



**Maine Public Employees  
Retirement System  
Retiree Group Life Insurance  
Program**

**State Sponsored Plans  
Actuarial Valuation and  
GASB Statement No. 74 Report  
as of June 30, 2018**

**Presented by Cheiron  
October 2018**

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***Via Electronic Mail and UPS Delivery***

October 29, 2018

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 Plans***

Dear Members of the Board:

The purpose of this report is to provide accounting and financial reporting information under Governmental Accounting Standards Board (GASB) No. 74 and present the estimated Postretirement Group Life Insurance obligations as of June 30, 2018 for the Maine Public Employees Retirement System (MainePERS or System) based on a full valuation 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 Plans. For Tables 1, 3, and 6, 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) as of the valuation 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 in this biennial full valuation is for both financial disclosure and to provide information that is used to adjust the Teacher funding contributions. The State contributions for the remaining members of the State Sponsored Plans 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 increased from \$0.31 to \$0.35 bi-weekly

per \$1,000 of coverage for fiscal year (FY) 2018. 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.

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.

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



Michael J. Noble, FSA, FCA, MAAA, EA  
Principal Consulting Actuary

**MAINE PUBLIC EMPLOYEES RETIREMENT SYSTEM  
RETIREE GROUP LIFE INSURANCE FOR STATE SPONSORED PLANS  
GASB 74 VALUATION REPORT AS OF JUNE 30, 2018**

**SUMMARY OF KEY RESULTS**

This report is the second report under 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, 2018. Measurements as of the reporting date are based on the fair value of assets as of June 30, 2018 and the Total OPEB Liability as of the valuation date, June 30, 2018. There was an update of census data as well as a change in discount rate since the prior valuation.

Beginning of year measurements presented in this report are based on the actuarial valuation as of June 30, 2017. Since this is a full valuation, liability gains or losses due to experience are reported due to the updated census information. There was also a loss due to the discount rate changing from 6.875% to 6.75%.

In determining the OPEB expense under GASB No. 75, the impact of experience gains or losses and assumption changes on the Total OPEB Liability (TOL) are recognized over the average expected remaining service life of all active and inactive members of the Plan, determined as of the beginning of the measurement period. As of June 30, 2018, this average for teachers and state combined was 7.93 years which would be rounded to 8.00 years for recognition purposes, which is split into 6.44 (rounded to 6.00) for state and 9.28 (rounded to 9.00) for teachers.

Table 1 below provides a summary of the key results during this reporting period ending on June 30, 2018. TOL results are shown for the State Sponsored Plans excluding the Teachers, for the Teachers group separately, and then the TOL under all of the State Sponsored Plans combined.

<b>Table 1 Summary of Results</b>		
	<b>Measurement Date 06/30/2017</b>	<b>Measurement Date 06/30/2018</b>
State Total OPEB Liability	\$ 93,243,492	\$ 98,707,399
State Plan Fiduciary Net Position	<u>32,495,093</u>	<u>34,638,335</u>
State Net OPEB Liability	\$ 60,748,399	\$ 64,069,064
Teacher Total OPEB Liability	\$ 90,479,201	\$ 97,555,504
Teacher Plan Fiduciary Net Position	<u>54,387,771</u>	<u>59,648,294</u>
Teacher OPEB Liability	\$ 36,091,430	\$ 37,907,210
Combined Total OPEB Liability	\$ 183,722,693	\$ 196,262,903
Combined Plan Fiduciary Net Position	<u>86,882,864</u>	<u>94,286,629</u>
Combined Net OPEB Liability	\$ 96,839,829	\$ 101,976,274

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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 2018, \$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 19 years remaining as of FY 2018 for the State Sponsored Plans. However, the contribution for the fiscal year ending June 30, 2018 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, 2018 is 6.750%, which is the assumed long-term expected rate of return on plan investments. This is a change from the 6.875% assumed rate of return used in the prior valuation. 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 is measured as of a valuation date of June 30, 2018. This is a full valuation, which is completed at least every two years, and roll forward valuations are performed in the off years. For the valuation effective June 30, 2018, the discount rate was lowered from 6.875% to 6.75%. The table below shows the calculated 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 shows the Total OPEB Liability as of the valuation date for the assumed discount rate as well as for plus and minus one percent of this discount rate.

<b>Table 2</b>			
<b>Total OPEB Liability Sensitivity at 6/30/2018 Measurement Date</b>			
<b>Discount Rate</b>	<b>5.75%</b>	<b>6.75%</b>	<b>7.75%</b>
<b>Total OPEB Liability, June 30, 2018</b>			
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>
<b>Total</b>	<b>\$ 225,129,581</b>	<b>\$ 196,262,903</b>	<b>\$ 172,808,976</b>

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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. Since this is a full valuation, there is a difference between expected and actual experience due to the updated census information. The discount rate was lowered from 6.875% to 6.75%, and the impact on the liability due to this change is noted in the changes of assumptions.

We provide separate tables for State (3A), Teachers (3B), and the combined results of the State Sponsored Plans (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)
<b>Balances at 06/30/2017</b>	\$ 93,243,492	\$ 32,495,093	\$ 60,748,399
<b>Changes for the year:</b>			
Service cost	911,580		911,580
Interest	6,316,365		6,316,365
Changes of benefits	0		0
Changes of assumptions	1,542,499		1,542,499
Differences between expected and actual experience	1,331,913		1,331,913
Contributions - employer		4,179,011	(4,179,011)
Contributions - member		0	0
Net investment income		2,890,563	(2,890,563)
Benefit payments	(4,638,450)	(4,638,450)	0
Administrative expense	0	(287,882)	287,882
<b>Net changes</b>	<b>5,463,907</b>	<b>2,143,242</b>	<b>3,320,665</b>
<b>Balances at 06/30/2018</b>	<b>\$ 98,707,399</b>	<b>\$ 34,638,335</b>	<b>\$ 64,069,064</b>



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**NOTE DISCLOSURES**

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

	Increase (Decrease)		
	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability
	(a)	(b)	(a) - (b)
<b>Balances at 06/30/2017</b>	\$ 90,479,201	\$ 54,387,771	\$ 36,091,430
<b>Changes for the year:</b>			
Service cost	1,210,499		1,210,499
Interest	6,214,717		6,214,717
Changes of benefits	0		0
Changes of assumptions	1,657,140		1,657,140
Differences between expected and actual experience	625,307		625,307
Contributions - employer		3,459,442	(3,459,442)
Contributions - member		0	0
Net investment income		4,914,276	(4,914,276)
Benefit payments	(2,631,360)	(2,631,360)	0
Administrative expense	0	(481,835)	481,835
<b>Net changes</b>	<b>7,076,303</b>	<b>5,260,523</b>	<b>1,815,780</b>
<b>Balances at 06/30/2018</b>	<b>\$ 97,555,504</b>	<b>\$ 59,648,294</b>	<b>\$ 37,907,210</b>

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**NOTE DISCLOSURES**

**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)
<b>Balances at 06/30/2017</b>	\$ 183,722,693	\$ 86,882,864	\$ 96,839,829
<b>Changes for the year:</b>			
Service cost	2,122,079		2,122,079
Interest	12,531,082		12,531,082
Changes of benefits	0		0
Changes of assumptions	3,199,639		3,199,639
Differences between expected and actual experience	1,957,220		1,957,220
Contributions - employer		7,638,453	(7,638,453)
Contributions - member		0	0
Net investment income		7,804,839	(7,804,839)
Benefit payments	(7,269,810)	(7,269,810)	0
Administrative expense	0	(769,717)	769,717
<b>Net changes</b>	<b>12,540,210</b>	<b>7,403,765</b>	<b>5,136,445</b>
<b>Balances at 06/30/2018</b>	<b>\$ 196,262,903</b>	<b>\$ 94,286,629</b>	<b>\$ 101,976,274</b>

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**NOTE DISCLOSURES**

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.

<b>Table 4</b>			
<b>Sensitivity of Total Net OPEB Liability to Changes in Discount Rate</b>			
	<b>1% Decrease 5.750%</b>	<b>Discount Rate 6.750%</b>	<b>1% Increase 7.750%</b>
<b>Teacher</b>			
Total OPEB Liability	\$ 112,552,725	\$ 97,555,504	\$ 85,435,426
Plan Fiduciary Net Position	<u>59,648,294</u>	<u>59,648,294</u>	<u>59,648,294</u>
Collective Net OPEB Liability	<u>\$ 52,904,431</u>	<u>\$ 37,907,210</u>	<u>\$ 25,787,132</u>
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	53.0%	61.1%	69.8%
<b>State</b>			
Total OPEB Liability	\$ 112,576,856	\$ 98,707,399	\$ 87,373,550
Plan Fiduciary Net Position	<u>34,638,335</u>	<u>34,638,335</u>	<u>34,638,335</u>
Collective Net OPEB Liability	<u>\$ 77,938,521</u>	<u>\$ 64,069,064</u>	<u>\$ 52,735,215</u>
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	30.8%	35.1%	39.6%
<b>Combined</b>			
Total OPEB Liability	\$ 225,129,581	\$ 196,262,903	\$ 172,808,976
Plan Fiduciary Net Position	<u>94,286,629</u>	<u>94,286,629</u>	<u>94,286,629</u>
Collective Net OPEB Liability	<u>\$ 130,842,952</u>	<u>\$ 101,976,274</u>	<u>\$ 78,522,347</u>
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	41.9%	48.0%	54.6%

For the combined State Sponsored Plans a one percent decrease in the discount rate increases the TOL by approximately 14.7% and increases the NOL by approximately 28.3%. A one percent increase in the discount rate decreases the TOL by approximately 12.0% and decreases the NOL by approximately 23.0%.

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**REQUIRED SUPPLEMENTARY INFORMATION**

The schedule of Required Supplementary Information started with one year of information as of the implementation of GASB No. 74 and now includes the second year of information, and eventually will build up to 10 years of information. The schedule below shows the changes in NOL and related ratios required by GASB.

<b>Table 5</b>		
<b>Schedule of Changes in Net OPEB Liability and Related Ratios</b>		
	<b>FY 2018</b>	<b>FYE 2017</b>
<b><u>Total OPEB Liability</u></b>		
Service cost (BOY)	\$ 2,122,079	\$ 2,065,283
Interest (includes interest on service cost)	12,531,082	12,014,739
Changes of benefit terms	0	0
Differences between expected and actual experience	1,957,220	0
Changes of assumptions	3,199,639	0
Benefit payments, including refunds of member contributions	(7,269,810)	(6,003,967)
<b>Net change in total OPEB liability</b>	<b>12,540,210</b>	<b>8,076,055</b>
<b>Total OPEB liability - beginning</b>	<b>183,722,693</b>	<b>175,646,638</b>
<b>Total OPEB liability - ending</b>	<b>\$ 196,262,903</b>	<b>\$ 183,722,693</b>
<b><u>Plan fiduciary net position</u></b>		
Contributions - employer	\$ 7,638,453	\$ 6,921,228
Contributions - member	0	0
Net investment income	7,804,839	9,885,896
Benefit payments, including refunds of member contributions	(7,269,810)	(6,003,967)
Administrative expense	(769,717)	(1,335,744)
<b>Net change in plan fiduciary net position</b>	<b>\$ 7,403,765</b>	<b>\$ 9,467,413</b>
<b>Plan fiduciary net position - beginning</b>	<b>86,882,864</b>	<b>77,415,451</b>
<b>Plan fiduciary net position - ending</b>	<b>\$ 94,286,629</b>	<b>\$ 86,882,864</b>
<b>Net OPEB liability - ending</b>	<b>\$ 101,976,274</b>	<b>\$ 96,839,829</b>
Plan fiduciary net position as a percentage of the total OPEB liability	48.04%	47.29%
Covered employee payroll	\$ 1,343,668,500	\$ 1,277,009,000
Net OPEB liability as a percentage of covered employee payroll	7.59%	7.58%

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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 Plans excluding the Teachers, then for the Teachers group separately, and then combined for the State Sponsored Plans.

Table 6 Schedule of Employer Contributions During Fiscal Year 2018			
	State	Teacher	Combined
Actuarially Determined Contribution	\$ 5,346,262	\$ 3,459,000	\$ 8,805,262
Contribution	4,179,011	3,459,442	7,638,453
Contribution Deficiency/(Excess)	\$ 1,167,251	\$ (442)	\$ 1,166,809
Covered Payroll	\$ 597,365,100	\$ 746,303,400	\$ 1,343,668,500
Contributions as a Percentage of Covered Payroll	0.70%	0.46%	0.57%

**Notes to Schedule**

Valuation Date: June 30, 2016

Timing: Actuarially determined contribution rates are calculated based on the actuarial valuation completed 12 months before the beginning of the fiscal year.

**Key Methods and Assumptions Used to Determine Contribution Rates for FY 2018**

Actuarial Cost Method: Entry Age Normal

Asset Valuation Method: Market Value

Amortization Method: Level percent closed period with 20 years remaining for FY 2018

Discount Rate: 6.875%

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, 2018 can be found in the June 30, 2016 actuarial valuation report.

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**APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS, AND METHODS**

**Participant Data as of June 30, 2018**

<b>TABLE A-1 ACTIVE MEMBER DATA</b>					
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	37	60.6	4.2		13,054
<b>TOTAL</b>	<b>25,954</b>	<b>47.5</b>	<b>12.5</b>		<b>51,790</b>

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.

<b>TABLE A-2 NON-ACTIVE MEMBER DATA</b>				
Group	Count	Average Age	Average Benefit <sup>1</sup>	
State	8,714	71.8	\$	17,413
Teachers	7,437	72.8		19,984
Judges	42	75.1		42,488
Legislators	12	77.7		5,491
<b>TOTAL</b>	<b>16,205</b>	<b>72.2</b>		<b>18,649</b>

<sup>1</sup>Ultimate 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 last year.

In determining the OPEB expense under GASB No. 75, the impact of experience gains or losses and assumption changes on the TOL are recognized over the average expected remaining service life of all active and inactive members of the Plan, determined as of the beginning of the measurement period. As of June 30, 2018, this average for the State Sponsored Plans was 7.93 years which would be rounded to 8.00 years for recognition purposes, which is split into 6.44 (rounded to 6.00) for State and 9.28 (rounded to 9.00) for Teachers.

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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 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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**APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS, AND METHODS**

*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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**APPENDIX A – PARTICIPANT DATA, ASSUMPTIONS, AND METHODS**

**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 advice of the MainePERS investment consultants.

**Changes Since Last Valuation**

The discount rate assumption was lowered from 6.875% to 6.750% based on a decision adopted by the Board of Trustees at their June 14, 2018 meeting.

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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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**APPENDIX C – GLOSSARY OF TERMS**

**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.