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Judicial Retirement System of New Jersey

GASB 68 Report as of June 30, 2018

Produced by Cheiron

February 2019

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SECTION I – BOARD SUMMARY

The purpose of this report is to provide accounting and financial disclosure information under Government Accounting Standards Board Statement 68 for the Judicial Retirement System of New Jersey (JRS). This information includes:

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

Highlights

The reporting date for the JRS is June 30, 2018. Measurements as of the reporting date are based on the fair value of assets as of June 30, 2018 and the Total Pension Liability as of the valuation date, July 1, 2017, updated to June 30, 2018. There were no changes in benefits between the valuation date and the measurement date. There was a change in assumptions as the discount rate used to measure the Total Pension Liability was changed as of the measurement date. We are not aware 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 change in discount rate. Additional information about the TPL can be found in the GASB 67 report.

The June 30, 2017 values shown in this report are based on the prior actuary's GASB report.

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

Table I-1
Summary of Results

Measurement Date	6/30/2018	6/30/2017
Net Pension Liability	$ 754,294,872	$ 762,070,662
Deferred Outflows	(18,062,743)	(49,873,525)
Deferred Inflows	52,394,447	57,085,898
Net Impact on Statement of Net Position	$ 788,626,576	$ 769,283,035
Pension Expense	$ 43,367,178	$ 48,098,248
Pension Expense (% of Payroll)	62.65%	70.67%

SECTION II – CERTIFICATION

The purpose of this report is to provide accounting and financial reporting information under GASB 68 for JRS. This report is for the use of JRS, the Division of Pensions and Benefits 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 JRS and estimating the price to settle JRS'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 calculation of the Total Pension Liability and the projection of the Plan's contributions and projected benefit payments were based on the recommended demographic assumptions of the July 1, 2011 – June 30, 2014 Experience Study prepared by the prior actuary, which was approved by the State House Commission on October 26, 2015. Cheiron has reviewed this experience study. While we consider these assumptions to be generally reasonable, we have not yet performed our own actuarial experience study.

Based on the State Treasurer's recommendation the following economic assumptions are used to determine the Total Pension Liability and 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.

To the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices that are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. 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.

SECTION II – CERTIFICATION

This report was prepared for JRS for the purposes described herein and for the use by the plan auditors 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 any other user.

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

SECTION III – DETERMINATION OF DISCOUNT RATE

The discount rate used to measure the Total Pension Liability was 3.83% as of June 30, 2017 and 4.09% as of June 30, 2018. As discussed with the Division of Pensions and Benefits, the projection of cash flows used to determine the discount rate as of June 30, 2018 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 were based on the recommended demographic assumptions of the July 1, 2011 – June 30, 2014 Experience Study prepared by the prior actuary, which was approved by the State House Commission on October 26, 2015.

  Based on the State Treasurer' recommendation the following economic 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 50.00% of the actuarially determined contribution and 100% of its Non-Contributory Group Insurance Premium Fund (NCGIPF) contribution. The 50.00% contribution rate is the actual total State contribution rate paid in fiscal year ending June 30, 2018 with respect to the actuarially determined contribution for the fiscal year ending June 30, 2018 for all State administered retirement systems.

- Prior to FYE 2018, it was assumed the State would make pension contributions on the June 30th following the valuation date. Effective with FYE 2018, Chapter 83, P.L. 2016 requires the State to make pension contributions on a quarterly basis: at least 25 percent by September 30, at least 50 percent by December 31, at least 75 percent by March 31, and at least 100 percent by June 30.

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 2024. Municipal bond rates of 3.58% as of June 30, 2017 and 3.87% as of June 30, 2018 were used in the development of the blended GASB discount rate after that point. 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 3.58% as of June 30, 2017 and the long-term rate of return of 7.00% and the municipal bond rate of 3.87% as of June 30, 2018, the blended GASB discount rates are 3.83% as of June 30, 2017 and **4.09%** as of June 30, 2018. The assumed discount rates have been determined in accordance with the method prescribed by GASB Statement No. 67.

SECTION IV –EMPLOYER REPORTING AMOUNTS

We understand the State has elected to use the 2018 measurement date for its 2019 reporting date. As a result, the schedules in this section will be used by the State for its 2019 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 3.66 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	$ 5,943,573	$ 6,216,185
Changes in assumptions	10,958,757	46,178,262
Net differences between projected and actual earnings on pension plan investments	1,160,413	0
Total	**$ 18,062,743**	**$ 52,394,447**

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

Measurement year ended June 30:	
2019	(11,078,633)
2020	(14,554,750)
2021	(7,996,995)
2022	(701,326)
2023	0
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 2018	2019	2020	2021	2022
2018	3.66	$ (8,553,096)	$ (2,336,911)	$ (2,336,911)	$ (2,336,911)	$ (1,542,363)	$ 0
2017	2.44	10,015,826	4,104,847	4,104,847	1,806,132	0	0
2016	1.44	106,670	74,076	32,594	0	0	0
2015	0.60	(288,865)	(288,865)	0	0	0	0
Total		$ 1,280,535	$ 1,553,147	$ 1,800,530	$ (530,779)	$ (1,542,363)	$ 0

Recognition of changes in assumptions

From Measurement Year Ending	Remaining Recognition Period	Remaining Deferred (Inflows) and Outflows*	Recognition Year 2018	2019	2020	2021	2022
2018	3.66	$ (23,084,707)	$ (6,307,297)	$ (6,307,297)	$ (6,307,297)	$ (4,162,816)	$ 0
2017	2.44	(49,818,111)	(20,417,259)	(20,417,259)	(8,983,593)	0	0
2016	1.44	35,865,022	24,906,265	10,958,757	0	0	0
2015	0.60	(6,978,922)	(6,978,922)	0	0	0	0
Total		$ (44,016,718)	$ (8,797,213)	$ (15,765,799)	$ (15,290,890)	$ (4,162,816)	$ 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 2018	2019	2020	2021	2022
2018	5.00	$ (3,506,622)	$ (701,324)	$ (701,324)	$ (701,324)	$ (701,324)	$ (701,326)
2017	4.00	(6,361,971)	(1,590,493)	(1,590,493)	(1,590,493)	(1,590,492)	0
2016	3.00	10,676,210	3,558,737	3,558,737	3,558,736	0	0
2015	2.00	3,239,434	1,619,718	1,619,716	0	0	0
2014	1.00	(3,667,666)	(3,667,666)	0	0	0	0
Total		$ 379,385	$ (781,028)	$ 2,886,636	$ 1,266,919	$ (2,291,816)	$ (701,326)
Grand Total		**$ (42,356,798)**	**$ (8,025,094)**	**$ (11,078,633)**	**$ (14,554,750)**	**$ (7,996,995)**	**$ (701,326)**

** 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 JRS 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 JRS 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		2018		2017
Change in Net Pension Liability	$	(7,775,790)	$	(38,671,624)
Change in Deferred Outflows		31,810,782		28,723,362
Change in Deferred Inflows		(4,691,451)		37,705,131
Employer Contributions		24,023,637		20,341,379
Pension Expense	**$**	**43,367,178**	**$**	**48,098,248**
Pension Expense as % of Payroll		**62.65%**		**70.67%**
Operating Expenses				
Service cost	$	35,477,981	$	37,224,230
Employee contributions		(9,177,453)		(10,348,191)
Administrative expenses		185,364		150,588
Total	$	26,485,892	$	27,026,627
Financing Expenses				
Interest cost	$	36,209,627	$	30,788,977
Expected return on assets		(11,303,247)		(12,078,688)
Total	$	24,906,380	$	18,710,289
Changes				
Benefit changes	$	0	$	0
Recognition of assumption changes		(8,797,213)		(1,256,444)
Recognition of liability gains and losses		1,553,147		3,697,479
Recognition of investment gains and losses		(781,028)		(79,703)
Total	$	(8,025,094)	$	2,361,332
Pension Expense	**$**	**43,367,178**	**$**	**48,098,248**

APPENDIX A – MEMBERSHIP INFORMATION

Plan Membership	July 1, 2017	July 1, 2016
Contributing Actives	417	410
Non-Contributing Actives	11	0
Terminated Vested	4	4
Inactive Receiving Benefits	607	605
Total	1,039	1,019
Annual Compensation for Contributing Actives	$ 69,216,709	$ 68,062,584
Annual Retirement Allowances for Those Receiving Benefits	$ 56,283,292	$ 55,093,264

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.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

A. Actuarial Assumptions

1. **Investment Rate of Return for determining Actuarially Determined Contributions**
   - July 1, 2017 valuation: 7.50% per annum, compounded annually.
   - 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 68 Effective Discount Rate**
   - June 30, 2017: 3.83% per annum, compounded annually.
   - June 30, 2018: 4.09% per annum, compounded annually.

4. **Administrative Expenses**
   0.32% of the expected benefit payments for the year

5. **COLA**
   No future COLA is assumed.

6. **Salary Increases**
   Salaries are assumed to increase by 2.00% per year through fiscal year 2025 and 3.00% per year for fiscal years 2026 and thereafter.

7. **401(a)(17) Pay Limit**
   $270,000 in 2017 increasing 3.00% per annum, compounded annually.

8. **Disability**

   Representative disability rates are as follows:

Age	Rates
30	0.022%
35	0.026
40	0.033
45	0.064
50	0.114
55	0.197
60	0.326
65	0.473

9. **Mortality**
   Healthy Mortality: RP-2000 Combined Healthy Mortality Tables (unadjusted for males and set forward 3 years for females) projected on a generational basis from the base year of 2000 to 2013 using Projection Scale BB and the Conduent Modified 2014 Projection scale thereafter.

   Disabled Mortality: RP-2000 Disability Mortality Tables (set forward 2 years for males and females) without projection.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

10. Retirement

Retirement Rates				
Age	Age 60 with 20 Years of Judicial Service or Age 65 with 15 Years of Judicial Service	After Age 59 with Less than 12 Years of Judicial Service	After Age 59 with 12 or More Years of Judicial Service (but have not attained 60/20JS or 65/15JS	Prior to age 60 with 5 Years of Judicial Service and 25 Years of Public Service
50	0.0%	0.0%	0.0%	0.0%
51	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0
53	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0
55	0.0	0.0	0.0	0.0
56	0.0	0.0	0.0	0.0
57	0.0	0.0	0.0	0.0
58	0.0	0.0	0.0	0.0
59	0.0	0.0	0.0	0.0
60	30.0	2.5	0.0	0.0
61	20.0	2.5	0.0	0.0
62	20.0	2.5	0.0	0.0
63	30.0	2.5	0.0	0.0
64	30.0	2.5	0.0	0.0
65	37.5	2.5	10.0	0.0
66	24.0	2.5	0.0	0.0
67	24.0	2.5	0.0	0.0
68	24.0	2.5	0.0	0.0
69	24.0	2.5	0.0	0.0

11. Termination None assumed.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

12. Family Composition Assumptions

For members not currently in receipt, 90% of members are assumed married. Husbands are assumed to be three years older than wives.

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

For purposes of the statutory death benefit for members currently in receipt, 100% of participants are assumed married, with the exception of those members who elected Optional Forms A, B, C or D and are currently in receipt of their maximum retirement allowance. The spouse is assumed to be the reported beneficiary. If no beneficiary date of birth is provided, husbands are assumed to be three years older than wives.

No additional dependent children or parents are assumed.

Current dependents under age 21 are assumed to receive a benefit until age 21. Current dependents over age 21 are assumed to receive a benefit for the remainder of their lifetime.

13. Form of Payment

Current actives are assumed to elect the Maximum Option.

14. Data

Information provided by the prior actuary was relied upon for the purposes of valuing the deferred vested members.

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

Active and inactive members not reported on the 2017 data are included as non-contributing actives with their last reported salary.

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

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

3. State Contribution Payable Dates

Prior to FYE 2018, it was assumed the State would make pension contributions the June 30th following the valuation date. Effective with FYE 2018, Chapter 83, P.L. 2016 requires the State to make pension contributions on a quarterly basis: at least 25 percent by September 30, at least 50 percent by December 31, at least 75 percent by March 31, and at least 100 percent by June 30. As such, contributions are assumed to be made on a quarterly basis.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

This summary of Plan provisions provides an overview of the major provisions of the JRS used in the actuarial valuation. It is not intended to replace the more precise language of the NJ State Statutes, Title 43, Chapter 6A, and if there is any difference between the description of the plan herein and the actual language in the NJ State Statutes, the NJ State Statutes will govern.

1. Eligibility for Membership

Chief Justice and Associate Justices of the State Supreme Court, and judges of the Appellate Court, Superior Court and Tax Court of the State of New Jersey.

2. Plan Year

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

3. Service Credit

A year is credited for each year of service as a public employee in the State of New Jersey. Any service, for which the member did not receive annual salary of at least $500, shall be excluded.

4. Final Salary

Annual salary received by the member at the time of retirement or other termination of service. (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.)

5. Accumulated Deductions

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

6. Employee Contributions

Any member enrolled prior to January 1, 1996 contributes 3% of the difference between current salary and salary for the position on January 18, 1982. Members enrolled on or after January 1, 1996 contribute 3% of their full salary.

Chapter 78, P.L. 2011 increases Member Contributions by 9% of salary phased in over a period of seven years beginning October 2011. (The additional 9% of salary will be fully recognized in July 2017.)

a) For Members enrolled prior to January 1, 1996:

(1) Member contributes 9% (phased in over a period of seven years beginning October 2011) of the salary for that position on January 18, 1982.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

(2) Member contributes 12% (9% of that phased in over a period of seven years beginning October 2011) of the difference between current salary and salary for that position on January 18, 1982.

b) **For members enrolled on or after January 1, 1996**, Member contributes 12% (9% of that phased in over a period of seven years beginning October 2011) of full salary.

7. Retirement Allowance

Pension derived from contributions of the State plus the annuity derived from employee contributions.

8. Benefits

a) **Service Retirements**
Mandatory retirement at age 70. Voluntary retirement prior to that age.

(1) Age 70 and 10 years of judicial service; or

Age 65 and 15 years of judicial service; or

Age 60 and 20 years of judicial service.

Benefit is an annual retirement allowance equal to 75% of final salary.

(2) Age 65 while serving as a judge, 5 consecutive years of judicial service and 15 years in the aggregate of public service; or

Age 60 while serving as a judge, 5 consecutive years of judicial service and 20 years in the aggregate of public service.

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

(3) Age 60 while serving as a judge, 5 consecutive years of judicial service and 15 years in the aggregate of public service.

Benefit is an annual retirement allowance equal to 2% of final salary for each year of public service up to 25 years plus 1% of final salary for each year of public service in excess of 25 years.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

(4) Age 60 while serving as a judge.

Benefit is an annual retirement allowance equal to 2% of final salary for each year of judicial service up to 25 years plus 1% for each year of public service in excess of 25 years.

b) Early Retirement

Prior to age 60 while serving as a judge, 5 consecutive years of judicial service and 25 or more years in the aggregate of public service.

Benefit is an annual retirement allowance equal to 2% of final salary for each year of public service up to 25 years plus 1% of final salary for each year of public service in excess of 25 years, actuarially reduced for commencement prior to age 60.

c) Vested Termination

Termination of service prior to age 60, with 5 consecutive years of judicial service and 10 years in the aggregate of public service.

Benefit is a refund of accumulated deductions, or a deferred life annuity beginning at age 60 equal to 2% of final salary for each year of public service up to 25 years, plus 1% of final salary for each year of public service in excess of 25 years.

d) Disability Retirement

Physically or otherwise incapacitated for the full and efficient service to State in his judicial capacity and such incapacity is likely to be permanent.

Benefit is an annual retirement allowance of 75% of final salary.

e) Death Benefits

(1) Before Retirement: Death of an active member of the plan. Benefit is equal to:

a) Lump sum payment equal to 1-1/2 times compensation, plus

b) Spousal life annuity of 25% of final salary payable until spouse's remarriage plus 10% (15%) to one (two or more) dependent child(ren). If there is no surviving spouse, or upon death or remarriage, a total of 15% (20%, 30%) of final salary payable to one (two, three or more) dependent child(ren). If there is no surviving spouse or dependent child(ren), 20% (30%) of final salary to one (two) dependent parent(s). If there is no surviving spouse, dependent child(ren) or parent(s), the benefit is a refund of accumulated deductions with interest. This is also known as the statutory death benefit.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

(2) After Retirement: Death of a retired member of the plan. The benefit is equal to:

a) Lump sum of 25% of final salary for a member retired under service or early retirement. For a member receiving a disability benefit, a lump sum of 150% of final salary if death occurred before the member attained age 60 and 25% of final salary if death occurred after age 60, plus

b) Spousal life annuity of 25% of final salary adjusted for any previously granted Cost-of-Living Adjustments, or the salary of an active judge in the member's final position at retirement, if larger, payable until spouse's remarriage plus 10% (15%) to one (two or more) dependent child(ren). If there is no surviving spouse, or upon death or remarriage, a total of 15% (20%, 30%) of final salary payable to one (two, three or more) dependent child(ren). This is also known as the statutory death benefit.

9. Forms of Payment

In addition to the postretirement death benefits listed above, the member may elect the following forms of payment.

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

10. Changes in Plan Provisions Since Last Valuation

None.

APPENDIX D – DETERMINATION OF DISCOUNT RATE

Table 1 - Projection of the Pension Plan's Fiduciary Net Position
(In Thousands)
Projections Commence June 30, 2018

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	$ 167,724	$ 7,721	$ 25,549	$ 59,978	$ 191	$ 10,609	$ 151,433
2	151,433	7,298	26,429	61,567	196	9,422	132,820
3	132,820	6,907	27,520	62,749	200	8,093	112,392
4	112,392	6,566	28,562	63,632	202	6,648	90,334
5	90,334	6,085	30,146	64,798	206	5,088	66,650
6	66,650	5,627	31,222	65,931	210	3,403	40,761
7	40,761	5,185	32,280	66,853	213	1,571	12,731
8	0	0	0	67,907	216	0	0
9	0	0	0	68,761	219	0	0
10	0	0	0	69,300	220	0	0
11	0	0	0	69,601	221	0	0
12	0	0	0	69,416	221	0	0
13	0	0	0	69,562	221	0	0
14	0	0	0	69,265	220	0	0
15	0	0	0	69,093	220	0	0
16	0	0	0	68,059	216	0	0
17	0	0	0	67,294	214	0	0
18	0	0	0	66,175	210	0	0
19	0	0	0	64,625	206	0	0
20	0	0	0	63,052	201	0	0
21	0	0	0	61,069	194	0	0
22	0	0	0	58,985	188	0	0
23	0	0	0	56,534	180	0	0
24	0	0	0	53,730	171	0	0
25	0	0	0	50,951	162	0	0
26	0	0	0	48,057	153	0	0
27	0	0	0	45,144	144	0	0
28	0	0	0	42,264	134	0	0
29	0	0	0	39,397	125	0	0
30	0	0	0	36,616	116	0	0
31	0	0	0	33,927	108	0	0
32	0	0	0	31,349	100	0	0
33	0	0	0	28,875	92	0	0
34	0	0	0	26,499	84	0	0
35	0	0	0	24,235	77	0	0
36	0	0	0	22,085	70	0	0
37	0	0	0	20,051	64	0	0
38	0	0	0	18,134	58	0	0
39	0	0	0	16,332	52	0	0
40	0	0	0	14,645	47	0	0
41	0	0	0	13,070	42	0	0
42	0	0	0	11,607	37	0	0
43	0	0	0	10,253	33	0	0
44	0	0	0	9,005	29	0	0
45	0	0	0	7,863	25	0	0
46	0	0	0	6,822	22	0	0
47	0	0	0	5,879	19	0	0
48	0	0	0	5,033	16	0	0
49	0	0	0	4,277	14	0	0
50	0	0	0	3,609	11	0	0

APPENDIX D – DETERMINATION OF DISCOUNT RATE

Table 1 - Projection of the Pension Plan's Fiduciary Net Position
(In Thousands)
Projections Commence June 30, 2018

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)
51	0	0	0	3,022	10	0	0
52	0	0	0	2,512	8	0	0
53	0	0	0	2,072	7	0	0
54	0	0	0	1,695	5	0	0
55	0	0	0	1,375	4	0	0
56	0	0	0	1,107	4	0	0
57	0	0	0	883	3	0	0
58	0	0	0	699	2	0	0
59	0	0	0	548	2	0	0
60	0	0	0	426	1	0	0
61	0	0	0	329	1	0	0
62	0	0	0	252	1	0	0
63	0	0	0	192	1	0	0
64	0	0	0	146	0	0	0
65	0	0	0	111	0	0	0
66	0	0	0	84	0	0	0
67	0	0	0	63	0	0	0
68	0	0	0	48	0	0	0
69	0	0	0	37	0	0	0
70	0	0	0	29	0	0	0
71	0	0	0	23	0	0	0
72	0	0	0	18	0	0	0
73	0	0	0	15	0	0	0
74	0	0	0	13	0	0	0
75	0	0	0	11	0	0	0
76	0	0	0	9	0	0	0
77	0	0	0	8	0	0	0
78	0	0	0	6	0	0	0
79	0	0	0	5	0	0	0
80	0	0	0	5	0	0	0
81	0	0	0	4	0	0	0
82	0	0	0	3	0	0	0
83	0	0	0	2	0	0	0
84	0	0	0	2	0	0	0
85	0	0	0	2	0	0	0
86	0	0	0	1	0	0	0
87	0	0	0	1	0	0	0
88	0	0	0	1	0	0	0
89	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0
94	0	0	0	0	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

APPENDIX D – DETERMINATION OF DISCOUNT RATE

Table 2 - Actuarial Present Values of Projected Benefit Payments
(In Thousands)
Projections Commence June 30, 2018
* 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+3.87%)^[(a) - .5]	Present Value of Benefit Payments Using the Single Discount Rate (h) = (c) / (1+4.09%)^[(a) - .5]
1	$ 167,724	$ 59,978	$ 59,978	$ 0	$ 57,983	$ 0	$ 58,787
2	151,433	61,567	61,567	0	55,626	0	57,972
3	132,820	62,749	62,749	0	52,984	0	56,761
4	112,392	63,632	63,632	0	50,215	0	55,296
5	90,334	64,798	64,798	0	47,789	0	54,095
6	66,650	65,931	65,931	0	45,444	0	52,877
7	40,761	66,853	40,761	26,093	26,257	20,386	51,507
8	0	67,907	0	67,907	0	51,079	50,262
9	0	68,761	0	68,761	0	49,794	48,893
10	0	69,300	0	69,300	0	48,314	47,338
11	0	69,601	0	69,601	0	46,717	45,674
12	0	69,416	0	69,416	0	44,856	43,761
13	0	69,562	0	69,562	0	43,276	42,129
14	0	69,265	0	69,265	0	41,485	40,299
15	0	69,093	0	69,093	0	39,841	38,618
16	0	68,059	0	68,059	0	37,783	36,545
17	0	67,294	0	67,294	0	35,966	34,713
18	0	66,175	0	66,175	0	34,050	32,793
19	0	64,625	0	64,625	0	32,014	30,766
20	0	63,052	0	63,052	0	30,070	28,836
21	0	61,069	0	61,069	0	28,039	26,831
22	0	58,985	0	58,985	0	26,074	24,896
23	0	56,534	0	56,534	0	24,059	22,923
24	0	53,730	0	53,730	0	22,014	20,930
25	0	50,951	0	50,951	0	20,098	19,067
26	0	48,057	0	48,057	0	18,250	17,277
27	0	45,144	0	45,144	0	16,505	15,591
28	0	42,264	0	42,264	0	14,876	14,022
29	0	39,397	0	39,397	0	13,350	12,557
30	0	36,616	0	36,616	0	11,946	11,212
31	0	33,927	0	33,927	0	10,656	9,980
32	0	31,349	0	31,349	0	9,479	8,859
33	0	28,875	0	28,875	0	8,406	7,839
34	0	26,499	0	26,499	0	7,427	6,911
35	0	24,235	0	24,235	0	6,539	6,072
36	0	22,085	0	22,085	0	5,737	5,316
37	0	20,051	0	20,051	0	5,015	4,636
38	0	18,134	0	18,134	0	4,366	4,028
39	0	16,332	0	16,332	0	3,786	3,485
40	0	14,645	0	14,645	0	3,268	3,002
41	0	13,070	0	13,070	0	2,808	2,574
42	0	11,607	0	11,607	0	2,401	2,196
43	0	10,253	0	10,253	0	2,042	1,864
44	0	9,005	0	9,005	0	1,727	1,572
45	0	7,863	0	7,863	0	1,451	1,319
46	0	6,822	0	6,822	0	1,212	1,099
47	0	5,879	0	5,879	0	1,006	910
48	0	5,033	0	5,033	0	829	748
49	0	4,277	0	4,277	0	678	611
50	0	3,609	0	3,609	0	551	495

APPENDIX D – DETERMINATION OF DISCOUNT RATE

Table 2 - Actuarial Present Values of Projected Benefit Payments
(In Thousands)
Projections Commence June 30, 2018
* 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+3.87%)^[(a) - .5]	(h) = (c) / (1+4.09%)^[(a) - .5]
51	0	3,022	0	3,022	0	444	399
52	0	2,512	0	2,512	0	355	318
53	0	2,072	0	2,072	0	282	252
54	0	1,695	0	1,695	0	222	198
55	0	1,375	0	1,375	0	174	154
56	0	1,107	0	1,107	0	135	119
57	0	883	0	883	0	103	92
58	0	699	0	699	0	79	70
59	0	548	0	548	0	59	52
60	0	426	0	426	0	45	39
61	0	329	0	329	0	33	29
62	0	252	0	252	0	24	21
63	0	192	0	192	0	18	16
64	0	146	0	146	0	13	11
65	0	111	0	111	0	10	8
66	0	84	0	84	0	7	6
67	0	63	0	63	0	5	4
68	0	48	0	48	0	4	3
69	0	37	0	37	0	3	2
70	0	29	0	29	0	2	2
71	0	23	0	23	0	2	1
72	0	18	0	18	0	1	1
73	0	15	0	15	0	1	1
74	0	13	0	13	0	1	1
75	0	11	0	11	0	1	1
76	0	9	0	9	0	1	0
77	0	8	0	8	0	0	0
78	0	6	0	6	0	0	0
79	0	5	0	5	0	0	0
80	0	5	0	5	0	0	0
81	0	4	0	4	0	0	0
82	0	3	0	3	0	0	0
83	0	2	0	2	0	0	0
84	0	2	0	2	0	0	0
85	0	2	0	2	0	0	0
86	0	1	0	1	0	0	0
87	0	1	0	1	0	0	0
88	0	1	0	1	0	0	0
89	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0
94	0	0	0	0	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
					$ 336,299 +	**$ 832,251 =**	**$ 1,168,550**

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.