State Police Retirement System of New Jersey

GASB 68 Report as of June 30, 2021

Produced by Cheiron

April 2022

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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 State Police Retirement System of New Jersey (SPRS, Plan or System). This information includes:

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

Highlights

The reporting date for SPRS is June 30, 2021. Measurements as of the reporting date are based on the fair value of assets as of June 30, 2021 and the Total Pension Liability as of the valuation date, July 1, 2020, updated to June 30, 2021. There were two changes in the assumptions. The assumed discount rate used to measure the Total Pension Liability was changed as of the measurement date. In addition, the mortality assumption was updated upon direction from the Division of Pensions and Benefits (DPB). 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 included 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.

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

Table I-1 Summary of Results		
Measurement Date	**6/30/2021**	**6/30/2020**
Net Pension Liability	$ 1,923,890,807	$ 3,317,373,005
Deferred Outflows	(204,814,338)	(408,461,219)
Deferred Inflows	1,507,587,151	624,336,548
Net Impact on Statement of Net Position	$ 3,226,663,620	$ 3,533,248,334
Pension Expense/(Income)	$ (165,371,889)	$ 195,400,307
Pension Expense/(Income) (% of Payroll)	-55.45%	65.97%

SECTION II – CERTIFICATION

The purpose of this report is to provide accounting and financial reporting information under GASB 68 for the State Police Retirement System of New Jersey (SPRS). This report is for the use of SPRS, the Division of Pensions and Benefits (DBP) 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 SPRS and estimating the price to settle SPRS's obligations.

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

Future actuarial measurements may differ significantly from the current measurements due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law.

For purposes of this report, the projection of the Plan's contributions and projected benefit payments as of June 30, 2021 was based on the recommended demographic assumptions of the July 1, 2014 – June 30, 2018 Experience Study, approved by the Board of Trustees on January 28, 2020. The calculation of the Total Pension Liability as of June 30, 2021 was based on the same demographic assumptions except for the mortality assumption, which was based on the SOA's MP-2021 mortality improvement scale upon direction from the DPB. While we do not find the use of the SOA's Scale MP-2021 unreasonable, it does not reflect the analysis of actual mortality experience from our Experience Study which was the basis for our recommended mortality assumptions, including the mortality improvement scale.

This report was prepared using census data as of the July 1, 2020 valuation date and financial information as of the June 30, 2021 measurement date. Given the uncertainty and lack of credible data regarding the impact that COVID-19 may have had on the System's demographic experience between the measurement date and reporting date, no specific adjustments have been made at this time. Chapter 115, P.L. 2020 modifies the hiring, rehiring, retention, and benefits of certain public employees during the COVID-19 Public Health Emergency under Executive Order No. 103 of 2020, as extended. Chapter 54, P.L. 2020, amends eligibility for accidental disability and accidental death benefits for SPRS members 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. Chapter 46, P.L. 2020 delays mandatory retirement in the SPRS when it would occur during a period of a state of emergency. 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.

SECTION II – CERTIFICATION

This report reflects one other change to the plan provisions. Chapter 75, P. L. 2021 provides accidental death benefits in certain circumstances to surviving spouses and children of SPRS retirees who participated in the World Trade Center rescue, recovery or cleanup operations and died prior to July 8, 2019. This legislation did not impact the Total Pension Liability for this report due to the current demographic assumptions and covered population.

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

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

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

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

This report was prepared for SPRS 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.

Janet Cranna, FSA, FCA, MAAA, EA
Principal Consulting Actuary

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Principal Consulting Actuary

SECTION III – DETERMINATION OF DISCOUNT RATE

The discount rate used to measure the Total Pension Liability was 5.00% as of June 30, 2020 and 7.00% as of June 30, 2021. As discussed with the Division of Pensions and Benefits, the projection of cash flows used to determine the discount rate as of June 30, 2021 assumed:

- In accordance with Paragraph 40 of GASB Statement No. 67, the projection of the Plan's fiduciary net position is based on a long-term expected rate of return of 7.00% per annum.

- In accordance with Paragraph 37 of GASB Statement No. 67, the projection of the Plan's contributions and projected benefit payments are based on the same assumptions used to determine the expected contributions for the System. The demographic assumptions are based on the recommendations of the July 1, 2014 – June 30, 2018 Experience Study as approved by the Board of Trustees on January 28, 2020.

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

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

- The State contributed 107.91% of the actuarially determined contribution for fiscal year ending June 30, 2022 at the beginning of the fiscal year. This contribution has been included in the projections. In subsequent years, it is assumed that the State will contribute 100% of the actuarially determined contribution and Non-Contributory Group Insurance Premium Fund (NCGIPF). The 100% contribution rate is the total State contribution rate expected to be paid in fiscal year ending June 30, 2023 with respect to the actuarially determined contribution for the fiscal year ending June 30, 2023 for all State-administered retirement systems.

- Consistent with Chapter 83, P.L. 2016, it is assumed that the State will make pension contributions in equal amounts at the end of each quarter. This assumption does not apply to the fiscal year ending June 30, 2022 contribution that was paid in full at the beginning of the fiscal year.

- The NCGIPF contributions are assumed to be paid monthly.

- Annual administrative expenses are assumed to be 0.21% of expected pension benefit payments.

Municipal bond rates of 2.21% as of June 30, 2020 and 2.16% as of June 30, 2021 were used in the development of the blended GASB discount rate in the event the Plan's fiduciary net position was no longer sufficient to make future benefit payments. As selected by the State Treasurer, the rates are based on the Bond Buyer GO 20-Bond Municipal Bond Index. Based on the long-term rate of return of 7.00% and the municipal bond rate of 2.21% as of June 30, 2020, the blended GASB discount rate was 5.00% as of June 30, 2020. As of June 30, 2021, based on the assumptions above, the pension Plan's fiduciary net position is expected to be sufficient to make all projected future benefit payments for current Plan members; therefore, the GASB discount rate as of June 30, 2021 is equal to the long-term rate of return of **7.00%**. The assumed discount rates have been determined in accordance with the method prescribed by GASB Statement No. 67. See Appendix D for the determination of the discount rate.

SECTION IV – EMPLOYER REPORTING AMOUNTS

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

The impact of experience gains or losses and assumption changes on the TPL are recognized in expense over the average expected remaining service life of all active and inactive members of the System. As of the measurement date, this recognition period was 5.49 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-1 Schedule of Deferred Inflows and Outflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 10,173,741	$ 11,583,893
Changes in assumptions	194,640,597	1,264,753,292
Net differences between projected and actual earnings on pension plan investments	0	231,249,966
Total	**$ 204,814,338**	**$ 1,507,587,151**

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

Measurement year ended June 30:

2022	(412,396,170)
2023	(318,835,280)
2024	(231,649,790)
2025	(241,213,149)
2026	(98,678,424)
Thereafter	$ 0

SECTION IV – EMPLOYER REPORTING AMOUNTS

Table IV-2		
Detailed Schedule of Deferred Inflows and Outflows of Resources		

Recognition of differences between expected and actual experience

From Measurement Year Ending	Remaining Recognition Period	Remaining Deferred (Inflows) and Outflows*	Recognition Year						
			2021	2022	2023	2024	2025	2026	Thereafter
2021	5.49	$ 3,828,968	$ 697,444	$ 697,444	$ 697,444	$ 697,444	$ 697,444	$ 341,748	$ 0
2020	4.58	5,413,407	1,181,966	1,181,966	1,181,966	1,181,966	685,543	0	0
2019	3.53	(7,359,352)	(2,084,803)	(2,084,803)	(2,084,803)	(1,104,943)	0	0	0
2018	2.90	(9,630,051)	(3,320,707)	(3,320,707)	(2,988,637)	0	0	0	0
2017	1.67	7,005,960	4,195,184	2,810,776	0	0	0	0	0
2016	0.70	(2,158,995)	(2,158,995)	0	0	0	0	0	0
Total		$ (2,900,063)	$ (1,489,911)	$ (715,324)	$ (3,194,030)	$ 774,467	$ 1,382,987	$ 341,748	$ 0

Recognition of changes in assumptions

From Measurement Year Ending	Remaining Recognition Period	Remaining Deferred (Inflows) and Outflows*	Recognition Year						
			2021	2022	2023	2024	2025	2026	Thereafter
2021	5.49	$ (1,109,430,087)	$ (202,081,983)	$ (202,081,983)	$ (202,081,983)	$ (202,081,983)	$ (202,081,983)	$ (99,020,172)	$ 0
2020	4.58	249,009,479	54,368,882	54,368,882	54,368,882	54,368,882	31,533,951	0	0
2019	3.53	(213,083,952)	(60,363,726)	(60,363,726)	(60,363,726)	(31,992,774)	0	0	0
2018	2.90	(186,529,123)	(64,320,387)	(64,320,387)	(57,888,349)	0	0	0	0
2017	1.67	(205,575,075)	(123,098,849)	(82,476,226)	0	0	0	0	0
2016	0.70	91,852,415	91,852,415	0	0	0	0	0	0
Total		$ (1,373,756,343)	$ (303,643,648)	$ (354,873,440)	$ (265,965,176)	$ (179,705,875)	$ (170,548,032)	$ (99,020,172)	$ 0

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

From Measurement Year Ending	Remaining Recognition Period	Remaining Deferred (Inflows) and Outflows*	Recognition Year						
			2021	2022	2023	2024	2025	2026	Thereafter
2021	5.00	$ (360,240,528)	$ (72,048,106)	$ (72,048,106)	$ (72,048,106)	$ (72,048,106)	$ (72,048,104)	$ 0	$ 0
2020	4.00	77,318,902	19,329,726	19,329,726	19,329,726	19,329,724	0	0	0
2019	3.00	9,126,922	3,042,308	3,042,308	3,042,306	0	0	0	0
2018	2.00	(14,262,670)	(7,131,336)	(7,131,334)	0	0	0	0	0
2017	1.00	(17,003,196)	(17,003,196)	0	0	0	0	0	0
Total		$ (305,060,570)	$ (73,810,604)	$ (56,807,406)	$ (49,676,074)	$ (52,718,382)	$ (72,048,104)	$ 0	$ 0

| **Grand Total** | | $ (1,681,716,976) | $ (378,944,163) | $ (412,396,170) | $ (318,835,280) | $ (231,649,790) | $ (241,213,149) | $ (98,678,424) | $ 0 |

As of the beginning of the measurement year

SECTION IV – EMPLOYER REPORTING AMOUNTS

The annual pension expense recognized by the State can be calculated two different ways. First, it is the change in the amounts reported on the Statement of Net Position that relate to SPRS 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 following table, 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 SPRS 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 through both of these methodologies.

SECTION IV – EMPLOYER REPORTING AMOUNTS

Table IV-3 Calculation of Pension Expense		
Measurement Year Ending	**2021**	**2020**
Change in Net Pension Liability	$ (1,393,482,198)	$ 489,310,986
Change in Deferred Outflows	203,646,881	(144,205,201)
Change in Deferred Inflows	883,250,603	(267,616,738)
Employer Contributions	141,212,825	117,911,260
Pension Expense/(Income)	**$ (165,371,889)**	**$ 195,400,307**
Pension Expense/(Income) as % of Payroll	**-55.45%**	**65.97%**
Operating Expenses		
Service cost	$ 106,016,397	$ 92,264,920
Employee contributions	(27,268,772)	(24,292,258)
Administrative expenses	494,765	632,762
Total	$ 79,242,390	$ 68,605,424
Financing Expenses		
Interest cost	$ 251,694,211	$ 253,377,036
Expected return on assets	(117,364,327)	(121,382,576)
Total	$ 134,329,884	$ 131,994,460
Changes		
Benefit changes	$ 0	$ 0
Recognition of assumption changes	(303,643,648)	(34,455,719)
Recognition of liability gains and losses	(1,489,911)	(868,540)
Recognition of investment gains and losses	(73,810,604)	30,124,682
Total	$ (378,944,163)	$ (5,199,577)
Pension Expense/(Income)	**$ (165,371,889)**	**$ 195,400,307**

APPENDIX A – MEMBERSHIP INFORMATION

Plan Membership		
	July 1, 2020	**July 1, 2019**
Contributing Actives	2,762	2,766
Non-Contributing Actives	57	54
Terminated Vested	0	0
Inactive Receiving Benefits*	3,479	3,400
Total	6,298	6,220
Annual Compensation for Contributing Actives	$ 298,254,514	$ 296,189,926
Annual Retirement Allowances for Those Receiving Benefits	$ 231,316,330	$ 223,394,278

* QDRO recipients are excluded from the counts

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

A. Actuarial Assumptions

1.	**Investment Rate of Return for determining Actuarially Determined Contributions**	• July 1, 2020 valuation: 7.30% per annum, compounded annually. • July 1, 2021 and later valuations: 7.00% per annum, compounded annually.
2.	**Long-Term Expected Rate of Return**	7.00% per annum, compounded annually.
3.	**GASB 67 Effective Discount Rate**	• June 30, 2020: 5.00% per annum, compounded annually. • June 30, 2021: 7.00% per annum, compounded annually.
4.	**Price Inflation**	2.75% per annum, compounded annually.
5.	**Wage Inflation**	3.25% per annum, compounded annually.
6.	**Cost-of-Living Adjustments (COLAs)**	No future COLAs are assumed. Previously granted COLAs are included in the data.
7.	**Salary Increases**	Salaries are assumed to increase by 2.95% per year through fiscal year 2025 and 3.95% per year for fiscal years 2026 and thereafter. Salary increases are assumed to occur on January 1.
8.	**401(a)(17) Pay Limit**	$285,000 in 2020 increasing 2.75% per annum, compounded annually.
9.	**Social Security Wage Base**	$137,700 in 2020 increasing 3.25% per annum, compounded annually.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

10. Termination

Termination rates are as follows:

Service	Rates
0-3	0.450%
4	0.300
5	0.225
6	0.200
7	0.175
8	0.150
9	0.125
10	0.100
11-19	0.075
20	0.000

No termination is assumed after attainment of retirement eligibility.

All members with 10 or more years of service at termination are assumed to elect a deferred retirement benefit.

11. Disability

Representative disability rates are as follows:

Age	Ordinary Disability	Accidental Disability
20	0.027%	0.015%
25	0.041	0.025
30	0.061	0.053
35	0.169	0.194
40	0.172	0.208
45	0.218	0.214
50	0.375	0.220
54	0.505	0.295

No ordinary disability is assumed prior to attainment of ordinary disability retirement eligibility at four years of service or after attainment of special retirement eligibility at 25 years of service.

Accidental disability rates apply at all ages until the mandatory retirement age of 55.

Members retiring under the ordinary disability decrement with 20 or more years of service are assumed to receive the involuntary disability retirement benefit.

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

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

12. Mortality

Pre-Retirement: The Pub-2010 Public Safety Above-Median Income Employee mortality table [*PubS-2010(A) Employee*] as published by the Society of Actuaries (SOA), unadjusted, and with future improvement from the base year of 2010 on a generational basis. For purposes of calculating projected cash flows used to determine the GASB discount rate, mortality improvement is based on SOA's Scale MP-2018. Upon direction from the DPB, for purposes of calculating the Total Pension Liability, mortality improvement is based on SOA's Scale MP-2021.

35% of the deaths are assumed to be accidental.

For purposes of pre-retirement accidental death benefits based on Adjusted Final Compensation, the benefit is assumed to increase at the same rate as active salaries.

Healthy Retirees (Healthy Annuitants): The Pub-2010 Public Safety Above-Median Income Healthy Retiree mortality table [*PubS-2010(A) Healthy Retiree*] as published by the SOA, unadjusted, and with future improvement from the base year of 2010 on a generational basis. For purposes of calculating projected cash flows used to determine the GASB discount rate, mortality improvement is based on SOA's Scale MP-2018. Upon direction from the DPB, for purposes of calculating the Total Pension Liability, mortality improvement is based on SOA's Scale MP-2021.

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

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

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

13. Retirement

For those with 24 years of service or less: 0.50%

For those with 25 years of service:

Age	Rates
48 or younger	25.00%
49-54	50.00

For those with 26 or more years of service: 35.00%

Mandatory retirement at age 55.

14. Family Composition Assumptions

For members not currently in receipt, 83.3% 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 post-retirement 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.

For current dependents receiving a pre-retirement accidental death benefit, those under age 24 are assumed to receive a benefit until age 24 while those over age 24 are assumed to receive a benefit for the remainder of their lifetime.

For current dependents receiving a benefit other than a pre-retirement accidental death benefit, those under age 18 are assumed to receive a benefit until age 18 while those over age 18 are assumed to receive a benefit for the remainder of their lifetime.

15. Data

Information provided by the prior actuary was relied upon for the purposes of setting the status of and valuing non-contributing active records.

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

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

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

16. 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 January 28, 2020. The investment return assumption was recommended by the State Treasurer. The MP-2021 mortality improvement scale was used to calculate the Total Pension Liability upon direction from the DPB.
17. Projection Basis	This report includes projections of future assets, benefit payments and contributions for the purpose of determining the GASB 67 discount rate.
	The projections are based on the census data as of July 1, 2020 and the financial information as of June 30, 2021. The projections assume continuation of the plan provisions and actuarial assumptions in effect as of July 1, 2020 and do not reflect the impact of any changes in benefits or actuarial assumptions that may be adopted after July 1, 2021 unless otherwise indicated. While the assumptions individually are reasonable for the underlying valuation that supports the projections, specifically for projection purposes, they are also considered reasonable in the aggregate.
	The projections assume that all future assumptions are met except where indicated with respect to future investment returns and demographic assumptions.
18. Changes in Assumptions Since Last Valuation	The mortality improvement scale used to calculate the Total Pension Liability was updated from the MP-2020 scale to the MP-2021 scale upon direction from the DPB.
	The GASB 67 effective discount rate has been updated in accordance with the method prescribed by GASB Statement No. 67.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

B. Actuarial Methods

The actuarial methods used for determining State contributions are described as follows.

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. 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.

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.

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 return on the previous year's assets and the 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. **State Contribution Payable Dates**

   Chapter 83, P.L. 2016 requires the State to make the required pension contributions on a quarterly basis in each fiscal year according to the following schedule: 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.

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**

   None.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

This summary of Plan provisions provides an overview of the major provisions of the SPRS used in the actuarial valuation. It is not intended to replace the more precise language of the NJ State Statutes, Title 53, Chapter 5A, 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 of Membership**

   All members of the former State Police and Benevolent Fund and full-time commissioned officers, non-commissioned officers or troopers of the Division of State Police. Membership is a condition of employment.

   a) Tier 1 Member: Any member hired on or before May 21, 2010.
   b) Tier 2 Member: Any member hired after May 21, 2010.

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

2. **Plan Year**

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

3. **Service Credit**

   Service rendered while a member as described above.

4. **Credited Service**

   A year is credited for each year of service as an officer or trooper in the State Police.

5. **Compensation**

   Base salary in accordance with established salary policies of the state for all employees in the same position. Compensation does not include individual salary adjustments granted primarily in anticipation of the retirement or for temporary or extracurricular duties beyond the regular workday or shift. Effective June 30, 1996, Chapter 113, P. L. 1997 provided that the amount of compensation used for employer and member contributions and benefits under the program cannot exceed the compensation limitation of Section 401(a)(17) of the Internal Revenue Code. Chapter 1, P. L. 2010 provides that for members hired on or after May 22, 2010, the amount of compensation used for employer and member contributions and benefits under the System cannot exceed the annual maximum wage contribution base for Social Security, pursuant to the Federal Insurance Contributions Act.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

6. **Final Compensation**

Average compensation received by the member in the last 12 months of credited service preceding retirement or death. Such term includes the value of the member's maintenance allowance for the same period. Chapter 1, P. L. 2010 provides that for members hired on or after May 22, 2010, Final Compensation means the average annual compensation for service for which contributions are made during any three fiscal years of membership providing the largest possible benefit to the member or the member's beneficiary.

7. **Aggregate Contributions**

The sum of all amounts deducted from the compensation of a member or contributed by him or on his behalf.

8. **Member Contributions**

Each member contributes 9.0% of base salary. For contribution purposes, compensation does not include overtime, bonuses, maintenance or any adjustments before retirement.

9. **Adjusted Final Compensation**

For purposes of the pre-retirement accidental death benefit, the amount of compensation or compensation as adjusted, as the case may be, increased by the same percentage increase which is applied in any adjustments of the compensation schedule of active members after the member's death and before the date on which the deceased member of the retirement system would have accrued 25 years of service under an assumption of continuous service, at which time that amount will become fixed. Adjustments to compensation or adjusted compensation shall take effect at the same time as any adjustments in the compensation schedule of active members.

10. **Benefits**

   a) **Service and Special Retirement:**

   Mandatory retirement at age 55. Voluntary retirement prior to age 55.

   (1) Service Retirement: 20 years of service credit, or members as of August 29, 1985 who would not have 20 years of service credit at age 55.

   Benefit is an annual retirement allowance equal to 50% of final compensation.

   (2) Special Retirement: 25 years of service credit.

   Benefit is an annual retirement allowance equal to 65% of final compensation, plus 1% for each year of service credit in excess of 25 years, to a maximum of 70% of final compensation.

   (3) Members as of August 29, 1985 who would have 20 years of service credit but not 25 years at age 55.

   Benefit is an annual retirement allowance equal to 50% of final compensation, plus 3% for each year of service credit in excess of 20 years.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

b) <u>**Deferred Retirement:**</u>

Termination of service prior to age 55 with 10 years of service credit.

Benefit is either a refund of aggregate contributions, or a deferred life annuity beginning at age 55 equal to 2% of final compensation for each year of service credit up to 25 years.

For members who die during the deferral period, the benefit is a return of aggregate contributions.

c) <u>**Non-Vested Termination:**</u>

Termination of service prior to age 55 and less than 10 years of service credit.

Benefit is a return of aggregate contributions.

d) <u>**Death Benefits**</u>

(1) <u>Ordinary Death Before Retirement</u>: Death of an active member of the plan. Benefit is equal to:

    a) Lump sum payment equal to 350% of final compensation, also known as the noncontributory group life insurance benefit, plus

    b) Spousal life annuity of 50% of final compensation payable until spouse's death or remarriage. If there is no surviving spouse, or upon death or remarriage, 50% of final compensation payable to surviving children in equal shares. If there is no surviving spouse or dependent child(ren), 25% (40%) of final 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 contributions.

(2) <u>Accidental Death Before Retirement</u>: Death of an active member of the plan resulting during performance of duties. Benefit is equal to:

    a) Lump sum payment equal to 350% of final compensation, also known as the noncontributory group life insurance benefit, plus

    b) Spousal life annuity of 70% of final compensation or adjusted final compensation (if appropriate) payable until spouse's death. If there is no surviving spouse, or upon death of the surviving spouse, 70% of final compensation or adjusted final compensation (if appropriate) payable to surviving children in equal shares. If there is no surviving spouse or dependent children, 25% (40%) of final compensation or adjusted final compensation (if appropriate) to one (two) dependent parents. If there is no surviving spouse, dependent child(ren) or parent(s), the benefit is a refund of accumulated contributions.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

(3) <u>Death After Retirement</u>: Death of a retired member of the plan. Accidental death benefits in certain circumstances are provided to surviving spouses and children of SPRS retirees who participated in the World Trade Center rescue, recovery or cleanup operations and died prior to July 8, 2019. Benefit is equal to:

    a) Lump sum payment equal to 50% of final compensation for a member retired under service, special or deferred retirement. For a member receiving a disability benefit, lump sum payment of 350% of final compensation if death occurs prior to age 55 and 50% of final compensation if death occurs after age 55. This benefit is also known as the noncontributory group life insurance benefit, plus

    b) Spousal life annuity of 50% of final 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 compensation payable to one (two, three or more) dependent child(ren). Previously granted COLAs also apply.

e) **Disability Retirement**

(1) <u>Ordinary Disability Retirement</u>: Four years of service credit and mentally or physically incapacitated for the performance of his usual duty and of any other available duty in the Division of State Police and such incapacity is likely to be permanent.

    Benefit is an immediate life annuity equal to the greater of:

    a) 40% of final compensation, or

    b) 1.5% of final compensation for each year of service credit.

(2) <u>Involuntary Ordinary Disability Retirement</u>: Ordinary Disability Retirement applied for by the employer.

    Benefit is an immediate life annuity equal to:

    a) For members with 20 years of service credit but less than 25 years, 50% of final compensation plus 3% of final compensation for each year of service credit in excess of 20 years, to a maximum of 65% of final compensation.

    b) For all other members, the Ordinary Disability benefit.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

(3) <u>Accidental Disability Retirement</u>: Totally and permanently disabled as a direct result of a traumatic event occurring during and as a result of his regular or assigned duties and such member is mentally or physically incapacitated for the performance of his usual duties in the Division of State Police. Under certain conditions, regular or assigned duties may include the World Trade Center (WTC) rescue, recovery, or cleanup operations between September 11, 2001 and October 11, 2011. 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.

Benefit is an immediate life annuity equal to 2/3 of annual rate of compensation, including the maintenance allowance, at the time of the traumatic event or retirement, whichever is greater.

11. Forms of Payment

No optional forms of payment available.

12. Changes in Plan Provisions Since Last Valuation

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

Chapter 75, P.L. 2021 provides accidental death benefits in certain circumstances to surviving spouses and children of SPRS retirees who participated in the World Trade Center rescue, recovery or cleanup operations and died prior to July 8, 2019.

APPENDIX D – DETERMINATION OF DISCOUNT RATE

Table 1 - Projection of the Pension Plan's Fiduciary Net Position

(In Thousands)

Projections Commence June 30, 2021

Year	Projected Beginning Fiduciary Net Position (a)	Projected Member Contributions (b)	Projected Employer Contributions (c)	Projected Benefit Payments (d)	Projected Administrative Expenses (e)	Projected Investment Earnings (f)	Projected Ending Fiduciary Net Position (g) = (a) + (b) + (c) - (d) - (e) + (f)
1	$ 2,135,924	$ 22,462	$ 203,864	$ 245,813	$ 509	$ 155,992	$ 2,271,919
2	2,271,919	22,057	195,624	252,547	523	156,171	2,392,701
3	2,392,701	21,401	194,207	261,072	541	164,274	2,510,970
4	2,510,970	20,824	192,328	268,410	556	172,232	2,627,389
5	2,627,389	20,478	191,180	273,803	567	180,155	2,744,832
6	2,744,832	19,715	191,254	283,151	586	188,031	2,860,095
7	2,860,095	18,922	189,672	292,930	606	195,695	2,970,848
8	2,970,848	18,246	187,787	301,592	624	203,079	3,077,744
9	3,077,744	17,367	186,544	311,462	645	210,160	3,179,708
10	3,179,708	15,987	184,711	325,010	673	216,736	3,271,459
11	3,271,459	14,632	181,317	337,583	699	222,592	3,351,719
12	3,351,719	13,633	177,951	346,847	718	227,770	3,423,509
13	3,423,509	12,621	175,857	355,823	736	232,398	3,487,826
14	3,487,826	11,549	173,604	364,528	754	236,506	3,544,204
15	3,544,204	10,801	171,092	369,973	766	240,175	3,595,534
16	3,595,534	10,245	169,768	373,367	772	243,599	3,645,006
17	3,645,006	9,619	169,158	376,884	779	246,905	3,693,024
18	3,693,024	8,717	168,303	382,366	791	250,025	3,736,914
19	3,736,914	7,433	166,311	390,187	807	252,733	3,772,398
20	3,772,398	6,251	162,813	396,755	820	254,861	3,798,748
21	3,798,748	5,104	159,605	402,593	832	256,383	3,816,414
22	3,816,414	4,037	156,454	407,412	842	257,336	3,825,988
23	3,825,988	2,828	153,397	413,009	853	257,693	3,826,044
24	3,826,044	1,671	149,592	417,720	863	257,398	3,816,121
25	3,816,121	873	145,739	418,774	865	256,541	3,799,635
26	3,799,635	465	143,118	416,121	859	255,398	3,781,635
27	3,781,635	238	141,909	411,573	849	254,257	3,765,617
28	3,765,617	122	141,326	405,753	837	253,318	3,753,794
29	3,753,794	36	141,112	399,386	823	252,703	3,747,435
30	3,747,435	4	140,994	392,241	808	252,502	3,747,886
31	3,747,886	0	13,775	384,553	791	249,507	3,625,825
32	3,625,825	0	7,665	376,551	774	241,082	3,497,246
33	3,497,246	0	7,559	368,268	757	232,365	3,368,146
34	3,368,146	0	7,673	359,708	738	223,627	3,238,999
35	3,238,999	0	7,769	350,884	720	214,895	3,110,059
36	3,110,059	0	7,845	341,811	701	206,184	2,981,577
37	2,981,577	0	7,903	332,515	681	197,513	2,853,796
38	2,853,796	0	7,941	323,025	661	188,897	2,726,948
39	2,726,948	0	7,963	313,374	641	180,351	2,601,247
40	2,601,247	0	7,969	303,596	620	171,889	2,476,889
41	2,476,889	0	7,960	293,723	600	163,524	2,354,051
42	2,354,051	0	7,939	283,788	579	155,267	2,232,890
43	2,232,890	0	7,907	273,820	558	147,129	2,113,548
44	2,113,548	0	7,866	263,846	537	139,117	1,996,148
45	1,996,148	0	7,819	253,885	517	131,241	1,880,806
46	1,880,806	0	7,770	243,952	496	123,508	1,767,637
47	1,767,637	0	7,717	234,047	475	115,926	1,656,757
48	1,656,757	0	7,661	224,170	455	108,503	1,548,297
49	1,548,297	0	7,599	214,312	434	101,248	1,442,398
50	1,442,398	0	7,528	204,467	414	94,173	1,339,218

APPENDIX D – DETERMINATION OF DISCOUNT RATE

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

Year	Projected Beginning Fiduciary Net Position	Projected Member Contributions	Projected Employer Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings	Projected Ending Fiduciary Net Position
	(a)	**(b)**	**(c)**	**(d)**	**(e)**	**(f)**	**(g) = (a) + (b) + (c) - (d) - (e) + (f)**
51	1,339,218	0	7,447	194,626	393	87,286	1,238,932
52	1,238,932	0	7,352	184,784	373	80,603	1,141,730
53	1,141,730	0	7,243	174,941	352	74,134	1,047,814
54	1,047,814	0	7,115	165,100	332	67,895	957,393
55	957,393	0	6,967	155,272	312	61,899	870,675
56	870,675	0	6,797	145,474	292	56,161	787,867
57	787,867	0	6,603	135,729	272	50,694	709,164
58	709,164	0	6,385	126,065	252	45,510	634,742
59	634,742	0	6,143	116,519	232	40,621	564,754
60	564,754	0	5,876	107,129	213	36,037	499,326
61	499,326	0	5,589	97,940	195	31,764	438,545
62	438,545	0	5,284	88,996	176	27,807	382,464
63	382,464	0	4,710	80,345	159	24,162	330,831
64	330,831	0	4,283	72,031	142	20,820	283,761
65	283,761	0	3,925	64,097	126	17,787	241,251
66	241,251	0	3,568	56,577	111	15,058	203,188
67	203,188	0	3,212	49,507	97	12,626	169,422
68	169,422	0	2,859	42,913	84	10,477	139,762
69	139,762	0	2,515	36,820	72	8,599	113,983
70	113,983	0	2,185	31,250	61	6,976	91,833
71	91,833	0	1,873	26,210	51	5,588	73,033
72	73,033	0	1,581	21,705	42	4,418	57,284
73	57,284	0	1,313	17,729	35	3,443	44,277
74	44,277	0	1,070	14,270	28	2,644	33,693
75	33,693	0	856	11,306	22	1,998	25,218
76	25,218	0	671	8,810	17	1,484	18,547
77	18,547	0	515	6,743	13	1,083	13,390
78	13,390	0	386	5,064	10	776	9,479
79	9,479	0	283	3,727	7	545	6,572
80	6,572	0	202	2,685	5	374	4,458
81	4,458	0	140	1,891	4	252	2,955
82	2,955	0	94	1,301	3	165	1,911
83	1,911	0	62	872	2	106	1,205
84	1,205	0	39	570	1	66	739
85	739	0	24	361	1	40	441
86	441	0	14	223	0	24	256
87	256	0	8	133	0	14	144
88	144	0	5	77	0	8	78
89	78	0	2	43	0	4	41
90	41	0	1	23	0	2	21
91	21	0	1	12	0	1	11
92	11	0	0	6	0	1	5
93	5	0	0	3	0	0	2
94	2	0	0	1	0	0	1
95	1	0	0	1	0	0	1
96	1	0	0	0	0	0	0
97	0	0	0	0	0	0	0
98	0	0	0	0	0	0	0
99	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0

APPENDIX D – DETERMINATION OF DISCOUNT RATE

Table 2 - Actuarial Present Values of Projected Benefit Payments
(In Thousands)
Projections Commence June 30, 2021
* From Table 1 - Projection of the Pension Plan's Fiduciary Net Position, column (a)
** From Table 1 - Projection of the Pension Plan's Fiduciary Net Position, column (d)

Year	Projected Beginning Fiduciary Net Position*	Projected Benefit Payments for current Plan participants**	"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	Present Value of "Funded" Benefit Payments	Present Value of "Unfunded" Benefit Payments	Present Value of Benefit Payments Using the Single Discount Rate
(a)	(b)	(c)	(d) = (c) if (b) >= (c)	(e) = (c) - (d)	(f) = (d) / $(1+7.00\%)^{[(a) - .5]}$	(g) = (e) / $(1+2.16\%)^{[(a) - .5]}$	(h) = (c) / $(1+7.00\%)^{[(a) - .5]}$
1	$ 2,135,924	$ 245,813	$ 245,813	$ 0	$ 237,637	$ 0	$ 237,637
2	2,271,919	252,547	252,547	0	228,174	0	228,174
3	2,392,701	261,072	261,072	0	220,445	0	220,445
4	2,510,970	268,410	268,410	0	211,814	0	211,814
5	2,627,389	273,803	273,803	0	201,935	0	201,935
6	2,744,832	283,151	283,151	0	195,167	0	195,167
7	2,860,095	292,930	292,930	0	188,699	0	188,699
8	2,970,848	301,592	301,592	0	181,569	0	181,569
9	3,077,744	311,462	311,462	0	175,244	0	175,244
10	3,179,708	325,010	325,010	0	170,903	0	170,903
11	3,271,459	337,583	337,583	0	165,902	0	165,902
12	3,351,719	346,847	346,847	0	159,303	0	159,303
13	3,423,509	355,823	355,823	0	152,734	0	152,734
14	3,487,826	364,528	364,528	0	146,234	0	146,234
15	3,544,204	369,973	369,973	0	138,709	0	138,709
16	3,595,534	373,367	373,367	0	130,824	0	130,824
17	3,645,006	376,884	376,884	0	123,417	0	123,417
18	3,693,024	382,366	382,366	0	117,021	0	117,021
19	3,736,914	390,187	390,187	0	111,602	0	111,602
20	3,772,398	396,755	396,755	0	106,057	0	106,057
21	3,798,748	402,593	402,593	0	100,577	0	100,577
22	3,816,414	407,412	407,412	0	95,122	0	95,122
23	3,825,988	413,009	413,009	0	90,121	0	90,121
24	3,826,044	417,720	417,720	0	85,186	0	85,186
25	3,816,121	418,774	418,774	0	79,814	0	79,814
26	3,799,635	416,121	416,121	0	74,120	0	74,120
27	3,781,635	411,573	411,573	0	68,514	0	68,514
28	3,765,617	405,753	405,753	0	63,126	0	63,126
29	3,753,794	399,386	399,386	0	58,070	0	58,070
30	3,747,435	392,241	392,241	0	53,301	0	53,301
31	3,747,886	384,553	384,553	0	48,837	0	48,837
32	3,625,825	376,551	376,551	0	44,692	0	44,692
33	3,497,246	368,268	368,268	0	40,850	0	40,850
34	3,368,146	359,708	359,708	0	37,290	0	37,290
35	3,238,999	350,884	350,884	0	33,996	0	33,996
36	3,110,059	341,811	341,811	0	30,950	0	30,950
37	2,981,577	332,515	332,515	0	28,139	0	28,139
38	2,853,796	323,025	323,025	0	25,547	0	25,547
39	2,726,948	313,374	313,374	0	23,163	0	23,163
40	2,601,247	303,596	303,596	0	20,972	0	20,972
41	2,476,889	293,723	293,723	0	18,962	0	18,962
42	2,354,051	283,788	283,788	0	17,123	0	17,123
43	2,232,890	273,820	273,820	0	15,440	0	15,440
44	2,113,548	263,846	263,846	0	13,905	0	13,905
45	1,996,148	253,885	253,885	0	12,504	0	12,504
46	1,880,806	243,952	243,952	0	11,229	0	11,229
47	1,767,637	234,047	234,047	0	10,068	0	10,068
48	1,656,757	224,170	224,170	0	9,013	0	9,013
49	1,548,297	214,312	214,312	0	8,053	0	8,053
50	1,442,398	204,467	204,467	0	7,180	0	7,180

APPENDIX D – DETERMINATION OF DISCOUNT RATE

Table 2 - Actuarial Present Values of Projected Benefit Payments
(In Thousands)
Projections Commence June 30, 2021
* From Table 1 - Projection of the Pension Plan's Fiduciary Net Position, column (a)
** From Table 1 - Projection of the Pension Plan's Fiduciary Net Position, column (d)

Year (a)	Projected Beginning Fiduciary Net Position* (b)	Projected Benefit Payments for current Plan participants** (c)	"Funded" Portion of Benefit Payments (d) = (c) if (b) >= (c)	"Unfunded" Portion of Benefit Payments (e) = (c) - (d)	Present Value of "Funded" Benefit Payments (f) = (d) / (1+7.00%)^[(a) - .5]	Present Value of "Unfunded" Benefit Payments (g) = (e) / (1+2.16%)^[(a) - .5]	Present Value of Benefit Payments Using the Single Discount Rate (h) = (c) / (1+7.00%)^[(a) - .5]
51	1,339,218	194,626	194,626	0	6,387	0	6,387
52	1,238,932	184,784	184,784	0	5,668	0	5,668
53	1,141,730	174,941	174,941	0	5,015	0	5,015
54	1,047,814	165,100	165,100	0	4,423	0	4,423
55	957,393	155,272	155,272	0	3,888	0	3,888
56	870,675	145,474	145,474	0	3,404	0	3,404
57	787,867	135,729	135,729	0	2,968	0	2,968
58	709,164	126,065	126,065	0	2,576	0	2,576
59	634,742	116,519	116,519	0	2,226	0	2,226
60	564,754	107,129	107,129	0	1,912	0	1,912
61	499,326	97,940	97,940	0	1,634	0	1,634
62	438,545	88,996	88,996	0	1,388	0	1,388
63	382,464	80,345	80,345	0	1,171	0	1,171
64	330,831	72,031	72,031	0	981	0	981
65	283,761	64,097	64,097	0	816	0	816
66	241,251	56,577	56,577	0	673	0	673
67	203,188	49,507	49,507	0	550	0	550
68	169,422	42,913	42,913	0	446	0	446
69	139,762	36,820	36,820	0	358	0	358
70	113,983	31,250	31,250	0	284	0	284
71	91,833	26,210	26,210	0	222	0	222
72	73,033	21,705	21,705	0	172	0	172
73	57,284	17,729	17,729	0	131	0	131
74	44,277	14,270	14,270	0	99	0	99
75	33,693	11,306	11,306	0	73	0	73
76	25,218	8,810	8,810	0	53	0	53
77	18,547	6,743	6,743	0	38	0	38
78	13,390	5,064	5,064	0	27	0	27
79	9,479	3,727	3,727	0	18	0	18
80	6,572	2,685	2,685	0	12	0	12
81	4,458	1,891	1,891	0	8	0	8
82	2,955	1,301	1,301	0	5	0	5
83	1,911	872	872	0	3	0	3
84	1,205	570	570	0	2	0	2
85	739	361	361	0	1	0	1
86	441	223	223	0	1	0	1
87	256	133	133	0	0	0	0
88	144	77	77	0	0	0	0
89	78	43	43	0	0	0	0
90	41	23	23	0	0	0	0
91	21	12	12	0	0	0	0
92	11	6	6	0	0	0	0
93	5	3	3	0	0	0	0
94	2	1	1	0	0	0	0
95	1	1	1	0	0	0	0
96	1	0	0	0	0	0	0
97	0	0	0	0	0	0	0
98	0	0	0	0	0	0	0
99	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0
					$ 4,636,887 +	$ 0 =	$ 4,636,887

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.