



Maine Public Employees Retirement System

Retiree Group Life Insurance Program

State Sponsored Groups Actuarial Valuation and GASB Statement No. 74 Report as of June 30, 2019

**Presented by Cheiron
October 2019**

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Via Electronic Mail and UPS Delivery

October 15, 2019

Board of Trustees
Maine Public Employees Retirement System
P.O. Box 349
Augusta, ME 04332-0349

***Re: Maine Public Employees Retirement System Retiree Group Life Insurance Program
Actuarial Valuation Report for the State Sponsored Groups***

Dear Members of the Board:

The purpose of this report is to provide accounting and financial reporting information under Governmental Accounting Standards Board (GASB) Statement No. 74 and present the estimated Postretirement Group Life Insurance obligations as of June 30, 2019 for the Maine Public Employees Retirement System (MainePERS or System) based on a roll-forward of the obligations as of June 30, 2018.

This report covers the participants of the State Employee and Teacher Retirement Program, the Judicial Retirement Program, and the Legislative Retirement Program, which we collectively call the State Sponsored Groups. For Tables 1, 3, 6, and 7, we separated out the Teachers group for informational purposes, with all others included in the State group.

This report includes:

- Determination of the discount rate,
- Calculation of the Total OPEB Liability (TOL) from the valuation date to the measurement date,
- Calculation of the Net OPEB Liability (NOL) at the discount rate as well as discount rates one percentage higher and lower than the discount rate, and
- Changes in the Net OPEB Liability.

We have determined the costs and liabilities for the substantive plan using actuarial assumptions and methods that we consider reasonable. The information shown in this report is primarily for financial disclosure purposes since the biennial full valuations are used to actually adjust the Teacher funding contributions. The State contributions for the remaining members of the State Sponsored Groups are based on premiums set by the premium studies.

The current premium rates reflect rate changes adopted by the Board of Trustees based on a premium study conducted in 2016. The basic premiums were unchanged for the Teacher group. Teachers pay \$0.05 bi-weekly per \$1,000 of coverage for active coverage and the State contributes an amount equal to the calculated ADC for retired teacher coverage. However, as these are set two years in advance, the actual contribution may be higher or lower than that given

year's ADC. The premiums for State group employees also were unchanged. State group employees pay \$0.35 bi-weekly per \$1,000 of coverage for fiscal year (FY) 2019. This includes \$0.09 for active coverage and \$0.26 for retiree coverage. It is anticipated that the premiums for retiree coverage will increase again to \$0.29 for FY 2020, with possible additional increases in future years to be determined by the next premium study in 2020.

In preparing our report, we relied on information (some oral and some written) supplied by the System. 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 presented in this report due to such factors as the following: plan experience differing from that anticipated by the assumptions; changes in assumptions; and changes in plan provisions or applicable law.

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 the Maine Public Employees Retirement System 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.

Sincerely,
Cheiron



John Colberg, FSA, MAAA, EA
Principal Consulting Actuary



Ryan Benitez, ASA, MAAA
Associate Actuary

**MAINE PUBLIC EMPLOYEES RETIREMENT SYSTEM
RETIREE GROUP LIFE INSURANCE FOR STATE SPONSORED GROUPS
GASB 74 VALUATION REPORT AS OF JUNE 30, 2019**

SUMMARY OF KEY RESULTS

This report is the third report under the Governmental Accounting Standards Board (GASB) Statement No. 74. The reporting date for the Maine Public Employees Retirement System Retiree Group Life Insurance Program presented in this report 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 OPEB Liability as of the valuation date, June 30, 2018, rolled forward to June 30, 2019. There were no 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 as permitted under GASB No. 74.

Beginning of year measurements presented in this report are based on the actuarial valuation as of June 30, 2018 rolled forward to June 30, 2019. Because the beginning and ending values are based on the same actuarial valuation and there were no significant events, no liability gains or losses due to experience are reported in either year shown in this report. During full valuation years, liability gains and losses will be reported reflecting the liability gains and losses between actuarial valuation dates as well as any significant events during the update period.

Table 1 below provides a summary of the key results during this reporting period ending on June 30, 2019. TOL results are shown for the State Sponsored Groups excluding the Teachers, for the Teachers group separately, and then the TOL under all of the State Sponsored Groups combined.

Table 1 Summary of Results		
	Measurement Date 06/30/2018	Measurement Date 06/30/2019
State Total OPEB Liability	\$ 98,707,399	\$ 102,240,873
State Plan Fiduciary Net Position	<u>34,638,335</u>	<u>36,961,097</u>
State Net OPEB Liability	\$ 64,069,064	\$ 65,279,776
Teacher Total OPEB Liability	\$ 97,555,504	\$ 102,191,125
Teacher Plan Fiduciary Net Position	<u>59,648,294</u>	<u>63,655,685</u>
Teacher Net OPEB Liability	\$ 37,907,210	\$ 38,535,440
Combined Total OPEB Liability	\$ 196,262,903	\$ 204,431,998
Combined Plan Fiduciary Net Position	<u>94,286,629</u>	<u>100,616,782</u>
Combined Net OPEB Liability	\$ 101,976,274	\$ 103,815,216

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DETERMINATION OF DISCOUNT RATE

MainePERS's funding policy for retiree group life insurance is to contribute at least the Actuarially Determined Contribution (ADC) annually for Teachers retirees and contribute based on premium rates for all other participants. The State premium rates on behalf of retirees are assumed to be \$0.26 beginning FY 2019, \$0.29 beginning fiscal year (FY) 2020, \$0.33 beginning FY 2022, and \$0.36 beginning FY 2024. The ADC is equal to the sum of the employer normal cost and the amortization of the unfunded liability. The amortization of the unfunded liability is calculated as a level-percent closed period with 18 years remaining as of FY 2019 for the State-Sponsored Groups. However, the contribution for the fiscal year ending June 30, 2019 was based on the valuation as of June 30, 2016, prior to MainePERS's implementation of GASB No. 74, and is therefore not equal to ADC.

The discount rate at June 30, 2019 is 6.750%, which is the assumed long-term expected rate of return on plan investments. The fiduciary net position was projected to be available to make all projected future benefit payments for current plan members. As such, the long-term expected rate of return on the Program's investments was applied to all periods of projected benefit payments in determining the Total OPEB Liability. The projection of cash flows used to determine the discount rate assumed that the employer contributions will be made according to the funding policy described in the above paragraph.

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PROJECTION OF TOTAL OPEB LIABILITY

The TOL at the beginning of the current measurement year is measured as of a valuation date of June 30, 2018. The TOL at the end of the measurement year, June 30, 2019, is measured as of a valuation date of June 30, 2018 and projected to June 30, 2019. This is a roll-forward valuation, and full valuations are completed at least every two years. There were no significant events during the current projection period of which we are aware of. The table below shows the projection of the TOL at discount rates equal to the rate used for disclosure purposes and plus and minus one percent from the rate used for disclosure purposes. The TOL has been determined using the entry age actuarial cost method as described in paragraph 54 of GASB Statement 74.

Table 2 projects the TOL from the valuation date to the end of the fiscal year for the assumed discount rate as well as for plus and minus one percent of this discount rate.

Table 2			
Projection of Total OPEB Liability			
Discount Rate	5.75%	6.75%	7.75%
Total OPEB Liability, 06/30/2018			
Actives	\$ 72,462,270	\$ 59,448,513	\$ 49,336,719
Deferred Vested	0	0	0
Retirees	<u>152,667,311</u>	<u>136,814,390</u>	<u>123,472,257</u>
Total	\$ 225,129,581	\$ 196,262,903	\$ 172,808,976
Service Cost, Beginning of Year			
Service Cost at Valuation Date	\$ 2,850,568	\$ 2,131,845	\$ 1,615,200
Service Cost Rate	0.21%	0.16%	0.12%
Expected Payroll During Year	1,343,668,500	1,343,668,500	1,343,668,500
Service Cost	\$ 2,850,568	\$ 2,131,845	\$ 1,615,200
Benefit Payments	\$ (7,118,082)	\$ (7,118,082)	\$ (7,118,082)
Interest	\$ 12,907,073	\$ 13,155,332	\$ 13,247,193
Change in Benefits	0	0	0
Change in Assumptions	0	0	0
Other Significant Events	<u>0</u>	<u>0</u>	<u>0</u>
Total OPEB Liability, 06/30/2019	\$ 233,769,140	\$ 204,431,998	\$ 180,553,287

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NOTE DISCLOSURES

The tables that follow show the changes in TOL, the plan fiduciary net position (i.e., fair value of Plan assets), and the Net OPEB Liability during the measurement year. There were no significant changes in benefits during the year. As previously noted, we did not modify assumptions or adjust the participant data for this report. Therefore, no differences between expected and actual experience, i.e., experience adjustments, are included in this report.

We provide separate tables for State (3A), Teachers (3B), and the combined results of the State Sponsored Groups (3C) results.

**Table 3 A
 Change in Net OPEB Liability - State**

	Increase (Decrease)		
	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (a) - (b)
Balances at 06/30/2018	\$ 98,707,399	\$ 34,638,335	\$ 64,069,064
Changes for the year:			
Service cost	918,646		918,646
Interest	6,592,697		6,592,697
Changes of benefits	0		0
Changes of assumptions	0		0
Differences between expected and actual experience	0		0
Contributions - employer		4,209,464	(4,209,464)
Contributions - member		0	0
Net investment income		2,357,788	(2,357,788)
Benefit payments	(3,977,869)	(3,977,869)	0
Administrative expense	0	(266,621)	266,621
Net changes	3,533,474	2,322,762	1,210,712
Balances at 06/30/2019	\$ 102,240,873	\$ 36,961,097	\$ 65,279,776

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**Table 3 B
 Change in Net OPEB Liability - Teacher**

	Increase (Decrease)		
	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (a) - (b)
Balances at 06/30/2018	\$ 97,555,504	\$ 59,648,294	\$ 37,907,210
Changes for the year:			
Service cost	1,213,199		1,213,199
Interest	6,562,635		6,562,635
Changes of benefits	0		0
Changes of assumptions	0		0
Differences between expected and actual experience	0		0
Contributions - employer		3,546,978	(3,546,978)
Contributions - member		0	0
Net investment income		4,060,325	(4,060,325)
Benefit payments	(3,140,213)	(3,140,213)	0
Administrative expense	0	(459,699)	459,699
Net changes	4,635,621	4,007,391	628,230
Balances at 06/30/2019	\$ 102,191,125	\$ 63,655,685	\$ 38,535,440

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**Table 3 C
 Change in Net OPEB Liability - Combined**

	Increase (Decrease)		
	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (a) - (b)
Balances at 06/30/2018	\$ 196,262,903	\$ 94,286,629	\$ 101,976,274
Changes for the year:			
Service cost	2,131,845		2,131,845
Interest	13,155,332		13,155,332
Changes of benefits	0		0
Changes of assumptions	0		0
Differences between expected and actual experience	0		0
Contributions - employer		7,756,442	(7,756,442)
Contributions - member		0	0
Net investment income		6,418,113	(6,418,113)
Benefit payments	(7,118,082)	(7,118,082)	0
Administrative expense	0	(726,320)	726,320
Net changes	8,169,095	6,330,153	1,838,942
Balances at 06/30/2019	\$ 204,431,998	\$ 100,616,782	\$ 103,815,216

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Changes in the discount rate would affect the measurement of the TOL. Lower discount rates produce a higher TOL and higher discount rates produce a lower TOL. Because the discount rate does not affect the measurement of assets, the percentage change in the NOL can be very significant for a relatively small change in the discount rate. Table 4 shows the sensitivity of the TOL and NOL to the discount rate.

Table 4			
Sensitivity of Total Net OPEB Liability to Changes in Discount Rate			
	1% Decrease 5.750%	Discount Rate 6.750%	1% Increase 7.750%
Teacher			
Total OPEB Liability	\$ 117,522,643	\$ 102,191,125	\$ 89,780,316
Plan Fiduciary Net Position	<u>63,655,685</u>	<u>63,655,685</u>	<u>63,655,685</u>
Collective Net OPEB Liability	<u>\$ 53,866,958</u>	<u>\$ 38,535,440</u>	<u>\$ 26,124,631</u>
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	54.2%	62.3%	70.9%
State			
Total OPEB Liability	\$ 116,246,497	\$ 102,240,873	\$ 90,772,971
Plan Fiduciary Net Position	<u>36,961,097</u>	<u>36,961,097</u>	<u>36,961,097</u>
Collective Net OPEB Liability	<u>\$ 79,285,400</u>	<u>\$ 65,279,776</u>	<u>\$ 53,811,874</u>
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	31.8%	36.2%	40.7%
Combined			
Total OPEB Liability	\$ 233,769,140	\$ 204,431,998	\$ 180,553,287
Plan Fiduciary Net Position	<u>100,616,782</u>	<u>100,616,782</u>	<u>100,616,782</u>
Collective Net OPEB Liability	<u>\$ 133,152,358</u>	<u>\$ 103,815,216</u>	<u>\$ 79,936,505</u>
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	43.0%	49.2%	55.7%

For the combined State-Sponsored Groups a one percent decrease in the discount rate increases the TOL by approximately 14.4% and increases the NOL by approximately 28.3%. A one percent increase in the discount rate decreases the TOL by approximately 11.7% and decreases the NOL by approximately 23.0%.

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REQUIRED SUPPLEMENTARY INFORMATION

Table 5 Schedule of Changes in Net OPEB Liability and Related Ratios	
	FY 2019
<u>Total OPEB Liability</u>	
Service cost (BOY)	\$ 2,131,845
Interest (includes interest on service cost)	13,155,332
Changes of benefit terms	0
Differences between expected and actual experience	0
Changes of assumptions	0
Benefit payments, including refunds of member contributions	(7,118,082)
Net change in total OPEB liability	8,169,095
Total OPEB liability - beginning	196,262,903
Total OPEB liability - ending	\$ 204,431,998
<u>Plan fiduciary net position</u>	
Contributions - employer	\$ 7,756,442
Contributions - member	0
Net investment income	6,418,113
Benefit payments, including refunds of member contributions	(7,118,082)
Administrative expense	(726,320)
Net change in plan fiduciary net position	\$ 6,330,153
Plan fiduciary net position - beginning	94,286,629
Plan fiduciary net position - ending	\$ 100,616,782
Net OPEB liability - ending	\$ 103,815,216
Plan fiduciary net position as a percentage of the total OPEB liability	49.22%
Covered employee payroll (projected for FY 2019)	\$ 1,380,619,384
Net OPEB liability as a percentage of covered employee payroll	7.52%

Notes to Schedule of Changes in Net OPEB Liability and Related Ratios

None.

A ten-year schedule of changes in NOL and related ratios is to be included within the CAFR for MainePERS. However, based on GASB guidance, this ten-year history can be built one year at a time following implementation. We have shown only the current year of this *Schedule of Changes in Net OPEB Liability and Related Ratios* above and believe that you can accumulate these individual years in the MainePERS CAFR to build this schedule to show the full ten-year schedule over time. Notes to this schedule should be included for any factors significantly impacting the trends reported within the period shown in this schedule at that time. As of June 30, 2019, we have included such a note in the *Notes to Schedule of Changes in Net OPEB Liability and Related Ratios* above. However, it is our expectation that the System staff will make the final determination regarding any notes needed for this schedule and are available to provide any information they may need for this purpose.

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REQUIRED SUPPLEMENTARY INFORMATION

If an Actuarially Determined Contribution is calculated, the following schedule is required. An Actuarially Determined Contribution is a contribution amount determined in accordance with Actuarial Standards of Practice.

Results are shown for the State Sponsored Groups excluding the Teachers, then for the Teachers group separately, and then combined for the State Sponsored Groups.

Table 6 Schedule of Employer Contributions During Fiscal Year 2019			
	State	Teacher	Combined
Actuarially Determined Contribution	\$ 5,493,284	\$ 3,547,000	\$ 9,040,284
Contribution	<u>4,209,464</u>	<u>3,546,978</u>	<u>7,756,442</u>
Contribution Deficiency/(Excess)	\$ 1,283,820	\$ 22	\$ 1,283,842
Covered Payroll*	\$ 613,792,640	\$ 766,826,744	\$ 1,380,619,384
Contributions as a Percentage of Covered Payroll	0.69%	0.46%	0.56%

* Projected payroll for roll-forward year

Notes to Schedule

Valuation Date: **State:** June 30, 2016
 Teacher: June 30, 2014

Timing: **State:** The ADC is calculated based on the prior biennial valuation, in this case, ADCs for 2018 and 2019 are based on the June 30, 2016 valuation.
 Teacher: The ADC is calculated in advance of the completion of the prior biennial valuation and thus rolled-forward from prior results. In this case, ADCs for 2018 and 2019 are based on the June 30, 2014 valuation rolled forward and adjusted for changes in assumptions.

Key Methods and Assumptions Used to Determine Contribution Rates for FY 2019

Actuarial Cost Method: Entry Age Normal
Asset Valuation Method: Market Value
Amortization Method: Level percent closed with 19 years remaining for FY 2019
Discount Rate: 6.875%
Salary Inflation: 2.750%
Administrative Expense Loads: State Employees, Judges, and Legislators: 9.52%
 Teachers: 13.07%

A complete description of the methods and assumptions used to determine contribution rates for the year ending June 30, 2019, can be found in the June 30, 2016 valuation report for employees of State-Sponsored Groups and in the June 30, 2015 valuation report for Teachers.

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REQUIRED SUPPLEMENTARY INFORMATION

Table 7 that follows is provided in this report at the request of MainePERS staff, showing the development of the average remaining service life for the Program. GASB 75 requires some items be recognized by employers into OPEB expense over a period “equal to the average of the expected remaining service lives of all employees that are provided with OPEB through the OPEB plan (active employees and inactive employees) determined as of the beginning of the measurement period.” For the current measurement year ending on June 30, 2019, these values are thus developed based on the prior full biennial valuation data as of June 30, 2018. The development of this value is shown below, including reflection of the decision by MainePERS to round the resulting value to the nearest whole year.

Table 7 Average Expected Remaining Service Life For Measurement Year Ending June 30, 2019			
<u>State Program</u>			
	Total Expected		Average
Status	Future Service	Count	Remaining
			Service Life
Actives	129,677	11,362	11
Inactives	<u>0</u>	<u>8,768</u>	<u>0</u>
Total Membership	129,677	20,130	6
<u>Teacher Program</u>			
	Total Expected		Average
Status	Future Service	Count	Remaining
			Service Life
Actives	204,434	14,592	14
Inactives	<u>0</u>	<u>7,437</u>	<u>0</u>
Total Membership	204,434	22,029	9
<u>Combined Programs</u>			
	Total Expected		Average
Status	Future Service	Count	Remaining
			Service Life
Actives	334,111	25,954	13
Inactives	<u>0</u>	<u>16,205</u>	<u>0</u>
Total Membership	334,111	42,159	8

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APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS, AND METHODS

Participant Data as of June 30, 2018

TABLE A-1 ACTIVE MEMBER DATA				
Group	Count	Average Age	Average Service	Average Salary
State	11,268	48.5	12.3	\$ 52,378
Teachers	14,592	46.6	12.7	51,145
Judges	57	61.1	17.6	125,754
Legislators	<u>37</u>	<u>60.6</u>	<u>4.2</u>	<u>13,054</u>
TOTAL	25,954	47.5	12.5	51,790

Note that Legislators are subject to 8-year term limits for each house. Therefore, it is assumed that no active Legislators will reach the 10 years of service required to be eligible for retiree life benefits. However, they are included in the counts for the above exhibit because they are included in the expected remaining service life.

TABLE A-2 NON-ACTIVE MEMBER DATA			
Group	Count	Average Age	Average Benefit¹
State	8,714	71.8	\$ 17,413
Teachers	7,437	72.8	19,984
Judges	42	75.1	42,488
Legislators	<u>12</u>	<u>77.7</u>	<u>5,491</u>
TOTAL	16,205	72.2	18,649

¹Ultimate benefit (40% of initial base benefit)

Note that all assumptions are based on the MainePERS Pension assumptions, which were updated after the experience study performed two years ago.

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APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS, AND METHODS

Economic Assumptions

Valuation Date: June 30, 2018

Investment Return: 6.750% per year

Cost-of-Living Increases in Life Benefits:

N/A. Unlike pension benefits, Life Benefits do not increase with the Cost of Living.

Premium Expense Assumption:

To reflect administrative expenses associated with the distribution of benefits, the following loads have been added to the liabilities, normal cost, and benefit payments.

State Employees, Judges, and Legislators: 9.52%

Teachers: 13.07%

Rates of Salary Increase (Experience-based sample rates by service including both merit scale increase and yearly increase):

Service	State	Teachers	Judges	Legislators
0	8.75%	14.50%	2.75%	2.75%
5	5.00%	5.75%	2.75%	2.75%
10	3.75%	4.75%	2.75%	2.75%
15	3.20%	4.00%	2.75%	2.75%
20	2.95%	2.75%	2.75%	2.75%
25+	2.75%	2.75%	2.75%	2.75%

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APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS, AND METHODS

Demographic Assumptions

Rates of Termination (Experience-based sample rates by service):

Service	State	Teachers
0	33.50%	33.50%
5	10.50	10.50
10	5.95	5.95
15	4.25	4.25
20	4.00	4.00
25	4.00	4.00

(Experience-based sample rates by age):

Age	Judges
25	7.00%
30	6.00%
35	5.00%
40	4.00%
45	3.00%
50	2.00%
55	1.00%

(Experience-based sample rates by service):

Service	Legislators
0-1	0.00%
2-3	30.00
4-5	25.00
6-7	10.00
8-9	50.00
10-15	25.00
16+	50.00

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APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS, AND METHODS

Rates of Mortality

State Healthy Employees:

Rates for Active State Employees are based on 104% and 120% of the RP-2014 Total Dataset Employee Mortality Table, respectively, for males and females, using the RP-2014 Total Dataset Healthy Annuitant Mortality Table rates after the end of the Total Employee Mortality Table, both projected from the 2006 base rates using the RPEC_2015 model, with an ultimate rate of 0.85% for ages 20-85, grading down to an ultimate rate of 0.00% for ages 111-120, and convergence to the ultimate rate in the year 2020.

Rates for Retiree State Employees are based on 104% and 120% of the RP-2014 Total Dataset Healthy Annuitant Mortality Table, respectively, for males and females, using the RP-2014 Total Dataset Employee Mortality Table for ages prior to start of the Healthy Annuitant Mortality Table, both projected from the 2006 base rates using the RPEC_2015 model, with an ultimate rate of 0.85% for ages 20-85, grading down to an ultimate rate of 0.00% for ages 111-120, and convergence to the ultimate rate in the year 2020.

Age	State	
	Male	Female
20	4	2
30	4	3
40	6	5
50	18	13
60	80	64
65	114	98
70	177	158
75	289	259
80	486	437
85	845	773
90	1,479	1,374
95	2,326	2,253

Sample Rates – Number of deaths per 10,000 members, showing values in 2015. Ages 20-50 show sample rates for actives, ages 60+ show sample rates for retirees.

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Teacher Healthy Employees:

Rates for Active Teachers are based on 99% of the RP-2014 Total Dataset Healthy Annuitant Mortality Table for both males and females, using the RP-2014 Total Dataset Healthy Annuitant Mortality Table rates after the end of the Total Employee Mortality Table, respectively, both projected using the RPEC_2015 model, with an ultimate rate of 0.85% for ages 20-85, grading down to an ultimate rate of 0.00% for ages 111-120, and convergence to the ultimate rate in the year 2020.

Rates for Retiree Teachers are based on 99% of the RP-2014 Total Dataset Healthy Annuitant Mortality Table for both males and females, using the RP-2014 Total Dataset Employee Mortality Table for ages prior to the start of the Healthy Annuitant Mortality Table, respectively, both projected using the RPEC_2015 model, with an ultimate rate of 0.85% for ages 20-85, grading down to an ultimate rate of 0.00% for ages 111-120, and convergence to the ultimate rate in the year 2020.

Age	Teachers	
	Male	Female
20	4	2
30	4	2
40	6	4
50	17	27
60	76	52
65	108	81
70	169	130
75	275	214
80	462	361
85	804	638
90	1,408	1,134
95	2,215	1,859

Sample Rates – Number of deaths per 10,000 members, showing values in 2015. Ages 20-50 show sample rates for actives, ages 60+ show sample rates for retirees.

Judges and Legislators Mortality:

Judges and legislators follow the same mortality assumption as the state employees listed previously.

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Rates of Disabled Mortality (Experience-based sample deaths per 10,000 members by age):

Rates are based on 108% and 105% of the RP-2014 Total Dataset Disabled Annuitant Mortality Table, respectively, for males and females, projected from the 2006 base rates using the RPEC_2015 model, with an ultimate rate of 0.85% for ages 20-85, grading down to an ultimate rate of 0.00% for ages 111-120, and convergence to the ultimate rate in the year 2020.

Age	Disabled Mortality	
	Male	Female
25	85	25
30	81	31
35	96	43
40	115	59
45	180	93
50	220	123
55	251	153
60	284	182
65	340	122
70	442	303

Rates of Retirement (Experience-based sample retirements per 1,000 members by age):

Age	State Employees and Teachers		
	Tier 1	Tier 2	Tier 3
45	13	NA	NA
50	29	NA	NA
55	40	40	40
59	150	40	40
60	250	75	40
61	200	175	40
62	200	250	40
63	200	150	75
64	250	200	225
65	350	250	300
70	200	200	300
75	1,000	1,000	1,000

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Judges:

Age	Tier 1	Tier 2	Tier 3
60-61	1,000	NA	NA
62-64	1,000	500	NA
65-69	1,000	500	500
70-74	1,000	500	500
75+	1,000	1,000	1,000

Legislators:

Age	Assumption
60-69	250
75+	1,000

Participants who are not members of MainePERS: Age 62

Rates of Disability (experience-based sample disablements per 10,000 members by service):

Age	State	Teachers	Judges & Legislators
25	5.0	2.1	0
30	6.1	2.3	0
35	9.3	2.3	0
40	14.8	3.1	0
45	22.8	7.0	0
50	34.0	10.9	0
55	39.9	14.9	0
60	43.4	18.8	0

Participation Percent for Future Retirees:

100% of those currently enrolled (unique to this valuation).

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Other Assumptions (Unique to this Valuation)

Conversion Charges:

Applies to the cost of active group life insurance, not retiree group life insurance.

Form of Benefit Payment:

Lump Sum.

Actuarial Cost Method

The individual entry age normal method is used to determine liabilities. Under this funding method, a normal cost rate is calculated for each member. This rate is determined by taking the value, as of age at entry into the Plan, of the member's projected future benefits, and dividing it by the value, also as of the member's entry age of his expected future salary. The normal cost for each member is the product of their annual salary at the valuation date and their normal cost rate. The normal cost amount for the group is then the sum of the normal costs for all members.

The Actuarial Liability is defined as the present value of future benefits, as of the valuation date, for all current members less the present value of future normal costs for all current members. For funding purposes, the Unfunded Actuarial Liability is then equal to the Actuarial Liability, less the actuarial value of the System's assets.

The discount rate used reflects the long-term funding policy to fully fund the benefits on an actuarial basis by FY 2038 for State and Teachers.

Asset Valuation Methods

Figures were reported by MainePERS without audit or change.

Rationale for Assumptions

The MainePERS Pension assumptions were adopted by the Board of Trustees at their July 14, 2016 meeting. The demographic assumptions adopted are based on an experience study covering the period from June 30, 2012 through June 30, 2015 and the economic assumptions are based on this experience study along with the advice of the MainePERS investment consultants.

Changes Since Last Valuation

There were no assumption changes for the current valuation.

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APPENDIX B – SUMMARY OF KEY PLAN PROVISIONS

Membership

Service Retirement: A retiree must have participated in the group life insurance program for at least ten years and possess coverage just prior to retirement.

Disability Retirement: An employee must have participated in the group life insurance program immediately prior to disablement.

Basic Insurance

Average final compensation calculated for retirement purposes.

Amount of Insurance for a Retiree

Service Retirement: The Basic Insurance will be reduced by 15% per year until the amount equal to the greater of (a) 40% of the initial Basic Insurance, or (b) \$2,500.

Disability Retirement: The amount of basic life insurance in force prior to retirement will be continued until normal retirement age. At normal retirement age, the amount of insurance will be reduced as for service retirement.

Retiree Contribution

State Employees:	None
Teachers:	None
Judges:	None
Legislators:	None

Normal Retirement Age

The specified age, the years of service requirement or any age and years of service combination at which a participant may become eligible for unreduced service retirement benefits.

Discontinued Coverages at Retirement

- Supplemental Life
- Accidental Death and Dismemberment
- Dependent Life

(Discontinued coverage may be ported to another group term product or converted to an individual policy. MainePERS is charged a fee for those active employees who convert to an individual policy upon termination from employment. Conversion charges are considered a cost of active, not retiree group life insurance. Therefore, it is not included in these liabilities.)

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APPENDIX C – 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. Entry Age Actuarial Cost Method

The actuarial cost method required for GASB 74 and 75 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 OPEB Liability.

4. Measurement Date

The date as of which the Total OPEB Liability and Plan Fiduciary Net Position are measured. The Total OPEB 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.

5. Net OPEB Liability

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

6. Plan Fiduciary Net Position

The fair or market value of assets.

7. Reporting Date

The last day of the Plan or employer’s fiscal year.

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8. 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 74 and 75. The Service Cost is the normal cost calculated under the entry age actuarial cost method.

9. Total OPEB 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 74 and 75. The Total OPEB Liability is the Actuarial Liability calculated under the entry age actuarial cost method.