Police and Firemen's Retirement System of New Jersey

Governmental Accounting Standards Board Statements 67 and 68 Actuarial Valuation as of June 30, 2023

Segal

Segal

December 21, 2023

Police and Firemen's Retirement System of New Jersey
50 West State Street, Trenton, NJ 08625

Dear Board Members:

We are pleased to submit this Governmental Accounting Standards Board Statements 67 and 68 (GASB 67 and 68) Actuarial Valuation based on a June 30, 2023 measurement date for employer reporting as of June 30, 2023. It contains various information that will need to be disclosed in order for Police and Firemen's Retirement System of New Jersey employers to comply with GASB 67 and 68. Please refer to the Police and Firemen's Retirement System of New Jersey Actuarial Valuation and Review as of July 1, 2022, dated December 20, 2022, for the data, assumptions, and plan of benefits underlying these calculations.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist the sponsors in preparing their financial report for their liabilities associated with the Police and Firemen's Retirement System of New Jersey. The census and financial information on which our calculations were based were provided by the Division of Pensions and Benefits. That assistance is gratefully acknowledged.
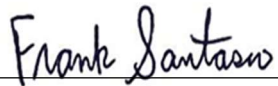
The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law.

The actuarial calculations were completed under the supervision of Jonathan Scarpa, FSA, EA, MAAA. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of my knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in my opinion, the assumptions as approved by the Board are reasonably related to the experience of and expectations for Police and Firemen's Retirement System of New Jersey. In addition, in my opinion, the combined effect of these assumptions is expected to have no significant bias.

We look forward to reviewing this report with you and to answering any questions.

Sincerely,

Segal

_____
Frank Santasiero, FSA, FCA, EA, MAAA
Vice President and Actuary

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Jonathan Scarpa, FSA, EA, MAAA
Vice President and Actuary

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Actuarial Valuation Summary

Purpose and basis

This report has been prepared by Segal to present certain disclosure information required by Governmental Accounting Standards Board Statements 67 and 68 (GASB 67/68) for employer reporting as of June 30, 2023. This valuation is based on:

- The benefit provisions of Police and Firemen's Retirement System of New Jersey (PFRS), as administered by the Board, including recent changes to the benefit provisions under Chapter 92, P.L. 2023, can be found in Chapter 255, P.L. 1944;

- The characteristics of covered active members, terminated vested members, and retired members and beneficiaries as of June 30, 2022, provided by the Division of Pensions and Benefits (DPB);

- The draft assets of the Plan as of June 30, 2023, provided by the Division of Pensions and Benefits;

- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the July 1, 2023 funding valuation, reflecting the approved assumption changes as recommended in Segal's Actuarial Experience Review report dated October 14, 2022; and

- Other actuarial assumptions, regarding employee terminations, retirement, death, etc. adopted by the Board for the June 30, 2023 funding valuation, reflecting the approved assumption changes as recommended in Segal's Actuarial Experience Review report dated October 14, 2022.

Section 1: Actuarial Valuation Summary

Highlights of the valuation

1. It is important to note that GASB 67 and 68 only define pension liability and expense for financial reporting purposes, and do not apply to contribution amounts for pension funding purposes. Employers and plans should develop and adopt funding policies under current practices if no policy currently exists.

2. When measuring pension liability, GASB uses the Entry Age actuarial cost method as a level percent of salary and the same discount rate (expected return on assets) as the PFRS uses for funding as of July 1, 2023.

3. The Net Pension Liability (NPL) is equal to the difference between the Total Pension Liability (TPL) and the Plan Fiduciary Net Position. The Plan Fiduciary Net Position is equal to the market value of assets and therefore, the NPL measure is very similar to an Unfunded Actuarial Accrued Liability (UAAL) on a market value basis.

4. The NPL was measured as of June 30, 2023 and June 30, 2022 and determined based upon the results of the actuarial valuations as of June 30, 2022 and June 30, 2021, respectively.

5. The NPL decreased from $17.8 billion as of June 30, 2022 to $17.5 billion as of June 30, 2023 primarily as a result of investment experience during the year ended June 30, 2023. Changes in these values during the last two fiscal years ending June 30, 2022 and June 30, 2023 can be found in Section 2.

6. The discount rate used to measure the TPL and NPL as of June 30, 2023 and June 30, 2022 was 7.00%. The detailed calculations used in the derivation of the discount rate can be found in Appendix A of Section 3. Various other information that is required to be disclosed can be found throughout Section 2.

7. The benefit provisions used to measure the TPL and NPL as of June 30, 2023 reflects Chapter 92, P.L. 2023 establishing an extension of the previous plan amendment Chapter 52, P.L. 2021, allowing members enrolled between January 18, 2000 and April 19, 2021 to retire prior to age 55 if they have attained 20 Years of Creditable Service and retire by May 1, 2026.

8. It is important to note that this actuarial valuation is based on plan draft assets as of June 30, 2023. The Plan's actuarial status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the Plan Year. While it is impossible to determine how the market will perform over the next several months, and how that will affect the results of next year's valuation, Segal is available to prepare projections of potential outcomes upon request.

Section 1: Actuarial Valuation Summary

Summary of key valuation results

		State	
Measurement Date		**June 30, 2023**	**June 30, 2022**
Disclosure elements for fiscal year ending June 30:	• Service cost	$120,233,875	$117,854,888
	• Total Pension Liability	6,224,656,704	5,943,036,234
	• Plan Fiduciary Net Position	1,800,709,171	1,616,443,699
	• Net Pension Liability	4,423,947,533	4,326,592,535
	• Pension expense	314,770,816	218,635,738
Demographic data for plan year ending June 30:	• Number of retired members and beneficiaries	7,363	7,073
	• Number of vested terminated members	8	10
	• Number of active members	5,887	6,445
	• Number of non-contributing active members	584	471
Key assumptions as of June 30:	• Investment rate of return	7.00%	7.00%
	• Inflation rate	2.75%	2.75%

		Local Employers	
Measurement Date		**June 30, 2023**	**June 30, 2022**
Disclosure elements for fiscal year ending June 30:	• Service cost	$813,226,096	$805,191,572
	• Total Pension Liability	43,851,174,717	42,575,681,720
	• Plan Fiduciary Net Position	30,766,525,115	29,092,209,711
	• Net Pension Liability	13,084,649,602	13,483,472,009
	• Pension expense	844,810,693	165,943,124
Demographic data for plan year ending June 30:	• Number of retired members and beneficiaries	41,390	40,445
	• Number of vested terminated members	52	50
	• Number of active members	34,004	34,031
	• Number of non-contributing active members	1,341	1,241
Key assumptions as of June 30:	• Investment rate of return	7.00%	7.00%
	• Inflation rate	2.75%	2.75%

Section 1: Actuarial Valuation Summary

Measurement Date		Total	
		June 30, 2023	**June 30, 2022**
Disclosure elements for fiscal year ending June 30:	• Service cost	$933,459,971	$923,046,459
	• Total Pension Liability	50,075,831,421	48,518,717,954
	• Plan Fiduciary Net Position	32,567,234,286	30,708,653,410
	• Net Pension Liability	17,508,597,135	17,810,064,544
	• Pension expense	1,159,581,509	384,578,862
Demographic data for plan year ending June 30:	• Number of retired members and beneficiaries	48,753	47,518
	• Number of vested terminated members	60	60
	• Number of active members	39,891	40,476
	• Number of non-contributing active members	1,925	1,712
Key assumptions as of June 30:	• Investment rate of return	7.00%	7.00%
	• Inflation rate	2.75%	2.75%

Section 1: Actuarial Valuation Summary

Important information about actuarial valuations

In order to prepare a valuation, Segal relies on a number of input items. These include:

Plan of benefits	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan description in this report (as well as the plan summary included in our funding valuation report) to confirm that Segal has correctly interpreted the plan of benefits.
Participant data	An actuarial valuation for a plan is based on data provided to the actuary by the DPB. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Assets	The valuation is based on the market value of assets as of the valuation date, as provided by the DPB.
Actuarial assumptions	In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets or, if there are no assets, a rate of return based on a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale). There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.
Models	Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary. The blended discount rate used for calculating total pension liability is based on a model developed by our Actuarial Technology and Systems unit, comprised of both actuaries and programmers. The model allows the client team, under the supervision of the responsible actuary, control over the entry of future expected contribution income, benefit payments and administrative expenses. The projection of fiduciary net position and the discounting of benefits is part of the model.

Section 1: Actuarial Valuation Summary

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

The valuation is prepared at the request of the Board to assist the sponsors of the System in preparing items related to the pension plan in their financial reports. Segal is not responsible for the use or misuse of its report, particularly by any other party.

An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

If the Board is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.

Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.

As Segal has no discretionary authority with respect to the management or assets of the PFRS, it is not a fiduciary in its capacity as actuaries and consultants with respect to the PFRS.

GASB 67/68 Information

General information about the pension plan

Plan Description

Plan membership. At June 30, 2022, pension plan membership consisted of the following:

	State	Local Employers	Total
Retired members or beneficiaries currently receiving benefits	7,363	41,390	48,753
Vested terminated members entitled to but not yet receiving benefits	8	52	60
Active members	5,887	34,004	39,891
Non-contributing active members	584	1,341	1,925
Total	13,842	76,787	90,629

Benefits provided. The GASB 67 results as of June 30, 2023 are based on the same plan of benefits as disclosed in the actuarial valuation as of July 1, 2022, updated to reflect the following plan amendment:

- Chapter 92, P.L. 2023 establishing an extension of the previous plan amendment Chapter 52, P.L. 2021, allowing members enrolled between January 18, 2000 and April 19, 2021 to retire prior to age 55 if they have attained 20 Years of Creditable Service and retire by May 1, 2026.

Net pension liability

State

Measurement Date	June 30, 2023	June 30, 2022
Total Pension Liability	$6,224,656,704	$5,943,036,234
Plan Fiduciary Net Position	1,800,709,171	1,616,443,699
Net Pension Liability	4,423,947,533	4,326,592,535
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	28.93%	27.20%

Local Employers

Measurement Date	June 30, 2023	June 30, 2022
Total Pension Liability	$43,851,174,717	$42,575,681,720
Plan Fiduciary Net Position	30,766,525,115	29,092,209,711
Net Pension Liability	13,084,649,602	13,483,472,009
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	70.16%	68.33%

Total

Measurement Date	June 30, 2023	June 30, 2022
Total Pension Liability	$50,075,831,421	$48,518,717,954
Plan Fiduciary Net Position	32,567,234,286	30,708,653,410
Net Pension Liability	17,508,597,135	17,810,064,544
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	65.04%	63.29%

The Net Pension Liability (NPL) for the plan was measured as of June 30, 2023 and 2022. Plan Fiduciary Net Position (plan assets) was valued as of the measurement dates and the Total Pension Liability (TPL) was determined from actuarial valuations as of June 30, 2022 and 2021, respectively.

Section 2: GASB 67/68 Information

Actuarial assumptions

The TPL as of June 30, 2023 and 2022, measured by actuarial valuations as of June 30, 2022 and 2021, respectively, used the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.75%
Salary increases	Varies by service
Investment rate of return	7.00%, net of pension plan investment expense, including inflation
Other assumptions	See Section 3 for a complete description of all actuarial assumptions. These assumptions reflect the approved changes as recommended in the analysis of actuarial experience study for the period July 1, 2018 through June 30, 2021.

Detailed information regarding all actuarial assumptions can be found in Section 3, Exhibit I.

Section 2: GASB 67/68 Information

Determination of discount rate and investment rates of return

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage, adding expected inflation and subtracting expected investment expenses and a risk margin. The target allocation (approved by the Board) and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before investment expenses, used in the derivation of the long-term expected investment rate of return assumption are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic equity	28.00%	6.56%
Foreign equity	11.50%	7.86%
Emerging market equity	7.50%	8.36%
Private equity	10.00%	9.61%
Core fixed income	17.00%	1.26%
High yield fixed income	6.00%	3.36%
Private debt	8.00%	6.96%
Real estate	7.00%	3.26%
Infrastructure	3.00%	5.36%
Cash	2.00%	0.36%
Total	100.00%	

Discount rate. The discount rates used to measure the Total Pension Liability (TPL) was 7.00% as of June 30, 2023 and June 30, 2022. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that Local employer contributions and State contributions will be made at the actuarially determined contribution amounts. The assumption that the State is paying 100% of the actuarially determined contribution is based on the State making the full contribution for the fiscal year ending June 30, 2024. For this purpose, only Local employer and State contributions that are intended to fund benefits for current plan members and their beneficiaries are included. Projected Local employer and State contributions that are intended to fund the service costs for future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the Plan Fiduciary Net Position (FNP) was

Section 2: GASB 67/68 Information

projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the TPL as of both June 30, 2023 and June 30, 2022.

Discount rate sensitivity

Sensitivity of the Net Pension Liability to changes in the discount rate. The following presents the Net Pension Liability (NPL) of the PFRS as of June 30, 2023, calculated using the discount rate of 7.00%, as well as what the PFRS's NPL would be if it were calculated using a discount rate that is 1-percentage-point lower (6.00%) or 1-percentage-point higher (8.00%) than the current rate.

Net Pension Liability	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
State	$5,163,176,931	$4,423,947,533	$3,808,103,818
Local Employers	$18,231,168,038	$13,084,649,602	$8,798,829,362
Total	$23,394,344,969	$17,508,597,135	$12,606,933,180

Schedule of changes in Net Pension Liability – Last two fiscal years

Measurement Date	State	
	June 30, 2023	June 30, 2022
Total Pension Liability		
Service cost	$120,233,875	$113,388,990
Interest	411,096,299	399,819,576
Change of benefit terms	14,840,251	26,190,625
Differences between expected and actual experience	116,381,713	38,376,142
Changes of assumptions	0	-47,787,546
Benefit payments	-381,362,288	-370,944,563
Transfers from other systems – employer	0	-88,476
Transfers from other systems – member	430,620	491,464
Net change in Total Pension Liability	$281,620,470	$159,446,212
Total Pension Liability – beginning	5,943,036,234	5,783,590,022
Total Pension Liability – ending	$6,224,656,704	$5,943,036,234
Plan Fiduciary Net Position		
Contributions – employer (appropriations)	$384,640,195	$387,224,112
Contributions – employer (lottery)	14,040,000	13,333,020
Employer contribution – delayed enrollments	6,732	19,442
Employer contribution – delayed appropriations	0	0
Employer contribution – retroactive	0	0
Employer contribution - additional	0	0
Contributions – member	53,703,766	53,744,938
Net investment income	114,414,928	-184,137,196
Benefit payments, including transfers from other systems	-380,931,668	-370,541,575
Administrative expense	-1,608,481	-2,217,299
Net change in Plan Fiduciary Net Position	$184,265,472	-$102,574,558
Plan Fiduciary Net Position – beginning	1,616,443,699	1,719,018,257
Plan Fiduciary Net Position – ending	$1,800,709,171	$1,616,443,699
Net Pension Liability – ending	$4,423,947,533	$4,326,592,535
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	28.93%	27.20%
Covered payroll	$556,078,849	$537,497,633
Plan Net Pension Liability as percentage of covered payroll	795.56%	804.95%

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Measurement Date	Local Employers	
	June 30, 2023	June 30, 2022
Total Pension Liability		
Service cost	$813,226,096	$774,728,421
Interest	2,944,126,172	2,846,557,024
Change of benefit terms	97,828,975	154,786,182
Differences between expected and actual experience	80,236,750	563,181,939
Changes of assumptions	0	-355,230,882
Benefit payments	-2,662,246,818	-2,599,531,680
Transfers from other systems – employer	157,408	43,389
Transfers from other systems – member	2,164,414	2,062,510
Net change in Total Pension Liability	$1,275,492,997	$1,386,596,903
Total Pension Liability – beginning	42,575,681,720	41,189,084,817
Total Pension Liability – ending	$43,851,174,717	$42,575,681,720
Plan Fiduciary Net Position		
Contributions – employer (appropriations)	$1,331,338,821	$1,300,795,184
Contributions – employer (paid by State on behalf of locals)	232,824,730	253,611,000
Employer contribution – delayed enrollments	78,693	189,065
Employer contribution – delayed appropriations	579,698	1,257,718
Employer contribution – retroactive	9,954,750	5,015,523
Employer contribution - additional	0	416,245
Contributions – member	385,533,004	376,540,963
Net investment income	2,383,561,875	-2,059,381,407
Benefit payments, including transfers from other systems	-2,659,924,996	-2,597,425,781
Administrative expense	-9,631,171	-13,044,029
Net change in Plan Fiduciary Net Position	$1,674,315,404	-$2,732,025,519
Plan Fiduciary Net Position – beginning	29,092,209,711	31,824,235,230
Plan Fiduciary Net Position – ending	$30,766,525,115	$29,092,209,711
Net Pension Liability – ending	$13,084,649,602	$13,483,472,009
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	70.16%	68.33%
Covered payroll	$3,752,809,563	$3,664,480,562
Plan Net Pension Liability as percentage of covered payroll	348.66%	367.95%
	Total	

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Measurement Date	June 30, 2023	June 30, 2022
Total Pension Liability		
Service cost	$933,459,971	$888,117,411
Interest	3,355,222,471	3,246,376,600
Change of benefit terms	112,669,226	180,976,807
Differences between expected and actual experience	196,618,463	601,558,081
Changes of assumptions	0	-403,018,428
Benefit payments	-3,043,609,106	-2,970,476,243
Transfers from other systems – employer	157,408	-45,087
Transfers from other systems – member	2,595,034	2,553,974
Net change in Total Pension Liability	$1,557,113,467	$1,546,043,115
Total Pension Liability – beginning	48,518,717,954	46,972,674,839
Total Pension Liability – ending	$50,075,831,421	$48,518,717,954
Plan Fiduciary Net Position		
Contributions – employer (appropriations)	$1,715,979,016	$1,688,019,296
Contributions – employer (lottery)	14,040,000	13,333,020
Contributions – employer (paid by State on behalf of locals)	232,824,730	253,611,000
Employer contribution – delayed enrollments	85,425	208,507
Employer contribution – delayed appropriations	579,698	1,257,718
Employer contribution – retroactive	9,954,750	5,015,523
Employer contribution - additional	0	416,245
Contributions – member	439,236,770	430,285,901
Net investment income	2,497,976,803	-2,243,518,603
Benefit payments, including transfers from other systems	-3,040,856,664	-2,967,967,356
Administrative expense	-11,239,652	-15,261,328
Net change in Plan Fiduciary Net Position	$1,858,580,876	-$2,834,600,077
Plan Fiduciary Net Position – beginning	30,708,653,410	33,543,253,487
Plan Fiduciary Net Position – ending	$32,567,234,286	$30,708,653,410
Net Pension Liability – ending	$17,508,597,135	$17,810,064,544
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	65.04%	63.29%
Covered payroll	$4,308,888,412	$4,201,978,195
Plan Net Pension Liability as percentage of covered payroll	406.34%	423.85%

Section 2: GASB 67/68 Information

Notes to Schedule:
Benefit changes: The following plan amendment is reflected in the Net Pension Liabilities as of June 30, 2023 shown above:

- Chapter 92, P.L. 2023 establishing an extension of the previous plan amendment Chapter 52, P.L. 2021, allowing members enrolled between January 18, 2000 and April 19, 2021 to retire prior to age 55 if they have attained 20 Years of Creditable Service and retire by May 1, 2026.

Deferred outflows and inflows of resources

	State	
Measurement Date	June 30, 2023	June 30, 2022
Deferred Outflows of Resources		
Changes of assumptions or other inputs	$3,319,245	$4,366,325
Net difference between projected and actual earnings on pension plan investments	107,761,886	153,292,182
Difference between expected and actual experience in the Total Pension Liability	123,525,124	32,206,344
Total Deferred Outflows of Resources	$234,606,255	$189,864,851
Deferred Inflows of Resources		
Changes of assumptions or other inputs	$106,283,356	$208,001,493
Net difference between projected and actual earnings on pension plan investments	0	0
Difference between expected and actual experience in the Total Pension Liability	72,282,696	107,094,264
Total Deferred Inflows of Resources	$178,566,052	$315,095,757
Deferred outflows of resources and (deferred inflows) of resources related to pension will be recognized as follows:		
Reporting Date under GASB 68 Year Ended June 30:		
2023	N/A	-$85,628,619
2024	-$34,833,248	-53,264,861
2025	-4,674,623	-23,106,236
2026	60,044,747	41,613,134
2027	13,920,171	-4,511,442
2028	18,560,253	-332,882
Thereafter	3,022,903	0

Section 2: GASB 67/68 Information

Measurement Date	Local Employers	
	June 30, 2023	June 30, 2022
Deferred Outflows of Resources		
Changes of assumptions or other inputs	$23,847,162.	$31,369,927
Net difference between projected and actual earnings on pension plan investments	562,693,623	1,048,149,891
Difference between expected and actual experience in the Total Pension Liability	473,086,762	518,092,671
Total Deferred Outflows of Resources	$1,059,627,547	$1,597,612,489
Deferred Inflows of Resources		
Changes of assumptions or other inputs	$746,057,589	$1,440,870,113
Net difference between projected and actual earnings on pension plan investments	0	0
Difference between expected and actual experience in the Total Pension Liability	526,928,921	701,244,931
Total Deferred Inflows of Resources	$1,272,986,510	$2,142,115,044
Deferred outflows of resources and (deferred inflows) of resources related to pension will be recognized as follows:		
Reporting Date under GASB 68 Year Ended June 30:		
2023	N/A	-$572,500,384
2024	-$429,980,024	-365,863,446
2025	-412,641,967	-348,525,389
2026	663,898,900	728,015,478
2027	-57,100,573	7,016,005
2028	20,380,627	7,355,181
Thereafter	2,084,074	0

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Measurement Date	Total	
	June 30, 2023	June 30, 2022
Deferred Outflows of Resources		
Changes of assumptions or other inputs	$27,166,407	$35,736,252
Net difference between projected and actual earnings on pension plan investments	670,455,509	1,201,442,073
Difference between expected and actual experience in the Total Pension Liability	594,571,158	544,100,940
Total Deferred Outflows of Resources	$1,292,193,074	$1,781,279,265
Deferred Inflows of Resources		
Changes of assumptions or other inputs	$852,340,945	$1,648,871,606
Net difference between projected and actual earnings on pension plan investments	0	0
Difference between expected and actual experience in the Total Pension Liability	597,170,889	802,141,120
Total Deferred Inflows of Resources	$1,449,511,834	$2,451,012,726
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting Date under GASB 68 Year Ended June 30:		
2023	N/A	-$658,129,003
2024	-$464,813,272	-419,128,307
2025	-417,316,590	-371,631,625
2026	723,943,647	769,628,612
2027	-43,180,402	2,504,563
2028	38,940,880	7,022,299
Thereafter	5,106,977	0

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There are changes in the total Net Pension Liability (NPL) during the measurement period ended June 30, 2023. The net effect of the change on the NPL and deferred outflows of resources and deferred inflows of resources is recognized over the average of the expected remaining service lives of all employees that are provided with pensions through the PFRS which is 6.16 years determined as of June 30, 2022 (the beginning of the measurement period ending June 30, 2023). This is described in Paragraph 33a. of GASB 67.

The average of the expected service lives of all employees is determined by:

- Calculating each active employee's expected remaining service life as the present value of $1 per year of future service at zero percent interest.

- Setting the remaining service life to zero for each nonactive or retired member.

- Dividing the sum of the above amounts by the total number of active employee, nonactive and retired members.

Schedule of recognition of change in total Net Pension Liability

Increase (Decrease) in Pension Expense Arising from the Recognition of the
Effects of Differences between Expected and Actual Experience on Total Pension Liability

State

Reporting Date for Employer under GASB 68 Year Ended June 30	Differences between Expected and Actual Experience	Initial Recognition Period (Years)	Recognition Year						
			2023	2024	2025	2026	2027	2028	Thereafter
2018	-$24,201,658	5.73	-$3,083,280	$0	$0	$0	$0	$0	$0
2019	-70,860,849	5.92	-11,969,738	-11,012,159	0	0	0	0	0
2020	-6,336,996	5.90	-1,074,067	-1,074,067	-966,661	0	0	0	0
2021	-115,283,258	6.17	-18,684,483	-18,684,483	-18,684,483	-18,684,483	-3,176,360	0	0
2022	38,376,142	6.22	6,169,798	6,169,798	6,169,798	6,169,798	6,169,798	1,357,354	0
2023	116,381,713	6.16	18,893,135	18,893,135	18,893,135	18,893,135	18,893,135	18,893,135	3,022,903
Net increase (decrease) in pension expense			-$9,748,635	-$5,707,776	$5,411,789	$6,378,450	$21,886,573	$20,250,489	$3,022,903

Local Employers

Reporting Date for Employer under GASB 68 Year Ended June 30	Differences between Expected and Actual Experience	Initial Recognition Period (Years)	Recognition Year						
			2023	2024	2025	2026	2027	2028	Thereafter
2018	$71,877,745	5.73	$9,157,198	$0	$0	$0	$0	$0	$0
2019	-67,495,453	5.92	-11,401,259	-10,489,160	0	0	0	0	0
2020	73,846,139	5.90	12,516,295	12,516,295	11,264,664	0	0	0	0
2021	-1,005,184,014	6.17	-162,914,751	-162,914,751	-162,914,751	-162,914,751	-27,695,508	0	0
2022	563,181,939	6.22	90,543,720	90,543,720	90,543,720	90,543,720	90,543,720	19,919,619	0
2023	80,236,750	6.16	13,025,446	13,025,446	13,025,446	13,025,446	13,025,446	13,025,446	2,084,074
Net increase (decrease) in pension expense			-$49,073,351	-$57,318,450	-$48,080,921	-$59,345,585	$75,873,658	$32,945,065	$2,084,074

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			Total						
Reporting Date for Employer under GASB 68 Year Ended June 30	Differences between Expected and Actual Experience	Initial Recognition Period (Years)	Recognition Year						
			2023	2024	2025	2026	2027	2028	Thereafter
2018	$47,676,087	5.73	$6,073,918	$0	$0	$0	$0	$0	$0
2019	-138,356,302	5.92	-23,370,997	-21,501,319	0	0	0	0	0
2020	67,509,143	5.90	11,442,228	11,442,228	10,298,003	0	0	0	0
2021	-1,120,467,272	6.17	-181,599,234	-181,599,234	-181,599,234	-181,599,234	-30,871,868	0	0
2022	601,558,081	6.22	96,713,518	96,713,518	96,713,518	96,713,518	96,713,518	21,276,973	0
2023	196,618,463	6.16	31,918,581	31,918,581	31,918,581	31,918,581	31,918,581	31,918,581	5,106,977
Net increase (decrease) in pension expense			-$58,821,986	-$63,026,226	-$42,669,132	-$52,967,135	$97,760,231	$53,195,554	$5,106,977

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Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Assumption Changes

State

Reporting Date for Employer under GASB 68 Year Ended June 30	Assumption Changes	Initial Recognition Period (Years)	Recognition Year						
			2023	2024	2025	2026	2027	2028	Thereafter
2018	-$264,067,892	5.73	-$33,642,156	$0	$0	$0	$0	$0	$0
2019	-246,980,571	5.92	-41,719,691	-38,382,113	0	0	0	0	0
2020	-110,173,087	5.90	-18,673,405	-18,673,405	-16,806,062	0	0	0	0
2021	6,460,485	6.17	1,047,080	1,047,080	1,047,080	1,047,080	178,005	0	0
2022	-47,787,546	6.22	-7,682,885	-7,682,885	-7,682,885	-7,682,885	-7,682,885	-1,690,236	0
2023	0	6.16	0	0	0	0	0	0	0
Net increase (decrease) in pension expense			-$100,671,057	-$63,691,323	-$23,441,867	-$6,635,805	-$7,504,880	-$1,690,236	$0

Local Employers

Reporting Date for Employer under GASB 68 Year Ended June 30	Assumption Changes	Initial Recognition Period (Years)	Recognition Year						
			2023	2024	2025	2026	2027	2028	Thereafter
2018	-$1,805,559,030	5.73	-$230,027,593	$0	$0	$0	$0	$0	$0
2019	-1,628,190,127	5.92	-275,032,116	-253,029,548	0	0	0	0	0
2020	-782,586,271	5.90	-132,641,741	-132,641,741	-119,377,566	0	0	0	0
2021	46,415,457	6.17	7,522,765	7,522,765	7,522,765	7,522,765	1,278,867	0	0
2022	-355,230,882	6.22	-57,111,074	-57,111,074	-57,111,074	-57,111,074	-57,111,074	-12,564,438	0
2023	0	6.16	0	0	0	0	0	0	0
Net increase (decrease) in pension expense			-$687,289,759	-$435,259,598	-$168,965,875	-$49,588,309	-$55,832,207	-$12,564,438	$0

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Reporting Date for Employer under GASB 68 Year Ended June 30	Assumption Changes	Initial Recognition Period (Years)	Total Recognition Year						
			2023	2024	2025	2026	2027	2028	Thereafter
2018	-$2,069,626,923	5.73	-$263,669,749	$0	$0	$0	$0	$0	$0
2019	-1,875,170,697	5.92	-316,751,807	-291,411,661	0	0	0	0	0
2020	-892,759,358	5.90	-151,315,146	-151,315,146	-136,183,628	0	0	0	0
2021	52,875,942	6.17	8,569,845	8,569,845	8,569,845	8,569,845	1,456,872	0	0
2022	-403,018,428	6.22	-64,793,959	-64,793,959	-64,793,959	-64,793,959	-64,793,959	-14,254,674	0
2023	0	6.16	0	0	0	0	0	0	0
Net increase (decrease) in pension expense			-$787,960,816	-$498,950,921	-$192,407,742	-$56,224,114	-$63,337,087	-$14,254,674	$0

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Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Projected and Actual Earnings on Pension Plan Investments

State

Reporting Date for Employer under GASB 68 Year Ended June 30	Differences between Projected and Actual Earnings	Initial Recognition Period (Years)	Recognition Year						
			2023	2024	2025	2026	2027	2028	Thereafter
2018	$5,832,360	5.00	$0	$0	$0	$0	$0	$0	$0
2019	43,284,165	5.00	8,656,833	0	0	0	0	0	0
2020	106,051,988	5.00	21,210,398	21,210,396	0	0	0	0	0
2021	-234,733,236	5.00	-46,946,647	-46,946,647	-46,946,647	0	0	0	0
2022	303,818,121	5.00	60,763,624	60,763,624	60,763,624	60,763,624	0	0	0
2023	-2,307,611	5.00	-461,523	-461,522	-461,522	-461,522	-461,522	0	0
Net increase (decrease) in pension expense			$43,222,685	$34,565,851	$13,355,455	$60,302,102	-$461,522	$0	$0

Local Employers

Reporting Date for Employer under GASB 68 Year Ended June 30	Differences between Projected and Actual Earnings	Initial Recognition Period (Years)	Recognition Year						
			2023	2024	2025	2026	2027	2028	Thereafter
2018	-$449,157,320	5.00	$0	$0	$0	$0	$0	$0	$0
2019	185,740,615	5.00	37,148,123	0	0	0	0	0	0
2020	1,290,965,979	5.00	258,193,196	258,193,195	0	0	0	0	0
2021	-4,842,139,825	5.00	-968,427,965	-968,427,965	-968,427,965	0	0	0	0
2022	4,249,874,088	5.00	849,974,818	849,974,818	849,974,818	849,974,818	0	0	0
2023	-385,710,118	5.00	-77,142,022	-77,142,024	-77,142,024	-77,142,024	-77,142,024	0	0
Net increase (decrease) in pension expense			$99,746,150	$62,598,024	-$195,595,171	$772,832,794	-$77,142,024	$0	$0

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			Total						
Reporting Date for Employer under GASB 68 Year Ended June 30	Differences between Projected and Actual Earnings	Initial Recognition Period (Years)	Recognition Year						
			2023	2024	2025	2026	2027	2028	Thereafter
2018	-$443,324,960	5.00	$0	$0	$0	$0	$0	$0	$0
2019	229,024,780	5.00	45,804,956	0	0	0	0	0	0
2020	1,397,017,967	5.00	279,403,594	279,403,591	0	0	0	0	0
2021	-5,076,873,062	5.00	-1,015,374,612	-1,015,374,612	-1,015,374,612	0	0	0	0
2022	4,553,692,209	5.00	910,738,442	910,738,442	910,738,442	910,738,442	0	0	0
2023	-388,017,729	5.00	-77,603,545	-77,603,546	-77,603,546	-77,603,546	-77,603,546	0	0
Net increase (decrease) in pension expense			$142,968,835	$97,163,875	-$182,239,716	$833,134,896	-$77,603,546	$0	$0

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Total Increase (Decrease) in Pension Expense

State

Reporting Date for Employer under GASB 68 Year Ended June 30	Total Increase (Decrease) in Pension Expense	Recognition Year						
		2023	2024	2025	2026	2027	2028	Thereafter
2018	-$282,437,190	-$36,725,436	$0	$0	$0	$0	$0	$0
2019	-274,557,255	-45,032,596	-49,394,272	0	0	0	0	0
2020	-10,458,095	1,462,926	1,462,924	-17,772,723	0	0	0	0
2021	-343,556,009	-64,584,050	-64,584,050	-64,584,050	-17,637,403	-2,998,355	0	0
2022	294,406,717	59,250,537	59,250,537	59,250,537	59,250,537	-1,513,087	-332,882	0
2023	114,074,102	18,431,612	18,431,613	18,431,613	18,431,613	18,431,613	18,893,135	3,022,903
Net increase (decrease) in pension expense		-$67,197,007	-$34,833,248	-$4,674,623	$60,044,747	$13,920,171	$18,560,253	$3,022,903

Local Employers

Reporting Date for Employer under GASB 68 Year Ended June 30	Total Increase (Decrease) in Pension Expense	Recognition Year						
		2023	2024	2025	2026	2027	2028	Thereafter
2018	-$2,182,838,606	-$220,870,395	$0	$0	$0	$0	$0	$0
2019	-1,509,944,965	-249,285,252	-263,518,708	0	0	0	0	0
2020	582,225,847	138,067,750	138,067,749	-108,112,902	0	0	0	0
2021	-5,800,908,382	-1,123,819,951	-1,123,819,951	-1,123,819,951	-155,391,986	-26,416,641	0	0
2022	4,457,825,145	883,407,464	883,407,464	883,407,464	883,407,464	33,432,646	7,355,181	0
2023	-305,473,368	-64,116,576	-64,116,578	-64,116,578	-64,116,578	-64,116,578	13,025,446	2,084,074
Net increase (decrease) in pension expense		-$636,616,960	-$429,980,024	-$412,641,967	$663,898,900	-$57,100,573	$20,380,627	$2,084,074

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		Total						
Reporting Date for Employer under GASB 68 Year Ended June 30	Total Increase (Decrease) in Pension Expense	Recognition Year						
		2023	2024	2025	2026	2027	2028	Thereafter
2018	-$2,465,275,796	-$257,595,831	$0	$0	$0	$0	$0	$0
2019	-1,784,502,220	-294,317,848	-312,912,980	0	0	0	0	0
2020	571,767,752	139,530,676	139,530,673	-125,885,625	0	0	0	0
2021	-6,144,464,392	-1,188,404,001	-1,188,404,001	-1,188,404,001	-173,029,389	-29,414,996	0	0
2022	4,752,231,862	942,658,001	942,658,001	942,658,001	942,658,001	31,919,559	7,022,299	0
2023	-191,399,266	-45,684,964	-45,684,965	-45,684,965	-45,684,965	-45,684,965	31,918,581	5,106,977
Net increase (decrease) in pension expense		-$703,813,967	-$464,813,272	-$417,316,590	$723,943,647	-$43,180,402	$38,940,880	$5,106,977

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Pension expense

Measurement Date	State	
	June 30, 2023	June 30, 2022
Components of Pension Expense		
Service cost	$120,233,875	$113,388,990
Interest on the Total Pension Liability	411,096,299	399,819,576
Current-period benefit changes	14,840,251	26,190,625
Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	18,893,135	6,169,798
Expensed portion of current-period changes of assumptions or other inputs	0	-7,682,885
Member contributions	-53,703,766	-53,744,938
Projected earnings on plan investments	-112,107,317	-119,680,925
Expensed portion of current-period differences between actual and projected earnings on plan investments	-461,523	60,763,625
Administrative expense	1,608,481	2,217,299
Recognition of beginning of year deferred outflows of resources as pension expense	97,847,733	32,080,784
Recognition of beginning of year deferred inflows of resources as pension expense	-183,476,352	-240,886,211
Pension Expense	**$314,770,816**	**$218,635,738**

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Measurement Date	Local Employers	
	June 30, 2023	**June 30, 2022**
Components of Pension Expense		
Service cost	$813,226,096	$774,728,421
Interest on the Total Pension Liability	2,944,126,172	2,846,557,024
Current-period benefit changes	97,828,975	154,786,182
Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	13,025,446	90,543,720
Expensed portion of current-period changes of assumptions or other inputs	0	-57,111,074
Member contributions	-385,533,004	-376,540,963
Projected earnings on plan investments	-1,997,851,757	-2,190,492,681
Expensed portion of current-period differences between actual and projected earnings on plan investments	-77,142,022	849,974,816
Administrative expense	9,631,171	13,044,029
Recognition of beginning of year deferred outflows of resources as pension expense	1,265,056,115	340,798,196
Recognition of beginning of year deferred inflows of resources as pension expense	<u>-1,837,556,499</u>	<u>-2,280,344,546</u>
Pension Expense	**$844,810,693**	**$165,943,124**

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Measurement Date	Total	
	June 30, 2023	June 30, 2022
Components of Pension Expense		
Service cost	$933,459,971	$888,117,411
Interest on the Total Pension Liability	3,355,222,471	3,246,376,600
Current-period benefit changes	112,669,226	180,976,807
Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	31,918,581	96,713,518
Expensed portion of current-period changes of assumptions or other inputs	0	-64,793,959
Member contributions	-439,236,770	-430,285,901
Projected earnings on plan investments	-2,109,959,074	-2,310,173,606
Expensed portion of current-period differences between actual and projected earnings on plan investments	-77,603,545	910,738,441
Administrative expense	11,239,652	15,261,328
Recognition of beginning of year deferred outflows of resources as pension expense	1,358,746,501	362,973,132
Recognition of beginning of year deferred inflows of resources as pension expense	-2,016,875,504	-2,511,324,909
Pension Expense	**$1,159,581,509**	**$384,578,862**

Schedule of reconciliation of Net Pension Liability

	State	
Measurement Date	**June 30, 2023**	**June 30, 2022**
Beginning Net Pension Liability	$4,326,592,535	$4,064,571,765
Pension expense	314,770,816	218,635,738
State plan contributions	-398,686,927	-400,576,574
New net deferred inflows/outflows	95,642,490	235,156,179
Recognition of prior deferred inflows/outflows	85,628,619	208,805,427
Ending Net Pension Liability	$4,423,947,533	$4,326,592,535

	Local Employers	
Measurement Date	**June 30, 2023**	**June 30, 2022**
Beginning Net Pension Liability	$13,483,472,009	$9,364,849,587
Pension expense	844,810,693	165,943,124
Local plan contributions	-1,574,776,692	-1,561,284,735
New net deferred inflows/outflows	-241,356,792	3,574,417,683
Recognition of prior deferred inflows/outflows	572,500,384	1,939,546,350
Ending Net Pension Liability	$13,084,649,602	$13,483,472,009

	Total	
Measurement Date	**June 30, 2023**	**June 30, 2022**
Beginning Net Pension Liability	$17,810,064,544	$13,429,421,352
Pension expense	1,159,581,509	384,578,862
Total plan contributions	-1,973,463,619	-1,961,861,309
New net deferred inflows/outflows	-145,714,302	3,809,573,862
Recognition of prior deferred inflows/outflows	658,129,003	2,148,351,777
Ending Net Pension Liability	$17,508,597,135	$17,810,064,544

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Schedule of contributions – Last ten fiscal years

		Total			
Year Ended June 30	Actuarially Determined Contributions	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency / (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
2014	$1,150,719,106	$880,431,697	$270,287,409	$3,678,910,266	23.93%
2015	1,217,110,411	941,950,336	275,160,075	3,682,677,356	25.58%
2016	1,311,849,713	986,654,840	325,194,873	3,695,509,355	26.70%
2017	1,335,659,737	1,046,327,392	289,332,345	3,726,807,562	28.08%
2018	1,424,767,509	1,236,395,284	188,372,225	3,803,348,329	32.51%
2019	1,545,236,051	1,332,222,254	213,013,797	3,870,718,707	34.42%
2020	1,592,156,607	1,427,886,341	164,270,266	3,937,977,209	36.26%
2021	1,725,652,140	1,600,351,881	125,300,259	4,016,767,909	39.84%
2022	1,798,890,158	1,846,054,575	(47,164,417)	4,070,199,174	45.36%
2023	1,942,204,908	1,957,493,982	(15,289,074)	4,159,231,628	47.06%

See accompanying notes to this schedule on next page.

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Notes to Schedule:

Methods and assumptions used to establish the "actuarially determined contribution":

Valuation date	Actuarially determined contribution rates are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are made
Actuarial cost method	Projected Unit Credit Actuarial Cost Method
Amortization method	Level dollar
Remaining amortization period	The NJ statute governing the System (Chapter 78, P.L. 2011) prescribes the funding policy used to calculate the actuarially determined contribution. Specifically, the unfunded actuarial liability is amortized over a closed 30-year period as a level dollar amount beginning with the July 1, 2018 actuarial valuation. On July 1, 2028 when the amortization period reaches 20 years, annual increases or decreases in the unfunded actuarial accrued liability will increase or decrease the amortization period unless that period is in excess of 20 years. If so, the unfunded actuarial accrued liability is amortized over 20 years. As of July 1, 2023 there are 25 years remaining on the closed amortization schedule.
Asset valuation method	Sum of actuarial value at beginning of year and increase in cost value during year excluding realized appreciation or losses plus 20 percent of market value at end of year in excess of that preliminary value. The asset method provides a degree of conservatism to increase the likelihood that benefits are funded.
Actuarial assumptions:	
Investment rate of return	7.00%, net of pension plan investment expense, including inflation.
Inflation rate	2.75%
Real across-the-board salary increase	3.25%
Other assumptions	Same as those used in the July 1, 2022 funding actuarial valuation.

Actuarial Assumptions and Methods and Appendices

Exhibit I: Actuarial Assumptions, Actuarial Cost Method and Models

Mortality Rates:	*Employee*: Pub-2010 Safety Employee amount-weighted mortality table (sex-specific), projected generationally from 2010 with Scale MP-2021 mortality projection. 5% of deaths are assumed to be accidental.
	Healthy Annuitant: Pub-2010 Safety Retiree Below Median amount-weighted mortality table (sex-specific), projected generationally from 2010 with Scale MP-2021 mortality projection
	Disabled: 144% of Pub-2010 Safety Disabled Retiree amount-weighted mortality table for males and 100% of Pub-2010 Safety Disabled Retiree amount-weighted mortality table for females, projected generationally from 2010 with Scale MP-2021 mortality projection
	Contingent Annuitant: Pub-1010 General Retiree Below-Median amount-weighted mortality tables projected generationally from 2010 with Scale MP-2021 mortality projection.

Section 3: Actuarial Assumptions and Methods and Appendices

Termination Rates before Retirement:

	Rate (%)			
	Mortality[1]		Ordinary	Accidental
Age	Male	Female	Disability	Disability
20	0.04	0.02	0.01	0.01
30	0.06	0.04	0.05	0.04
40	0.08	0.06	0.32	0.26
50	0.11	0.08	0.15	0.26
60	0.27	0.18	0.05	0.05
70	0.71	0.40	–	–
80	2.40	1.65	–	–
90	2.51	1.72	–	–

[1] Mortality rates shown for current year (as of June 30, 2022).

Service	Withdrawal Rate[2]
0-4	2.00
5-6	1.60
7-9	1.00
10-11	0.60
12-13	0.25
14-24	0.20
25+	0.00

[2] Withdrawal rates do not apply at or beyond early retirement age.

Section 3: Actuarial Assumptions and Methods and Appendices

Retirement Rates for Active participants:

For those with less than 25 years of service:

Age	Retirement Probability
40-43	1.00%
44-46	2.50
47	3.75
48	4.00
49	5.00
50	6.00
51-56	7.00
57-61	8.00
62-64	13.00
65 and older	100.00

For those with 25 years of service:

Age	Retirement Probability
54 and younger	45.00%
55-57	50.00
58-61	55.00
62-63	70.00
64	90.00
65 and older	100.00

For those with 26 or more years of service:

Age	Retirement Probability
53 and younger	22.00%
54-60	24.00
61	28.00
62	30.00
63	20.00

	64	60.00
	65 and older	100.00

Retirement Age for Inactive Vested Participants:	Age 55
Unknown Data for Members:	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.
Percent Married:	90%
Age of Spouse:	Females three years younger than males
Net Investment Return:	7.00%, net of investment expenses The net investment return assumption is chosen based on direction from the Chief Financial Officer and as adopted by the Board of Trustees.
Cost-of-Living Adjustments (COLAs) for Retirees:	No future COLAs are assumed. Previously granted COLAs are included in the data.

Salary Increases:

Service	Rate (%)
0	16.25
1	14.00
2-4	12.00
5	11.00
6	10.00
7	9.00
8	8.00
9	7.00
10	6.00
11-12	5.00
13-16	4.00
17+	3.25

Actuarial Cost Method:	Entry Age Actuarial Cost Method. Entry Age is the age at date of initiation or, if date is unknown, current age minus years of service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary, with Normal Cost determined using the plan of benefits applicable to each participant.

Section 3: Actuarial Assumptions and Methods and Appendices

Expected Remaining Service Lives:	The average of the expected service lives of all employees is determined by: • Calculating each active employee's expected remaining service life as the present value of $1 per year of future service at zero percent interest. • Setting the remaining service life to zero for each nonactive or retired member. • Dividing the sum of the above amounts by the total number of active employee, nonactive, and retired members.
Models	Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary. The blended discount rate used for calculating total pension liability is based on a model developed by our Actuarial Technology and Systems unit, comprised of both actuaries and programmers. The model allows the client team, under the supervision of the responsible actuary, control over the entry of future expected contribution income, benefit payments and administrative expenses. The projection of fiduciary net position and the discounting of benefits is part of the model.

Section 3: Actuarial Assumptions and Methods and Appendices

Appendix A: Projection of Plan Fiduciary Net Position ($in thousands) for use in the Calculation of Discount Rate as of June 30, 2023

Year Beginning June 30	Projected Beginning Plan Fiduciary Net Position (a)	Projected Employee Contributions (b)	Projected State Contributions (c)	Projected Local Employer Contributions (d)	Projected Lottery Contributions (e)	Projected Benefit Payments (f)	Projected Administrative Expenses (g)	Projected Investment Earnings (h)	Projected Ending Plan Fiduciary Net Position (f) = (a) + (b) + (c) + (d) + (e) − (f) − (g) + (h)
2023	$32,567,234	$397,288	$623,726	$1,339,685	$13,388	$3,160,638	$11,549	$2,131,669	$33,900,803
2024	33,900,803	392,132	655,397	1,403,503	13,511	3,287,418	11,866	2,218,649	35,284,712
2025	35,284,712	385,134	663,061	1,406,327	13,622	3,420,846	12,193	2,307,451	36,627,268
2026	36,627,268	382,838	664,562	1,409,180	13,759	3,539,773	12,528	2,397,072	37,942,378
2027	37,942,378	380,235	665,097	1,420,548	13,879	3,636,730	12,872	2,485,501	39,258,035
2028	39,258,035	377,011	666,854	1,432,326	14,015	3,729,076	13,226	2,573,694	40,579,631
2029	40,579,631	372,864	668,468	1,418,361	14,281	3,818,629	13,590	2,662,347	41,883,734
2030	41,883,734	365,607	656,977	1,403,139	14,424	3,912,626	13,964	2,750,514	43,147,805
2031	43,147,805	356,647	644,891	1,383,641	14,569	4,013,649	14,348	2,835,623	44,355,178
2032	44,355,178	346,774	632,158	1,362,350	14,715	4,114,348	14,743	2,916,949	45,499,034
2033	45,499,034	336,049	618,593	1,341,536	14,862	4,212,337	15,148	2,993,967	46,576,557
2034	46,576,557	326,738	604,706	1,322,091	15,011	4,300,346	15,564	3,066,706	47,595,898
2035	47,595,898	319,126	590,463	1,305,925	15,161	4,371,297	15,993	3,135,948	48,575,233
2036	48,575,233	309,893	578,043	1,293,817	15,313	4,433,249	16,432	3,202,522	49,525,140
2037	49,525,140	297,525	566,238	1,280,720	15,466	4,500,864	16,884	3,266,532	50,433,874
2038	50,433,874	281,696	553,185	1,263,207	15,621	4,579,821	17,349	3,327,160	51,277,573
2039	51,277,573	263,559	539,216	1,239,978	15,777	4,668,396	17,826	3,383,025	52,032,907
2040	52,032,907	242,592	524,693	1,212,875	15,935	4,764,393	18,316	3,432,631	52,678,925
2041	52,678,925	219,422	509,275	1,180,722	16,095	4,867,925	18,819	3,474,424	53,192,119
2042	53,192,119	193,875	492,977	1,144,586	16,256	4,977,799	19,337	3,506,856	53,549,533

2043	53,549,533	168,304	474,863	1,104,229	16,419	5,087,902	19,869	3,528,535	53,734,113
2044	53,734,113	142,240	455,717	1,062,241	16,583	5,191,873	20,415	3,538,507	53,737,114
2045	53,737,114	119,178	436,701	1,019,262	16,749	5,280,859	20,977	3,536,487	53,563,656
2046	53,563,656	94,130	418,040	977,816	16,916	5,359,879	21,553	3,522,455	53,211,582
2047	53,211,582	67,921	400,156	930,638	-	5,440,874	22,146	3,495,151	52,642,427
2048	52,642,427	51,593	383,763	884,167	-	5,489,355	22,755	3,455,067	51,904,907
2049	51,904,907	39,764	367,758	851,851	-	5,488,974	23,381	3,405,038	51,056,962
2050	51,056,962	30,378	355,216	825,230	-	5,462,571	24,024	3,347,622	50,128,814
2051	50,128,814	22,981	344,264	802,378	-	5,417,280	24,685	3,285,065	49,141,538
2052	49,141,538	17,184	334,328	781,740	-	5,356,826	25,363	3,218,784	48,111,384
2053	48,111,384	12,664	324,856	763,004	-	5,282,989	26,061	3,149,909	47,052,768
2054	47,052,768	9,182	316,451	746,307	-	5,197,975	26,778	3,079,398	45,979,353
2055	45,979,353	6,548	308,418	730,211	-	5,103,422	27,514	3,008,116	44,901,709
2056	44,901,709	4,573	300,461	715,242	-	5,000,980	28,271	2,936,807	43,829,543
2057	43,829,543	3,111	293,016	701,366	-	4,891,701	29,048	2,866,092	42,772,379
2058	42,772,379	2,044	285,877	688,218	-	4,776,623	29,847	2,796,594	41,738,643
2059	41,738,643	1,282	279,121	674,975	-	4,657,066	30,668	2,728,875	40,735,162
2060	40,735,162	772	272,484	662,381	-	4,533,459	31,511	2,663,431	39,769,261
2061	39,769,261	438	266,151	650,498	-	4,406,305	32,378	2,600,721	38,848,386
2062	38,848,386	223	260,094	638,736	-	4,276,640	33,268	2,541,224	37,978,755
2063	37,978,755	101	254,282	627,781	-	4,144,649	34,183	2,485,399	37,167,486
2064	37,167,486	40	248,597	617,337	-	4,011,024	35,123	2,433,677	36,420,991
2065	36,420,991	12	243,065	607,812	-	3,876,248	36,089	2,386,508	35,746,052
2066	35,746,052	3	237,850	598,750	-	3,740,649	37,081	2,344,337	35,149,261
2067	35,149,261	1	233,147	590,112	-	3,604,504	38,101	2,307,643	34,637,559
2068	34,637,559	-	228,580	581,724	-	3,468,000	39,149	2,276,898	34,217,613
2069	34,217,613	-	66,626	-	-	3,331,228	40,225	2,248,440	33,161,226
2070	33,161,226	-	-	-	-	3,194,244	41,331	2,208,041	32,133,691

2071	32,133,691	-	-	-	-	3,057,079	42,468	2,140,874	31,175,018
2072	31,175,018	-	-	-	-	2,919,748	43,636	2,078,533	30,290,168
2073	30,290,168	-	-	-	-	2,782,267	44,836	2,021,363	29,484,428
2074	29,484,428	-	-	-	-	2,644,659	46,069	1,969,734	28,763,434
2075	28,763,434	-	-	-	-	2,506,965	47,336	1,924,040	28,133,174
2076	28,133,174	-	-	-	-	2,369,258	48,638	1,884,696	27,599,974
2077	27,599,974	-	-	-	-	2,231,656	49,975	1,852,141	27,170,484
2078	27,170,484	-	-	-	-	2,094,334	51,349	1,826,835	26,851,636
2079	26,851,636	-	-	-	-	1,957,533	52,762	1,809,254	26,650,596
2080	26,650,596	-	-	-	-	1,821,564	54,212	1,799,890	26,574,709
2081	26,574,709	-	-	-	-	1,686,825	55,703	1,799,241	26,631,422
2082	26,631,422	-	-	-	-	1,553,788	57,235	1,807,814	26,828,213
2083	26,828,213	-	-	-	-	1,423,002	58,809	1,826,112	27,172,514
2084	27,172,514	-	-	-	-	1,295,081	60,426	1,854,633	27,671,640
2085	27,671,640	-	-	-	-	1,170,691	62,088	1,893,868	28,332,729
2086	28,332,729	-	-	-	-	1,050,534	63,795	1,944,289	29,162,689
2087	29,162,689	-	-	-	-	935,319	65,550	2,006,358	30,168,178
2088	30,168,178	-	-	-	-	825,740	67,352	2,080,514	31,355,599
2089	31,355,599	-	-	-	-	722,452	69,205	2,167,184	32,731,127
2090	32,731,127	-	-	-	-	626,032	71,108	2,266,779	34,300,766
2091	34,300,766	-	-	-	-	536,959	73,063	2,379,703	36,070,447
2092	36,070,447	-	-	-	-	455,591	75,073	2,506,358	38,046,141
2093	38,046,141	-	-	-	-	382,139	68,339	2,647,463	40,243,126
2094	40,243,126	-	-	-	-	316,665	57,321	2,803,929	42,673,070
2095	42,673,070	-	-	-	-	259,074	47,500	2,976,385	45,342,881
2096	45,342,881	-	-	-	-	209,117	38,861	3,165,322	48,260,225
2097	48,260,225	-	-	-	-	166,415	31,368	3,371,293	51,433,736
2098	51,433,736	-	-	-	-	130,470	24,962	3,594,921	54,873,225

2099	54,873,225	-	-	-	-	100,697	19,571	3,836,916	58,589,874
2100	58,589,874	-	-	-	-	76,448	15,105	4,098,087	62,596,408
2101	62,596,408	-	-	-	-	57,046	11,467	4,379,351	66,907,245
2102	66,907,245	-	-	-	-	41,806	8,557	4,681,744	71,538,627
2103	71,538,627	-	-	-	-	30,068	6,271	5,006,432	76,508,720
2104	76,508,720	-	-	-	-	21,210	4,510	5,354,710	81,837,710
2105	81,837,710	-	-	-	-	14,667	3,182	5,728,015	87,547,876
2106	87,547,876	-	-	-	-	9,941	2,200	6,127,926	93,663,661
2107	93,663,661	-	-	-	-	6,605	1,491	6,556,173	100,211,738
2108	100,211,738	-	-	-	-	4,304	991	7,014,636	107,221,079
2109	107,221,079	-	-	-	-	2,756	646	7,505,357	114,723,035
2110	114,723,035	-	-	-	-	1,738	413	8,030,537	122,751,421
2111	122,751,421	-	-	-	-	1,083	261	8,592,552	131,342,629
2112	131,342,629	-	-	-	-	672	163	9,193,955	140,535,750
2113	140,535,750	-	-	-	-	418	101	9,837,484	150,372,716
2114	150,372,716	-	-	-	-	263	63	10,526,079	160,898,469
2115	160,898,469	-	-	-	-	168	39	11,262,886	172,161,147
2116	172,161,147	-	-	-	-	111	25	12,051,276	184,212,287
2117	184,212,287	-	-	-	-	75	17	12,894,857	197,107,052
2118	197,107,052	-	-	-	-	51	11	13,797,491	210,904,481
2119	210,904,481	-	-	-	-	36	8	14,763,312	225,667,750
2120	225,667,750	-	-	-	-	25	5	15,796,741	241,464,461
2121	241,464,461	-	-	-	-	17	4	16,902,512	258,366,952
2122	258,366,952	-	-	-	-	12	3	18,085,686	276,452,623
2123	276,452,623	-	-	-	-	8	2	19,351,683	295,804,297
2124	295,804,297	-	-	-	-	5	1	20,706,301	316,510,591
2125	316,510,591	-	-	-	-	3	1	22,155,741	338,666,328
2126	338,666,328	-	-	-	-	2	1	23,706,643	362,372,968

2127	362,372,968	-	-	-	-	1	-	25,366,108	387,739,074
2128	387,739,074	-	-	-	-	1	-	27,141,735	414,880,808
2129	414,880,808	-	-	-	-	-	-	29,041,657	443,922,464

Notes

1. Amounts may not total exactly due to rounding.

2. Column (a): None of the projected beginning Plan Fiduciary Net Position amounts shown have been adjusted for the time value of money.

3. Columns (b-e): Projected State and Local contributions include normal cost rates applied to closed group projected payroll (based on covered active members as of June 30, 2022), plus contributions to the unfunded actuarial accrued liability. It is assumed that 1.2% of the proceeds from the Lottery Enterprise are contributed for a period of 30 years from the first contribution. 100% of the actuarially determined State contribution is assumed to be made on a quarterly basis for each fiscal year based on the actual payment made during the June 30, 2024 fiscal year. 100% of the actuarially determined contribution is assumed to be paid by Local Employees on April 1, for the fiscal year 21 months after the actuarial valuation for which that contribution is determined.

4. Column (f): Projected benefit payments have been determined in accordance with paragraph 39 of GASB Statement No. 67. The demographic assumptions used are consistent with those approved by the Board of Trustees on November 14, 2022 and are based on the experience study for the period July 1, 2018 – June 30, 2021.

5. Column (g): Projected administrative expenses in the year ending June 30, 2024 are calculated assuming a 2.75% increase from the actual amount for the year ended June 30, 2023, limited to 15% of the prior year's projected benefit payments. Administrative expenses are assumed to occur halfway through the year, on average.

6. Column (h): Projected investment earnings are based on the assumed investment rate of return of 7.00% per annum and reflect the assumed timing of benefit payments, which is halfway through the year, on average.

7. As illustrated in this Exhibit, the Plan Fiduciary Net Position was projected to be available to make all projected future benefit payments for current Plan members. In other words, there is no projected "cross-over date" when projected benefits are not covered by projected assets. Therefore, the long-term expected rate of return on Plan investments of 7.00% per annum was applied to all periods of projected benefit payments to determine the Total Pension Liability as of June 30, 2023 shown earlier in this report, pursuant to paragraph 44 of GASB Statement No. 67.

Appendix B: Development of Blended Discount Rate as of June 30, 2023

Year Beginning June 30:	Projected Beginning Plan Fiduciary Net Position	Funded Benefit Payments	Unfunded Benefit Payments	Discounted Funded Benefit Payments	Discounted Unfunded Benefit Payments	Discounted at Blended Rate
2023	$32,567,234	$3,160,638	-	$3,055,150	-	$3,055,150
2024	33,900,803	3,287,418	-	2,970,156	-	2,970,156
2025	35,284,712	3,420,846	-	2,888,511	-	2,888,511
2026	36,627,268	3,539,773	-	2,793,394	-	2,793,394
2027	37,942,378	3,636,730	-	2,682,156	-	2,682,156
2028	39,258,035	3,729,076	-	2,570,340	-	2,570,340
2029	40,579,631	3,818,629	-	2,459,874	-	2,459,874
2030	41,883,734	3,912,626	-	2,355,537	-	2,355,537
2031	43,147,805	4,013,649	-	2,258,277	-	2,258,277
2032	44,355,178	4,114,348	-	2,163,491	-	2,163,491
2033	45,499,034	4,212,337	-	2,070,110	-	2,070,110
2034	46,576,557	4,300,346	-	1,975,104	-	1,975,104
2035	47,595,898	4,371,297	-	1,876,347	-	1,876,347
2036	48,575,233	4,433,249	-	1,778,448	-	1,778,448
2037	49,525,140	4,500,864	-	1,687,451	-	1,687,451
2038	50,433,874	4,579,821	-	1,604,723	-	1,604,723
2039	51,277,573	4,668,396	-	1,528,746	-	1,528,746
2040	52,032,907	4,764,393	-	1,458,114	-	1,458,114
2041	52,678,925	4,867,925	-	1,392,336	-	1,392,336
2042	53,192,119	4,977,799	-	1,330,619	-	1,330,619
2043	53,549,533	5,087,902	-	1,271,075	-	1,271,075
2044	53,734,113	5,191,873	-	1,212,196	-	1,212,196
2045	53,737,114	5,280,859	-	1,152,311	-	1,152,311
2046	53,563,656	5,359,879	-	1,093,040	-	1,093,040
2047	53,211,582	5,440,874	-	1,036,970	-	1,036,970

2048	52,642,427	5,489,355	-	977,766	-	977,766
2049	51,904,907	5,488,974	-	913,737	-	913,737
2050	51,056,962	5,462,571	-	849,852	-	849,852
2051	50,128,814	5,417,280	-	787,669	-	787,669
2052	49,141,538	5,356,826	-	727,924	-	727,924
2053	48,111,384	5,282,989	-	670,926	-	670,926
2054	47,052,768	5,197,975	-	616,943	-	616,943
2055	45,979,353	5,103,422	-	566,094	-	566,094
2056	44,901,709	5,000,980	-	518,440	-	518,440
2057	43,829,543	4,891,701	-	473,936	-	473,936
2058	42,772,379	4,776,623	-	432,511	-	432,511
2059	41,738,643	4,657,066	-	394,098	-	394,098
2060	40,735,162	4,533,459	-	358,540	-	358,540
2061	39,769,261	4,406,305	-	325,686	-	325,686
2062	38,848,386	4,276,640	-	295,422	-	295,422
2063	37,978,755	4,144,649	-	267,575	-	267,575
2064	37,167,486	4,011,024	-	242,007	-	242,007
2065	36,420,991	3,876,248	-	218,575	-	218,575
2066	35,746,052	3,740,649	-	197,130	-	197,130
2067	35,149,261	3,604,504	-	177,528	-	177,528
2068	34,637,559	3,468,000	-	159,631	-	159,631
2069	34,217,613	3,331,228	-	143,304	-	143,304
2070	33,161,226	3,194,244	-	128,422	-	128,422
2071	32,133,691	3,057,079	-	114,867	-	114,867
2072	31,175,018	2,919,748	-	102,529	-	102,529
2073	30,290,168	2,782,267	-	91,310	-	91,310
2074	29,484,428	2,644,659	-	81,116	-	81,116
2075	28,763,434	2,506,965	-	71,862	-	71,862

2076	28,133,174	2,369,258	-	63,472	-	63,472
2077	27,599,974	2,231,656	-	55,874	-	55,874
2078	27,170,484	2,094,334	-	49,006	-	49,006
2079	26,851,636	1,957,533	-	42,808	-	42,808
2080	26,650,596	1,821,564	-	37,229	-	37,229
2081	26,574,709	1,686,825	-	32,220	-	32,220
2082	26,631,422	1,553,788	-	27,737	-	27,737
2083	26,828,213	1,423,002	-	23,740	-	23,740
2084	27,172,514	1,295,081	-	20,193	-	20,193
2085	27,671,640	1,170,691	-	17,059	-	17,059
2086	28,332,729	1,050,534	-	14,307	-	14,307
2087	29,162,689	935,319	-	11,904	-	11,904
2088	30,168,178	825,740	-	9,822	-	9,822
2089	31,355,599	722,452	-	8,031	-	8,031
2090	32,731,127	626,032	-	6,504	-	6,504
2091	34,300,766	536,959	-	5,214	-	5,214
2092	36,070,447	455,591	-	4,134	-	4,134
2093	38,046,141	382,139	-	3,241	-	3,241
2094	40,243,126	316,665	-	2,510	-	2,510
2095	42,673,070	259,074	-	1,919	-	1,919
2096	45,342,881	209,117	-	1,448	-	1,448
2097	48,260,225	166,415	-	1,077	-	1,077
2098	51,433,736	130,470	-	789	-	789
2099	54,873,225	100,697	-	569	-	569
2100	58,589,874	76,448	-	404	-	404
2101	62,596,408	57,046	-	282	-	282
2102	66,907,245	41,806	-	193	-	193
2103	71,538,627	30,068	-	130	-	130

2104	76,508,720	21,210	-	85	-	85
2105	81,837,710	14,667	-	55	-	55
2106	87,547,876	9,941	-	35	-	35
2107	93,663,661	6,605	-	22	-	22
2108	100,211,738	4,304	-	13	-	13
2109	107,221,079	2,756	-	8	-	8
2110	114,723,035	1,738	-	5	-	5
2111	122,751,421	1,083	-	3	-	3
2112	131,342,629	672	-	2	-	2
2113	140,535,750	418	-	1	-	1
2114	150,372,716	263	-	1	-	1
2115	160,898,469	168	-	-	-	-
2116	172,161,147	111	-	-	-	-
2117	184,212,287	75	-	-	-	-
2118	197,107,052	51	-	-	-	-
2119	210,904,481	36	-	-	-	-
2120	225,667,750	25	-	-	-	-
2121	241,464,461	17	-	-	-	-
2122	258,366,952	12	-	-	-	-
2123	276,452,623	8	-	-	-	-
2124	295,804,297	5	-	-	-	-
2125	316,510,591	3	-	-	-	-
2126	338,666,328	2	-	-	-	-
2127	362,372,968	1	-	-	-	-
2128	387,739,074	1	-	-	-	-
2129	414,880,808	-	-	-	-	-
Total				$60,011,928		$60,011,928

Appendix C: Definition of Terms

Definitions of certain terms as they are used in Statement 68. The terms may have different meanings in other contexts.

Active Employees:	Individuals employed at the end of the reporting or measurement period, as applicable.
Actual Contributions:	Cash contributions recognized as additions to a pension Plan Fiduciary Net Position.
Actuarial Present Value of Projected Benefit Payments:	Projected benefit payments discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.
Actuarial Valuation:	The determination, as of a point in time (the actuarial valuation date), of 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:	A target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.
Closed Period:	A specific number of years that is counted from one date and declines to zero with the passage of time. For example, if the recognition period initially is five years on a closed basis, four years remain after the first year, three years after the second year, and so forth.
Collective Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions:	Deferred outflows of resources and deferred inflows of resources related to pensions arising from certain changes in the collective Net Pension Liability.
Collective Pension Expense:	Pension expense arising from certain changes in the collective Net Pension Liability.
Contributions:	Additions to a pension Plan Fiduciary Net Position for amounts from employers, non-employer contributing entities (for example, state government contributions to a local government pension plan), or employees. Contributions can result from cash receipts by the pension plan or from recognition by the pension plan of a receivable from one of these sources.
Cost-of-Living Adjustments:	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
Covered Payroll:	The payroll of employees that are provided with pensions through the pension plan.
Defined Benefit Pension Plans:	Pension plans that are used to provide defined benefit pensions.
Defined Benefit Pensions:	Pensions for which the income or other benefits that the employee will receive at or after

	separation from employment are defined by the benefit terms. The pensions may be stated as a specified dollar amount or as an amount that is calculated based on one or more factors such as age, years of service, and compensation. (A pension that does not meet the criteria of a defined contribution pension is classified as a defined benefit pension for purposes of Statement 68.)
Discount Rate:	The single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following: 1. The actuarial present value of benefit payments projected to be made in future periods in which (a) the amount of the pension Plan Fiduciary Net Position is projected (under the requirements of Statement 68) to be greater than the benefit payments that are projected to be made in that period and (b) pension plan assets up to that point are expected to be invested using a strategy to achieve the long-term expected rate of return, calculated using the long-term expected rate of return on pension plan investments. 2. The actuarial present value of projected benefit payments not included in (1), calculated using the municipal bond rate.
Entry Age Actuarial Cost Method:	A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age(s). The portion of this actuarial present value allocated to a valuation year is called 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 called the actuarial accrued liability.
Inactive Employees:	Terminated individuals that have accumulated benefits but are not yet receiving them, and retirees or their beneficiaries currently receiving benefits.
Measurement Period:	The period between the prior and the current measurement dates.
Net Pension Liability (NPL):	The liability of employers and non-employer contributing entities to employees for benefits provided through a defined benefit pension plan.
Other Postemployment Benefits:	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.
Pension Plans:	Arrangements through which pensions are determined, assets dedicated for pensions are accumulated and managed and benefits are paid as they come due.
Pensions:	Retirement income and, if provided through a pension plan, postemployment benefits other than retirement income (such as death benefits, life insurance, and disability benefits). Pensions do not include postemployment healthcare benefits and termination benefits.
Plan Fiduciary Net Position:	Market value of assets.

Section 3: Actuarial Assumptions and Methods and Appendices

Plan Members:	Individuals that are covered under the terms of a pension plan. Plan members generally include (1) employees in active service (active plan members) and (2) terminated employees who have accumulated benefits but are not yet receiving them and retirees or their beneficiaries currently receiving benefits (inactive plan members).
Projected Benefit Payments:	All benefits estimated to be payable through the pension plan to current active and inactive employees as a result of their past service and their expected future service.
Public Employee Retirement System:	A special-purpose government that administers one or more pension plans; also may administer other types of employee benefit plans, including postemployment healthcare plans and deferred compensation plans.
Real Rate of Return:	The rate of return on an investment after adjustment to eliminate inflation.
Service Costs:	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
Termination Benefits:	Inducements offered by employers to active employees to hasten the termination of services, or payments made in consequence of the early termination of services. Termination benefits include early-retirement incentives, severance benefits, and other termination-related benefits.
Total Pension Liability (TPL):	The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of Statement 68.