



## **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, 2022**

**Presented by Cheiron  
October 2022**

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October 13, 2022

Board of Trustees  
Maine Public Employees Retirement System  
PO Box 349  
Augusta, Maine 04332-0349

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, 2022 for the Maine Public Employees Retirement System (MainePERS or System) based on a full valuation of the obligations as of June 30, 2022.

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 I-1, IV-1 to IV-4, V-2, and V-3, 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 2020. 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 have increased to \$0.42 bi-weekly per \$1,000 of coverage for Fiscal Year (FY) 2022. This includes \$0.09 for active coverage and \$0.33 for retiree coverage. Premiums for retiree coverage will increase to \$0.36 for FY 2024. Any further increases would be determined by the next premium study in 2024.

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 does not contain any explicit adjustments for the potential impact of COVID-19. We note that benefit payments over the past fiscal year were below the long-term assumptions for State and close to the assumptions for Teachers, so we did not observe a short-term increase in mortality experience over the past year. The long-term net impact is not determinable at this time and will be reviewed as part of the next premium study.

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, EA, MAAA,  
Principal Consulting Actuary



Ryan Benitez, ASA, MAAA  
Consulting Actuary

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**SECTION I – SUMMARY OF KEY RESULTS**

The reporting date for the Maine Public Employees Retirement System Retiree Group Life Insurance Program presented in this report is June 30, 2022. Measurements as of the reporting date are based on the fair value of assets as of June 30, 2022, and the Total OPEB Liability (TOL) as of the valuation date, June 30, 2022. There was an update of census data since the prior valuation.

Beginning of year measurements presented in this report are based on the actuarial valuation as of June 30, 2021. Since this is a full valuation, liability gains or losses due to experience are reported due to the updated census information.

Table I-1 below provides a summary of the key results during this reporting period ending on June 30, 2022. 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.

<b>Table I-1 Summary of Results</b>		
	<b>Measurement Date 06/30/2021</b>	<b>Measurement Date 06/30/2022</b>
State Total OPEB Liability	\$ 115,123,392	\$ 119,403,083
State Plan Fiduciary Net Position	<u>51,849,291</u>	<u>46,031,286</u>
State Net OPEB Liability	\$ 63,274,101	\$ 73,371,797
Teacher Total OPEB Liability	\$ 108,392,510	\$ 115,657,004
Teacher Plan Fiduciary Net Position	<u>88,750,303</u>	<u>77,123,482</u>
Teacher Net OPEB Liability	\$ 19,642,207	\$ 38,533,522
Combined Total OPEB Liability	\$ 223,515,902	\$ 235,060,087
Combined Plan Fiduciary Net Position	<u>140,599,594</u>	<u>123,154,768</u>
Combined Net OPEB Liability	\$ 82,916,308	\$ 111,905,319

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**SECTION II – 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 \$0.33 beginning fiscal year (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 16 years remaining as of FY 2022 for the State-Sponsored Groups. However, because the State sets contributions at least 2 years in advance, the contribution for the fiscal year ending June 30, 2022, was based on the valuation as of June 30, 2018, rolled forward to June 30, 2020.

The discount rate at June 30, 2022 is 6.50%, 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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**SECTION III – PROJECTION OF TOTAL OPEB LIABILITY**

The TOL is measured as of a valuation date of June 30, 2022. This is a full valuation, which is completed at least every two years, and roll forward valuations are performed in the off years. The only significant event in calculating the TOL as of the valuation date was an update in census data. 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 III-1 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 III-1 Projection of Total OPEB Liability</b>			
<b>Discount Rate</b>	<b>5.50%</b>	<b>6.50%</b>	<b>7.50%</b>
<b>Total OPEB Liability, 06/30/2022</b>			
Actives	\$ 84,625,006	\$ 68,090,687	\$ 55,411,016
Deferred Vested	0	0	0
Retirees	<u>186,409,917</u>	<u>166,969,400</u>	<u>150,539,283</u>
<b>Total</b>	<b>\$ 271,034,923</b>	<b>\$ 235,060,087</b>	<b>\$ 205,950,299</b>

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**SECTION IV – 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.

We provide separate tables for State (IV-1), Teachers (IV-2), and the combined results of the State Sponsored Groups (IV-3) results.

<b>Table IV-1 Change in Net OPEB Liability - State</b>			
	<b>Increase (Decrease)</b>		
	<b>Total OPEB Liability (a)</b>	<b>Plan Fiduciary Net Position (b)</b>	<b>Net OPEB Liability (a) - (b)</b>
<b>Balances at 06/30/2021</b>	\$ 115,123,392	\$ 51,849,291	\$ 63,274,101
<b>Changes for the year:</b>			
Service cost	1,348,897		1,348,897
Interest	7,722,676		7,722,676
Changes of benefits	0		0
Changes of assumptions	0		0
Differences between expected and actual experience	(846,651)		(846,651)
Contributions - employer		5,991,899	(5,991,899)
Contributions - member		0	0
Net investment income		(7,560,609)	7,560,609
Benefit payments	(3,945,231)	(3,945,231)	0
Administrative expense	0	(304,064)	304,064
<b>Net changes</b>	<b>4,279,691</b>	<b>(5,818,005)</b>	<b>10,097,696</b>
<b>Balances at 06/30/2022</b>	\$ 119,403,083	\$ 46,031,286	\$ 73,371,797



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**SECTION IV – NOTE DISCLOSURES**

<b>Table IV-2 Change in Net OPEB Liability - Teacher</b>			
	<b>Increase (Decrease)</b>		
	<b>Total OPEB Liability (a)</b>	<b>Plan Fiduciary Net Position (b)</b>	<b>Net OPEB Liability (a) - (b)</b>
<b>Balances at 06/30/2021</b>	\$ 108,392,510	\$ 88,750,303	\$ 19,642,207
<b>Changes for the year:</b>			
Service cost	1,407,913		1,407,913
Interest	7,517,336		7,517,336
Changes of benefits	0		0
Changes of assumptions	0		0
Differences between expected and actual experience	1,211,695		1,211,695
Contributions - employer		4,592,852	(4,592,852)
Contributions - member		0	0
Net investment income		(12,826,760)	12,826,760
Benefit payments	(2,872,450)	(2,872,450)	0
Administrative expense	0	(520,463)	520,463
<b>Net changes</b>	<b>7,264,494</b>	<b>(11,626,821)</b>	<b>18,891,315</b>
<b>Balances at 06/30/2022</b>	<b>\$ 115,657,004</b>	<b>\$ 77,123,482</b>	<b>\$ 38,533,522</b>

<b>Table IV-3 Change in Net OPEB Liability - Combined</b>			
	<b>Increase (Decrease)</b>		
	<b>Total OPEB Liability (a)</b>	<b>Plan Fiduciary Net Position (b)</b>	<b>Net OPEB Liability (a) - (b)</b>
<b>Balances at 06/30/2021</b>	\$ 223,515,902	\$ 140,599,594	\$ 82,916,308
<b>Changes for the year:</b>			
Service cost	2,756,810		2,756,810
Interest	15,240,012		15,240,012
Changes of benefits	0		0
Changes of assumptions	0		0
Differences between expected and actual experience	365,044		365,044
Contributions - employer		10,584,751	(10,584,751)
Contributions - member		0	0
Net investment income		(20,387,369)	20,387,369
Benefit payments	(6,817,681)	(6,817,681)	0
Administrative expense	0	(824,527)	824,527
<b>Net changes</b>	<b>11,544,185</b>	<b>(17,444,826)</b>	<b>28,989,011</b>
<b>Balances at 06/30/2022</b>	<b>\$ 235,060,087</b>	<b>\$ 123,154,768</b>	<b>\$ 111,905,319</b>

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**SECTION IV – 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 IV-4 shows the sensitivity of the TOL and NOL to the discount rate.

<b>Table IV-4 Sensitivity of Total Net OPEB Liability to Changes in Discount Rate</b>			
	<b>1% Decrease 5.50%</b>	<b>Discount Rate 6.50%</b>	<b>1% Increase 7.50%</b>
<b>Teacher</b>			
Total OPEB Liability	\$ 134,585,128	\$ 115,657,004	\$ 100,458,011
Plan Fiduciary Net Position	<u>77,123,482</u>	<u>77,123,482</u>	<u>77,123,482</u>
Collective Net OPEB Liability	<u>\$ 57,461,646</u>	<u>\$ 38,533,522</u>	<u>\$ 23,334,529</u>
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	57.3%	66.7%	76.8%
<b>State</b>			
Total OPEB Liability	\$ 136,449,795	\$ 119,403,083	\$ 105,492,288
Plan Fiduciary Net Position	<u>46,031,286</u>	<u>46,031,286</u>	<u>46,031,286</u>
Collective Net OPEB Liability	<u>\$ 90,418,509</u>	<u>\$ 73,371,797</u>	<u>\$ 59,461,002</u>
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	33.7%	38.6%	43.6%
<b>Combined</b>			
Total OPEB Liability	\$ 271,034,923	\$ 235,060,087	\$ 205,950,299
Plan Fiduciary Net Position	<u>123,154,768</u>	<u>123,154,768</u>	<u>123,154,768</u>
Collective Net OPEB Liability	<u>\$ 147,880,155</u>	<u>\$ 111,905,319</u>	<u>\$ 82,795,531</u>
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	45.4%	52.4%	59.8%

For the combined State-Sponsored Groups a one percent decrease in the discount rate increases the TOL by approximately 15.3% and increases the NOL by approximately 32.1%. A one percent increase in the discount rate decreases the TOL by approximately 12.4% and decreases the NOL by approximately 26.0%.

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**SECTION V – REQUIRED SUPPLEMENTARY INFORMATION**

Table V-1 Schedule of Changes in Net OPEB Liability and Related Ratios	
	<b>FY 2022</b>
<b><u>Total OPEB Liability</u></b>	
Service cost (BOY)	\$ 2,756,810
Interest (includes interest on service cost)	15,240,012
Changes of benefit terms	0
Differences between expected and actual experience	365,044
Changes of assumptions	0
Benefit payments	(6,817,681)
<b>Net change in total OPEB liability</b>	<b>11,544,185</b>
<b>Total OPEB liability - beginning</b>	<b>223,515,902</b>
<b>Total OPEB liability - ending</b>	<b>\$ 235,060,087</b>
<b><u>Plan fiduciary net position</u></b>	
Contributions - employer	\$ 10,584,751
Contributions - member	0
Net investment income	(20,387,369)
Benefit payments	(6,817,681)
Administrative expense	(824,527)
<b>Net change in plan fiduciary net position</b>	<b>\$ (17,444,826)</b>
<b>Plan fiduciary net position - beginning</b>	<b>140,599,594</b>
<b>Plan fiduciary net position - ending</b>	<b>\$ 123,154,768</b>
<b>Net OPEB liability - ending</b>	<b>\$ 111,905,319</b>
Plan fiduciary net position as a percentage of the total OPEB liability	52.39%
Covered employee payroll	\$ 1,600,464,673
Net OPEB liability as a percentage of covered employee payroll	6.99%

**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 Annual Comprehensive Financial Report (ACFR) 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 ACFR 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, 2022, we have not 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 we are available to provide any information they may need for this purpose.

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**SECTION V – 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 in Table V-2 for the State Sponsored Groups excluding the Teachers, then for the Teachers group separately, and then combined for the State Sponsored Groups.

Table V-2 Schedule of Employer Contributions During Fiscal Year 2022			
	State	Teacher	Combined
Actuarially Determined Contribution	\$ 6,649,156	\$ 4,592,850	\$ 11,242,006
Contributions in Relation to the Actuarially Determined Contribution	5,991,899	4,592,852	10,584,751
Contribution Deficiency/(Excess)	\$ 657,257	\$ (2)	\$ 657,255
Covered Payroll	\$ 729,982,000	\$ 870,482,673	\$ 1,600,464,673
Contributions as a Percentage of Covered Payroll	0.82%	0.53%	0.66%

**Notes to Schedule**

Valuation Date: June 30, 2018

Timing: 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 2022 and 2023 are based on the June 30, 2018 valuation rolled forward and adjusted for changes in assumptions.

**Key Methods and Assumptions Used to Determine Contribution Rates for FY 2022**

Actuarial Cost Method:	Entry Age Normal
Asset Valuation Method:	Market Value
Amortization Method:	Level percent closed with 16 years remaining for FY 2022
Discount Rate:	6.750%
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, 2022, can be found in the June 30, 2018 Actuarial Valuation report.

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**SECTION V – REQUIRED SUPPLEMENTARY INFORMATION**

Table V-3 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, 2022, these values are thus developed based on the prior full biennial valuation data as of June 30, 2020. 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.

<b>Table V-3 Average Expected Remaining Service Life For Measurement Year Ending June 30, 2022</b>			
<b><u>State Program</u></b>			
	<b>Total Expected</b>		<b>Average</b>
<b>Status</b>	<b>Future Service</b>	<b>Count</b>	<b>Remaining</b>
			<b>Service Life</b>
Actives	146,575	11,698	13
Inactives	<u>0</u>	<u>8,741</u>	<u>0</u>
Total Membership	146,575	20,439	7
<b><u>Teacher Program</u></b>			
	<b>Total Expected</b>		<b>Average</b>
<b>Status</b>	<b>Future Service</b>	<b>Count</b>	<b>Remaining</b>
			<b>Service Life</b>
Actives	232,499	15,029	15
Inactives	<u>0</u>	<u>7,534</u>	<u>0</u>
Total Membership	232,499	22,563	10
<b><u>Combined Programs</u></b>			
	<b>Total Expected</b>		<b>Average</b>
<b>Status</b>	<b>Future Service</b>	<b>Count</b>	<b>Remaining</b>
			<b>Service Life</b>
Actives	379,074	26,727	14
Inactives	<u>0</u>	<u>16,275</u>	<u>0</u>
Total Membership	379,074	43,002	9

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

**Participant Data as of June 30, 2022**

<b>Table A-1 Active Member Data</b>				
<b>Group</b>	<b>Count</b>	<b>Average Age</b>	<b>Average Service</b>	<b>Average Salary</b>
State	11,286	47.9	12.3	\$ 63,945
Teachers	15,374	46.4	13.3	56,620
Judges	59	60.0	14.5	140,627
Legislators	54	63.2	6.1	14,000
<b>TOTAL</b>	<b>26,773</b>	<b>47.1</b>	<b>12.8</b>	<b>59,807</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>			
<b>Group</b>	<b>Count</b>	<b>Average Age</b>	<b>Average Benefit<sup>1</sup></b>
State	8,909	73.2	\$ 19,066
Teachers	8,039	74.3	21,496
Judges	55	76.0	46,642
Legislators	13	81.2	5,622
<b>TOTAL</b>	<b>17,016</b>	<b>73.7</b>	<b>20,293</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 two years ago. All assumptions specific to this valuation are detailed in the following section.

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

**A. Actuarial Assumptions**

**1. Annual Rate of Investment Return**

State Employees	6.50%
Teachers	6.50%
Judges	6.50%
Legislative	6.50%

**2. Cost-of-Living Adjustment in Life Benefits**

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

**3. Annual Rate of Individual Salary Increase (% at Selected Years of Service)**

Service	State Employees	Teachers	Judges	Legislators
0	9.43%	13.03%	2.75%	2.75%
5	6.24	5.83	2.75	2.75
10	5.32	4.81	2.75	2.75
15	3.98	4.29	2.75	2.75
20	3.78	3.26	2.75	2.75
25 and over	3.26	2.80	2.75	2.75

The above rates include a 2.75% across-the-board increase at each year of service.

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

**4. Sample Rates of Termination (% at Selected Years of Service)**

Service	State Employees	Teachers
0	32.5%	26.0%
5	10.0	9.0
10	6.0	5.5
15	4.0	3.5
20	3.0	3.0
25	2.5	3.0

Age	Judges
25	7%
30	6
35	5
40	4
45	3
50	2
55	1

Service	Legislators
0	0%
1	5
2	10
3	15
4	20
5	25
6	30
7	40
8	50
9	50
10	50
11	50
12	50
13	50
14	50
15	50
16+	50

The rates shown for legislators are only applicable in the fiscal years ending in odd years while zero terminations are assumed in the fiscal years ending in even years.



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**5. Sample Rates of Mortality for Healthy Annuitant Lives at Selected Ages (number of deaths per 10,000 members)**

(showing values in 2022)				
Age	State Employees		Teachers	
	Male	Female	Male	Female
50	31	25	10	6
55	47	35	21	17
60	71	48	36	26
65	103	69	59	37
70	159	112	97	60
75	269	200	179	114
80	485	370	342	320
85	894	703	715	629
90	1,556	1,314	1,335	1,191
95	2,428	2,146	2,246	2,119

Rates for the State Group are based on 112.1% and 118.5% of the 2010 Public Plan General Benefits-Weighted Healthy Retiree Mortality Table, respectively, for males and females.

Rates for Teachers are based on the 2010 Public Plan Teacher Benefits-Weighted Healthy Retiree Mortality Table adjusted as follows:

- 98.1% and 87.5% respectively of the rates for males before age 85 and females before age 80
- 106.4% and 122.3% respectively of the rates for males on and after age 85 and females on and after age 80

Rates are projected generationally using the RPEC\_2020 model, with an ultimate rate of 1.00% for ages 80 and under, grading down to 0.05% at age 95, and further grading down to 0.00% at age 115, along with convergence to the ultimate rates in the year 2027. All other parameters used in the RPEC\_2020 model are those included in the published MP-2020 scale.

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**6. Sample Rates of Mortality for Active Healthy Lives at Selected Ages (number of deaths per 10,000 members)**

(showing values in 2022)				
Age	State Employees		Teachers	
	Male	Female	Male	Female
20	3	1	3	1
25	3	1	2	1
30	4	2	3	2
35	6	3	4	3
40	7	4	5	3
45	9	5	7	4
50	12	7	10	6
55	18	11	15	10
60	28	17	25	16
65	39	25	41	24

Rates for the State Group are based on 83.5% and 88.6% of the 2010 Public Plan General Benefits-Weighted Employee Mortality Table, respectively, for males and females. Rates for Teachers are based on 93.1% and 91.9% of the 2010 Public Plan Teacher Benefits-Weighted Employee Mortality Table, respectively, for males and females. These rates are generationally projected using the same version of the RPEC\_2020 model as described in the healthy annuitant mortality.

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**7. Sample Rates of Mortality for Disabled Annuitant Lives at Selected Ages (number of deaths per 10,000 members)**

(showing values in 2022)				
State				
	Employees		Teachers	
Age	Male	Female	Male	Female
25	36	21	32	25
30	54	37	47	42
35	73	57	64	69
40	90	76	79	91
45	113	99	99	119
50	161	143	141	172
55	219	184	192	221
60	278	213	244	255
65	330	222	289	267
70	389	262	341	314

Rates for the State Group are based on 107.3% and 103.2% of the 2010 Public Plan Non-Safety Benefits-Weighted Disabled Retiree Mortality Table, respectively, for males and females. Rates for Teachers are based on 94.2% and 123.8% of the 2010 Public Plan Non-Safety Benefits-Weighted Disabled Retiree Mortality Table, respectively, for males and females. These rates are generationally projected using the same version of the RPEC\_2020 model described in the healthy annuitant mortality.

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**8. Sample Rates of Retirement at Selected Ages (number retiring per 1,000 members)**

*Teachers and State Regular Plans*

Age	State Regular Employees			Teachers		
	NRA 60	NRA 62	NRA 65	NRA 60	NRA 62	NRA 65
57	40	35	N/A	40	35	N/A
59	260	40	N/A	200	45	N/A
60	210	50	20	275	80	20
61	210	350	20	210	240	20
62	210	270	50	230	220	50
63	250	180	80	220	180	80
64	190	200	300	280	220	200
65	210	220	250	340	300	300
70	200	200	200	300	200	300
75	350	350	250	400	200	300
80	1,000	1,000	1,000	1,000	1,000	1,000

In the case of State Regular and Teacher employees, NRA 60 refers to those who had accrued at least 10 years of service by July 1, 1993. NRA 62 refers to those who had not accrued at least 10 years of service by July 1, 1993 or were hired after that date but had five years of service by July 1, 2011. NRA 65 refers to those who did not have five years of service by July 1, 2011. Rates are only applied for early retirement when the member is at least age 57. Earlier rates are applicable for normal retirement.

*State Special Plans*

Members of the 1998 Special Plan are assumed to retire at rates that vary by age and whether service is less than 25 years or not. Sample rates are as follows:

Age	1998 Special Plan Retirement	
	Service < 25	Service >= 25
55	20.0%	25.0%
57	10.0	25.0
60	20.0	30.0
62	30.0	30.0
65	23.4	30.0
67	36.8	50.0
70	100.0	100.0

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Members of the 25 & Out Plan are assumed to retire at rates that vary by service. Sample rates are as follows:

Service	Rate
<24	0.0%
25-29	25.0
30-31	25.0
32-34	40.0
35-37	40.0
38+	100.0

Members of State Special Plans other than the 25 & Out Plan and the 1998 Special Plan are all currently assumed to retire at a rate of 50% per year, beginning when they reach eligibility for unreduced benefits, with a 100% assumed rate at age 70. Rates are only applied when the member is at least age 50.

*Judges*

Age	NRA 60	NRA 62	NRA 65
60-61	1,000	NA	NA
62	1,000	200	NA
63	1,000	275	NA
64	1,000	350	NA
65	1,000	425	400
66	1,000	500	500
67	1,000	450	450
68	1,000	400	400
69	1,000	350	350
70	1,000	300	300
71-75	1,000	250	250
76-79	1,000	500	500
80+	1,000	1,000	1,000

In the case of judicial employees, NRA 60 refers to those who had accrued at least ten years of service by July 1, 1993. NRA 62 refers to those who had not accrued at least ten years of service by July 1, 1993 or were hired after that date but had five years of service by July 1, 2011. NRA 65 refers to those who did not have five years of service by July 1, 2011.

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*Legislators*

Age	Legislators	
	Fiscal Years Ending Even	Fiscal Years Ending Odd
57-69	0	250
70+	0	1,000

Note that all retirement rates are only applied once the member is eligible to retire, so those in with 62 or 65 normal retirement ages are not assumed to retire until eligible. No retirements are assumed prior to age 57, regardless of service amount.

**9. Sample Rates of Disability at Selected Ages (number becoming disabled per 10,000 members)**

	Regular	Special	Teachers
25	2.5	5.4	1.1
30	3.1	6.5	1.2
35	9.3	9.9	1.2
40	14.0	15.8	1.6
45	16.0	24.4	3.1
50	18.0	36.4	6.6
55	25.0	42.6	22.1
60	43.4	46.4	22.2

*Judges and Legislators:* No disability assumed.

**10. Premium Expense Assumption**

To reflect administrative expenses associated with the distribution of benefits, the following loads, determined in the 2020 Premium Study, have been added to the liabilities, normal cost, and benefit payments.

State Employees, Judges, and Legislators: 9.84%

Teachers: 16.51%

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**11. Technical and Miscellaneous Assumptions**

Decrement Timing: Middle of the valuation year.

Pay Increase Timing: Salary provided is treated as the rate of pay as of the valuation date. Annual increases are applied as of the beginning of each subsequent valuation.

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

Form of Benefit Payment: Lump Sum.

Participation Percent for Future Retirees: 100% of those currently enrolled.

Retirement for Participants who are not members of MainePERS: Age 62.

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**12. Rationale for Assumptions**

The revised demographic assumptions were adopted by the Board of Trustees at their March 11, 2021 meeting. The revised discount rate was adopted by the Board of Trustees at their August 12, 2021 meeting. The demographic assumptions adopted are based on an experience study covering the period from July 1, 2015 through June 30, 2020, and the economic assumptions are based on this experience study along with advice of the MainePERS investment consultants.

**13. Changes since Last Valuation**

None

**14. Rationale for Change in Actuarial Assumptions**

N/A

**15. Additional Disclosures regarding Models Used:**

***ProVal:*** Cheiron utilizes ProVal, an actuarial valuation software leased from Winklevoss Technologies (WinTech) to calculate the liabilities, normal costs, and projected benefit payments. We have relied on WinTech as the developer of ProVal. We have reviewed ProVal and have a basic understanding of it and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect this actuarial valuation.

***Mortality Improvement Model:*** Cheiron utilized the RPEC\_2014\_v2020 Model Implementation Tool for the purposes of developing the customized version of MP-2020 used in this report. This tool is updated and published annually by the Society of Actuaries and their Retirement Plans Experience Committee and allows actuaries to develop customized versions of mortality improvement scales based on the parameters and data underlying the published MP-2020 scale but allowing practitioners to vary parameters from those used in the published MP-2020 scale.

We have reviewed this model and believe it is appropriate to our intended use in developing a customized mortality improvement scale for the Programs. Further, we are aware of no material inconsistencies that would limit our ability to use this model for its intended purpose.



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**B. Actuarial Methods**

**1. Funding 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.

**2. Asset Valuation Method**

Figures were reported by MainePERS without audit or change.

**3. Changes since Last Valuation**

None

**4. Rationale for Change**

N/A

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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.)

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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.