0	39,245	0	45,016
2037	1,656,213	97,668	97,668	0	39,191	0	45,414
2038	1,677,895	103,377	103,377	0	38,950	0	45,595
2039	1,694,220	109,222	109,222	0	38,641	0	45,695
2040	1,704,724	114,891	114,891	0	38,165	0	45,594
2041	1,709,225	120,492	120,492	0	37,583	0	45,358
2042	1,707,415	125,790	125,790	0	36,841	0	44,916
2043	1,699,213	130,759	130,759	0	35,959	0	44,288
2044	1,684,563	135,773	135,773	0	35,059	0	43,621
2045	1,663,010	140,970	140,970	0	34,179	0	42,961
2046	1,633,918	145,950	145,950	0	33,227	0	42,191
2047	1,597,038	150,903	150,903	0	32,258	0	41,379
2048	1,551,910	155,525	155,525	0	31,217	0	40,452
2049	1,498,366	159,737	159,737	0	30,105	0	39,410
2050	1,436,319	163,562	163,562	0	28,945	0	38,278
2051	1,365,650	166,887	166,887	0	27,731	0	37,047
2052	1,286,356	169,841	169,841	0	26,499	0	35,764
2053	1,198,290	172,321	172,321	0	25,245	0	34,419
2054	1,101,414	174,268	174,268	0	23,972	0	33,017
2055	995,746	175,692	175,692	0	22,693	0	31,575
2056	881,294	175,753	175,753	0	21,315	0	29,961
2057	758,942	174,717	174,717	0	19,896	0	28,252
2058	629,359	173,103	173,103	0	18,509	0	26,551
2059	492,721	170,950	170,950	0	17,164	0	24,872
2060	349,174	168,317	168,317	0	15,868	0	23,229
2061	198,806	165,273	165,273	0	14,630	0	21,636
2062	41,636	161,855	41,636	120,219	3,461	28,732	20,099
2063	0	158,087	0	158,087	0	36,438	18,621
2064	0	153,992	0	153,992	0	34,231	17,205
2065	0	149,605	0	149,605	0	32,072	15,856
2066	0	144,960	0	144,960	0	29,970	14,573
2067	0	140,091	0	140,091	0	27,933	13,359
2068	0	135,032	0	135,032	0	25,966	12,214
2069	0	129,812	0	129,812	0	24,074	11,138
2070	0	124,461	0	124,461	0	22,260	10,130
2071	0	119,004	0	119,004	0	20,527	9,187
2072	0	113,462	0	113,462	0	18,874	8,309

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

Fiscal Year Ending	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^((a)-.5)	(g)=(e)*vf ^((a)-.5)	(h)=(c)/(1+sdr)^(a-.5)
2073	$ -	$ 107,857	$ -	$ 107,857	$ -	$ 17,304	$ 7,492
2074	0	102,209	0	102,209	0	15,814	6,734
2075	0	96,539	0	96,539	0	14,405	6,034
2076	0	90,867	0	90,867	0	13,076	5,387
2077	0	85,215	0	85,215	0	11,826	4,792
2078	0	79,602	0	79,602	0	10,654	4,246
2079	0	74,051	0	74,051	0	9,559	3,747
2080	0	68,582	0	68,582	0	8,538	3,292
2081	0	63,214	0	63,214	0	7,589	2,878
2082	0	57,969	0	57,969	0	6,712	2,503
2083	0	52,867	0	52,867	0	5,903	2,166
2084	0	47,931	0	47,931	0	5,162	1,862
2085	0	43,181	0	43,181	0	4,485	1,592
2086	0	38,638	0	38,638	0	3,870	1,351
2087	0	34,325	0	34,325	0	3,316	1,138
2088	0	30,259	0	30,259	0	2,819	952
2089	0	26,456	0	26,456	0	2,377	789
2090	0	22,929	0	22,929	0	1,987	649
2091	0	19,688	0	19,688	0	1,645	529
2092	0	16,738	0	16,738	0	1,349	426
2093	0	14,080	0	14,080	0	1,094	340
2094	0	11,714	0	11,714	0	878	268
2095	0	9,632	0	9,632	0	696	209
2096	0	7,822	0	7,822	0	545	161
2097	0	6,271	0	6,271	0	422	123
2098	0	4,959	0	4,959	0	322	92
2099	0	3,866	0	3,866	0	242	68
2100	0	2,969	0	2,969	0	179	50
2101	0	2,245	0	2,245	0	131	36
2102	0	1,669	0	1,669	0	94	25
2103	0	1,220	0	1,220	0	66	17
2104	0	875	0	875	0	46	12
2105	0	617	0	617	0	31	8
2106	0	426	0	426	0	21	5
2107	0	289	0	289	0	14	3
2108	0	192	0	192	0	9	2
2109	0	125	0	125	0	5	1
2110	0	80	0	80	0	3	1
2111	0	50	0	50	0	2	0
2112	0	31	0	31	0	1	0
2113	0	19	0	19	0	1	0
2114	0	11	0	11	0	0	0
2115	0	7	0	7	0	0	0
2116	0	4	0	4	0	0	0
2117	0	2	0	2	0	0	0
2118	0	1	0	1	0	0	0
2119	0	1	0	1	0	0	0
2120	0	0	0	0	0	0	0
2121	0	0	0	0	0	0	0
2122	0	0	0	0	0	0	0
				Totals	$ 1,232,714	$ 454,270	$ 1,686,984

SECTION H

GLOSSARY OF TERMS

Glossary of Terms

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

Glossary of Terms

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

Glossary of Terms

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

Glossary of Terms

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