



# **The Public Employees' Retirement System of New Jersey**

**GASB 68 Report  
as of June 30, 2020**

**Produced by Cheiron**

**March 2021**

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**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY**  
**GASB 68 REPORTING FOR JUNE 30, 2020 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, 2020. Measurements as of the reporting date are based on the fair value of assets as of June 30, 2020 and the Total Pension Liability as of the valuation date, July 1, 2019, updated to June 30, 2020. There were two changes in assumptions. The discount rate used to measure the Total Pension Liability (TPL) was changed as of the measurement date. In addition, the mortality assumption was updated upon direction from the Division of Pensions and Benefits (DPB). This report also reflects two changes to the plan provisions. Chapter 157, P.L. 2019 expanded the definition of regular or assigned duties for purposes of accidental disability. The DPB also adopted a new policy regarding the crediting of interest on member contributions for the purpose of refund of Accumulated Deductions. 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 an adjustment to reflect the changes in assumptions.

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.

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**SECTION I – BOARD SUMMARY**

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

<b>Table I-1 Summary of Collective Results</b>		
<b>Measurement Date</b>	<b>6/30/2020</b>	<b>6/30/2019</b>
<b><u>State</u></b>		
Net Pension Liability	\$ 22,223,967,525	\$ 23,012,420,340
Deferred Outflows	(1,207,240,789)	(1,537,694,730)
Deferred Inflows	<u>5,123,513,091</u>	<u>4,779,928,924</u>
Net Impact on Statement of Net Position	\$ 26,140,239,827	\$ 26,254,654,534
Total Pension Expense	\$ 895,192,133	\$ 1,267,799,109
Pension Expense (% of Payroll)	19.72%	29.25%
<b><u>Local Employers</u></b>		
Net Pension Liability	\$ 16,435,616,426	\$ 18,143,832,135
Deferred Outflows	(1,383,360,202)	(2,122,619,897)
Deferred Inflows	<u>6,885,726,332</u>	<u>6,618,184,855</u>
Net Impact on Statement of Net Position	\$ 21,937,982,556	\$ 22,639,397,093
Total Pension Expense	\$ 407,705,399	\$ 974,471,686
Pension Expense (% of Payroll)	5.63%	13.71%
<b><u>Total</u></b>		
Net Pension Liability	\$ 38,659,583,951	\$ 41,156,252,475
Deferred Outflows	(2,590,600,991)	(3,660,314,627)
Deferred Inflows	<u>12,009,239,423</u>	<u>11,398,113,779</u>
Net Impact on Statement of Net Position	\$ 48,078,222,383	\$ 48,894,051,627
Total Pension Expense	\$ 1,302,897,532	\$ 2,242,270,795
Pension Expense (% of Payroll)	11.06%	19.60%

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**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, 2020 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, 2020 was based on the same demographic assumptions except for the mortality assumption, which was based on the SOA's Scale MP-2020 mortality improvement scale upon direction from the DPB. While we do not find the use of the SOA's Scale MP-2020 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, 2019 valuation date and financial information as of the June 30, 2020 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 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.

This report also reflects two other changes to the plan provisions. Chapter 157, P.L. 2019 expanded the definition of regular or assigned duties for purposes of accidental disability retirement for PERS law enforcement officers or emergency medical technicians to include the World Trade Center (WTC) rescue, recovery, or cleanup operations between September 11, 2001 and October 11, 2011 under certain conditions. For such members who participated in the WTC

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SECTION II – CERTIFICATION

rescue, recovery, or cleanup operations, the total and permanent disability may occur after retirement on a service retirement or an ordinary disability retirement. After reviewing the members who have submitted eligibility registration forms and/or amended benefits requests forms with the DPB, we do not expect this legislation to have a material impact on the benefits payable by the System. Therefore, the impact of Chapter 157, P.L. 2019 will be recognized as part of the demographic experience as members are approved for such benefits.

The DPB adopted a new policy regarding the crediting of interest on member contributions for the purpose of refund of Accumulated Deductions. Previously, after termination of employment but prior to retirement or death, interest was credited on member Accumulated Deductions at the valuation interest rate for the entire period. Effective July 1, 2018, interest is only credited at the valuation interest rate for the first two years of inactivity prior to retirement or death. Thereafter, no additional interest is credited. This policy change decreased 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, 2020 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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**SECTION III – DETERMINATION OF DISCOUNT RATE**

The discount rate used to measure the Total Pension Liability was 6.28% as of June 30, 2019 and 7.00% as of June 30, 2020. As discussed with the DPB, the projection of cash flows used to determine the discount rate as of June 30, 2020 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, while the State will contribute 78% of their actuarially determined contribution and 100% of their NCGIPF contribution for all years of the projection. The 78% contribution rate is the total State contribution rate expected to be paid in fiscal year ending June 30, 2021 with respect to the actuarially determined contribution for the fiscal year ending June 30, 2021 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.
- Annual administrative expenses are assumed to be 0.32% and 0.57% of expected pension benefit payments for State and Local employers, respectively.
- 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 1<sup>st</sup>, 21 months after the associated valuation date.
- The State NCGIPF contributions are assumed to be paid monthly.

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**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, 2019, the FNP includes receivable contributions of \$1,038,892,124 (\$922,973,395 for appropriations, \$49,732,041 for NCGIPF, \$29,002,502 for Chapter 19 and \$37,184,186 for ERI).
- 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 ERI).

Based on these assumptions, the pension Plan's fiduciary net position was projected to be available to make all projected future benefit payments of current Plan members. Municipal bond rates of 3.50% as of June 30, 2019 and 2.21% as of June 30, 2020 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 3.50% as of June 30, 2019 and 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 rates are 6.28% as of June 30, 2019 and **7.00%** as of June 30, 2020. The assumed discount rates have been determined in accordance with the method prescribed by GASB Statement No. 67.

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**SECTION IV – COLLECTIVE EMPLOYER REPORTING AMOUNTS**

We understand the State and Local employers have elected to use the 2020 measurement date for its 2021 reporting date. As a result, the schedules in this section will be used by the State and Local employers for their 2021 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 5.16 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	\$ 584,263,302	\$ 119,750,458
Changes in assumptions	370,773,517	5,003,762,633
Net differences between projected and actual earnings on pension plan investments	252,203,970	0
<b>Total</b>	<b><u>\$ 1,207,240,789</u></b>	<b><u>\$ 5,123,513,091</u></b>
Amounts reported as deferred outflows and deferred inflows of resources will be recognized in pension expense as follows:		
<b>Measurement year ended June 30:</b>		
2021	\$ (1,412,722,981)	
2022	(1,356,408,661)	
2023	(784,320,789)	
2024	(309,971,140)	
2025	(52,848,731)	
Thereafter	\$ 0	

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**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	\$ 296,930,682	\$ 57,669,960
Changes in assumptions	529,030,023	6,828,056,372
Net differences between projected and actual earnings on pension plan investments	557,399,497	0
<b>Total</b>	<b><u>\$ 1,383,360,202</u></b>	<b><u>\$ 6,885,726,332</u></b>
Amounts reported as deferred outflows and deferred inflows of resources will be recognized in pension expense as follows:		
<b>Measurement year ended June 30:</b>		
2021	\$ (2,046,278,639)	
2022	(1,865,583,957)	
2023	(1,066,133,576)	
2024	(431,126,457)	
2025	(93,243,501)	
Thereafter	\$ 0	

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**SECTION IV – COLLECTIVE EMPLOYER REPORTING AMOUNTS**

**Table IV-1C**

**Schedule of Collective Deferred Inflows and Outflows of Resources**

**Total**

	<b>Deferred Outflows of Resources</b>	<b>Deferred Inflows of Resources</b>
Differences between expected and actual experience	\$ 881,193,984	\$ 177,420,418
Changes in assumptions	899,803,540	11,831,819,005
Net differences between projected and actual earnings on pension plan investments	809,603,467	0
<b>Total</b>	<b><u>\$ 2,590,600,991</u></b>	<b><u>\$ 12,009,239,423</u></b>

Amounts reported as deferred outflows and deferred inflows of resources will be recognized in pension expense as follows:

**Measurement year ended June 30:**

2021	\$ (3,459,001,620)
2022	(3,221,992,618)
2023	(1,850,454,365)
2024	(741,097,597)
2025	(146,092,232)
Thereafter	\$ 0



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**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							
			2020	2021	2022	2023	2024	2025	Thereafter	
2020	5.16	\$ 177,421,042	\$ 34,383,923	\$ 34,383,923	\$ 34,383,923	\$ 34,383,923	\$ 34,383,923	\$ 34,383,923	\$ 5,501,427	\$ 0
2019	4.21	120,570,723	28,639,126	28,639,126	28,639,126	28,639,126	6,014,219	0	0	0
2018	3.63	(79,597,702)	(21,927,742)	(21,927,742)	(21,927,742)	(13,814,476)	0	0	0	0
2017	2.48	76,925,880	31,018,501	31,018,501	14,888,878	0	0	0	0	0
2016	1.57	44,220,530	28,165,943	16,054,587	0	0	0	0	0	0
2015	0.72	81,691,065	81,691,065	0	0	0	0	0	0	0
<b>Total</b>		<b>\$ 421,231,538</b>	<b>\$ 181,970,816</b>	<b>\$ 88,168,395</b>	<b>\$ 55,984,185</b>	<b>\$ 49,208,573</b>	<b>\$ 40,398,142</b>	<b>\$ 5,501,427</b>	<b>\$ 0</b>	<b>\$ 0</b>

**Recognition of changes in assumptions**

From Measurement Year Ending	Remaining Recognition Period	Remaining Deferred (Inflows) and Outflows*	Recognition Year							
			2020	2021	2022	2023	2024	2025	Thereafter	
2020	5.16	\$ (3,184,523,878)	\$ (617,155,790)	\$ (617,155,790)	\$ (617,155,790)	\$ (617,155,790)	\$ (617,155,790)	\$ (98,744,928)	\$ 0	\$ 0
2019	4.21	(1,577,314,013)	(374,658,911)	(374,658,911)	(374,658,911)	(374,658,911)	(78,678,369)	0	0	0
2018	3.63	(2,090,225,389)	(575,819,666)	(575,819,666)	(575,819,666)	(362,766,391)	0	0	0	0
2017	2.48	(2,586,618,986)	(1,042,991,527)	(1,042,991,527)	(500,635,932)	0	0	0	0	0
2016	1.57	1,457,152,869	928,122,846	529,030,023	0	0	0	0	0	0
2015	0.72	294,439,889	294,439,889	0	0	0	0	0	0	0
2014	0.44	47,618,941	47,618,941	0	0	0	0	0	0	0
<b>Total</b>		<b>\$ (7,639,470,567)</b>	<b>\$ (1,340,444,218)</b>	<b>\$ (2,081,595,871)</b>	<b>\$ (2,068,270,299)</b>	<b>\$ (1,354,581,092)</b>	<b>\$ (695,834,159)</b>	<b>\$ (98,744,928)</b>	<b>\$ 0</b>	<b>\$ 0</b>

**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							
			2020	2021	2022	2023	2024	2025	Thereafter	
2020	5.00	\$ 1,121,547,800	\$ 224,309,560	\$ 224,309,560	\$ 224,309,560	\$ 224,309,560	\$ 224,309,560	\$ 0	\$ 0	\$ 0
2019	4.00	59,717,526	14,929,381	14,929,381	14,929,381	14,929,383	0	0	0	0
2018	3.00	(277,610,356)	(92,536,786)	(92,536,786)	(92,536,784)	0	0	0	0	0
2017	2.00	(399,106,638)	(199,553,320)	(199,553,318)	0	0	0	0	0	0
2016	1.00	332,570,703	332,570,703	0	0	0	0	0	0	0
<b>Total</b>		<b>\$ 837,119,035</b>	<b>\$ 279,719,538</b>	<b>\$ (52,851,163)</b>	<b>\$ 146,702,157</b>	<b>\$ 239,238,943</b>	<b>\$ 224,309,560</b>	<b>\$ 0</b>	<b>\$ 0</b>	<b>\$ 0</b>

<b>Grand Total</b>		<b>\$ (6,381,119,994)</b>	<b>\$ (878,753,864)</b>	<b>\$ (2,046,278,639)</b>	<b>\$ (1,865,583,957)</b>	<b>\$ (1,066,133,576)</b>	<b>\$ (431,126,457)</b>	<b>\$ (93,243,501)</b>	<b>\$ 0</b>	<b>\$ 0</b>
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\* As of the beginning of the measurement year

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**SECTION IV – COLLECTIVE EMPLOYER REPORTING AMOUNTS**

**Table IV-2C  
Detailed Schedule of Collective Deferred Inflows and Outflows of Resources  
Total**

**Recognition of differences between expected and actual experience**

From Measurement Year Ending	Remaining Recognition Period	Remaining Deferred (Inflows) and Outflows*	Recognition Year						
			2020	2021	2022	2023	2024	2025	Thereafter
2020	5.16	\$ 799,902,851	\$ 155,019,932	\$ 155,019,932	\$ 155,019,932	\$ 155,019,932	\$ 155,019,932	\$ 24,803,191	\$ 0
2019	4.21	110,833,664	26,326,286	26,326,286	26,326,286	26,326,286	5,528,520	0	0
2018	3.63	(234,633,538)	(64,637,339)	(64,637,339)	(64,637,339)	(40,721,521)	0	0	0
2017	2.48	138,907,781	56,011,203	56,011,203	26,885,375	0	0	0	0
2016	1.57	169,347,613	107,864,723	61,482,890	0	0	0	0	0
2015	0.72	132,267,918	132,267,918	0	0	0	0	0	0
<b>Total</b>		<b>\$ 1,116,626,289</b>	<b>\$ 412,852,723</b>	<b>\$ 234,202,972</b>	<b>\$ 143,594,254</b>	<b>\$ 140,624,697</b>	<b>\$ 160,548,452</b>	<b>\$ 24,803,191</b>	<b>\$ 0</b>

**Recognition of changes in assumptions**

From Measurement Year Ending	Remaining Recognition Period	Remaining Deferred (Inflows) and Outflows*	Recognition Year						
			2020	2021	2022	2023	2024	2025	Thereafter
2020	5.16	\$ (5,511,377,388)	\$ (1,068,096,393)	\$ (1,068,096,393)	\$ (1,068,096,393)	\$ (1,068,096,393)	\$ (1,068,096,393)	\$ (170,895,423)	\$ 0
2019	4.21	(2,653,309,155)	(630,239,705)	(630,239,705)	(630,239,705)	(630,239,705)	(132,350,335)	0	0
2018	3.63	(3,619,502,178)	(997,108,038)	(997,108,038)	(997,108,038)	(628,178,064)	0	0	0
2017	2.48	(4,596,503,084)	(1,853,428,664)	(1,853,428,664)	(889,645,756)	0	0	0	0
2016	1.57	2,478,406,245	1,578,602,705	899,803,540	0	0	0	0	0
2015	0.72	515,021,216	515,021,216	0	0	0	0	0	0
2014	0.44	83,520,578	83,520,578	0	0	0	0	0	0
<b>Total</b>		<b>\$ (13,303,743,766)</b>	<b>\$ (2,371,728,301)</b>	<b>\$ (3,649,069,260)</b>	<b>\$ (3,585,089,892)</b>	<b>\$ (2,326,514,162)</b>	<b>\$ (1,200,446,728)</b>	<b>\$ (170,895,423)</b>	<b>\$ 0</b>

**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						
			2020	2021	2022	2023	2024	2025	Thereafter
2020	5.00	\$ 1,494,003,391	\$ 298,800,678	\$ 298,800,678	\$ 298,800,678	\$ 298,800,678	\$ 298,800,679	\$ 0	\$ 0
2019	4.00	146,537,685	36,634,421	36,634,421	36,634,421	36,634,422	0	0	0
2018	3.00	(347,796,239)	(115,932,080)	(115,932,080)	(115,932,079)	0	0	0	0
2017	2.00	(527,276,706)	(263,638,355)	(263,638,351)	0	0	0	0	0
2016	1.00	466,379,048	466,379,048	0	0	0	0	0	0
<b>Total</b>		<b>\$ 1,231,847,179</b>	<b>\$ 422,243,712</b>	<b>\$ (44,135,332)</b>	<b>\$ 219,503,020</b>	<b>\$ 335,435,100</b>	<b>\$ 298,800,679</b>	<b>\$ 0</b>	<b>\$ 0</b>

<b>Grand Total</b>		<b>\$ (10,955,270,298)</b>	<b>\$ (1,536,631,866)</b>	<b>\$ (3,459,001,620)</b>	<b>\$ (3,221,992,618)</b>	<b>\$ (1,850,454,365)</b>	<b>\$ (741,097,597)</b>	<b>\$ (146,092,232)</b>	<b>\$ 0</b>
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\* As of the beginning of the measurement year

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY  
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**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.

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**SECTION IV – COLLECTIVE EMPLOYER REPORTING AMOUNTS**

<b>Table IV-3A Calculation of Collective Pension Expense State</b>		
<b>Measurement Year Ending</b>	<b>2020</b>	<b>2019</b>
Change in Net Pension Liability	\$ (788,452,815)	\$ (691,877,753)
Change in Deferred Outflows	330,453,941	1,258,140,677
Change in Deferred Inflows	343,584,167	(188,702,905)
Employer Contributions*	1,014,817,197	890,001,213
Other - NCGIPF adjustment	<u>0</u>	<u>0</u>
<b>Subtotal</b>	<b>\$ 900,402,490</b>	<b>\$ 1,267,561,232</b>
Employer Contribution - delayed enrollments**	220,673	194,089
Employer Contribution - delayed appropriations**	(5,431,030)	43,788
Employer Contribution - retroactive**	0	0
Employer Contribution - additional**	<u>0</u>	<u>0</u>
<b>Total Pension Expense</b>	<b>\$ 895,192,133</b>	<b>\$ 1,267,799,109</b>
<b>Total Pension Expense as % of Payroll</b>	<b>19.72%</b>	<b>29.25%</b>
<b>Operating Expenses</b>		
Service cost	\$ 505,967,261	\$ 526,757,589
Employee contributions	(345,896,206)	(355,581,371)
Administrative expenses	<u>5,895,744</u>	<u>6,593,343</u>
Total	\$ 165,966,799	\$ 177,769,561
<b>Financing Expenses</b>		
Interest cost	\$ 1,827,655,555	\$ 1,701,980,100
Expected return on assets	<u>(430,893,889)</u>	<u>(446,287,688)</u>
Total	\$ 1,396,761,666	\$ 1,255,692,412
<b>Changes</b>		
Benefit changes	\$ (9,658,330)	\$ 0
Recognition of assumption changes	(1,031,284,083)	(448,868,863)
Recognition of liability gains and losses	230,881,907	129,914,677
Recognition of investment gains and losses	<u>142,524,174</u>	<u>153,291,322</u>
Total	\$ (667,536,332)	\$ (165,662,864)
<b>Total Pension Expense</b>	<b>\$ 895,192,133</b>	<b>\$ 1,267,799,109</b>

\* Includes appropriations and lottery revenue

\*\* Pension expense related to specific liabilities of individual employers

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**SECTION IV – COLLECTIVE EMPLOYER REPORTING AMOUNTS**

<b>Table IV-3B Calculation of Collective Pension Expense Local Employers</b>		
<b>Measurement Year Ending</b>	<b>2020</b>	<b>2019</b>
Change in Net Pension Liability	\$ (1,708,215,709)	\$ (1,545,669,404)
Change in Deferred Outflows	739,259,695	1,497,365,547
Change in Deferred Inflows	267,541,477	36,315,487
Employer Contributions*	1,102,066,862	979,534,570
Other - NCGIPF adjustment	<u>0</u>	<u>2,387</u>
<b>Subtotal</b>	<b>\$ 400,652,325</b>	<b>\$ 967,548,587</b>
Employer Contribution - delayed enrollments**	346,761	463,612
Employer Contribution - delayed appropriations**	1,284,584	1,732,038
Employer Contribution - retroactive**	5,318,876	4,623,577
Employer Contribution - additional**	<u>102,853</u>	<u>103,872</u>
<b>Total Pension Expense</b>	<b>\$ 407,705,399</b>	<b>\$ 974,471,686</b>
<b>Total Pension Expense as % of Payroll</b>	<b>5.63%</b>	<b>13.71%</b>
<b>Operating Expenses</b>		
Service cost	\$ 792,122,562	\$ 803,761,000
Employee contributions	(563,040,019)	(553,610,183)
Administrative expenses	<u>13,469,267</u>	<u>14,664,098</u>
Total	\$ 242,551,810	\$ 264,814,915
<b>Financing Expenses</b>		
Interest cost	\$ 2,580,980,825	\$ 2,382,273,210
Expected return on assets	<u>(1,519,380,739)</u>	<u>(1,478,181,305)</u>
Total	\$ 1,061,600,086	\$ 904,091,905
<b>Changes</b>		
Benefit changes	\$ (17,692,633)	\$ 0
Recognition of assumption changes	(1,340,444,218)	(548,178,094)
Recognition of liability gains and losses	181,970,816	179,355,644
Recognition of investment gains and losses	<u>279,719,538</u>	<u>174,387,316</u>
Total	\$ (896,446,497)	\$ (194,435,134)
<b>Total Pension Expense</b>	<b>\$ 407,705,399</b>	<b>\$ 974,471,686</b>

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

\*\* Pension expense related to specific liabilities of individual employers

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**SECTION IV – COLLECTIVE EMPLOYER REPORTING AMOUNTS**

<b>Table IV-3C Calculation of Collective Pension Expense Total</b>		
<b>Measurement Year Ending</b>	<b>2020</b>	<b>2019</b>
Change in Net Pension Liability	\$ (2,496,668,524)	\$ (2,237,547,157)
Change in Deferred Outflows	1,069,713,636	2,755,506,224
Change in Deferred Inflows	611,125,644	(152,387,418)
Employer Contributions*	2,116,884,059	1,869,535,783
Other - NCGIPF adjustment	<u>0</u>	<u>2,387</u>
<b>Subtotal</b>	<b>\$ 1,301,054,815</b>	<b>\$ 2,235,109,819</b>
Employer Contribution - delayed enrollments**	567,434	657,701
Employer Contribution - delayed appropriations**	(4,146,446)	1,775,826
Employer Contribution - retroactive**	5,318,876	4,623,577
Employer Contribution - additional**	<u>102,853</u>	<u>103,872</u>
<b>Total Pension Expense</b>	<b>\$ 1,302,897,532</b>	<b>\$ 2,242,270,795</b>
<b>Total Pension Expense as % of Payroll</b>	<b>11.06%</b>	<b>19.60%</b>
<b>Operating Expenses</b>		
Service cost	\$ 1,298,089,823	\$ 1,330,518,589
Employee contributions	(908,936,225)	(909,191,554)
Administrative expenses	<u>19,365,011</u>	<u>21,257,441</u>
Total	\$ 408,518,609	\$ 442,584,476
<b>Financing Expenses</b>		
Interest cost	\$ 4,408,636,380	\$ 4,084,253,310
Expected return on assets	<u>(1,950,274,628)</u>	<u>(1,924,468,993)</u>
Total	\$ 2,458,361,752	\$ 2,159,784,317
<b>Changes</b>		
Benefit changes	\$ (27,350,963)	\$ 0
Recognition of assumption changes	(2,371,728,301)	(997,046,957)
Recognition of liability gains and losses	412,852,723	309,270,321
Recognition of investment gains and losses	<u>422,243,712</u>	<u>327,678,638</u>
Total	\$ (1,563,982,829)	\$ (360,097,998)
<b>Total Pension Expense</b>	<b>\$ 1,302,897,532</b>	<b>\$ 2,242,270,795</b>

\* 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

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**APPENDIX A – MEMBERSHIP INFORMATION**

	Plan Membership					
	July 1, 2019			July 1, 2018		
	State	Local Employers	Total	State	Local	Total
Contributing Actives	67,906	145,287	213,193	68,593	146,615	215,208
Non-Contributing Actives	9,255	26,597	35,852	9,405	27,985	37,390
Terminated Vested	229	713	942	169	440	609
Inactive Receiving Benefits*	59,849	122,643	182,492	58,556	120,192	178,748
<b>Total</b>	<b>137,239</b>	<b>295,240</b>	<b>432,479</b>	<b>136,723</b>	<b>295,232</b>	<b>431,955</b>
Annual Compensation for Contributing Actives	\$ 4,539,069,588	\$ 7,236,080,086	\$ 11,775,149,674	\$ 4,333,772,974	\$ 7,106,248,788	\$ 11,440,021,762
Annual Retirement Allowances for Those Receiving Benefits	\$ 1,671,166,694	\$ 2,251,384,758	\$ 3,922,551,452	\$ 1,607,733,796	\$ 2,157,906,233	\$ 3,765,640,029

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

THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY  
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APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

**A. Actuarial Assumptions**

- |  |  |
|--|--|
| <b>1. Investment Rate of Return for determining Actuarially Determined Contributions</b> | <ul style="list-style-type: none"><li>• July 1, 2019 valuation: 7.30% per annum, compounded annually.</li><li>• July 1, 2020 valuation: 7.30% per annum, compounded annually.</li><li>• July 1, 2021 and later valuations: 7.00% per annum, compounded annually.</li></ul> |
| <b>2. Long-Term Expected Rate of Return</b>  | 7.00% per annum, compounded annually.  |
| <b>3. Interest Crediting Rate on Accumulated Deductions</b>                              | 7.30% per annum, compounded annually. Interest credits are assumed to end upon termination.  |
| <b>4. GASB 67 Effective Discount Rate</b>  | <ul style="list-style-type: none"><li>• June 30, 2019: 6.28% per annum, compounded annually.</li><li>• June 30, 2020: 7.00% per annum, compounded annually.</li></ul>  |
| <b>5. Price Inflation</b>  | <ul style="list-style-type: none"><li>• 2.75% per annum, compounded annually.</li></ul>  |
| <b>6. Wage Inflation</b>   | <ul style="list-style-type: none"><li>• 3.25% per annum, compounded annually.</li></ul>  |
| <b>7. Cost-of-Living Adjustments (COLAs)</b>   | No future COLAs are assumed. Previously granted COLAs are included in the data.  |

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**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**

\$280,000 in 2019 increasing 2.75% per annum, compounded annually.

**10. Social Security Wage Base**

\$132,900 in 2019 increasing 3.25% per annum, compounded annually.

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**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:

<b>Termination Rates for Members Electing a Refund</b>				
<b>Service</b>	<b>State</b>		<b>Local Employers'</b>	
	<b>Less than 31 Years Old</b>	<b>31 Years or Older</b>	<b>Less than 31 Years Old</b>	<b>31 Years or Older</b>
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.

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**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

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

<b>Termination Rates for Members Electing a Deferred Annuity</b>		
<b>Service</b>	<b>State</b>	<b>Local Employers</b>
< 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.

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**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-2020.

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-2020.

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-2020.

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**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.

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**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

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

<b>Local Employers' Tiers 1-4 Retirement Rates</b>			
<b>Age</b>	<b>Less Than 25 Years of Service</b>	<b>25 Years of Service</b>	<b>26 or More Years of Service</b>
< 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

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY  
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**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

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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.

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- 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.
- 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 2018 data but omitted from the 2019 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.

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**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-2020 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, 2019 and the financial information as of June 30, 2020. The projections assume continuation of the plan provisions and actuarial assumptions in effect as of July 1, 2019 and do not reflect the impact of any changes in benefits or actuarial assumptions that may be adopted after July 1, 2020 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 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-2019 scale to the MP-2020 scale upon direction from the DPB.

The GASB 67 effective discount rate has been updated in accordance with the method prescribed by GASB Statement No. 67.

The interest crediting rate on Accumulated Deductions was decreased from 7.50% to 7.30% per annum, compounded annually.

In connection with a new policy adopted by the DPB, interest credits are assumed to end upon termination, instead of continuing through retirement.

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Also in connection with the new interest crediting policy adopted by the DPB, for purposes of valuing the liability for non-contributing active members, the reported ASF is adjusted to include interest through the valuation date. Previously, the ASF as reported was used to value the liability. Such a change is appropriate because many non-contributing actives will receive annuity benefits in the future. Therefore, using the ASF amount as reported under the new policy may result in future liability losses.

## 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.

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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.

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

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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.

**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**

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.

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**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.

**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 1/7<sup>th</sup> 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.

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- 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 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 1/12 of one percent for each month the retirement date precedes age 60 through age 55 and by 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 1/12 of one percent for each month the retirement date precedes age 62 through age 55 and by 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 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, 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.

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- 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.

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(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:

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- 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):

Member 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.

(1) Service Retirement:

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

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- 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.

- (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.

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- (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:

- 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.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

**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**

Effective July 1, 2018, the DPB adopted a new policy regarding the crediting of interest on member contributions for the purpose of refund of Accumulated Deductions. Previously, after termination of employment but prior to retirement or death, interest was credited on member Accumulated Deductions at the valuation interest rate for the entire period. Effective July 1, 2018, interest is only credited at the valuation interest rate for the first two years of inactivity prior to retirement or death. Thereafter, no additional interest is credited.

Chapter 157, P.L. 2019 expanded the definition of regular or assigned duties for purposes of accidental disability retirement for PERS law enforcement officers or emergency medical technicians to include the World Trade Center (WTC) rescue, recovery, or cleanup operations between September 11, 2001 and October 11, 2011 under certain conditions. 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.

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**APPENDIX D – DETERMINATION OF DISCOUNT RATE**

**Table 1 - Projection of the Pension Plan's Fiduciary Net Position**  
(In Thousands)  
Projections Commence June 30, 2020

Year	Projected Beginning Fiduciary Net Position (a)	Projected Member Contributions (b)	Projected State Contributions (c)	Projected State-paid Local Contributions (d)	Projected Local Employer Contributions (e)	Projected Lottery Contributions (f)	Projected Benefit Payments (g)	Projected Administrative Expenses (h)	Projected Investment Earnings (i)	Projected Ending Fiduciary Net Position (j) = (a) + (b) + (c) + (d) + (e) + (f) - (g) - (h) + (i)
1	\$ 27,900,480	\$ 797,914	\$ 1,054,835	\$ 13,013	\$ 1,112,471	\$ 228,362	\$ 4,606,180	\$ 21,234	\$ 1,875,991	\$ 28,355,652
2	28,355,652	758,577	1,097,008	37,819	1,181,493	231,038	4,766,677	21,993	1,903,959	28,776,876
3	28,776,876	721,074	1,275,456	48,645	1,356,621	233,729	4,918,064	22,710	1,934,903	29,406,530
4	29,406,530	684,777	1,308,956	48,095	1,389,409	236,565	5,061,156	23,391	1,974,296	29,964,081
5	29,964,081	649,333	1,342,811	47,476	1,419,270	239,449	5,196,961	24,038	2,008,883	30,450,306
6	30,450,306	614,278	1,375,899	46,818	1,446,032	242,366	5,327,419	24,659	2,038,602	30,862,223
7	30,862,223	579,711	1,408,307	46,123	1,460,440	245,329	5,452,391	25,255	2,063,099	31,187,586
8	31,187,586	550,994	1,438,531	45,476	1,477,200	248,120	5,569,732	25,816	2,081,981	31,434,341
9	31,434,341	522,524	1,469,606	44,846	1,493,096	250,046	5,678,292	26,333	2,095,652	31,605,486
10	31,605,486	493,888	1,500,778	44,353	1,508,067	252,573	5,782,754	26,827	2,104,176	31,699,739
11	31,699,739	465,330	1,532,017	44,081	1,521,631	255,125	5,880,035	27,284	2,107,553	31,718,156
12	31,718,156	437,295	1,528,041	44,032	1,514,063	257,702	5,965,457	27,683	2,104,784	31,610,931
13	31,610,931	409,918	1,524,113	44,786	1,506,126	260,305	6,038,544	28,021	2,093,686	31,383,300
14	31,383,300	383,365	1,519,932	48,297	1,496,881	262,935	6,097,720	28,289	2,074,712	31,043,413
15	31,043,413	358,043	1,511,071	26,626	1,488,388	265,590	6,140,690	28,477	2,047,724	30,571,688
16	30,571,688	334,102	1,504,988	20,332	1,481,214	268,272	6,166,183	28,579	2,012,651	29,998,485
17	29,998,485	311,582	1,499,460	17,789	1,474,654	270,981	6,173,877	28,596	1,971,263	29,341,740
18	29,341,740	290,530	1,494,323	16,287	1,468,627	273,717	6,164,474	28,530	1,924,714	28,616,933
19	28,616,933	270,940	1,489,390	15,142	1,463,500	276,481	6,137,774	28,384	1,874,079	27,840,307
20	27,840,307	252,811	1,485,030	14,162	1,458,709	279,272	6,093,742	28,159	1,820,492	27,028,884
21	27,028,884	236,030	1,481,252	13,303	1,454,498	282,091	6,033,765	27,859	1,765,095	26,199,530
22	26,199,530	219,886	1,477,952	12,538	1,450,809	284,938	5,961,681	27,503	1,708,908	25,365,377
23	25,365,377	203,360	1,474,539	11,854	1,447,132	287,814	5,884,078	27,121	1,652,562	24,531,440
24	24,531,440	186,238	1,470,707	11,251	1,442,691	290,718	5,802,602	26,721	1,596,323	23,700,045
25	23,700,045	169,044	1,466,533	10,720	1,437,577	293,652	5,714,493	26,291	1,540,740	22,877,258
26	22,877,258	151,925	1,465,521	10,250	1,432,214	296,614	5,620,755	25,837	1,485,497	22,072,687
27	22,072,687	134,654	1,464,584	9,840	1,426,229	299,607	5,522,774	25,364	1,431,934	21,291,397
28	21,291,397	116,984	1,583,191	9,487	1,419,652	0	5,423,806	24,886	1,372,694	20,344,713
29	20,344,713	98,886	1,577,737	9,186	1,412,224	0	5,324,107	24,405	1,308,970	19,403,204
30	19,403,204	81,956	1,571,585	8,935	1,403,788	0	5,216,288	23,889	1,245,895	18,475,187
31	18,475,187	67,632	1,566,121	8,730	1,396,018	0	5,093,255	23,304	1,184,410	17,581,539
32	17,581,539	55,443	1,561,393	8,566	1,388,956	0	4,865,114	22,215	1,129,071	16,837,639
33	16,837,639	45,007	1,557,185	8,436	1,382,445	0	4,720,292	21,535	1,081,416	16,170,302
34	16,170,302	36,168	1,553,443	8,334	1,376,383	0	4,566,590	20,816	1,039,503	15,596,728
35	15,596,728	28,758	1,550,123	8,256	1,370,798	0	4,405,819	20,067	1,004,466	15,133,244
36	15,133,244	22,600	1,547,220	8,196	1,365,701	0	4,238,650	19,289	977,419	14,796,441
37	14,796,441	17,559	1,544,655	8,151	1,361,269	0	4,066,891	18,491	948,489	13,948,182
38	13,948,182	13,471	1,542,463	8,117	1,357,430	0	3,891,716	17,679	884,712	12,604,981
39	12,604,981	10,230	1,540,562	8,092	1,353,938	0	3,714,055	16,857	796,030	11,309,359
40	11,309,359	7,703	1,538,938	8,073	1,350,697	0	3,534,947	16,029	711,278	10,098,073
41	10,098,073	5,718	1,537,558	8,060	1,347,571	0	3,356,227	15,204	632,475	8,979,468
42	8,979,468	4,202	1,536,319	8,051	1,344,679	0	3,178,681	14,385	560,147	7,959,911
43	7,959,911	3,034	1,535,259	8,044	1,342,093	0	3,003,571	13,578	494,692	7,044,743
44	7,044,743	2,164	1,534,283	8,041	1,339,740	0	2,831,788	12,788	436,447	6,238,511
45	6,238,511	1,506	1,533,412	8,039	1,337,519	0	2,664,091	12,017	385,701	5,545,218
46	5,545,218	1,032	1,532,587	8,038	1,335,430	0	2,500,991	11,268	342,723	4,968,755
47	4,968,755	681	1,531,822	8,037	1,333,473	0	2,342,176	10,542	307,765	4,512,690
48	4,512,690	431	1,531,085	8,037	1,331,640	0	2,188,603	9,839	281,070	4,180,588
49	4,180,588	258	1,530,368	8,037	1,329,923	0	2,040,095	9,161	262,885	3,976,159
50	3,976,159	146	1,529,656	8,037	1,328,316	0	1,896,703	8,508	253,464	3,903,235
51	3,903,235	75	1,528,947	8,037	1,326,816	0	1,758,514	7,880	253,072	3,965,787
52	3,965,787	35	1,528,225	8,037	1,325,416	0	1,625,588	7,277	261,984	4,167,966
53	4,167,966	17	1,527,483	8,037	1,324,116	0	1,497,988	6,699	280,487	4,514,117
54	4,514,117	6	1,526,715	8,037	1,322,916	0	1,375,848	6,147	308,881	5,008,713
55	5,008,713	1	1,525,922	8,037	1,321,716	0	1,259,171	5,621	347,477	5,656,522
56	5,656,522	0	1,525,104	8,037	1,320,516	0	1,147,990	5,120	396,609	6,462,607
57	6,462,607	0	1,524,262	8,037	1,319,316	0	1,042,340	4,644	456,629	7,432,332
58	7,432,332	0	927,000	8,037	1,318,116	0	942,250	4,195	512,477	7,959,574
59	7,959,574	0	262,011	8,037	1,316,916	0	847,740	3,771	535,407	7,938,125
60	7,938,125	0	81,786	8,037	1,315,716	0	758,830	3,372	532,280	7,821,106

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**APPENDIX D – DETERMINATION OF DISCOUNT RATE**

**Table 1 - Projection of the Pension Plan's Fiduciary Net Position**  
(In Thousands)  
Projections Commence June 30, 2020

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	\$ 7,821,106	\$ 0	\$ 32,351	\$ 8,037	\$ 21,584	\$ 0	\$ 675,559	\$ 3,000	\$ 525,654	\$ 7,730,174
62	7,730,174	0	18,204	8,037	20,116	0	597,958	2,653	521,572	7,697,491
63	7,697,491	0	13,583	8,037	18,675	0	526,035	2,332	521,617	7,731,038
64	7,731,038	0	11,544	8,037	17,262	0	459,768	2,036	526,171	7,832,248
65	7,832,248	0	10,221	8,037	15,880	0	399,107	1,766	535,286	8,000,799
66	8,000,799	0	9,117	8,037	14,531	0	343,955	1,520	548,931	8,235,940
67	8,235,940	0	8,106	8,037	13,222	0	294,170	1,299	567,056	8,536,893
68	8,536,893	0	7,160	8,037	11,956	0	249,566	1,100	589,611	8,902,990
69	8,902,990	0	6,275	8,037	10,742	0	209,915	924	616,558	9,333,764
70	9,333,764	0	5,453	8,037	9,585	0	174,952	769	647,873	9,828,990
71	9,828,990	0	4,694	8,037	8,491	0	144,386	633	683,551	10,388,744
72	10,388,744	0	4,000	8,037	7,464	0	117,907	516	723,608	11,013,430
73	11,013,430	0	3,371	8,037	6,507	0	95,193	416	768,083	11,703,819
74	11,703,819	0	2,805	8,037	5,625	0	75,919	331	817,043	12,461,077
75	12,461,077	0	2,302	8,037	4,818	0	59,756	260	870,578	13,286,797
76	13,286,797	0	1,860	3,224	4,088	0	46,375	201	928,689	14,178,082
77	14,178,082	0	1,479	759	3,224	0	35,453	153	991,365	15,139,302
78	15,139,302	0	1,154	179	2,530	0	26,673	115	1,058,916	16,175,293
79	16,175,293	0	883	42	2,000	0	19,732	85	1,131,654	17,290,055
80	17,290,055	0	662	10	1,567	0	14,340	62	1,209,858	18,487,750
81	18,487,750	0	485	2	1,209	0	10,231	44	1,293,826	19,772,997
82	19,772,997	0	347	1	915	0	7,161	31	1,383,890	21,150,957
83	21,150,957	0	242	0	679	0	4,916	21	1,480,417	22,627,358
84	22,627,358	0	164	0	494	0	3,311	14	1,583,815	24,208,506
85	24,208,506	0	108	0	351	0	2,188	9	1,694,529	25,901,297
86	25,901,297	0	69	0	244	0	1,422	6	1,813,048	27,713,230
87	27,713,230	0	43	0	165	0	911	4	1,939,899	29,652,423
88	29,652,423	0	26	0	109	0	577	2	2,075,652	31,727,631
89	31,727,631	0	16	0	71	0	364	2	2,220,923	33,948,274
90	33,948,274	0	9	0	44	0	231	1	2,376,372	36,324,468
91	36,324,468	0	5	0	27	0	148	1	2,542,708	38,867,061
92	38,867,061	0	3	0	17	0	97	0	2,720,691	41,587,674
93	41,587,674	0	2	0	10	0	65	0	2,911,135	44,498,756
94	44,498,756	0	1	0	6	0	45	0	3,114,912	47,613,630
95	47,613,630	0	1	0	4	0	32	0	3,332,953	50,946,555
96	50,946,555	0	0	0	2	0	23	0	3,566,258	54,512,793
97	54,512,793	0	0	0	1	0	17	0	3,815,895	58,328,673
98	58,328,673	0	0	0	1	0	12	0	4,083,007	62,411,669
99	62,411,669	0	0	0	1	0	9	0	4,368,817	66,780,477
100	66,780,477	0	0	0	1	0	6	0	4,674,633	71,455,105
101	71,455,105	0	0	0	0	0	5	0	5,001,857	76,456,958
102	76,456,958	0	0	0	0	0	3	0	5,351,987	81,808,942
103	81,808,942	0	0	0	0	0	2	0	5,726,626	87,535,566
104	87,535,566	0	0	0	0	0	2	0	6,127,490	93,663,054
105	93,663,054	0	0	0	0	0	1	0	6,556,414	100,219,467
106	100,219,467	0	0	0	0	0	1	0	7,015,363	107,234,829
107	107,234,829	0	0	0	0	0	0	0	7,506,438	114,741,267
108	114,741,267	0	0	0	0	0	0	0	8,031,889	122,773,155
109	122,773,155	0	0	0	0	0	0	0	8,594,121	131,367,276
110	131,367,276	0	0	0	0	0	0	0	9,195,709	140,562,985
111	140,562,985	0	0	0	0	0	0	0	9,839,409	150,402,394
112	150,402,394	0	0	0	0	0	0	0	10,528,168	160,930,562
113	160,930,562	0	0	0	0	0	0	0	11,265,139	172,195,701
114	172,195,701	0	0	0	0	0	0	0	12,053,699	184,249,400
115	184,249,400	0	0	0	0	0	0	0	12,897,458	197,146,858

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY  
GASB 68 REPORTING FOR JUNE 30, 2020 MEASUREMENT DATE**

**APPENDIX D – DETERMINATION OF DISCOUNT RATE**

**Table 2 - Actuarial Present Values of Projected Benefit Payments**

(In Thousands)

Projections Commence June 30, 2020

\* 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 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+2.21%)^(a) - .5]	(h) = (c) / (1+7.00%)^(a) - .5]
1	\$ 27,900,480	\$ 4,606,180	\$ 4,606,180	\$ 0	\$ 4,452,963	\$ 0	\$ 4,452,963
2	28,355,652	4,766,677	4,766,677	0	4,306,655	0	4,306,655
3	28,776,876	4,918,064	4,918,064	0	4,152,740	0	4,152,740
4	29,406,530	5,061,156	5,061,156	0	3,993,985	0	3,993,985
5	29,964,081	5,196,961	5,196,961	0	3,832,855	0	3,832,855
6	30,450,306	5,327,419	5,327,419	0	3,672,029	0	3,672,029
7	30,862,223	5,452,391	5,452,391	0	3,512,307	0	3,512,307
8	31,187,586	5,569,732	5,569,732	0	3,353,173	0	3,353,173
9	31,434,341	5,678,292	5,678,292	0	3,194,888	0	3,194,888
10	31,605,486	5,782,754	5,782,754	0	3,040,807	0	3,040,807
11	31,699,739	5,880,035	5,880,035	0	2,889,683	0	2,889,683
12	31,718,156	5,965,457	5,965,457	0	2,739,872	0	2,739,872
13	31,610,931	6,038,544	6,038,544	0	2,592,000	0	2,592,000
14	31,383,300	6,097,720	6,097,720	0	2,446,169	0	2,446,169
15	31,043,413	6,140,690	6,140,690	0	2,302,250	0	2,302,250
16	30,571,688	6,166,183	6,166,183	0	2,160,568	0	2,160,568
17	29,998,485	6,173,877	6,173,877	0	2,021,742	0	2,021,742
18	29,341,740	6,164,474	6,164,474	0	1,886,600	0	1,886,600
19	28,616,933	6,137,774	6,137,774	0	1,755,541	0	1,755,541
20	27,840,307	6,093,742	6,093,742	0	1,628,922	0	1,628,922
21	27,028,884	6,033,765	6,033,765	0	1,507,374	0	1,507,374
22	26,199,530	5,961,681	5,961,681	0	1,391,930	0	1,391,930
23	25,365,377	5,884,078	5,884,078	0	1,283,936	0	1,283,936
24	24,531,440	5,802,602	5,802,602	0	1,183,325	0	1,183,325
25	23,700,045	5,714,493	5,714,493	0	1,089,118	0	1,089,118
26	22,877,258	5,620,755	5,620,755	0	1,001,171	0	1,001,171
27	22,072,687	5,522,774	5,522,774	0	919,363	0	919,363
28	21,291,397	5,423,806	5,423,806	0	843,821	0	843,821
29	20,344,713	5,324,107	5,324,107	0	774,121	0	774,121
30	19,403,204	5,216,288	5,216,288	0	708,827	0	708,827
31	18,475,187	5,093,255	5,093,255	0	646,830	0	646,830
32	17,581,539	4,865,114	4,865,114	0	577,436	0	577,436
33	16,837,639	4,720,292	4,720,292	0	523,596	0	523,596
34	16,170,302	4,566,590	4,566,590	0	473,408	0	473,408
35	15,596,728	4,405,819	4,405,819	0	426,861	0	426,861
36	15,133,244	4,238,650	4,238,650	0	383,799	0	383,799
37	14,796,441	4,066,891	4,066,891	0	344,155	0	344,155
38	13,948,182	3,891,716	3,891,716	0	307,786	0	307,786
39	12,604,981	3,714,055	3,714,055	0	274,519	0	274,519
40	11,309,359	3,534,947	3,534,947	0	244,188	0	244,188
41	10,098,073	3,356,227	3,356,227	0	216,675	0	216,675
42	8,979,468	3,178,681	3,178,681	0	191,787	0	191,787
43	7,959,911	3,003,571	3,003,571	0	169,366	0	169,366
44	7,044,743	2,831,788	2,831,788	0	149,234	0	149,234
45	6,238,511	2,664,091	2,664,091	0	131,211	0	131,211
46	5,545,218	2,500,705	2,500,705	0	115,107	0	115,107
47	4,968,755	2,342,176	2,342,176	0	100,757	0	100,757
48	4,512,690	2,188,603	2,188,603	0	87,991	0	87,991
49	4,180,588	2,040,095	2,040,095	0	76,654	0	76,654
50	3,976,159	1,896,703	1,896,703	0	66,604	0	66,604
51	3,903,235	1,758,514	1,758,514	0	57,712	0	57,712
52	3,965,787	1,625,588	1,625,588	0	49,859	0	49,859
53	4,167,966	1,497,988	1,497,988	0	42,940	0	42,940
54	4,514,117	1,375,848	1,375,848	0	36,859	0	36,859
55	5,008,713	1,259,171	1,259,171	0	31,526	0	31,526
56	5,656,522	1,147,990	1,147,990	0	26,862	0	26,862
57	6,462,607	1,042,340	1,042,340	0	22,794	0	22,794
58	7,432,332	942,250	942,250	0	19,257	0	19,257
59	7,959,574	847,740	847,740	0	16,192	0	16,192
60	7,938,125	758,830	758,830	0	13,546	0	13,546

**THE PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEW JERSEY  
GASB 68 REPORTING FOR JUNE 30, 2020 MEASUREMENT DATE**

**APPENDIX D – DETERMINATION OF DISCOUNT RATE**

**Table 2 - Actuarial Present Values of Projected Benefit Payments**

(In Thousands)

Projections Commence June 30, 2020

\* 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 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+2.21%)^(a) - .5]	(h) = (c) / (1+7.00%)^(a) - .5]
61	\$ 7,821,106	\$ 675,559	\$ 675,559	\$ 0	\$ 11,271	\$ 0	\$ 11,271
62	7,730,174	597,958	597,958	0	9,323	0	9,323
63	7,697,491	526,035	526,035	0	7,665	0	7,665
64	7,731,038	459,768	459,768	0	6,261	0	6,261
65	7,832,248	399,107	399,107	0	5,080	0	5,080
66	8,000,799	343,955	343,955	0	4,091	0	4,091
67	8,235,940	294,170	294,170	0	3,270	0	3,270
68	8,536,893	249,566	249,566	0	2,593	0	2,593
69	8,902,990	209,915	209,915	0	2,038	0	2,038
70	9,333,764	174,952	174,952	0	1,588	0	1,588
71	9,828,990	144,386	144,386	0	1,225	0	1,225
72	10,388,744	117,907	117,907	0	935	0	935
73	11,013,430	95,193	95,193	0	705	0	705
74	11,703,819	75,919	75,919	0	526	0	526
75	12,461,077	59,756	59,756	0	387	0	387
76	13,286,797	46,375	46,375	0	280	0	280
77	14,178,082	35,453	35,453	0	200	0	200
78	15,139,302	26,673	26,673	0	141	0	141
79	16,175,293	19,732	19,732	0	97	0	97
80	17,290,055	14,340	14,340	0	66	0	66
81	18,487,750	10,231	10,231	0	44	0	44
82	19,772,997	7,161	7,161	0	29	0	29
83	21,150,957	4,916	4,916	0	19	0	19
84	22,627,358	3,311	3,311	0	12	0	12
85	24,208,506	2,188	2,188	0	7	0	7
86	25,901,297	1,422	1,422	0	4	0	4
87	27,713,230	911	911	0	3	0	3
88	29,652,423	577	577	0	2	0	2
89	31,727,631	364	364	0	1	0	1
90	33,948,274	231	231	0	1	0	1
91	36,324,468	148	148	0	0	0	0
92	38,867,061	97	97	0	0	0	0
93	41,587,674	65	65	0	0	0	0
94	44,498,756	45	45	0	0	0	0
95	47,613,630	32	32	0	0	0	0
96	50,946,555	23	23	0	0	0	0
97	54,512,793	17	17	0	0	0	0
98	58,328,673	12	12	0	0	0	0
99	62,411,669	9	9	0	0	0	0
100	66,780,477	6	6	0	0	0	0
101	71,455,105	5	5	0	0	0	0
102	76,456,958	3	3	0	0	0	0
103	81,808,942	2	2	0	0	0	0
104	87,535,566	2	2	0	0	0	0
105	93,663,054	1	1	0	0	0	0
106	100,219,467	1	1	0	0	0	0
107	107,234,829	0	0	0	0	0	0
108	114,741,267	0	0	0	0	0	0
109	122,773,155	0	0	0	0	0	0
110	131,367,276	0	0	0	0	0	0
111	140,562,985	0	0	0	0	0	0
112	150,402,394	0	0	0	0	0	0
113	160,930,562	0	0	0	0	0	0
114	172,195,701	0	0	0	0	0	0
115	184,249,400	0	0	0	0	0	0
					\$ 76,522,112	\$ 0	\$ 76,522,112

## 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.