



The Public Employees' Retirement System of New Jersey

**GASB 68 Report
as of June 30, 2021**

Produced by Cheiron

April 2022

TABLE OF CONTENTS

<i>Section</i>		<i>Page</i>
Section I	Board Summary	1
Section II	Certification	3
Section III	Determination of Discount Rate	5
Section IV	Collective Employer Reporting Amounts.....	7
 <i>Appendices</i>		
Appendix A	Membership Information	17
Appendix B	Actuarial Assumptions and Methods	18
Appendix C	Summary of Plan Provisions.....	35
Appendix D	Determination of Discount Rate	46
Appendix E	Glossary of Terms.....	50

THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE

SECTION I – BOARD SUMMARY

The purpose of this report is to provide accounting and financial disclosure information under Governmental Accounting Standards Board Statement 68 for the Public Employees' Retirement System of New Jersey (PERS, Plan or System). This information includes:

- Disclosure of Deferred Inflows and Outflows, and
- Calculation of the Collective Annual Pension Expense.

Highlights

The reporting date for the PERS is June 30, 2021. Measurements as of the reporting date are based on the fair value of assets as of June 30, 2021 and the Total Pension Liability as of the valuation date, July 1, 2020, updated to June 30, 2021. There was a change in the assumptions, as the mortality assumption was updated upon direction from the Division of Pensions and Benefits (DPB). This report also reflects one change to the plan provisions. Chapter 140, P.L. 2021 reopened the Worker's Compensation Judges (WCJ) Part of PERS and transferred WCJs from the Defined Contribution Retirement Program (DCRP) and regular part of PERS into the WCJ Part of PERS. We are not aware of any other significant events that are measurable at this time between the valuation date and the measurement date, so the update procedures only include the addition of service cost and interest cost offset by actual benefit payments, and adjustments to reflect the changes in assumptions and plan provisions.

Additional information about the TPL can be found in the GASB 67 report. This report contains the GASB 68 collective employer reporting amounts. The individual employer reporting amounts can be found in the GASB 67-68 Employer Schedules provided separately in excel format.

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

SECTION I – BOARD SUMMARY

The following table provides a summary of the key results during this reporting period.

Table I-1 Summary of Collective Results		
Measurement Date	6/30/2021	6/30/2020
<u>State</u>		
Net Pension Liability	\$ 21,629,497,485	\$ 22,223,967,525
Deferred Outflows	(569,828,808)	(1,207,240,789)
Deferred Inflows	<u>3,820,494,887</u>	<u>5,123,513,091</u>
Net Impact on Statement of Net Position	\$ 24,880,163,564	\$ 26,140,239,827
Total Pension Expense/(Income)	\$ 46,255,456	\$ 895,192,133
Pension Expense/(Income) (% of Payroll)	1.00%	19.72%
<u>Local Employers</u>		
Net Pension Liability	\$ 11,972,782,878	\$ 16,435,616,426
Deferred Outflows	(248,531,007)	(1,383,360,202)
Deferred Inflows	<u>7,422,916,600</u>	<u>6,885,726,332</u>
Net Impact on Statement of Net Position	\$ 19,147,168,471	\$ 21,937,982,556
Total Pension Expense/(Income)	\$ (1,599,674,464)	\$ 407,705,399
Pension Expense/(Income) (% of Payroll)	-21.83%	5.63%
<u>Total</u>		
Net Pension Liability	\$ 33,602,280,363	\$ 38,659,583,951
Deferred Outflows	(818,359,815)	(2,590,600,991)
Deferred Inflows	<u>11,243,411,487</u>	<u>12,009,239,423</u>
Net Impact on Statement of Net Position	\$ 44,027,332,035	\$ 48,078,222,383
Total Pension Expense/(Income)	\$ (1,553,419,008)	\$ 1,302,897,532
Pension Expense/(Income) (% of Payroll)	-12.98%	11.06%

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

SECTION II – CERTIFICATION

The purpose of this report is to provide accounting and financial reporting information under GASB 68 for the Public Employees' Retirement System of New Jersey (PERS). This report is for the use of PERS, the DPB and their auditors in preparing financial reports in accordance with applicable law and accounting requirements. This report is not appropriate for other purposes, including the measurement of funding requirements for PERS and estimating the price to settle PERS's obligations.

In preparing our report, we relied on information (some oral and some written) supplied by the DPB. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

Future actuarial measurements may differ significantly from the current measurements 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.

For purposes of this report, the projection of the Plan's contributions and projected benefit payments as of June 30, 2021 was based on the recommended demographic assumptions of the July 1, 2014 – June 30, 2018 Experience Study, approved by the Board of Trustees on February 19, 2020. The calculation of the Total Pension Liability as of June 30, 2021 was based on the same demographic assumptions except for the mortality assumption, which was based on the SOA's Scale MP-2021 mortality improvement scale upon direction from the DPB. While we do not find the use of the SOA's Scale MP-2021 unreasonable, it does not reflect the analysis of actual mortality experience from our Experience Study which was the basis for our recommended mortality assumptions, including the mortality improvement scale.

This report was prepared using census data as of the July 1, 2020 valuation date and financial information as of the June 30, 2021 measurement date. Given the uncertainty and lack of credible data regarding the impact that COVID-19 may have had on the System's demographic experience between the measurement date and reporting date, no specific adjustments have been made at this time. Chapter 115, P.L. 2020 modifies the hiring, rehiring, retention, and benefits of certain public employees during the COVID-19 Public Health Emergency under Executive Order No. 103 of 2020, as extended. Chapter 54, P.L. 2020, amends eligibility for accidental disability and accidental death benefits for PERS law enforcement officers, firefighters, or emergency medical responders when related to the contraction of COVID-19 during the Public Health Emergency declared by the Governor in Executive Order 103 of 2020, as extended. We will continue to monitor developments regarding the COVID-19 pandemic and the impact it may have on the System. Actual experience, both demographic and economic, will be reflected in subsequent years as experience emerges.

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

SECTION II – CERTIFICATION

This report reflects one change to the plan provisions. Chapter 140, P.L. 2021 reopened the Worker's Compensation Judges (WCJ) Part of PERS and transferred WCJs from the Defined Contribution Retirement Program (DCRP) and the regular part of PERS into the WCJ Part of PERS. DCRP account balances from member contributions were transferred to PERS and members received WCJ Part service credit for service starting on the member's date of appointment. The corresponding increase in the unfunded actuarial liability is amortized over a closed 20-year period. The additional unfunded actuarial liability contribution and the increased normal cost will be paid by transfers from the Second Injury Fund (SIF). In conjunction with Chapter 140, P.L. 2021, the assumed retirement rates for members in the WCJ Part of PERS were revised to match the assumed retirement rates used in the Judicial Retirement System (JRS) of New Jersey's July 1, 2020 Actuarial Valuation Report. This plan change increased the Net Pension Liability, which is immediately recognized in the pension expense.

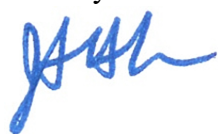
Based on the State Treasurer's recommendation the following investment return assumptions are used to determine the actuarially determined contributions:

- Effective with the July 1, 2019 valuation: 7.30% per annum,
- Effective with the July 1, 2021 valuation: 7.00% per annum,

In accordance with Paragraph 40 of GASB Statement No. 67, the projection of the Plan's fiduciary net position is based on a long-term expected rate of return of 7.00% per annum. The discount rate used to measure the Total Pension Liability is 7.00% as of June 30, 2021 and is described in Section III of the report.

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

This report was prepared for PERS for the purposes described herein and for the use by the plan auditor in completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to such other users.



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THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE

SECTION III – DETERMINATION OF DISCOUNT RATE

The discount rate used to measure the Total Pension Liability was 7.00% as of June 30, 2020 and June 30, 2021. As discussed with the DPB, the projection of cash flows used to determine the discount rate as of June 30, 2021 assumed:

- In accordance with Paragraph 40 of GASB Statement No. 67, the projection of the Plan's fiduciary net position is based on a long-term expected rate of return of 7.00% per annum.
- In accordance with Paragraph 37 of GASB Statement No. 67, the projection of the Plan's contributions and projected benefit payments are based on the same assumptions used to determine the expected contributions for the System. The demographic assumptions are based on the recommendations of the July 1, 2014 – June 30, 2018 Experience Study as approved by the Board of Trustees on February 19, 2020.

Based on the State Treasurer's recommendation the following investment return assumptions are used to determine the actuarially determined contributions:

- Effective with the July 1, 2019 valuation: 7.30% per annum,
- Effective with the July 1, 2021 valuation: 7.00% per annum,
- It is assumed that the Local employers will contribute 100% of their actuarially determined contribution, except for FYE 2021 and FYE 2022 when the impact of the recent demographic assumption changes is phased-in, and 100% of their Non-Contributory Group Insurance Premium Fund (NCGIPF) contribution. The State contributed 107.91% of the actuarially determined contribution for fiscal year ending June 30, 2022 at the beginning of the fiscal year. This contribution has been included in the projections. In subsequent years, it is assumed that the State will contribute 100% of their actuarially determined contribution and NCGIPF contribution. The 100% contribution rate is the total State contribution rate expected to be paid in fiscal year ending June 30, 2023 with respect to the actuarially determined contribution for the fiscal year ending June 30, 2023 for all State administered retirement systems.
- Consistent with Chapter 83, P.L. 2016, it is assumed that the State will make pension contributions in equal amounts at the end of each quarter. This assumption does not apply to the fiscal year ending June 30, 2022 contribution that was paid in full at the beginning of the fiscal year.
- In accordance with Chapter 98, P. L. 2017, PERS receives 21.02% of the proceeds of the Lottery Enterprise for a period of 30 years. Revenues received from lottery proceeds are assumed to be contributed to the System on a monthly basis.
- It is assumed that Local employers' contributions, including the NCGIPF contributions, are expected to be received on April 1st, 21 months after the associated valuation date.
- The State NCGIPF contributions are assumed to be paid monthly.
- Annual administrative expenses are assumed to be 0.23% and 0.41% of expected pension benefit payments for State and Local employers, respectively.

THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE

SECTION III – DETERMINATION OF DISCOUNT RATE

The Fiduciary Net Position (FNP) includes Local employers' contributions receivable as reported in the financial statements provided to us by the DPB. In determining the discount rate in Appendix D, the FNP at the beginning of each year does not reflect receivable contributions as those amounts are not available at the beginning of the year to pay benefits. The receivable contributions for the current year and prior year are shown below:

- For FYE June 30, 2020, the FNP includes receivable contributions of \$1,144,889,253 (\$1,041,074,703 for appropriations, \$52,874,860 for NCGIPF, \$23,228,193 for Chapter 19 and \$27,711,497 for Early Retirement Incentive (ERI)).
- For FYE June 30, 2021, the FNP includes receivable contributions of \$1,207,896,120 (\$1,117,134,996 for appropriations, \$53,981,229 for NCGIPF, \$17,058,889 for Chapter 19 and \$19,721,006 for ERI).

Municipal bond rates of 2.21% as of June 30, 2020 and 2.16% as of June 30, 2021 were used in the development of the blended GASB discount rate after the Plan's fiduciary net position was no longer sufficient to make future benefit payments, when applicable. As selected by the State Treasurer, the rates are based on the Bond Buyer GO 20-Bond Municipal Bond Index. Based on the long-term rate of return of 7.00% and the municipal bond rate of 2.21% as of June 30, 2020, the blended GASB discount rate was 7.00% as of June 30, 2020. As of June 30, 2021, based on the assumptions above, the pension Plan's fiduciary net position is expected to be sufficient to make all projected future benefit payments for current Plan members; therefore, the GASB discount rate as of June 30, 2021 is equal to the long-term rate of return of **7.00%**. The assumed discount rates have been determined in accordance with the method prescribed by GASB Statement No. 67.

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

SECTION IV – COLLECTIVE EMPLOYER REPORTING AMOUNTS

We understand the State and Local employers have elected to use the 2021 measurement date for its 2022 reporting date. As a result, the schedules in this section will be used by the State and Local employers for their 2022 reporting.

The impact of experience gains or losses and assumption changes on the TPL are recognized in expense over the average expected remaining service life of all active and inactive members of the System. As of the measurement date, this recognition period was 5.13 years.

The following tables summarize the current balances of deferred outflows and deferred inflows of resources along with the net recognition over the next five years.

Table IV-1A		
Schedule of Collective Deferred Inflows and Outflows of Resources		
State		
	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 525,689,806	\$ 74,728,021
Changes in assumptions	44,139,002	3,065,515,727
Net differences between projected and actual earnings on pension plan investments	0	680,251,139
Total	<u>\$ 569,828,808</u>	<u>\$ 3,820,494,887</u>
Amounts reported as deferred outflows and deferred inflows of resources will be recognized in pension expense as follows:		
Measurement year ended June 30:		
2022	\$ (1,544,577,737)	
2023	(972,489,865)	
2024	(498,140,216)	
2025	(241,017,805)	
2026	5,559,544	
Thereafter	\$ 0	

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

SECTION IV – COLLECTIVE EMPLOYER REPORTING AMOUNTS

Table IV-1B		
Schedule of Collective Deferred Inflows and Outflows of Resources		
Local Employers		
	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 186,834,545	\$ 84,806,953
Changes in assumptions	61,696,462	4,217,430,478
Net differences between projected and actual earnings on pension plan investments	0	3,120,679,169
Total	<u>\$ 248,531,007</u>	<u>\$ 7,422,916,600</u>
Amounts reported as deferred outflows and deferred inflows of resources will be recognized in pension expense as follows:		
Measurement year ended June 30:		
2022	\$ (2,795,257,884)	
2023	(1,995,807,503)	
2024	(1,360,800,384)	
2025	(1,022,917,429)	
2026	397,607	
Thereafter	\$ 0	

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

SECTION IV – COLLECTIVE EMPLOYER REPORTING AMOUNTS

Table IV-1C		
Schedule of Collective Deferred Inflows and Outflows of Resources		
Total		
	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 712,524,351	\$ 159,534,974
Changes in assumptions	105,835,464	7,282,946,205
Net differences between projected and actual earnings on pension plan investments	0	3,800,930,308
Total	<u>\$ 818,359,815</u>	<u>\$ 11,243,411,487</u>
Amounts reported as deferred outflows and deferred inflows of resources will be recognized in pension expense as follows:		
Measurement year ended June 30:		
2022	\$ (4,339,835,621)	
2023	(2,968,297,368)	
2024	(1,858,940,600)	
2025	(1,263,935,234)	
2026	5,957,151	
Thereafter	\$ 0	

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

SECTION IV – COLLECTIVE EMPLOYER REPORTING AMOUNTS

**Table IV-2A
Detailed Schedule of Collective Deferred Inflows and Outflows of Resources
State**

Recognition of differences between expected and actual experience

From Measurement Year Ending	Remaining Recognition Period	Remaining Deferred (Inflows) and Outflows*	Recognition Year							
			2021	2022	2023	2024	2025	2026	Thereafter	
2021	5.13	\$ 164,561,852	\$ 32,078,334	\$ 32,078,334	\$ 32,078,334	\$ 32,078,334	\$ 32,078,334	\$ 32,078,334	\$ 4,170,182	\$ 0
2020	4.16	501,845,800	120,636,009	120,636,009	120,636,009	120,636,009	120,636,009	19,301,764	0	0
2019	3.21	(7,424,219)	(2,312,840)	(2,312,840)	(2,312,840)	(485,699)	0	0	0	0
2018	2.63	(112,326,239)	(42,709,597)	(42,709,597)	(26,907,045)	0	0	0	0	0
2017	1.48	36,989,199	24,992,702	11,996,497	0	0	0	0	0	0
2016	0.57	45,428,303	45,428,303	0	0	0	0	0	0	0
Total		\$ 629,074,696	\$ 178,112,911	\$ 119,688,403	\$ 123,494,458	\$ 152,228,644	\$ 51,380,098	\$ 4,170,182	\$ 0	\$ 0

Recognition of changes in assumptions

From Measurement Year Ending	Remaining Recognition Period	Remaining Deferred (Inflows) and Outflows*	Recognition Year							
			2021	2022	2023	2024	2025	2026	Thereafter	
2021	5.13	\$ 54,826,412	\$ 10,687,410	\$ 10,687,410	\$ 10,687,410	\$ 10,687,410	\$ 10,687,410	\$ 10,687,410	\$ 1,389,362	\$ 0
2020	4.16	(1,875,912,907)	(450,940,603)	(450,940,603)	(450,940,603)	(450,940,603)	(450,940,603)	(72,150,495)	0	0
2019	3.21	(820,414,348)	(255,580,794)	(255,580,794)	(255,580,794)	(255,580,794)	(53,671,966)	0	0	0
2018	2.63	(1,107,988,417)	(421,288,372)	(421,288,372)	(265,411,673)	0	0	0	0	0
2017	1.48	(1,199,446,961)	(810,437,137)	(389,009,824)	0	0	0	0	0	0
2016	0.57	370,773,517	370,773,517	0	0	0	0	0	0	0
Total		\$ (4,578,162,704)	\$ (1,556,785,979)	\$ (1,506,132,183)	\$ (961,245,660)	\$ (493,925,159)	\$ (61,463,085)	\$ 1,389,362	\$ 0	\$ 0

Recognition of net differences between projected and actual earnings on pension plan investments

From Measurement Year Ending	Remaining Recognition Period	Remaining Deferred (Inflows) and Outflows*	Recognition Year							
			2021	2022	2023	2024	2025	2026	Thereafter	
2021	5.00	\$ (1,154,674,098)	\$ (230,934,820)	\$ (230,934,820)	\$ (230,934,820)	\$ (230,934,820)	\$ (230,934,820)	\$ (230,934,818)	\$ 0	\$ 0
2020	4.00	297,964,473	74,491,118	74,491,118	74,491,118	74,491,119	0	0	0	0
2019	3.00	65,115,119	21,705,040	21,705,040	21,705,039	0	0	0	0	0
2018	2.00	(46,790,589)	(23,395,294)	(23,395,295)	0	0	0	0	0	0
2017	1.00	(64,085,033)	(64,085,033)	0	0	0	0	0	0	0
Total		\$ (902,470,128)	\$ (222,218,989)	\$ (158,133,957)	\$ (134,738,663)	\$ (156,443,701)	\$ (230,934,818)	\$ 0	\$ 0	\$ 0

Grand Total		\$ (4,851,558,136)	\$ (1,600,892,057)	\$ (1,544,577,737)	\$ (972,489,865)	\$ (498,140,216)	\$ (241,017,805)	\$ 5,559,544	\$ 0	\$ 0
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* As of the beginning of the measurement year

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

SECTION IV – COLLECTIVE EMPLOYER REPORTING AMOUNTS

**Table IV-2B
Detailed Schedule of Collective Deferred Inflows and Outflows of Resources
Local Employers**

Recognition of differences between expected and actual experience

From Measurement Year Ending	Remaining Recognition Period	Remaining Deferred (Inflows) and Outflows*	Recognition Year							
			2021	2022	2023	2024	2025	2026	Thereafter	
2021	5.13	\$ (60,944,816)	\$ (11,880,081)	\$ (11,880,081)	\$ (11,880,081)	\$ (11,880,081)	\$ (11,880,081)	\$ (11,880,081)	\$ (1,544,411)	\$ 0
2020	4.16	143,037,119	34,383,923	34,383,923	34,383,923	34,383,923	34,383,923	5,501,427	0	0
2019	3.21	91,931,597	28,639,126	28,639,126	28,639,126	6,014,219	0	0	0	0
2018	2.63	(57,669,960)	(21,927,742)	(21,927,742)	(13,814,476)	0	0	0	0	0
2017	1.48	45,907,379	31,018,501	14,888,878	0	0	0	0	0	0
2016	0.57	16,054,587	16,054,587	0	0	0	0	0	0	0
Total		\$ 178,315,906	\$ 76,288,314	\$ 44,104,104	\$ 37,328,492	\$ 28,518,061	\$ (6,378,654)	\$ (1,544,411)	\$ 0	\$ 0

Recognition of changes in assumptions

From Measurement Year Ending	Remaining Recognition Period	Remaining Deferred (Inflows) and Outflows*	Recognition Year							
			2021	2022	2023	2024	2025	2026	Thereafter	
2021	5.13	\$ 76,635,073	\$ 14,938,611	\$ 14,938,611	\$ 14,938,611	\$ 14,938,611	\$ 14,938,611	\$ 14,938,611	\$ 1,942,018	\$ 0
2020	4.16	(2,567,368,088)	(617,155,790)	(617,155,790)	(617,155,790)	(617,155,790)	(617,155,790)	(98,744,928)	0	0
2019	3.21	(1,202,655,102)	(374,658,911)	(374,658,911)	(374,658,911)	(78,678,369)	0	0	0	0
2018	2.63	(1,514,405,723)	(575,819,666)	(575,819,666)	(362,766,391)	0	0	0	0	0
2017	1.48	(1,543,627,459)	(1,042,991,527)	(500,635,932)	0	0	0	0	0	0
2016	0.57	529,030,023	529,030,023	0	0	0	0	0	0	0
Total		\$ (6,222,391,276)	\$ (2,066,657,260)	\$ (2,053,331,688)	\$ (1,339,642,481)	\$ (680,895,548)	\$ (83,806,317)	\$ 1,942,018	\$ 0	\$ 0

Recognition of net differences between projected and actual earnings on pension plan investments

From Measurement Year Ending	Remaining Recognition Period	Remaining Deferred (Inflows) and Outflows*	Recognition Year							
			2021	2022	2023	2024	2025	2026	Thereafter	
2021	5.00	\$ (4,663,662,286)	\$ (932,732,457)	\$ (932,732,457)	\$ (932,732,457)	\$ (932,732,457)	\$ (932,732,457)	\$ (932,732,458)	\$ 0	\$ 0
2020	4.00	897,238,240	224,309,560	224,309,560	224,309,560	224,309,560	0	0	0	0
2019	3.00	44,788,145	14,929,381	14,929,381	14,929,383	0	0	0	0	0
2018	2.00	(185,073,570)	(92,536,786)	(92,536,784)	0	0	0	0	0	0
2017	1.00	(199,553,318)	(199,553,318)	0	0	0	0	0	0	0
Total		\$ (4,106,262,789)	\$ (985,583,620)	\$ (786,030,300)	\$ (693,493,514)	\$ (708,422,897)	\$ (932,732,458)	\$ 0	\$ 0	\$ 0

Grand Total		\$ (10,150,338,159)	\$ (2,975,952,566)	\$ (2,795,257,884)	\$ (1,995,807,503)	\$ (1,360,800,384)	\$ (1,022,917,429)	\$ 397,607	\$ 0	\$ 0
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* As of the beginning of the measurement year

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

SECTION IV – COLLECTIVE EMPLOYER REPORTING AMOUNTS

The annual pension expense recognized by the State and Local employers can be calculated two different ways. First, it is the change in the amounts reported on the Statement of Net Position that relate to PERS and are not attributable to employer contributions. That is, it is the change in NPL plus the changes in deferred outflows and inflows plus employer contributions.

Alternatively, annual pension expense can be calculated by its individual components. While GASB does not require or suggest the organization of the individual components shown in the table below, we believe it helps to understand the level and volatility of pension expense.

First, there are components referred to as operating expenses. These are items directly attributable to the operation of the plan during the measurement year. Service cost less employee contributions represents the increase in employer-provided benefits attributable to the year, and administrative expenses are the cost of operating PERS for the year.

Second, there are the financing expenses: the interest on the Total Pension Liability less the expected return on assets.

The final category is changes. This category will drive most of the volatility in pension expense from year to year. It includes any changes in benefits made during the year and the recognized amounts due to assumption changes, gains or losses on the TPL, and investment gains or losses.

The following table shows the development of pension expense for the State and Local employers through both of these methodologies.

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

SECTION IV – COLLECTIVE EMPLOYER REPORTING AMOUNTS

Table IV-3A Calculation of Collective Pension Expense State		
Measurement Year Ending	2021	2020
Change in Net Pension Liability	\$ (594,470,040)	\$ (788,452,815)
Change in Deferred Outflows	637,411,981	330,453,941
Change in Deferred Inflows	(1,303,018,204)	343,584,167
Employer Contributions*	1,306,192,295	1,014,817,197
Other - NCGIPF adjustment	<u>0</u>	<u>0</u>
Subtotal	\$ 46,116,032	\$ 900,402,490
Employer Contribution - delayed enrollments**	139,424	220,673
Employer Contribution - delayed appropriations**	0	(5,431,030)
Employer Contribution - retroactive**	0	0
Employer Contribution - additional**	<u>0</u>	<u>0</u>
Total Pension Expense/(Income)	\$ 46,255,456	\$ 895,192,133
Total Pension Expense/(Income) as % of Payroll	1.00%	19.72%
Operating Expenses		
Service cost	\$ 442,011,429	\$ 505,967,261
Employee contributions	(346,264,728)	(345,896,206)
Administrative expenses	<u>4,265,664</u>	<u>5,895,744</u>
Total	\$ 100,012,365	\$ 165,966,799
Financing Expenses		
Interest cost	\$ 1,943,414,332	\$ 1,827,655,555
Expected return on assets	<u>(404,767,415)</u>	<u>(430,893,889)</u>
Total	\$ 1,538,646,917	\$ 1,396,761,666
Changes		
Benefit changes	\$ 8,488,231	\$ (9,658,330)
Recognition of assumption changes	(1,556,785,979)	(1,031,284,083)
Recognition of liability gains and losses	178,112,911	230,881,907
Recognition of investment gains and losses	<u>(222,218,989)</u>	<u>142,524,174</u>
Total	\$ (1,592,403,826)	\$ (667,536,332)
Total Pension Expense/(Income)	\$ 46,255,456	\$ 895,192,133

* Includes appropriations and lottery revenue

** Pension expense related to specific liabilities of individual employers

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

SECTION IV – COLLECTIVE EMPLOYER REPORTING AMOUNTS

Table IV-3B Calculation of Collective Pension Expense Local Employers		
Measurement Year Ending	2021	2020
Change in Net Pension Liability	\$ (4,462,833,548)	\$ (1,708,215,709)
Change in Deferred Outflows	1,134,829,195	739,259,695
Change in Deferred Inflows	537,190,268	267,541,477
Employer Contributions*	1,184,196,137	1,102,066,862
Other - NCGIPF adjustment	<u>0</u>	<u>0</u>
Subtotal	\$ (1,606,617,948)	\$ 400,652,325
Employer Contribution - delayed enrollments**	600,674	346,761
Employer Contribution - delayed appropriations**	2,411,251	1,284,584
Employer Contribution - retroactive**	3,838,039	5,318,876
Employer Contribution - additional**	<u>93,520</u>	<u>102,853</u>
Total Pension Expense/(Income)	\$ (1,599,674,464)	\$ 407,705,399
Total Pension Expense/(Income) as % of Payroll	-21.83%	5.63%
Operating Expenses		
Service cost	\$ 692,825,511	\$ 792,122,562
Employee contributions	(563,674,866)	(563,040,019)
Administrative expenses	<u>9,854,513</u>	<u>13,469,267</u>
Total	\$ 139,005,158	\$ 242,551,810
Financing Expenses		
Interest cost	\$ 2,722,623,035	\$ 2,580,980,825
Expected return on assets	<u>(1,485,350,091)</u>	<u>(1,519,380,739)</u>
Total	\$ 1,237,272,944	\$ 1,061,600,086
Changes		
Benefit changes	\$ 0	\$ (17,692,633)
Recognition of assumption changes	(2,066,657,260)	(1,340,444,218)
Recognition of liability gains and losses	76,288,314	181,970,816
Recognition of investment gains and losses	<u>(985,583,620)</u>	<u>279,719,538</u>
Total	\$ (2,975,952,566)	\$ (896,446,497)
Total Pension Expense/(Income)	\$ (1,599,674,464)	\$ 407,705,399

* Includes appropriations and State contributions made on behalf of Local employers

** Pension expense related to specific liabilities of individual employers

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

SECTION IV – COLLECTIVE EMPLOYER REPORTING AMOUNTS

Table IV-3C Calculation of Collective Pension Expense Total		
Measurement Year Ending	2021	2020
Change in Net Pension Liability	\$ (5,057,303,588)	\$ (2,496,668,524)
Change in Deferred Outflows	1,772,241,176	1,069,713,636
Change in Deferred Inflows	(765,827,936)	611,125,644
Employer Contributions*	2,490,388,432	2,116,884,059
Other - NCGIPF adjustment	<u>0</u>	<u>0</u>
Subtotal	\$ (1,560,501,916)	\$ 1,301,054,815
Employer Contribution - delayed enrollments**	740,098	567,434
Employer Contribution - delayed appropriations**	2,411,251	(4,146,446)
Employer Contribution - retroactive**	3,838,039	5,318,876
Employer Contribution - additional**	<u>93,520</u>	<u>102,853</u>
Total Pension Expense/(Income)	\$ (1,553,419,008)	\$ 1,302,897,532
Total Pension Expense/(Income) as % of Payroll	-12.98%	11.06%
Operating Expenses		
Service cost	\$ 1,134,836,940	\$ 1,298,089,823
Employee contributions	(909,939,594)	(908,936,225)
Administrative expenses	<u>14,120,177</u>	<u>19,365,011</u>
Total	\$ 239,017,523	\$ 408,518,609
Financing Expenses		
Interest cost	\$ 4,666,037,367	\$ 4,408,636,380
Expected return on assets	<u>(1,890,117,506)</u>	<u>(1,950,274,628)</u>
Total	\$ 2,775,919,861	\$ 2,458,361,752
Changes		
Benefit changes	\$ 8,488,231	\$ (27,350,963)
Recognition of assumption changes	(3,623,443,239)	(2,371,728,301)
Recognition of liability gains and losses	254,401,225	412,852,723
Recognition of investment gains and losses	<u>(1,207,802,609)</u>	<u>422,243,712</u>
Total	\$ (4,568,356,392)	\$ (1,563,982,829)
Total Pension Expense/(Income)	\$ (1,553,419,008)	\$ 1,302,897,532

* Includes State and Local employer appropriations, lottery revenue and State contributions made on behalf of Local employers

** Pension expense related to specific liabilities of individual employers

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX A – MEMBERSHIP INFORMATION

	Plan Membership					
	July 1, 2020			July 1, 2019		
	State	Local Employers	Total	State	Local	Total
Contributing Actives	67,774	142,757	210,531	67,906	145,287	213,193
Non-Contributing Actives	9,331	26,914	36,245	9,255	26,597	35,852
Terminated Vested	213	664	877	229	713	942
Inactive Receiving Benefits*	60,783	123,992	184,775	59,849	122,643	182,492
Total	138,101	294,327	432,428	137,239	295,240	432,479
Annual Compensation for Contributing Actives	\$ 4,637,529,278	\$ 7,328,393,274	\$ 11,965,922,552	\$ 4,539,069,588	\$ 7,236,080,086	\$ 11,775,149,674
Annual Retirement Allowances for Those Receiving Benefits	\$ 1,726,418,877	\$ 2,328,399,284	\$ 4,054,818,161	\$ 1,671,166,694	\$ 2,251,384,758	\$ 3,922,551,452

* QDRO recipients are excluded from the counts for both years.

THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

A. Actuarial Assumptions

- 1. Investment Rate of Return for determining Actuarially Determined Contributions**
 - July 1, 2020 valuation: 7.30% per annum, compounded annually.
 - July 1, 2021 and later valuations: 7.00% per annum, compounded annually.

- 2. Long-Term Expected Rate of Return** 7.00% per annum, compounded annually.

- 3. Interest Crediting Rate on Accumulated Deductions** 7.30% per annum, compounded annually. Interest credits are assumed to end upon termination.

- 4. GASB 67 Effective Discount Rate**
 - June 30, 2020: 7.00% per annum, compounded annually.
 - June 30, 2021: 7.00% per annum, compounded annually.

- 5. Price Inflation**
 - 2.75% per annum, compounded annually.

- 6. Wage Inflation**
 - 3.25% per annum, compounded annually.

- 7. Cost-of-Living Adjustments (COLAs)** No future COLAs are assumed. Previously granted COLAs are included in the data.

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

8. Salary Increases

Salary increases vary by years of service and time period. Annual salary increases are shown below.

Salary Increases		
Years of Service	Period Ending June 30, 2026	Ultimate Period
0	6.00%	7.00%
1	6.00	7.00
2	5.75	6.75
3	5.50	6.50
4	5.00	6.00
5	4.75	5.75
6	4.50	5.50
7	4.25	5.25
8	4.00	5.00
9	3.80	4.80
10	3.60	4.60
11	3.40	4.40
12	3.20	4.20
13	3.00	4.00
14	2.90	3.90
15	2.80	3.80
16	2.70	3.70
17-21	2.60	3.60
22	2.50	3.50
23-25	2.40	3.40
26	2.30	3.30
27	2.20	3.20
28	2.10	3.10
29+	2.00	3.00

Salary increases are assumed to occur on July 1.

9. 401(a)(17) Pay Limit

\$285,000 in 2020 increasing 2.75% per annum, compounded annually.

10. Social Security Wage Base

\$137,700 in 2020 increasing 3.25% per annum, compounded annually.

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

11. Termination

Termination rates are shown separately for members electing a refund of contributions and members electing a deferred annuity.

Termination rates for members electing a refund of contributions are as follows:

Termination Rates for Members Electing a Refund				
Service	State		Local Employers'	
	Less than 31 Years Old	31 Years or Older	Less than 31 Years Old	31 Years or Older
0	23.00%	11.00%	21.00%	12.00%
1	23.00	11.00	21.00	12.00
2	12.00	8.00	16.00	9.00
3	11.00	7.00	15.00	8.00
4	10.50	6.00	13.00	7.00
5	10.00	6.00	12.00	7.00
6	7.50	6.00	10.00	6.50
7	7.50	5.00	9.00	5.50
8	7.50	4.50	9.00	5.00
9	7.50	3.50	6.50	4.00
10	1.70	1.70	1.70	1.70
11	1.50	1.50	1.50	1.50
12	1.10	1.10	1.40	1.40
13	1.10	1.10	1.20	1.20
14	0.70	0.70	1.10	1.10
15	0.60	0.60	0.90	0.90
16	0.60	0.60	0.80	0.80
17	0.60	0.60	0.70	0.70
18	0.50	0.50	0.60	0.60
19	0.50	0.50	0.60	0.60
20	0.50	0.50	0.50	0.50
21	0.50	0.50	0.50	0.50
22	0.40	0.40	0.50	0.50
23	0.40	0.40	0.40	0.40
24-29	0.30	0.30	0.30	0.30

No termination is assumed after attainment of retirement eligibility.

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

Termination rates for members electing a deferred annuity are as follows:

Termination Rates for Members Electing a Deferred Annuity		
Service	State	Local Employers
< 10	N/A	N/A
10	1.60%	1.80%
11	1.60	1.80
12	1.20	1.70
13	1.20	1.60
14	1.00	1.50
15	0.90	1.40
16	0.90	1.30
17	0.80	1.20
18	0.80	1.10
19	0.80	1.00
20	0.80	1.00
21	0.70	0.90
22	0.50	0.80
23	0.50	0.80
24	0.40	0.70

No termination is assumed after attainment of retirement eligibility.

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

12. Disability

Ordinary disability rates are as follows:

Ordinary Disability Rates					
Age	State	Local Employers	Age	State	Local Employers
25	0.100%	0.200%	50	0.380%	0.390%
26	0.110	0.200	51	0.395	0.405
27	0.120	0.200	52	0.410	0.420
28	0.130	0.200	53	0.425	0.435
29	0.140	0.200	54	0.440	0.450
30	0.150	0.205	55	0.455	0.460
31	0.160	0.210	56	0.470	0.470
32	0.170	0.215	57	0.485	0.480
33	0.180	0.220	58	0.500	0.490
34	0.190	0.225	59	0.515	0.500
35	0.205	0.230	60	0.530	0.510
36	0.220	0.235	61	0.545	0.520
37	0.235	0.240	62	0.560	0.530
38	0.250	0.245	63	0.575	0.540
39	0.265	0.250	64	0.590	0.550
40	0.275	0.260	65	0.605	0.560
41	0.285	0.270	66	0.620	0.570
42	0.295	0.280	67	0.635	0.580
43	0.305	0.290	68	0.650	0.590
44	0.315	0.300	69	0.665	0.600
45	0.325	0.315	70	0.675	0.615
46	0.335	0.330	71	0.685	0.630
47	0.345	0.345	72	0.695	0.645
48	0.355	0.360	73	0.705	0.660
49	0.365	0.375	74	0.715	0.675

Accidental disability rates are assumed to be 0.02% for all State members and 0.03% for all Local employers' members.

Ordinary disability rates apply upon attainment of 10 years of service and continue through the ultimate retirement age.

Members are assumed to receive the greater of the applicable disability benefit or the early or service retirement benefit, depending on eligibility.

Tier 4 and Tier 5 members are not eligible for the Ordinary or Accidental Disability benefits but the disability rates still apply. Such members terminating under the disability decrement are assumed to separate from service and elect a Deferred Retirement benefit.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

13. Mortality

Pre-Retirement Mortality: The Pub-2010 General Below-Median Income Employee mortality table [*PubG-2010(B) Employee*] as published by the Society of Actuaries with an 82.2% adjustment for males and 101.4% adjustment for females, and with future improvement from the base year of 2010 on a generational basis. For purposes of calculating projected cash flows used to determine the GASB discount rate, mortality improvement is based on SOA's Scale MP-2018. Upon direction from the DPB, for purposes of calculating the Total Pension Liability, mortality improvement is based on SOA's Scale MP-2021.

All pre-retirement deaths are assumed to be ordinary deaths.

Healthy Retirees and Beneficiaries (Healthy Annuitants): The Pub-2010 General Below-Median Income Healthy Retiree mortality table [*PubG-2010(B) Healthy Retiree*] as published by the Society of Actuaries with a 91.4% adjustment for males and 99.7% adjustment for females, and with future improvement from the base year of 2010 on a generational basis. For purposes of calculating projected cash flows used to determine the GASB discount rate, mortality improvement is based on SOA's Scale MP-2018. Upon direction from the DPB, for purposes of calculating the Total Pension Liability, mortality improvement is based on SOA's Scale MP-2021.

Disabled Retirees (Disabled Annuitants): The Pub-2010 Non-Safety Disabled Retiree mortality table [*PubNS-2010 Disabled Retiree*] as published by the Society of Actuaries with a 127.7% adjustment for males and 117.2% adjustment for females, and with future improvement from the base year of 2010 on a generational basis. For purposes of calculating projected cash flows used to determine the GASB discount rate, mortality improvement is based on SOA's Scale MP-2018. Upon direction from the DPB, for purposes of calculating the Total Pension Liability, mortality improvement is based on SOA's Scale MP-2021.

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

14. Retirement

Retirement rates for State Tier 1-4 members are as follows:

State Tiers 1-4 Retirement Rates			
Age	Less Than 25 Years of Service	25 Years of Service	26 or More Years of Service
< 49	N/A	3.50%	2.00%
49	N/A	3.50	2.00
50	N/A	3.50	3.50
51	N/A	3.50	3.50
52	N/A	6.00	4.25
53	N/A	6.00	5.50
54	N/A	7.00	6.75
55	N/A	17.50	18.00
56	N/A	17.50	15.00
57	N/A	17.50	14.00
58	N/A	20.00	14.00
59	N/A	20.00	14.00
60	5.00	20.00	17.00
61	5.00	30.00	17.00
62	8.00	36.50	27.00
63	8.00	36.50	24.00
64	8.00	36.50	21.00
65	12.00	44.00	25.00
66	17.00	55.00	30.00
67	16.00	50.00	26.00
68	15.00	47.00	23.00
69	15.00	47.00	23.00
70	15.00	47.00	26.00
71	15.00	47.00	23.00
72	15.00	47.00	21.00
73	15.00	47.00	21.00
74	15.00	47.00	21.00
75	100.00	100.00	100.00

Rates apply upon retirement eligibility by tier.

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

Retirement rates for Local employers' Tier 1-4 members are as follows:

Local Employers' Tiers 1-4 Retirement Rates			
Age	Less Than 25 Years of Service	25 Years of Service	26 or More Years of Service
< 49	N/A	3.00%	2.25%
49	N/A	3.00	3.00
50	N/A	3.50	3.50
51	N/A	4.25	3.75
52	N/A	4.75	3.75
53	N/A	7.00	5.00
54	N/A	7.00	6.00
55	N/A	15.00	15.00
56	N/A	17.00	13.00
57	N/A	18.00	12.00
58	N/A	18.00	12.00
59	N/A	18.00	12.00
60	4.50	18.00	14.00
61	4.50	18.00	14.00
62	7.50	34.00	25.00
63	7.50	34.00	22.00
64	7.50	34.00	20.00
65	11.00	35.00	20.00
66	15.00	43.00	26.00
67	14.00	40.00	26.00
68	13.00	40.00	22.00
69	13.00	37.00	22.00
70	13.00	37.00	24.00
71	13.00	37.00	24.00
72	13.00	37.00	20.00
73	13.00	37.00	20.00
74	13.00	37.00	20.00
75	100.00	100.00	100.00

Rates apply upon retirement eligibility by tier.

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

Retirement rates for State Tier 5 members are as follows:

State Tier 5 Retirement Rates					
Age	Less Than 25 Years of Service	25 Years of Service	26 to 29 Years of Service	30 Years of Service	31 or More Years of Service
< 49	N/A	N/A	N/A	3.50%	2.00%
49	N/A	N/A	N/A	3.50	2.00
50	N/A	N/A	N/A	3.50	3.50
51	N/A	N/A	N/A	3.50	3.50
52	N/A	N/A	N/A	6.00	4.25
53	N/A	N/A	N/A	6.00	5.50
54	N/A	N/A	N/A	7.00	6.75
55	N/A	N/A	N/A	17.50	18.00
56	N/A	N/A	N/A	17.50	15.00
57	N/A	N/A	N/A	17.50	14.00
58	N/A	N/A	N/A	20.00	14.00
59	N/A	N/A	N/A	20.00	14.00
60	N/A	N/A	N/A	20.00	17.00
61	N/A	N/A	N/A	30.00	17.00
62	N/A	N/A	N/A	36.50	27.00
63	N/A	N/A	N/A	36.50	24.00
64	N/A	N/A	N/A	36.50	21.00
65	12.00	44.00	44.00	44.00	25.00
66	17.00	55.00	30.00	30.00	30.00
67	16.00	50.00	26.00	26.00	26.00
68	15.00	47.00	23.00	23.00	23.00
69	15.00	47.00	23.00	23.00	23.00
70	15.00	47.00	26.00	26.00	26.00
71	15.00	47.00	23.00	23.00	23.00
72	15.00	47.00	21.00	21.00	21.00
73	15.00	47.00	21.00	21.00	21.00
74	15.00	47.00	21.00	21.00	21.00
75	100.00	100.00	100.00	100.00	100.00

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

Retirement rates for Local employers' Tier 5 members are as follows:

Local Employers' Tier 5 Retirement Rates					
Age	Less Than 25 Years of Service	25 Years of Service	26 to 29 Years of Service	30 Years of Service	31 or More Years of Service
< 49	N/A	N/A	N/A	3.00%	2.25%
49	N/A	N/A	N/A	3.00	3.00
50	N/A	N/A	N/A	3.50	3.50
51	N/A	N/A	N/A	4.25	3.75
52	N/A	N/A	N/A	4.75	3.75
53	N/A	N/A	N/A	7.00	5.00
54	N/A	N/A	N/A	7.00	6.00
55	N/A	N/A	N/A	15.00	15.00
56	N/A	N/A	N/A	17.00	13.00
57	N/A	N/A	N/A	18.00	12.00
58	N/A	N/A	N/A	18.00	12.00
59	N/A	N/A	N/A	18.00	12.00
60	N/A	N/A	N/A	18.00	14.00
61	N/A	N/A	N/A	18.00	14.00
62	N/A	N/A	N/A	34.00	25.00
63	N/A	N/A	N/A	34.00	22.00
64	N/A	N/A	N/A	34.00	20.00
65	11.00	35.00	35.00	35.00	20.00
66	15.00	43.00	26.00	26.00	26.00
67	14.00	40.00	26.00	26.00	26.00
68	13.00	40.00	22.00	22.00	22.00
69	13.00	37.00	22.00	22.00	22.00
70	13.00	37.00	24.00	24.00	24.00
71	13.00	37.00	24.00	24.00	24.00
72	13.00	37.00	20.00	20.00	20.00
73	13.00	37.00	20.00	20.00	20.00
74	13.00	37.00	20.00	20.00	20.00
75	100.00	100.00	100.00	100.00	100.00

Retirement rates for members of Prosecutors Part (Chapter 366, P.L. 2001) are as follows:

- Members with less than 25 years of service: 6.0% for all ages,
- Members with 25 years of service: 50.0% for all ages,
- Members with 26 or more years of service: 25.0% for all ages.

Rates apply upon retirement eligibility. 100% retirement is assumed at age 70.

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

Retirement rates for members of WCJ Part (Chapter 140, P.L. 2021) are as follows:

Age	Less than 15 Years of WCJ Part Service	15-19 Years of WCJ Part Service	20 or more Years of WCJ Part Service
<60	0.0%	0.0%	0.0%
60	2.0	5.0	20.0
61	2.0	5.0	20.0
62	2.0	5.0	20.0
63	2.0	5.0	20.0
64	2.0	5.0	20.0
65	5.0	40.0	30.0
66	2.0	50.0	20.0
67	2.0	60.0	20.0
68	2.0	60.0	20.0
69	2.0	60.0	20.0
70	100.0	100.0	100.0

15. Family Composition Assumptions

For members not currently in receipt, 100% of members are assumed married to spouses of the opposite sex. Males are assumed to be three years older than females.

For purposes of the optional form of payment death benefit for members currently in receipt, beneficiary status is based on the beneficiary allowance reported. If no beneficiary date of birth is provided, the beneficiary is assumed to be the member's spouse of the opposite sex with males assumed to be three years older than females.

No additional dependent children or parents are assumed.

16. Form of Payment

Current active members are assumed to elect the Maximum Option.

17. Non-Contributory Group Insurance Form of Payment

All benefits are assumed to be paid as lump sums.

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

18. Data

All non-contributing members are included in the valuation with a liability based on the reported Accumulated Deductions with interest (Annuity Savings Fund or ASF), adjusted to include interest through the valuation date.

Per discussions with DPB, the statuses for active records in Locations 4 – 7 (General Assembly and Senate) are based on changes in service instead of the contribution code.

For current beneficiaries with incomplete information, reasonable assumptions were made based on information available in prior years.

Inactive participants receiving benefits according to the 2019 data but omitted from the 2020 data are assumed to have died without a beneficiary.

Tier 4 and 5 members on long-term disability appeared on the active data for the first time in 2019. The number of members on long-term disability is immaterial for valuation purposes. Therefore, we valued these members as regular contributing and non-contributing members while we gain clarity on what happens with these members.

19. Rationale for Assumptions

The demographic assumptions used in this report reflect the results of the July 1, 2014 – June 30, 2018 Experience Study approved by the Board of Trustees on February 19, 2020.

The investment return assumption was recommended by the State Treasurer.

The MP-2021 mortality improvement scale was used to calculate the Total Pension Liability upon direction from the DPB.

20. Projection Basis

This report includes projections of future assets, benefit payments and contributions for the purpose of determining the GASB 67 discount rate.

The projections are based on the census data as of July 1, 2020 and the financial information as of June 30, 2021. The projections assume continuation of the plan provisions and actuarial assumptions in effect as of July 1, 2020 and do not reflect the impact of any changes in benefits or actuarial assumptions that may be adopted after July 1, 2021 unless otherwise indicated. While the assumptions individually are reasonable for the underlying valuation that supports the projections, specifically for projection purposes, they are also considered reasonable in the aggregate.

THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

The projections assume that all future assumptions are met except where indicated with respect to future investment returns and demographic assumptions.

**21. Changes in Assumptions
Since Last Valuation**

The mortality improvement scale used to calculate the Total Pension Liability was updated from the MP-2020 scale to the MP-2021 scale upon direction from the DPB.

In conjunction with Chapter 140, P.L. 2021, the assumed retirement rates for members in the WCJ Part of PERS were revised to match the assumed retirement rates used in the Judicial Retirement System (JRS) of New Jersey's July 1, 2020 Actuarial Valuation Report. The JRS retirement assumptions are appropriate for this purpose because of the similarity between WCJ and JRS retirement benefits.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

B. Actuarial Methods

The actuarial methods used for determining State and Local employer contributions are described below.

1. Actuarial Cost Method

The actuarial cost method for funding calculations is the Projected Unit Credit Cost Method.

The actuarial liability is calculated as the actuarial present value of the projected benefits linearly allocated to periods prior to the valuation year based on service. Refunds are valued as the reported Accumulated Deductions with interest as of the valuation date. The unfunded actuarial liability is the actuarial liability on the valuation date less the actuarial value of assets.

In accordance with Chapter 78, P.L. 2011:

- Beginning with the July 1, 2010 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars, it will amortize the unfunded accrued liability over an open 30 year period.
- Beginning with the July 1, 2019 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars, it will amortize the unfunded accrued liability over a closed 30 year period (i.e., for each subsequent actuarial valuation the amortization period shall decrease by one year).
- Beginning with the July 1, 2029 actuarial valuation, when the remaining amortization period reaches 20 years, any increase or decrease in the unfunded accrued liability as a result of actuarial losses or gains for subsequent valuation years shall serve to increase or decrease, respectively, the amortization period for the unfunded accrued liability, unless an increase in the amortization period will cause it to exceed 20 years. If an increase in the amortization period as a result of actuarial losses for a valuation year would exceed 20 years, the accrued liability contribution shall be computed for the valuation year using a 20 year amortization period.

Certain portions of the normal cost and unfunded actuarial liabilities attributable to Local employers are payable by the State and/or over different periods in accordance with the NJ State Statutes.

To the extent that the amortization period remains an open period in future years and depending upon the specific circumstances, it should be noted that in the absence of emerging actuarial gains or contributions made in excess of the actuarially determined contribution, any existing unfunded accrued liability may not be fully amortized in the future.

The non-contributory group life insurance benefit is funded separately through a term cost.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

2. Asset Valuation Method

For the purposes of determining contribution rates, an actuarial value of assets is used that dampens the volatility in the market value of assets, resulting in a smoother pattern of contributions.

The actuarial value of assets is adjusted to reflect actual contributions, benefit payments and administrative expenses, and an assumed rate of return on the previous year's assets and current year's cash flow at the prior year's actuarial valuation interest rate, with a further adjustment to reflect 20% of the difference between the resulting value and the actual market value of Plan assets.

3. Contributions

Chapter 83, P.L. 2016 requires the State to make pension contributions on a quarterly basis: at least 25% by September 30, at least 50% by December 31, at least 75% by March 31, and at least 100% by June 30. As such, contributions are assumed to be made on a quarterly basis with the first contribution 15 months after the associated valuation date.

Local employers' contributions are expected to be paid on April 1st, 21 months after the associated valuation date.

The Board of Trustees adopted a three-year phase-in of the Local employers' contribution increase due to the assumption changes from the July 1, 2014 – June 30, 2018 Experience Study, first effective in the July 1, 2019 valuation and the associated FYE 2021 contribution. The impact will be fully phased-in by the FYE 2023 contribution.

Chapter 98, P.L. 2017, the Lottery Enterprise Contribution Act, allows the PERS to receive 21.02% of the proceeds of the Lottery Enterprise, based upon their members' past or present employment in schools and institutions in the State for a term of 30 years. Revenues from Chapter 98, P.L. 2017, the Lottery Enterprise Contribution Act, are assumed to be contributed to the trust on a monthly basis. The State's pension contribution is reduced by the product of the allocable percentage for the PERS, the adjustment percentage, and the special asset value.

Contributions payable in the fiscal year starting on the valuation date are included in the actuarial value of assets as receivable contributions, discounted by the applicable valuation interest rate.

Legislation has provided for additional benefits and/or funding requirements which are included in this valuation and are described as follows.

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

Early Retirement Incentive Programs

Local employers which elected to participate in various early retirement incentive programs authorized by NJ Statute make contributions to cover the cost of these programs over amortization periods elected by the employer to the extent permitted by NJ Statute.

Chapter 133, P.L. 2001

Chapter 133, P.L. 2001 increased the accrual rate from 1/60 to 1/55. In addition, it lowered the age required for a veteran benefit equal to 1/55 of highest 12-month Compensation for each Year of Service from 60 to 55.

Chapter 133, P.L. 2001 also established the Benefit Enhancement Fund (BEF) to fund the additional annual employer normal contribution due to the Statute's increased benefits. (Chapter 353, P.L. 2001 extended this coverage to this Statute's additional annual employer normal contribution.) If the assets in the BEF are insufficient to cover the normal contribution for the increased benefits for a valuation period, the State will pay such amount for both the State and Local employers.

Chapter 259, P.L. 2001

Chapter 259, P.L. 2001 established the Workers' Compensation Judges Part of the System with special retirement benefits for Workers' Compensation Judges. See Appendix C for details.

In accordance with the provisions of Chapter 259, P.L. 2001, the additional contributions for these special retirement benefits will be funded by transfers from the Second Injury Fund.

Chapter 366, P.L. 2001

Chapter 366, P.L. 2001 established the Prosecutors Part of the System with special retirement benefits for Prosecutors. See Appendix C for details.

Chapter 366, P.L. 2001 also requires the State be liable for any increase in pension costs to a County that results from the enrollment of Prosecutors in the Prosecutors Part. Any increase in the unfunded actuarial liability arising from the benefits established for the Prosecutors Part are to be amortized over a closed 30 year period.

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

Chapter 19, P.L. 2009

Chapter 19, P.L. 2009 provided that the State Treasurer will reduce for Local employers the normal and accrued liability contributions to 50 percent of the amount certified for fiscal year 2009. The remaining 50% of the contribution (unfunded liability) will be paid by the Local employers in level annual payments over a period of 15 years with the first payment due in the fiscal year ending June 30, 2012. The unfunded liability will be adjusted by the rate of return on the actuarial value of assets. The legislation also provided that a Local employer may pay 100 percent of the contribution for the fiscal year 2009. Such an employer will be credited with the full payment and any such amounts will not be included in their unfunded liability. In addition, certain Local employers who were eligible to defer 50% of their fiscal year 2009 pension contributions but instead paid 100% of the fiscal year 2009 pension contributions were permitted to defer 50% of their 2010 fiscal year pension contributions. The unfunded liability will be paid by these Local employers over a period of 15 years with the first payment due in the fiscal year ending June 30, 2012. The unfunded liability will be adjusted by the rate of return on the actuarial value of assets.

Chapter 140, P.L. 2021

Chapter 140, P.L. 2021 reopened the Worker's Compensation Judges (WCJ) Part of PERS and transferred WCJs from the Defined Contribution Retirement Program (DCRP) and the regular part of PERS into the WCJ Part of PERS.

The corresponding increase in the unfunded actuarial liability is amortized over a closed 20-year period. The additional unfunded actuarial liability contribution and the increased normal cost will be paid by transfers from the Second Injury Fund (SIF).

4. Valuation Software

Cheiron utilizes ProVal, an actuarial valuation software leased from Winklevoss Technologies (WinTech) to calculate liabilities and project benefit payments. We have relied on WinTech as the developer of ProVal. We have reviewed ProVal and have a basic understanding of it and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect this actuarial valuation.

5. Changes in Methods Since the Last Valuation

Chapter 140, P.L. 2021 reopened the Worker's Compensation Judges (WCJ) Part of PERS and transferred WCJs from the Defined Contribution Retirement Program (DCRP) and the regular part of PERS into the WCJ Part of PERS. The corresponding increase in the unfunded actuarial liability is amortized over a closed 20-year period. The additional unfunded actuarial liability contribution and the increased normal cost will be paid by transfers from the Second Injury Fund (SIF).

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX C – SUMMARY OF PLAN PROVISIONS

This summary of Plan provisions provides an overview of the major provisions of the PERS used in the actuarial valuation. It is not intended to replace the more precise language of the NJ State Statutes, Title 43, Chapter 15A, and if there is any difference between the description of the plan herein and the actual language in the NJ State Statutes, the NJ State Statutes will govern.

1. Eligibility for Membership

Employees of the State or any county, municipality, school district, or public agency employed on a regular basis in a position covered by Social Security and not required to be a member of any other State or local government retirement system. Certain exceptions apply.

- a) Class B (or Tier 1) Member: Any member hired prior to July 1, 2007.
- b) Class D (or Tier 2) Member: Any member hired on or after July 1, 2007 and before November 2, 2008.
- c) Class E (or Tier 3) Member: Any member hired after November 1, 2008 and before May 22, 2010.
- d) Class F (or Tier 4) Member: Any member hired after May 21, 2010 and before June 28, 2011.
- e) Class G (or Tier 5) Member: Any member hired on or after June 28, 2011.

The hiring, rehiring, retention, and benefits of certain public employees during the COVID-19 Public Health Emergency was modified under Executive Order No. 103 of 2020, as extended.

2. Plan Year

The 12-month period beginning on July 1 and ending on June 30.

3. Years of Service

A year of service for each year an employee is a Member of the Retirement System plus service, if any, covered by a prior service liability. Tier 4 and Tier 5 Members must be scheduled to work at least 35 hours per week for the State or 32 hours per week for a Local employer. Tier 3, 4 and 5 Members must have an annual salary of \$7,500 (indexed for inflation) and other members must have an annual salary of \$1,500.

4. Compensation

Base salary upon which contributions by a Member to the Annuity Savings Fund were based. Chapter 113, P.L. 1997 provides that Compensation cannot exceed the compensation limitation of Section 401(a)(17) of the Internal Revenue Code. Chapter 103, P.L. 2007 provides that for a Tier 2, 3, 4 or 5 Member, Compensation cannot exceed the annual maximum wage contribution base for Social Security, pursuant to the Federal Insurance Contribution Act.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

5. Final Compensation

The average annual compensation upon which contributions by a Member are made for the three consecutive years of service immediately preceding retirement, or the highest three fiscal years of service, if greater. Chapter 1, P. L. 2010 provides that for a Tier 4 or Tier 5 Member, Final Compensation is the average annual compensation upon which contributions by a Member are made for the five consecutive years of service immediately preceding retirement, or the highest five fiscal years of service, if greater.

6. Final Year Compensation

The compensation upon which contributions by a Member to the Annuity Savings Fund are based in the last year of service.

7. Accumulated Deductions

The sum of all amounts deducted from the compensation of a Member or contributed by the Member or on the Member's behalf without interest.

8. Interest Credits on Accumulated Deductions

Members receive interest credits while contributing and for the first two years of inactivity. The rate depends on the type of benefit. Prior to July 1, 2018, members received interest credits for the entire period of inactivity until retirement or death.

9. Member Contributions

Each Member contributes a percentage of Compensation. Effective October 1, 2011, Chapter 78, P.L. 2011 set the member contribution rate at 6.5% and increased it by 1/7th of 1% each July thereafter until it attained an ultimate rate of 7.5% on July 1, 2018.

For members who are eligible to retire under the Prosecutors Part as provided by Chapter 366, P.L. 2001, Chapter 78, P.L. 2011 set the member contribution rate at 10.0%, effective October 1, 2011.

10. Benefits

- a) **Service Retirement:** For a Tier 1 or Tier 2 Member, age 60. For a Tier 3 or Tier 4 Member, age 62. For a Tier 5 Member, age 65.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of:

- (1) For a Tier 1, 2 or 3 Member, 1/55 of Final Compensation for each Year of Service.
- (2) For a Tier 4 or 5 Member, 1/60 of Final Compensation for each Year of Service.

THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE

APPENDIX C – SUMMARY OF PLAN PROVISIONS

- b) **Early Retirement:** Prior to eligibility for Service Retirement. For a Tier 1, 2, 3 or 4 Member, 25 Years of Service. For a Tier 5 Member, 30 Years of Service.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of:

- (1) For a Tier 1 Member, the Service Retirement benefit reduced by $\frac{1}{4}$ of one percent for each month the retirement date precedes age 55.
- (2) For a Tier 2 Member, the Service Retirement benefit reduced by $\frac{1}{12}$ of one percent for each month the retirement date precedes age 60 through age 55 and by $\frac{1}{4}$ of one percent for each month the retirement date precedes age 55.
- (3) For a Tier 3 or 4 Member, the Service Retirement benefit reduced by $\frac{1}{12}$ of one percent for each month the retirement date precedes age 62 through age 55 and by $\frac{1}{4}$ of one percent for each month the retirement date precedes age 55.
- (4) For a Tier 5 Member, the Service Retirement benefit reduced by $\frac{1}{4}$ of one percent for each month the retirement date precedes age 65.

- c) **Veteran Retirement:** Age 55 with 25 Years of Service or Age 60 with 20 Years of Service for a qualified military veteran who retires directly from active service.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of the greater of:

- (1) 54.5% of highest 12-month Compensation, or
- (2) For a member who is at least age 55 with 35 Years of Service, $\frac{1}{55}$ of highest 12-month Compensation for each Year of Service.

Veterans may receive a Service Retirement benefit if greater.

- d) **Deferred Retirement:** Termination of service prior to eligibility for Service Retirement with 10 Years of Service.

Benefit is either:

- (1) A refund of Accumulated Deductions plus, if the member has completed three years of service, interest accumulated at 2.0% per annum; or
- (2) A deferred life annuity, commencing at age 60 for a Tier 1 or Tier 2 Member, age 62 for a Tier 3 or Tier 4 Member or age 65 for a Tier 5 Member, comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of the Service Retirement benefit based on Final Compensation and Years of Service at date of termination.

For Members who die during the deferral period, the benefit is a return of Accumulated Deductions with credited interest.

THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE

APPENDIX C – SUMMARY OF PLAN PROVISIONS

- e) **Non-Vested Termination:** Termination of service prior to eligibility for Service Retirement and less than 10 Years of Service.

Benefit is a refund of Accumulated Deductions plus, if the member has completed three years of service, interest accumulated at 2.0% per annum.

- f) **Death Benefits**

- (1) **Ordinary Death Before Retirement:** Death of an active contributing Member. Benefit is equal to:

- a. Lump sum payment equal to 150% of Final Year Compensation, also known as the non-contributory group life insurance benefit, plus
- b. Accumulated Deductions with credited interest.

- (2) **Accidental Death Before Retirement:** Death of an active Member resulting from injuries received from an accident during performance of duty and not a result of willful negligence. Benefit is equal to:

- a. Lump sum payment equal to 150% of Final Year Compensation, also known as the non-contributory group life insurance benefit, plus
- b. Spouse life annuity of 50% of Final Year Compensation payable until spouse's death or remarriage. If there is no surviving spouse or upon death or remarriage, a total of 20% (35%, 50%) of Final Year Compensation payable to one (two, three or more) dependent child(ren). If there is no surviving spouse or dependent child(ren), 25% (40%) of Final Year Compensation to one (two) dependent parent(s). If there is no surviving spouse, dependent child(ren) or parent(s), the benefit is a refund of Accumulated Deductions with credited interest.

- (3) **Death After Retirement:** Death of a retired Member. Benefit is equal to:

- a. Lump sum payment equal to 3/16 of Final Year Compensation for a Member retired under Service, Early, Veteran or Deferred Retirement with 10 Years of Service. For a Member receiving a Disability benefit, lump sum payment of 150% of Final Year Compensation if death occurs prior to age 60 and 3/16 of Final Compensation if death occurs after age 60. This benefit is also known as the non-contributory group life insurance benefit, plus
- b. Any survivor benefit due under the Member's optional form of payment election. Previously granted COLAs also apply to life annuities.

Members are also eligible for a voluntary, employee-paid life insurance policy, known as the contributory group life insurance policy. This benefit is not paid through the System and is not considered for valuation purposes.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

g) **Disability Retirement**

- (1) **Ordinary Disability Retirement**: 10 years of service and totally and permanently incapacitated from the performance of normal or assigned duties. Only available to Tier 1, 2 and 3 Members.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of:

- a. 1.64% of Final Compensation for each Year of Service; or
- b. 43.6% of Final Compensation.

- (2) **Accidental Disability Retirement**: Total and permanent incapacitation as a direct result of a traumatic event occurring during and as a result of the performance of regular or assigned duties. Under certain conditions for law enforcement officers or emergency medical technicians, regular or assigned duties may include the World Trade Center (WTC) rescue, recovery, or cleanup operations between September 11, 2001 and October 11, 2001. For such members who participated in the WTC rescue, recovery, or cleanup operations, the total and permanent disability may occur after retirement on a service retirement or an ordinary disability retirement. Only available to Tier 1, 2 and 3 Members.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 72.7% of Compensation at the date of injury.

The pension portion of the benefit will be offset for any periodic Workers' Compensation benefits.

Tier 4 and Tier 5 Members are eligible for long-term disability coverage. This benefit is not paid through the System and is not considered for valuation purposes. Both Member and employer contributions to the System continue while on long-term disability, with the policy covering the Member portion. The long-term disability benefit equals 60% of Final Year Compensation and may be offset for other periodic benefits, such as Workers' Compensation, short-term disability or Social Security. The long-term disability benefit may continue through the earlier of age 70 or commencement of a retirement benefit under the System.

11. Benefits for Special Employee Groups

Certain members qualify for enrollment into special employee groups. Such members receive the greater of the special benefits described below or the regular PERS benefit described above. For benefit types not explicitly mentioned, the regular PERS benefit applies.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

a) **Law Enforcement Officers (LEOs):**

Members employed in eligible job titles as well as individuals who do not meet the age or medical requirements for entry into the Police and Firemen's Retirement System (PFRS).

(1) **Service and Special Retirement**

Mandatory retirement at age 65. Veterans with less than 20 Years of Service at age 65 must retire upon attainment of 20 Years of Service or age 70, whichever is earlier. Voluntary retirement prior to those ages.

a. **Service Retirement:** Age 55 after 20 Years of LEO Service.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 2% of Final Compensation for each Year of LEO Service up to 25 years plus 1% of Final Compensation for each Year of LEO Service over 25 years.

The Member is also eligible for a regular PERS benefit based on any non-LEO service.

b. **Special Retirement:** 25 Years of LEO Service.

Benefit is the Service Retirement benefit plus 5% of Final Compensation with a maximum of 70% of Final Compensation.

(2) **Ordinary Disability Retirement:** 5 Years of LEO Service.

Benefit is the regular PERS Ordinary Disability benefit.

(3) **Death Benefits:**

Benefit is the regular PERS Death benefit except, upon Accidental Disability Retirement, the minimum lump sum payment is \$5,000.

b) **Legislative Retirement System (LRS):**

Members of the State Legislature. Chapter 92, P.L. 2007 closed LRS to new members enrolled on or after July 1, 2007.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

(1) Special Legislative Retirement: Age 60.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 3% of Final Compensation for each Year of Legislative Service with a maximum of two-thirds of Final Compensation.

The Member is also eligible for a regular PERS benefit based on any non-legislative service.

(2) Deferred Retirement: Termination of service prior to eligibility for Service or Special Legislative Retirement with 8 Years of Legislative Service.

Benefit is either:

- a. A refund of Accumulated Deductions plus, if the Member has completed three years of service, interest accumulated at 2.0% per annum; or
- b. A deferred life annuity, commencing at age 60, comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of the Service or Special Legislative Retirement benefit based on Final Compensation and Years of Service at date of termination.

c) Prosecutors Part (Chapter 366, P.L. 2001):

Covers prosecutors as well as members employed in certain other related job titles. Chapter 1. P.L. 2010 closed the Prosecutors Part to new members enrolled on or after May 22, 2010.

(1) Service and Special Retirement

Mandatory retirement at age 70. Voluntary retirement prior to that age.

In addition to the benefits described below, the member is eligible for a regular PERS benefit based on any non-Prosecutors Part service.

- a. Service Retirement: For a Prosecutors Part Member enrolled as of January 7, 2002, age 55 or 20 Years of Prosecutors Part Service. For a Prosecutors Part Member enrolled after January 7, 2002, age 55.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of the greater of:

THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE

APPENDIX C – SUMMARY OF PLAN PROVISIONS

- i. 2% of Final Year Compensation for each Year of Prosecutors Part Service up to 30 years plus 1% of Final Year Compensation for each Year of Prosecutors Part Service over 30 years.
- ii. 50% of Final Year Compensation for Prosecutors Part Members with 20 or more Years of Prosecutors Part Service.
- iii. 1/60 of Final Year Compensation for each Year of Prosecutors Part Service.

- b. Special Retirement: 25 Years of Prosecutors Part Service.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 65% of Final Year Compensation plus 1% of Final Year Compensation for each Year of Prosecutors Part Service in excess of 25 years with a maximum of 70% of Final Compensation.

- (2) Deferred Retirement: Termination of service prior to eligibility for Service or Special Retirement with 10 Years of Prosecutors Part Service.

Benefit is either:

- a. A refund of Accumulated Deductions plus, if the Member has completed three years of service, interest accumulated at 2.0% per annum; or
- b. A deferred life annuity, commencing at age 55, comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 2% of Final Year Compensation for each Year of Prosecutors Part Service.

- (3) Death Benefits:

Benefit is the regular PERS Death benefit except, upon Service, Special or Deferred Prosecutors Part Retirement with 10 Years of Prosecutors Part Service, the lump sum payment equals 50% of Final Year Compensation.

- d) Workers Compensation Judges Part (WCJ) (Chapter 259, P.L. 2001 and Chapter 140, P.L. 2021):

Members employed in an eligible job title by the Division of Workers' Compensation. Chapter 92, P.L. 2007 closed the Workers Compensation Judges Part to new members enrolled on or after July 1, 2007.

Chapter 140, P.L. 2021 reopened the Worker's Compensation Judges (WCJ) Part of PERS and transferred WCJs from the Defined Contribution Retirement Program (DCRP) and the regular part of PERS into the WCJ Part of PERS.

THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE

APPENDIX C – SUMMARY OF PLAN PROVISIONS

(1) Service Retirement:

Mandatory retirement age 70. Voluntary retirement prior to that age.

- a. Age 70 and 10 Years of WCJ Service; or
Age 65 and 15 Years of WCJ Service; or
Age 60 and 20 Years of WCJ Service.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 75% of contractual Compensation at the date of retirement.

- b. Age 65, 5 consecutive Years of WCJ Service and 15 Years of Aggregate PERS Service; or

Age 60, 5 consecutive Years of WCJ Service and 20 Years of Aggregate PERS Service.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 50% of contractual Compensation at the date of retirement.

- c. Age 60, 5 consecutive Years of WCJ Service and 15 Years of Aggregate PERS Service.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 2% of contractual Compensation at the date of retirement for each Year of Aggregate PERS Service up to 25 years plus 1% of contractual Compensation at the date of retirement for each Year of Aggregate PERS Service over 25 years.

- d. Age 60.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 2% of contractual Compensation at the date of retirement for each Year of WCJ Service up to 25 years plus 1% of contractual Compensation at the date of retirement for each Year of Aggregate PERS Service over 25 years.

THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE

APPENDIX C – SUMMARY OF PLAN PROVISIONS

- (2) Early Retirement: Prior to eligibility for Service Retirement and 5 consecutive Years of WCJ Service and 25 Years of Aggregate PERS Service.

Benefit is an annual retirement allowance comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 2% of contractual Compensation at the date of retirement for each Year of Aggregate PERS Service up to 25 years plus 1% of contractual Compensation at the date of retirement for each Year of Aggregate PERS Service over 25 years, actuarially reduced for commencement prior to age 60.

- (3) Deferred Retirement: Termination of service prior to eligibility for Service Retirement with 5 consecutive Years of WCJ Service and 10 Years of Aggregate PERS Service.

Benefit is either:

- a. A refund of Accumulated Deductions plus, if the Member has completed three years of service, interest accumulated at 2.0% per annum; or
- b. A deferred life annuity, commencing at age 60, comprised of a member annuity plus an employer pension which together will provide a total retirement allowance of 2% of contractual Compensation at the date of retirement for each Year of Aggregate PERS Service up to 25 years plus 1% of contractual Compensation at the date of retirement for each Year of Aggregate PERS Service over 25 years.

- (4) Death Benefits

- a. Before Retirement: Death of an active WCJ Member. Benefit is equal to:

- i. Lump sum equal to 150% of contractual Compensation at the date of death, plus
- ii. Spousal life annuity of 25% of contractual Compensation at the date of death payable until spouse's remarriage plus 10% (15%) to one (two or more) dependent child(ren). If there is no surviving spouse, or upon death or remarriage, a total of 15% (20%, 30%) of contractual Compensation at the date of death payable to one (two, three or more) dependent child(ren). If there is no surviving spouse or dependent child(ren), 20% (30%) of contractual Compensation at the date of death to one (two) dependent parent(s). If there is no surviving spouse, dependent child(ren) or parent(s), the benefit is a refund of Accumulated Deductions with interest.

- b. After Retirement: Death of a retired WCJ Member. Benefit is equal to:

APPENDIX C – SUMMARY OF PLAN PROVISIONS

- i. Lump sum equal to 25% of contractual Compensation at the date of death for a Member retired under Service or Early WCJ Retirement with 10 Years of Aggregate PERS Service. For a Member receiving a Disability benefit, lump sum payment of 150% of contractual Compensation at the date of death if death occurs prior to age 60 and 25% of contractual Compensation at the date of death if death occurs after age 60, plus
- ii. Any survivor benefit due under the Member's optional form of payment election. Previously granted COLAs also apply to life annuities.

12. Optional Forms of Payment

The member may elect the following forms of payment.

- a) Maximum Option: Single life annuity with a return of the balance of the Accumulated Deductions with credited interest.
- b) Option 1: Single life annuity with a return of the balance of the initial reserve.
- c) Option 2: 100% joint and survivor annuity.
- d) Option 3: 50% joint and survivor annuity.
- e) Option 4: Other percentage joint and survivor annuity.
- f) Option A: 100% pop-up joint and survivor annuity.
- g) Option B: 75% pop-up joint and survivor annuity.
- h) Option C: 50% pop-up joint and survivor annuity.
- i) Option D: 25% pop-up joint and survivor annuity.

13. Cost-of-Living Adjustments

Also known as Pension Adjustments. Provided annually to retirees and survivors after 24 months of retirement prior to July 1, 2011. Chapter 78, P.L. 2011 eliminated future adjustments effective July 1, 2011. Adjustments may be reinstated in the future subject to certain conditions outlined in Chapter 78, P.L. 2011.

14. Changes in Plan Provisions Since Last Valuation

Chapter 140, P.L. 2021 reopened the Worker's Compensation Judges (WCJ) Part of PERS and transferred WCJs from the Defined Contribution Retirement Program (DCRP) and the regular part of PERS into the WCJ Part of PERS.

Chapter 115, P.L. 2020 modified the hiring, rehiring, retention, and benefits of certain public employees during the COVID-19 Public Health Emergency under Executive Order No. 103 of 2020, as extended.

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX D – DETERMINATION OF DISCOUNT RATE

Table 1 - Projection of the Pension Plan's Fiduciary Net Position
(In Thousands)
Projections Commence June 30, 2021

Year	Projected Beginning Fiduciary Net Position	Projected Member Contributions	Projected State Contributions	Projected State-paid Local Contributions	Projected Local Employer Contributions	Projected Lottery Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings	Projected Ending Fiduciary Net Position
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j) = (a) + (b) + (c) + (d) + (e) + (f) - (g) - (h) + (i)
1	\$ 34,499,909	\$ 810,288	\$ 1,602,553	\$ 52,501	\$ 1,183,412	\$ 231,038	\$ 4,763,275	\$ 15,473	\$ 2,421,351	\$ 36,022,304
2	36,022,304	770,156	1,609,891	61,476	1,270,803	231,858	4,922,528	16,003	2,451,311	37,479,268
3	37,479,268	731,899	1,606,076	59,439	1,237,596	234,510	5,072,473	16,505	2,546,183	38,805,994
4	38,805,994	694,876	1,603,112	57,254	1,209,572	236,671	5,214,294	16,979	2,632,351	40,008,557
5	40,008,557	658,389	1,599,532	54,986	1,185,960	238,615	5,349,479	17,432	2,710,125	41,089,253
6	41,089,253	622,552	1,595,422	52,615	1,155,813	241,005	5,477,892	17,863	2,779,511	42,040,415
7	42,040,415	593,119	1,588,085	50,207	1,133,411	243,109	5,599,573	18,272	2,840,322	42,870,823
8	42,870,823	564,155	1,581,553	47,697	1,114,696	245,498	5,711,095	18,646	2,893,137	43,587,819
9	43,587,819	535,118	1,574,430	45,193	1,099,281	250,163	5,815,751	18,994	2,938,368	44,195,626
10	44,195,626	506,078	1,566,225	42,683	1,085,654	252,668	5,917,127	19,330	2,975,997	44,688,474
11	44,688,474	477,448	1,561,149	40,137	1,078,538	255,197	6,008,208	19,630	3,006,139	45,079,243
12	45,079,243	449,502	1,555,889	37,559	1,071,039	257,752	6,087,239	19,888	3,029,565	45,373,421
13	45,373,421	422,368	1,549,781	35,024	1,062,356	260,332	6,152,006	20,096	3,046,709	45,577,980
14	45,577,890	396,458	1,540,576	17,607	1,054,369	262,938	6,200,968	20,248	3,057,709	45,686,330
15	45,686,330	371,875	1,533,981	15,284	1,047,712	265,570	6,233,207	20,342	3,063,091	45,730,294
16	45,730,294	348,675	1,527,395	13,194	1,041,620	268,229	6,247,883	20,377	3,064,631	45,725,779
17	45,725,779	326,938	1,521,143	11,392	1,036,064	270,914	6,245,356	20,353	3,063,447	45,689,966
18	45,689,966	306,651	1,515,160	9,814	1,031,460	273,626	6,225,920	20,274	3,060,734	45,641,217
19	45,641,217	287,851	1,509,927	8,414	1,027,143	276,365	6,188,741	20,137	3,057,810	45,599,849
20	45,599,849	270,400	1,505,491	7,180	1,023,466	279,131	6,135,770	19,949	3,056,029	45,585,828
21	45,585,828	253,598	1,501,690	6,088	1,020,311	281,925	6,070,669	19,722	3,056,634	45,615,683
22	45,615,683	236,385	1,497,851	5,121	1,017,124	284,747	5,999,981	19,475	3,060,491	45,697,946
23	45,697,946	218,513	1,493,466	4,277	1,013,224	287,598	5,925,425	19,216	3,068,104	45,838,486
24	45,838,486	199,992	1,488,653	3,541	1,008,650	290,476	5,847,735	18,947	3,079,864	46,042,980
25	46,042,980	181,256	1,483,260	2,900	1,003,115	293,384	5,765,233	18,663	3,096,230	46,319,229
26	46,319,229	162,756	1,477,747	2,348	997,236	296,320	5,676,064	18,358	3,117,851	46,679,065
27	46,679,065	143,993	1,472,000	1,883	990,995	0	5,584,772	18,046	3,138,444	46,953,563
28	46,953,563	124,887	1,474,015	1,494	983,939	0	5,491,902	17,729	3,146,409	46,774,676
29	46,774,676	105,517	1,415,24	1,169	975,880	0	5,397,976	17,409	3,112,181	45,695,562
30	45,695,562	87,505	91,939	903	966,897	0	5,295,982	17,064	3,038,095	44,567,854
31	44,567,854	72,254	82,418	690	961,762	0	5,177,849	16,669	2,952,130	42,842,588
32	42,842,588	59,167	74,523	521	129,650	0	4,947,274	15,893	2,834,697	40,977,980
33	40,977,980	48,004	67,684	389	109,742	0	4,806,233	15,427	2,708,134	39,090,273
34	39,090,273	38,580	61,581	287	101,324	0	4,656,550	14,934	2,580,527	37,201,088
35	37,201,088	30,669	56,290	209	94,342	0	4,498,204	14,415	2,453,214	35,323,192
36	35,323,192	24,106	51,631	150	87,916	0	4,333,320	13,875	2,326,990	33,466,789
37	33,466,789	18,721	47,652	104	81,977	0	4,162,930	13,318	2,202,526	31,641,522
38	31,641,522	14,390	44,175	71	76,556	0	3,988,151	12,748	2,080,453	29,856,268
39	29,856,268	10,954	41,235	47	71,651	0	3,810,550	12,170	1,961,331	28,118,765
40	28,118,765	8,232	38,737	30	67,178	0	3,631,433	11,587	1,845,648	26,435,569
41	26,435,569	6,129	36,567	18	63,089	0	3,452,083	11,005	1,733,811	24,812,095
42	24,812,095	4,500	34,771	10	59,394	0	3,273,625	10,426	1,626,156	23,252,874
43	23,252,874	3,266	33,174	5	56,006	0	3,097,045	9,854	1,522,959	21,761,385
44	21,761,385	2,311	31,804	2	52,925	0	2,923,742	9,293	1,424,410	20,339,803
45	20,339,803	1,620	30,536	1	50,055	0	2,753,825	8,744	1,330,654	18,990,100
46	18,990,100	1,104	29,439	0	47,472	0	2,588,117	8,209	1,241,799	17,713,588
47	17,713,588	731	28,390	0	45,024	0	2,426,821	7,689	1,157,924	16,511,147
48	16,511,147	467	27,410	0	42,775	0	2,270,214	7,185	1,079,081	15,383,480
49	15,383,480	282	26,464	0	40,661	0	2,118,480	6,698	1,005,309	14,331,019
50	14,331,019	162	25,534	0	38,666	0	1,971,671	6,228	936,636	13,354,120
51	13,354,120	84	24,624	0	36,782	0	1,829,974	5,774	873,080	12,452,941
52	12,452,941	40	23,695	0	34,986	0	1,693,409	5,338	814,649	11,627,563
53	11,627,563	18	22,768	0	33,270	0	1,562,113	4,920	761,344	10,877,930
54	10,877,930	7	21,818	0	31,621	0	1,436,217	4,519	713,156	10,203,795
55	10,203,795	2	20,853	0	30,030	0	1,315,783	4,137	670,064	9,604,824
56	9,604,824	0	19,869	0	28,486	0	1,200,856	3,772	632,044	9,080,596
57	9,080,596	0	18,863	0	26,982	0	1,091,487	3,425	599,064	8,630,593
58	8,630,593	0	17,837	0	25,511	0	987,741	3,097	571,086	8,254,189
59	8,254,189	0	16,789	0	24,067	0	889,659	2,787	548,064	7,950,662
60	7,950,662	0	15,722	0	22,640	0	797,298	2,495	529,945	7,719,175

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX D – DETERMINATION OF DISCOUNT RATE

Table 1 - Projection of the Pension Plan's Fiduciary Net Position
(In Thousands)
Projections Commence June 30, 2021

Year	Projected Beginning Fiduciary Net Position	Projected Member Contributions	Projected State Contributions	Projected State-paid Local Contributions	Projected Local Employer Contributions	Projected Lottery Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings	Projected Ending Fiduciary Net Position
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j) = (a) + (b) + (c) + (d) + (e) + (f) - (g) - (h) + (i)
61	\$ 7,719,175	\$ 0	\$ 14,640	\$ 0	\$ 21,228	\$ 0	\$ 710,721	\$ 2,222	\$ 516,669	\$ 7,558,769
62	7,558,769	0	13,552	0	19,829	0	629,974	1,968	508,167	7,468,374
63	7,468,374	0	12,464	0	18,442	0	555,071	1,732	504,364	7,446,841
64	7,446,841	0	11,387	0	17,072	0	485,998	1,515	505,182	7,492,968
65	7,492,968	0	10,333	0	15,721	0	422,700	1,316	510,537	7,605,542
66	7,605,542	0	9,308	0	14,396	0	365,072	1,135	520,349	7,783,387
67	7,783,387	0	8,326	0	13,101	0	312,963	972	534,541	8,025,419
68	8,025,419	0	7,390	0	11,846	0	266,175	825	553,045	8,330,701
69	8,330,701	0	6,508	0	10,635	0	224,479	695	575,804	8,698,474
70	8,698,474	0	5,684	0	9,476	0	187,608	580	602,773	9,128,219
71	9,128,219	0	4,919	0	8,374	0	155,275	479	633,926	9,619,684
72	9,619,684	0	4,215	0	7,334	0	127,171	391	669,257	10,172,929
73	10,172,929	0	3,571	0	6,362	0	102,979	316	708,781	10,788,348
74	10,788,348	0	2,987	0	5,462	0	82,375	252	752,536	11,466,707
75	11,466,707	0	2,465	0	4,635	0	65,032	199	800,588	12,209,163
76	12,209,163	0	2,002	0	3,884	0	50,621	154	853,029	13,017,303
77	13,017,303	0	1,599	0	3,211	0	38,815	118	909,981	13,893,162
78	13,893,162	0	1,254	0	2,616	0	29,289	89	971,598	14,839,252
79	14,839,252	0	964	0	2,098	0	21,730	66	1,038,066	15,858,585
80	15,858,585	0	726	0	1,654	0	15,837	48	1,109,607	16,954,687
81	16,954,687	0	534	0	1,281	0	11,330	34	1,186,477	18,131,615
82	18,131,615	0	383	0	973	0	7,951	24	1,268,968	19,393,964
83	19,393,964	0	268	0	724	0	5,471	16	1,357,410	20,746,880
84	20,746,880	0	183	0	528	0	3,690	11	1,452,169	22,196,058
85	22,196,058	0	121	0	376	0	2,441	7	1,553,650	23,747,756
86	23,747,756	0	78	0	261	0	1,586	5	1,662,295	25,408,800
87	25,408,800	0	48	0	177	0	1,013	3	1,778,586	27,186,595
88	27,186,595	0	29	0	117	0	639	2	1,903,043	29,089,143
89	29,089,143	0	17	0	76	0	400	1	2,036,228	31,125,063
90	31,125,063	0	10	0	48	0	250	1	2,178,747	33,303,616
91	33,303,616	0	5	0	29	0	158	0	2,331,248	35,634,741
92	35,634,741	0	3	0	17	0	101	0	2,494,429	38,129,089
93	38,129,089	0	2	0	10	0	66	0	2,669,034	40,798,069
94	40,798,069	0	1	0	6	0	44	0	2,855,863	43,653,895
95	43,653,895	0	0	0	3	0	30	0	3,055,772	46,709,640
96	46,709,640	0	0	0	2	0	21	0	3,269,674	49,979,296
97	49,979,296	0	0	0	1	0	15	0	3,498,550	53,477,832
98	53,477,832	0	0	0	1	0	10	0	3,743,448	57,221,271
99	57,221,271	0	0	0	0	0	7	0	4,005,489	61,226,752
100	61,226,752	0	0	0	0	0	5	0	4,285,872	65,512,620
101	65,512,620	0	0	0	0	0	4	0	4,585,883	70,098,499
102	70,098,499	0	0	0	0	0	3	0	4,906,895	75,005,392
103	75,005,392	0	0	0	0	0	2	0	5,250,377	80,255,768
104	80,255,768	0	0	0	0	0	1	0	5,617,904	85,873,670
105	85,873,670	0	0	0	0	0	1	0	6,011,157	91,884,827
106	91,884,827	0	0	0	0	0	0	0	6,431,938	98,316,764
107	98,316,764	0	0	0	0	0	0	0	6,882,173	105,198,937
108	105,198,937	0	0	0	0	0	0	0	7,363,926	112,562,863
109	112,562,863	0	0	0	0	0	0	0	7,879,400	120,442,263
110	120,442,263	0	0	0	0	0	0	0	8,430,958	128,873,221
111	128,873,221	0	0	0	0	0	0	0	9,021,125	137,894,347
112	137,894,347	0	0	0	0	0	0	0	9,652,604	147,546,951
113	147,546,951	0	0	0	0	0	0	0	10,328,287	157,875,238
114	157,875,238	0	0	0	0	0	0	0	11,051,267	168,926,504
115	168,926,504	0	0	0	0	0	0	0	11,824,855	180,751,360

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX D – DETERMINATION OF DISCOUNT RATE

Table 2 - Actuarial Present Values of Projected Benefit Payments
(In Thousands)

Projections Commence June 30, 2021

* From Table 1 - Projection of the Pension Plan's Fiduciary Net Position, column (a)

** From Table 1 - Projection of the Pension Plan's Fiduciary Net Position, column (g)

Year	Projected Beginning Fiduciary Net Position*	Projected Benefit Payments for current Plan participants**	"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	Present Value of "Funded" Benefit Payments	Present Value of "Unfunded" Benefit Payments	Present Value of Benefit Payments Using the Single Discount Rate
(a)	(b)	(c)	(d) = (c) if (b) >= (c)	(e) = (c) - (d)	(f) = (d) / (1+7.00%) ⁿ [(a) - .5]	(g) = (e) / (1+2.16%) ⁿ [(a) - .5]	(h) = (c) / (1+7.00%) ⁿ [(a) - .5]
1	\$ 34,499,909	\$ 4,763,275	\$ 4,763,275	\$ 0	\$ 4,604,832	\$ 0	\$ 4,604,832
2	36,022,304	4,922,528	4,922,528	0	4,447,465	0	4,447,465
3	37,479,268	5,072,473	5,072,473	0	4,283,120	0	4,283,120
4	38,805,994	5,214,294	5,214,294	0	4,114,834	0	4,114,834
5	40,008,557	5,349,479	5,349,479	0	3,945,341	0	3,945,341
6	41,089,253	5,477,892	5,477,892	0	3,775,746	0	3,775,746
7	42,040,415	5,599,573	5,599,573	0	3,607,118	0	3,607,118
8	42,870,823	5,711,095	5,711,095	0	3,438,278	0	3,438,278
9	43,587,819	5,815,751	5,815,751	0	3,272,229	0	3,272,229
10	44,195,626	5,917,127	5,917,127	0	3,111,466	0	3,111,466
11	44,688,474	6,008,208	6,008,208	0	2,952,673	0	2,952,673
12	45,079,243	6,087,239	6,087,239	0	2,795,805	0	2,795,805
13	45,373,421	6,152,006	6,152,006	0	2,640,703	0	2,640,703
14	45,577,890	6,200,968	6,200,968	0	2,487,588	0	2,487,588
15	45,686,330	6,233,207	6,233,207	0	2,336,936	0	2,336,936
16	45,730,294	6,247,883	6,247,883	0	2,189,195	0	2,189,195
17	45,725,779	6,245,356	6,245,356	0	2,045,149	0	2,045,149
18	45,689,966	6,225,920	6,225,920	0	1,905,406	0	1,905,406
19	45,641,217	6,188,741	6,188,741	0	1,770,119	0	1,770,119
20	45,599,849	6,135,770	6,135,770	0	1,640,157	0	1,640,157
21	45,585,828	6,070,669	6,070,669	0	1,516,593	0	1,516,593
22	45,615,683	5,999,981	5,999,981	0	1,400,873	0	1,400,873
23	45,697,946	5,925,425	5,925,425	0	1,292,958	0	1,292,958
24	45,838,486	5,847,735	5,847,735	0	1,192,529	0	1,192,529
25	46,042,980	5,765,233	5,765,233	0	1,098,789	0	1,098,789
26	46,319,229	5,676,064	5,676,064	0	1,011,023	0	1,011,023
27	46,679,065	5,584,772	5,584,772	0	929,684	0	929,684
28	46,953,563	5,491,902	5,491,902	0	854,415	0	854,415
29	46,774,676	5,397,976	5,397,976	0	784,862	0	784,862
30	45,695,562	5,295,982	5,295,982	0	719,656	0	719,656
31	44,567,854	5,177,849	5,177,849	0	657,573	0	657,573
32	42,842,588	4,947,274	4,947,274	0	587,188	0	587,188
33	40,977,980	4,806,233	4,806,233	0	533,129	0	533,129
34	39,090,273	4,656,550	4,656,550	0	482,734	0	482,734
35	37,201,088	4,498,204	4,498,204	0	435,812	0	435,812
36	35,323,192	4,333,320	4,333,320	0	392,371	0	392,371
37	33,466,789	4,162,930	4,162,930	0	352,283	0	352,283
38	31,641,522	3,988,151	3,988,151	0	315,413	0	315,413
39	29,856,268	3,810,550	3,810,550	0	281,652	0	281,652
40	28,118,765	3,631,433	3,631,433	0	250,853	0	250,853
41	26,435,569	3,452,083	3,452,083	0	222,863	0	222,863
42	24,812,095	3,273,625	3,273,625	0	197,516	0	197,516
43	23,252,874	3,097,045	3,097,045	0	174,637	0	174,637
44	21,761,385	2,923,742	2,923,742	0	154,079	0	154,079
45	20,339,803	2,753,825	2,753,825	0	135,631	0	135,631
46	18,990,100	2,588,117	2,588,117	0	119,130	0	119,130
47	17,713,588	2,426,821	2,426,821	0	104,398	0	104,398
48	16,511,147	2,270,214	2,270,214	0	91,272	0	91,272
49	15,383,480	2,118,480	2,118,480	0	79,600	0	79,600
50	14,331,019	1,971,671	1,971,671	0	69,237	0	69,237
51	13,354,120	1,829,974	1,829,974	0	60,057	0	60,057
52	12,452,941	1,693,409	1,693,409	0	51,939	0	51,939
53	11,627,563	1,562,113	1,562,113	0	44,778	0	44,778
54	10,877,930	1,436,217	1,436,217	0	38,476	0	38,476
55	10,203,795	1,315,783	1,315,783	0	32,943	0	32,943
56	9,604,824	1,200,856	1,200,856	0	28,099	0	28,099
57	9,080,596	1,091,487	1,091,487	0	23,869	0	23,869
58	8,630,593	987,741	987,741	0	20,187	0	20,187
59	8,254,189	889,659	889,659	0	16,993	0	16,993
60	7,950,662	797,298	797,298	0	14,233	0	14,233

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2021 MEASUREMENT DATE**

APPENDIX D – DETERMINATION OF DISCOUNT RATE

Table 2 - Actuarial Present Values of Projected Benefit Payments
(In Thousands)

Projections Commence June 30, 2021

* From Table 1 - Projection of the Pension Plan's Fiduciary Net Position, column (a)

** From Table 1 - Projection of the Pension Plan's Fiduciary Net Position, column (g)

Year	Projected Beginning Fiduciary Net Position*	Projected Benefit Payments for current Plan participants**	"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	Present Value of "Funded" Benefit Payments	Present Value of "Unfunded" Benefit Payments	Present Value of Benefit Payments Using the Single Discount Rate
(a)	(b)	(c)	(d) = (c) if (b) >= (c)	(e) = (c) - (d)	(f) = (d) / (1+7.00%)^(a) - .5]	(g) = (e) / (1+2.16%)^(a) - .5]	(h) = (c) / (1+7.00%)^(a) - .5]
61	\$ 7,719,175	\$ 710,721	\$ 710,721	\$ 0	\$ 11,857	\$ 0	\$ 11,857
62	7,558,769	629,974	629,974	0	9,822	0	9,822
63	7,468,374	555,071	555,071	0	8,088	0	8,088
64	7,446,841	485,998	485,998	0	6,619	0	6,619
65	7,492,968	422,700	422,700	0	5,380	0	5,380
66	7,605,542	365,072	365,072	0	4,343	0	4,343
67	7,783,387	312,963	312,963	0	3,479	0	3,479
68	8,025,419	266,175	266,175	0	2,765	0	2,765
69	8,330,701	224,479	224,479	0	2,180	0	2,180
70	8,698,474	187,608	187,608	0	1,702	0	1,702
71	9,128,219	155,275	155,275	0	1,317	0	1,317
72	9,619,684	127,171	127,171	0	1,008	0	1,008
73	10,172,929	102,979	102,979	0	763	0	763
74	10,788,348	82,375	82,375	0	570	0	570
75	11,466,707	65,032	65,032	0	421	0	421
76	12,209,163	50,621	50,621	0	306	0	306
77	13,017,303	38,815	38,815	0	219	0	219
78	13,893,162	29,289	29,289	0	155	0	155
79	14,839,252	21,730	21,730	0	107	0	107
80	15,858,585	15,837	15,837	0	73	0	73
81	16,954,687	11,330	11,330	0	49	0	49
82	18,131,615	7,951	7,951	0	32	0	32
83	19,393,964	5,471	5,471	0	21	0	21
84	20,746,880	3,690	3,690	0	13	0	13
85	22,196,058	2,441	2,441	0	8	0	8
86	23,747,756	1,586	1,586	0	5	0	5
87	25,408,800	1,013	1,013	0	3	0	3
88	27,186,595	639	639	0	2	0	2
89	29,089,143	400	400	0	1	0	1
90	31,125,063	250	250	0	1	0	1
91	33,303,616	158	158	0	0	0	0
92	35,634,741	101	101	0	0	0	0
93	38,129,089	66	66	0	0	0	0
94	40,798,069	44	44	0	0	0	0
95	43,653,895	30	30	0	0	0	0
96	46,709,640	21	21	0	0	0	0
97	49,979,296	15	15	0	0	0	0
98	53,477,832	10	10	0	0	0	0
99	57,221,271	7	7	0	0	0	0
100	61,226,752	5	5	0	0	0	0
101	65,512,620	4	4	0	0	0	0
102	70,098,499	3	3	0	0	0	0
103	75,005,392	2	2	0	0	0	0
104	80,255,768	1	1	0	0	0	0
105	85,873,670	1	1	0	0	0	0
106	91,884,827	0	0	0	0	0	0
107	98,316,764	0	0	0	0	0	0
108	105,198,937	0	0	0	0	0	0
109	112,562,863	0	0	0	0	0	0
110	120,442,263	0	0	0	0	0	0
111	128,873,221	0	0	0	0	0	0
112	137,894,347	0	0	0	0	0	0
113	147,546,951	0	0	0	0	0	0
114	157,875,238	0	0	0	0	0	0
115	168,926,504	0	0	0	0	0	0
					\$ 78,195,793	\$ 0	\$ 78,195,793

APPENDIX E – GLOSSARY OF TERMS

1. Actuarially Determined Contribution

A target or recommended contribution 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.

2. Actuarial Valuation Date

The date as of which an actuarial valuation is performed. This date may be up to 24 months prior to the measurement date and up to 30 months prior to the employer's reporting date.

3. Deferred Inflow of Resources

An acquisition of net assets by a government employer that is applicable to a future reporting period. In the context of GASB 68, these are experience gains on the Total Pension Liability, assumption changes reducing the Total Pension Liability, or investment gains that are recognized in future reporting periods.

4. Deferred Outflow of Resources

A consumption of net assets by a government employer that is applicable to a future reporting period. In the context of GASB 68, these are experience losses on the Total Pension Liability, assumption changes increasing the Total Pension Liability, or investment losses that are recognized in future reporting periods.

5. Entry Age Actuarial Cost Method

The actuarial cost method required for GASB 68 calculations. Under this method, 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 of the individual between entry age and assumed exit ages. The portion of this actuarial present value allocated to a valuation year is called the Service Cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future service costs is called the Total Pension Liability.

6. Measurement Date

The date as of which the Total Pension Liability and Plan Fiduciary Net Position are measured. The Total Pension Liability may be projected from the Actuarial Valuation Date to the Measurement Date. The Measurement Date must be the same as the Reporting Date for the plan.

APPENDIX E – GLOSSARY OF TERMS

7. Net Pension Liability

The liability of employers and nonemployer contributing entities for employees for benefits provided through a defined benefit pension plan. It is calculated as the Total Pension Liability less the Plan Fiduciary Net Position.

8. Plan Fiduciary Net Position

The fair or market value of assets.

9. Reporting Date

The last day of the plan or employer's fiscal year.

10. Service Cost

The portion of the actuarial present value of projected benefit payments that is attributed to the current period of employee service in conformity with the requirements of GASB 68. The Service Cost is the normal cost calculated under the entry age actuarial cost method.

11. Total Pension Liability

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 GASB 68. The Total Pension Liability is the actuarial liability calculated under the entry age actuarial cost method. This measurement generally is not appropriate for estimating the cost to settle the Plan's liabilities.