



State Police Retirement System of New Jersey

GASB 68 Report as of June 30, 2019

Produced by Cheiron

March 2020

TABLE OF CONTENTS

<i>Section</i>		<i>Page</i>
Section I	Board Summary	1
Section II	Certification	2
Section III	Determination of Discount Rate	4
Section IV	Employer Reporting Amounts	5
 <i>Appendices</i>		
Appendix A	Membership Information	9
Appendix B	Actuarial Assumptions and Methods	10
Appendix C	Summary of Plan Provisions.....	18
Appendix D	Determination of Discount Rate	23
Appendix E	Glossary of Terms.....	27

**STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 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 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, 2019. Measurements as of the reporting date are based on the fair value of assets as of June 30, 2019 and the Total Pension Liability as of the valuation date, July 1, 2018, updated to June 30, 2019. As a result of the Experience Study covering the period July 1, 2014 through June 30, 2018, the assumed rates of termination, retirement, mortality, and inflation were updated. To see a detailed comparison of the changes refer to the Experience Study. The assumed discount rate used to measure the Total Pension Liability was also changed as of the measurement date. We are not of any other significant events 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	6/30/2019	6/30/2018
Net Pension Liability	\$ 2,828,062,019	\$ 3,059,669,558
Deferred Outflows	(264,256,018)	(490,383,861)
Deferred Inflows	<u>891,953,286</u>	<u>793,217,457</u>
Net Impact on Statement of Net Position	\$ 3,455,759,287	\$ 3,362,503,154
Pension Expense	\$ 191,439,089	\$ 245,375,272
Pension Expense (% of Payroll)	69.41%	86.19%

**STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE**

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, 2019 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, 2019 was based on the SOA's MP-2019 mortality improvement scale upon direction from the DPB. While we do not find the use of the SOA's Scale MP-2019 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.

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, 2017 valuation: 7.50% per annum,
- 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.

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.

STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE

SECTION II – CERTIFICATION

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



Anu Patel, FSA, MAAA, EA
Principal Consulting Actuary

**STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE**

SECTION III – DETERMINATION OF DISCOUNT RATE

The discount rate used to measure the Total Pension Liability was 4.97% as of June 30, 2018 and 5.51% as of June 30, 2019. As discussed with the Division of Pensions and Benefits, the projection of cash flows used to determine the discount rate as of June 30, 2019 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:

- Effective with the July 1, 2017 valuation: 7.50% per annum,
- 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 State will contribute 70.00% of the actuarially determined contribution and 100% of its Non-Contributory Group Insurance Premium Fund (NCGIPF) contribution for all years of the projection. The 70.00% contribution rate is the total State contribution rate expected to be paid in fiscal year ending June 30, 2020 with respect to the actuarially determined contribution for the fiscal year ending June 30, 2020 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 0.27% of expected pension benefit payments.

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 through fiscal year 2051. Municipal bond rates of 3.87% as of June 30, 2018 and 3.50% as of June 30, 2019 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. 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 3.87% as of June 30, 2018 and the long-term rate of return of 7.00% and the municipal bond rate of 3.50% as of June 30, 2019, the blended GASB discount rates are 4.97% as of June 30, 2018 and **5.51%** as of June 30, 2019. The assumed discount rates have been determined in accordance with the method prescribed by GASB Statement No. 67.

**STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE**

SECTION IV – EMPLOYER REPORTING AMOUNTS

We understand the State has elected to use the 2019 measurement date for its 2020 reporting date. As a result, the schedules in this section will be used by the State for its 2020 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 5.53 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	\$ 13,445,242	\$ 27,638,186
Changes in assumptions	250,810,776	852,971,112
Net differences between projected and actual earnings on pension plan investments	0	11,343,988
Total	<u>\$ 264,256,018</u>	<u>\$ 891,953,286</u>
Amounts reported as deferred outflows and deferred inflows of resources will be recognized in pension expense as follows:		
Measurement year ended June 30:		
2020	(80,080,151)	
2021	(180,392,092)	
2022	(213,844,099)	
2023	(120,283,209)	
2024	(33,097,717)	
Thereafter	\$ 0	

**STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE**

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						
			2019	2020	2021	2022	2023	2024	
2019	5.53	\$ (11,528,958)	\$ (2,084,803)	\$ (2,084,803)	\$ (2,084,803)	\$ (2,084,803)	\$ (2,084,803)	\$ (2,084,803)	\$ (1,104,943)
2018	4.90	(16,271,465)	(3,320,707)	(3,320,707)	(3,320,707)	(3,320,707)	(3,320,707)	(2,988,637)	0
2017	3.67	15,396,328	4,195,184	4,195,184	4,195,184	2,810,776		0	0
2016	2.70	(8,327,551)	(3,084,278)	(3,084,278)	(2,158,995)	0	0	0	0
2015	1.34	8,844,387	6,600,289	2,244,098	0	0	0	0	0
Total		\$ (11,887,259)	\$ 2,305,685	\$ (2,050,506)	\$ (3,369,321)	\$ (2,594,734)	\$ (5,073,440)	\$ (1,104,943)	
Recognition of changes in assumptions									
From Measurement Year Ending	Remaining Recognition Period	Remaining Deferred (Inflows) and Outflows*	Recognition Year						
			2019	2020	2021	2022	2023	2024	
2019	5.53	\$ (333,811,404)	\$ (60,363,726)	\$ (60,363,726)	\$ (60,363,726)	\$ (60,363,726)	\$ (60,363,726)	\$ (60,363,726)	\$ (31,992,774)
2018	4.90	(315,169,897)	(64,320,387)	(64,320,387)	(64,320,387)	(64,320,387)	(64,320,387)	(57,888,349)	0
2017	3.67	(451,772,773)	(123,098,849)	(123,098,849)	(123,098,849)	(82,476,226)		0	0
2016	2.70	354,287,879	131,217,732	131,217,732	91,852,415	0	0	0	0
2015	1.34	109,330,722	81,590,093	27,740,629	0	0	0	0	0
2014	0.14	2,524,545	2,524,545	0	0	0	0	0	0
Total		\$ (634,610,928)	\$ (32,450,592)	\$ (88,824,601)	\$ (155,930,547)	\$ (207,160,339)	\$ (118,252,075)	\$ (31,992,774)	
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						
			2019	2020	2021	2022	2023	2024	
2019	5.00	\$ 15,211,538	\$ 3,042,308	\$ 3,042,308	\$ 3,042,308	\$ 3,042,308	\$ 3,042,306	\$	0
2018	4.00	(28,525,342)	(7,131,336)	(7,131,336)	(7,131,336)	(7,131,334)		0	0
2017	3.00	(51,009,590)	(17,003,197)	(17,003,197)	(17,003,196)	0	0	0	0
2016	2.00	63,774,361	31,887,180	31,887,181	0	0	0	0	0
2015	1.00	14,084,800	14,084,800	0	0	0	0	0	0
Total		\$ 13,535,767	\$ 24,879,755	\$ 10,794,956	\$ (21,092,224)	\$ (4,089,026)	\$ 3,042,306	\$	0
Grand Total		\$ (632,962,420)	\$ (5,265,152)	\$ (80,080,151)	\$ (180,392,092)	\$ (213,844,099)	\$ (120,283,209)	\$ (33,097,717)	

* As of the beginning of the measurement year

**STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE**

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.

STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE

SECTION IV – EMPLOYER REPORTING AMOUNTS

Table IV-3		
Calculation of Pension Expense		
Measurement Year Ending	2019	2018
Change in Net Pension Liability	\$ (231,607,539)	\$ (303,107,221)
Change in Deferred Outflows	226,127,843	266,944,707
Change in Deferred Inflows	98,735,829	206,934,006
Employer Contributions	<u>98,182,956</u>	<u>74,603,780</u>
Pension Expense	\$ 191,439,089	\$ 245,375,272
Pension Expense as % of Payroll	69.41%	86.19%
Operating Expenses		
Service cost	\$ 100,705,109	\$ 119,718,797
Employee contributions	(24,183,990)	(22,416,571)
Administrative expenses	<u>596,137</u>	<u>377,193</u>
Total	\$ 77,117,256	\$ 97,679,419
Financing Expenses		
Interest cost	\$ 240,494,663	\$ 226,928,605
Expected return on assets	<u>(120,907,678)</u>	<u>(118,372,331)</u>
Total	\$ 119,586,985	\$ 108,556,274
Changes		
Benefit changes	\$ 0	\$ 0
Recognition of assumption changes	(32,450,592)	43,421,060
Recognition of liability gains and losses	2,305,685	4,390,488
Recognition of investment gains and losses	<u>24,879,755</u>	<u>(8,671,969)</u>
Total	\$ (5,265,152)	\$ 39,139,579
Pension Expense	\$ 191,439,089	\$ 245,375,272

**STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE**

APPENDIX A – MEMBERSHIP INFORMATION

Plan Membership		
	July 1, 2018	July 1, 2017
Contributing Actives	2,661	2,762
Non-Contributing Actives	52	50
Terminated Vested	0	0
Inactive Receiving Benefits*	<u>3,404</u>	<u>3,337</u>
Total	6,117	6,149
Annual Compensation for Contributing Actives	\$ 275,790,087	\$ 284,707,387
Annual Retirement Allowances for Those Receiving Benefits	\$ 222,196,734	\$ 215,636,675

* QDRO recipients are excluded from the counts

The July 1, 2017 membership information shown in the table above is based on Cheiron's processed data and may not match the prior actuary's report.

STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

A. Actuarial Assumptions

- | | |
|--|--|
| 1. Investment Rate of Return for determining Actuarially Determined Contributions | <ul style="list-style-type: none">• July 1, 2018 valuation: 7.50% per annum, compounded annually.• July 1, 2019 valuation: 7.30% per annum, compounded annually.• 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 | <ul style="list-style-type: none">• June 30, 2018: 4.97% per annum, compounded annually.• June 30, 2019: 5.51% 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. |
| 8. 401(a)(17) Pay Limit | \$275,000 in 2018 increasing 2.75% per annum, compounded annually. |
| 9. Social Security Wage Base | \$128,400 in 2018 increasing 3.25% per annum, compounded annually. |

STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

10. Termination

Termination rates are as follows:

Service	Rates
0	0.450%
1	0.450
2	0.450
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.

**STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE**

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

11. Disability

Disability rates are as follows:

Age	Ordinary Disability	Accidental Disability
20	0.027%	0.015%
21	0.027	0.015
22	0.035	0.020
23	0.035	0.020
24	0.035	0.020
25	0.041	0.025
26	0.041	0.025
27	0.048	0.025
28	0.048	0.045
29	0.055	0.045
30	0.061	0.053
31	0.061	0.053
32	0.069	0.060
33	0.102	0.188
34	0.136	0.191
35	0.169	0.194
36	0.170	0.196
37	0.171	0.199
38	0.172	0.202
39	0.172	0.205
40	0.172	0.208
41	0.172	0.209
42	0.172	0.210
43	0.172	0.211
44	0.191	0.212
45	0.218	0.214
46	0.252	0.215
47	0.281	0.216
48	0.314	0.217
49	0.342	0.218
50	0.375	0.220
51	0.410	0.240
52	0.443	0.260
53	0.470	0.275
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.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

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.

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-2019.

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 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-2019.

Beneficiaries (Contingent Annuitants): The Pub-2010 General Above-Median Income Healthy Retiree mortality table [*PubG-2010(A) Healthy 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-2019.

STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

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-2019.

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.

STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

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 2017 data but omitted from the 2018 data are assumed to have died without a beneficiary.

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-2019 mortality improvement scale was used to calculate the Total Pension Liability upon direction from the DPB.

17. Changes in Assumptions Since Last Valuation

The assumed rates of termination, retirement, mortality, and inflation were updated based on the July 1, 2014 – June 30, 2018 Experience Study.

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.

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.

**STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE**

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

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. 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.

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 work day 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.

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.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

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) Deferred Retirement:

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) Non-Vested Termination:

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

Benefit is a return of aggregate contributions.

d) Death Benefits

(1) Ordinary Death Before Retirement: 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, a total of 20% (35%, 50%) of final 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 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) Accidental Death Before Retirement: 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.

STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE

APPENDIX C – SUMMARY OF PLAN PROVISIONS

(3) Death After Retirement: Death of a retired member of the plan. 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) Ordinary Disability Retirement: 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) Involuntary Ordinary Disability Retirement: 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.

(3) Accidental Disability Retirement: 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.

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.

**STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE**

APPENDIX C – SUMMARY OF PLAN PROVISIONS

11. Forms of Payment

No optional forms of payment available.

12. Changes in Plan Provisions Since Last Valuation

None.

**STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE**

APPENDIX D – DETERMINATION OF DISCOUNT RATE

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

(In Thousands)

Projections Commence June 30, 2019

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)
1	\$ 1,791,790	\$ 21,301	\$ 118,133	\$ 232,432	\$ 614	\$ 121,216	\$ 1,819,393
2	1,819,393	20,805	126,115	239,794	633	123,085	1,848,971
3	1,848,971	20,278	130,781	246,913	652	125,013	1,877,478
4	1,877,478	19,807	142,661	253,474	670	127,075	1,912,877
5	1,912,877	19,047	147,721	262,162	692	129,359	1,946,150
6	1,946,150	18,381	152,157	269,441	712	131,530	1,978,065
7	1,978,065	17,942	157,017	274,740	726	133,693	2,011,250
8	2,011,250	17,028	162,644	284,423	751	135,797	2,041,545
9	2,041,545	16,101	166,952	294,269	777	137,658	2,067,210
10	2,067,210	15,285	171,123	302,970	800	139,236	2,089,083
11	2,089,083	14,299	175,767	312,606	826	140,522	2,106,240
12	2,106,240	12,840	180,140	325,667	860	141,336	2,114,029
13	2,114,029	11,400	179,676	337,871	892	141,400	2,107,740
14	2,107,740	10,309	179,087	346,776	916	140,601	2,090,045
15	2,090,045	9,263	179,274	354,917	938	139,051	2,061,778
16	2,061,778	8,192	179,380	362,605	958	136,774	2,022,561
17	2,022,561	7,435	179,280	367,146	970	133,845	1,975,005
18	1,975,005	6,888	179,911	369,500	976	130,433	1,921,761
19	1,921,761	6,322	181,039	371,597	982	126,645	1,863,188
20	1,863,188	5,496	182,073	375,578	992	122,407	1,796,595
21	1,796,595	4,412	182,279	381,152	1,007	117,522	1,718,649
22	1,718,649	3,356	181,650	385,922	1,019	111,850	1,628,564
23	1,628,564	2,340	180,978	389,990	1,030	105,352	1,526,215
24	1,526,215	1,411	180,275	393,032	1,038	98,034	1,411,865
25	1,411,865	705	179,571	393,629	1,040	89,968	1,287,440
26	1,287,440	308	179,341	391,254	1,033	81,322	1,156,123
27	1,156,123	129	179,855	386,673	1,021	72,296	1,020,710
28	1,020,710	44	180,882	381,007	1,006	63,038	882,660
29	882,660	8	182,120	374,662	990	53,625	742,762
30	742,762	0	183,470	367,825	972	44,104	601,540
31	601,540	0	184,881	360,661	953	34,504	459,311
32	459,311	0	186,307	353,238	933	24,842	316,289
33	316,289	0	187,728	345,545	913	15,134	172,692
34	0	0	0	337,579	892	0	0
35	0	0	0	329,336	870	0	0
36	0	0	0	320,824	847	0	0
37	0	0	0	312,054	824	0	0
38	0	0	0	303,043	800	0	0
39	0	0	0	293,819	776	0	0
40	0	0	0	284,409	751	0	0
41	0	0	0	274,849	726	0	0
42	0	0	0	265,171	700	0	0
43	0	0	0	255,410	675	0	0
44	0	0	0	245,601	649	0	0
45	0	0	0	235,772	623	0	0
46	0	0	0	225,953	597	0	0
47	0	0	0	216,166	571	0	0
48	0	0	0	206,427	545	0	0
49	0	0	0	196,743	520	0	0
50	0	0	0	187,117	494	0	0

**STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE**

APPENDIX D – DETERMINATION OF DISCOUNT RATE

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

(In Thousands)

Projections Commence June 30, 2019

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	0	0	0	177,547	469	0	0
52	0	0	0	168,030	444	0	0
53	0	0	0	158,568	419	0	0
54	0	0	0	149,160	394	0	0
55	0	0	0	139,817	369	0	0
56	0	0	0	130,547	345	0	0
57	0	0	0	121,371	321	0	0
58	0	0	0	112,311	297	0	0
59	0	0	0	103,396	273	0	0
60	0	0	0	94,659	250	0	0
61	0	0	0	86,140	228	0	0
62	0	0	0	77,878	206	0	0
63	0	0	0	69,918	185	0	0
64	0	0	0	62,302	165	0	0
65	0	0	0	55,071	145	0	0
66	0	0	0	48,263	127	0	0
67	0	0	0	41,907	111	0	0
68	0	0	0	36,027	95	0	0
69	0	0	0	30,639	81	0	0
70	0	0	0	25,753	68	0	0
71	0	0	0	21,374	56	0	0
72	0	0	0	17,497	46	0	0
73	0	0	0	14,114	37	0	0
74	0	0	0	11,204	30	0	0
75	0	0	0	8,744	23	0	0
76	0	0	0	6,700	18	0	0
77	0	0	0	5,035	13	0	0
78	0	0	0	3,705	10	0	0
79	0	0	0	2,667	7	0	0
80	0	0	0	1,875	5	0	0
81	0	0	0	1,286	3	0	0
82	0	0	0	859	2	0	0
83	0	0	0	558	1	0	0
84	0	0	0	352	1	0	0
85	0	0	0	216	1	0	0
86	0	0	0	128	0	0	0
87	0	0	0	74	0	0	0
88	0	0	0	41	0	0	0
89	0	0	0	22	0	0	0
90	0	0	0	12	0	0	0
91	0	0	0	6	0	0	0
92	0	0	0	3	0	0	0
93	0	0	0	1	0	0	0
94	0	0	0	1	0	0	0
95	0	0	0	0	0	0	0
96	0	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

**STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE**

APPENDIX D – DETERMINATION OF DISCOUNT RATE

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

Projections Commence June 30, 2019

* 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+3.50%)^[(a) - .5]	(h) = (c) / (1+5.51%)^[(a) - .5]
1	\$ 1,791,790	\$ 232,432	\$ 232,432	\$ 0	\$ 224,701	\$ 0	\$ 226,280
2	1,819,393	239,794	239,794	0	216,652	0	221,253
3	1,848,971	246,913	246,913	0	208,489	0	215,921
4	1,877,478	253,474	253,474	0	200,028	0	210,080
5	1,912,877	262,162	262,162	0	193,350	0	205,931
6	1,946,150	269,441	269,441	0	185,718	0	200,593
7	1,978,065	274,740	274,740	0	176,981	0	193,853
8	2,011,250	284,423	284,423	0	171,233	0	190,203
9	2,041,545	294,269	294,269	0	165,570	0	186,508
10	2,067,210	302,970	302,970	0	159,314	0	181,992
11	2,089,083	312,606	312,606	0	153,627	0	177,971
12	2,106,240	325,667	325,667	0	149,575	0	175,722
13	2,114,029	337,871	337,871	0	145,029	0	172,784
14	2,107,740	346,776	346,776	0	139,113	0	168,075
15	2,090,045	354,917	354,917	0	133,065	0	163,035
16	2,061,778	362,605	362,605	0	127,053	0	157,866
17	2,022,561	367,146	367,146	0	120,228	0	151,493
18	1,975,005	369,500	369,500	0	113,083	0	144,500
19	1,921,761	371,597	371,597	0	106,285	0	137,730
20	1,863,188	375,578	375,578	0	100,396	0	131,933
21	1,796,595	381,152	381,152	0	95,221	0	126,898
22	1,718,649	385,922	385,922	0	90,105	0	121,774
23	1,628,564	389,990	389,990	0	85,098	0	116,630
24	1,526,215	393,032	393,032	0	80,151	0	111,400
25	1,411,865	393,629	393,629	0	75,021	0	105,741
26	1,287,440	391,254	391,254	0	69,690	0	99,613
27	1,156,123	386,673	386,673	0	64,369	0	93,304
28	1,020,710	381,007	381,007	0	59,276	0	87,135
29	882,660	374,662	374,662	0	54,476	0	81,208
30	742,762	367,825	367,825	0	49,983	0	75,561
31	601,540	360,661	360,661	0	45,803	0	70,219
32	459,311	353,238	353,238	0	41,926	0	65,182
33	316,289	345,545	316,289	29,257	35,084	9,565	60,431
34	0	337,579	0	337,579	0	106,628	55,954
35	0	329,336	0	329,336	0	100,507	51,737
36	0	320,824	0	320,824	0	94,599	47,767
37	0	312,054	0	312,054	0	88,901	44,034
38	0	303,043	0	303,043	0	83,415	40,529
39	0	293,819	0	293,819	0	78,141	37,243
40	0	284,409	0	284,409	0	73,080	34,167
41	0	274,849	0	274,849	0	68,235	31,293
42	0	265,171	0	265,171	0	63,606	28,614
43	0	255,410	0	255,410	0	59,193	26,122
44	0	245,601	0	245,601	0	54,995	23,806
45	0	235,772	0	235,772	0	51,009	21,660
46	0	225,953	0	225,953	0	47,232	19,673
47	0	216,166	0	216,166	0	43,658	17,838
48	0	206,427	0	206,427	0	40,281	16,145
49	0	196,743	0	196,743	0	37,093	14,583
50	0	187,117	0	187,117	0	34,085	13,145

**STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY
GASB 68 REPORTING FOR JUNE 30, 2019 MEASUREMENT DATE**

APPENDIX D – DETERMINATION OF DISCOUNT RATE

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

Projections Commence June 30, 2019

* 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+3.50%)^[(a) - .5]	(h) = (c) / (1+5.51%)^[(a) - .5]
51	0	177,547	0	177,547	0	31,248	11,822
52	0	168,030	0	168,030	0	28,573	10,604
53	0	158,568	0	158,568	0	26,052	9,484
54	0	149,160	0	149,160	0	23,678	8,455
55	0	139,817	0	139,817	0	21,444	7,511
56	0	130,547	0	130,547	0	19,345	6,647
57	0	121,371	0	121,371	0	17,377	5,857
58	0	112,311	0	112,311	0	15,536	5,137
59	0	103,396	0	103,396	0	13,819	4,482
60	0	94,659	0	94,659	0	12,224	3,889
61	0	86,140	0	86,140	0	10,748	3,354
62	0	77,878	0	77,878	0	9,388	2,874
63	0	69,918	0	69,918	0	8,144	2,445
64	0	62,302	0	62,302	0	7,011	2,065
65	0	55,071	0	55,071	0	5,988	1,730
66	0	48,263	0	48,263	0	5,070	1,437
67	0	41,907	0	41,907	0	4,254	1,183
68	0	36,027	0	36,027	0	3,533	964
69	0	30,639	0	30,639	0	2,903	777
70	0	25,753	0	25,753	0	2,358	619
71	0	21,374	0	21,374	0	1,891	487
72	0	17,497	0	17,497	0	1,495	378
73	0	14,114	0	14,114	0	1,165	289
74	0	11,204	0	11,204	0	894	217
75	0	8,744	0	8,744	0	674	161
76	0	6,700	0	6,700	0	499	117
77	0	5,035	0	5,035	0	362	83
78	0	3,705	0	3,705	0	258	58
79	0	2,667	0	2,667	0	179	40
80	0	1,875	0	1,875	0	122	26
81	0	1,286	0	1,286	0	81	17
82	0	859	0	859	0	52	11
83	0	558	0	558	0	33	7
84	0	352	0	352	0	20	4
85	0	216	0	216	0	12	2
86	0	128	0	128	0	7	1
87	0	74	0	74	0	4	1
88	0	41	0	41	0	2	0
89	0	22	0	22	0	1	0
90	0	12	0	12	0	1	0
91	0	6	0	6	0	0	0
92	0	3	0	3	0	0	0
93	0	1	0	1	0	0	0
94	0	1	0	1	0	0	0
95	0	0	0	0	0	0	0
96	0	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
					\$ 4,035,691	\$ 1,410,668	\$ 5,446,359

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.