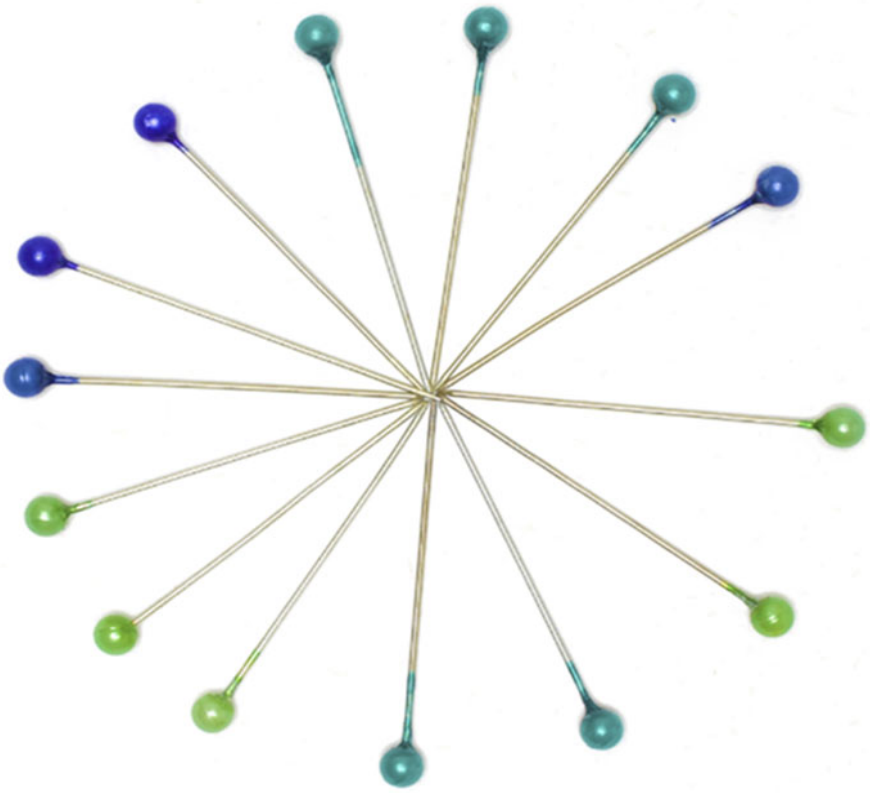

Commonwealth of Massachusetts Postemployment Benefits Other Than Pensions

GASB Statement Nos. 74/75 Valuation Report

Measurement Date of June 30, 2023

Prepared by Deloitte Consulting LLP **January 2024**

Contents

Actuarial Valuation Opinion

This report presents results of the actuarial valuation of the Commonwealth of Massachusetts's Other Post-Employment Benefit Plan ("OPEB Plan" or "the Plan") measured as of June 30, 2023. In this report, we present disclosure information measured as of June 30, 2023 as required by Government Accounting Standards Board Statement Nos. 74 and 75 ("GASB Nos. 74/75"). In our opinion, this report is complete and accurate and represents fairly the actuarial position of the Plan for the purposes stated herein.

Actuarial information under GASB Nos. 74/75 is for purposes of fulfilling trust and employer financial accounting requirements. The results have been prepared on a basis consistent with our understanding of GASB Nos. 74/75 and are based upon assumptions prescribed by the Commonwealth of Massachusetts ("the Commonwealth"). Determinations for purposes other than meeting trust financial accounting requirements may be significantly different from the results reported herein.

The Commonwealth provided the participant data, financial information, and plan descriptions used in this valuation. The actuary has analyzed the data and other information provided for reasonableness but has not independently audited the data or other information provided. The actuary has no reason to believe the data or other information provided is not complete and accurate and knows of no further information that is essential to the preparation of the actuarial valuation.

In our opinion, all costs, liabilities, rates of interest, and other factors underlying these actuarial computations have been determined on the basis of actuarial assumptions and methods that are each reasonable (or consistent with authoritative guidance) for the purposes herein taking into account the experience of the Plan and future expectations.

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 economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operations of the methodology used for these measurements (such as the additional cost or contribution requirements based on the Plan's funded status); and changes in program provisions or applicable law. Our scope for this actuarial valuation did not include analyzing the potential range of such future measurements, and we did not perform that analysis.

The undersigned with actuarial credentials collectively meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

This report was prepared solely for the benefit and internal use of the plan sponsor. This report is not intended for the benefit of any other party and may not be relied upon by any third party for any purpose, and Deloitte Consulting accepts no responsibility or liability with respect to any party other than the plan sponsor.

To the best of our knowledge, no employee of the Deloitte U.S. Firms is an officer or director of the employer. In addition, we are not aware of any relationship between the Deloitte U.S. Firms and the employer that may impair or appear to impair the objectivity of the work detailed in this report.

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Executive Summary

Governmental Accounting Requirements and Report Purpose

The Governmental Accounting Standards Board released the Statement of Governmental Accounting Standards Nos. 74 and 75 in June 2015. GASB No. 74 establishes financial reporting requirements for OPEB plans that have assets accumulated in a trust or equivalent arrangement for the purpose of funding OPEB. GASB No. 75 details the reporting and disclosure requirements for employers with payables (OPEB liabilities) to employees of state and local governmental employers through defined benefit OPEB plans.

The purpose of this actuarial valuation report is to provide information for the Commonwealth's trust and employer financial reporting. The information provided herein will be used for the fiscal year ended June 30, 2023 for the GASB No. 74 disclosures and fiscal year ending June 30, 2024 for the GASB No. 75 disclosures (the Commonwealth has elected to use a measurement date as of the end of the prior fiscal year end for GASB No. 75).

Summary of Results

The key results for the measurement period ended June 30, 2023 are:

- Net OPEB Liability (NOL) is $14.2 billion, 248.3% of covered employee payroll (was $13.4 billion, 231.3% of covered employee payroll in the prior year)
    - Total OPEB Liability (TOL) is $16.5 billion (was $15.3 billion in the prior year)
    - Plan Fiduciary Net Position (FNP) is $2.3 billion (was $2.0 billion in the prior year)
- Plan FNP as a percentage of TOL, also known as the funded ratio, is 13.8%.

Significant Changes from the Previous Actuarial Valuation

For the June 30, 2023 measurement, there was an increase in TOL of $1.1 billion compared to the previous valuation, with the change due to the following:

- There was an expected increase of $0.7 billion due to the passage of time (service cost, interest, actual benefit payments, retiree contributions);
- There was a decrease of $0.2 billion due to changes in the discount rate, healthcare cost trend, and mortality project scale assumptions;
- There was an increase of $0.6 billion due to actual experience over the past year being different than expected, primarily due to higher-than-expected per capita claims costs.

The effect of changes on the TOL is detailed in the Actuarial Experience section of this report.

Background and Comments

Overview of Plan

The Commonwealth administers a single employer defined benefit Other Post-Employment Benefit (OPEB) plan. Benefits are managed by the Group Insurance Commission (GIC) and investments are managed by PRIM. The GIC has representation on the Board of Trustees of the State Retirees' Benefits Trust (SRBT).

Under Chapter 32A of the Massachusetts General Laws (MGL) the Commonwealth is required to provide certain health care and life insurance benefits for retired employees of the Commonwealth, housing authorities, redevelopment authorities and certain other governmental agencies. Substantially all of the Commonwealth's employees may become eligible for these benefits upon reaching retirement age if they are eligible for a retirement allowance from the State Employees' Retirement System.

Eligible retirees are required to contribute a specified percentage of the health care/benefit costs based on the date of retirement. Employer and retiree contribution rates are set in MGL.

Funding Policy

In addition to funding the pay-as-you-go cost of the OPEB Plan, the Commonwealth is required by statute to allocate to the SRBT a portion of revenue received under the Master Settlement Agreement with tobacco companies, increasing from 10% in FY14 to 100% by FY23. The percentage of tobacco settlement proceeds to be transferred to the SRBT in FY23 was set at 10% or approximately $25 million, overriding existing statute. Based on recent contribution history, it is assumed that approximately $26 million of tobacco settlement proceeds will be transferred to the SRBT in future years, subject to annual evaluation.

The SRBT is set up solely to fund OPEB benefits and the cost to administer those benefits. It can only be revoked when all such health care and other non-pension benefits, current and future, have been paid or defeased. GIC administers benefit payments, while the Trustees are responsible for reviewing the applications of entities that wish to invest their OPEB funds with PRIT. The SRBT is administered by the board of trustees and is reported as an OPEB Trust Fund and does not issue a stand-alone audited financial report.

The SRBT is required statutorily to invest in the PRIT Fund. The SRBT's target asset allocation as of June 30, 2023 is shown in the table below.

Asset Class	Target Allocation
Global Equity	32% - 42%
Core Fixed Income	12% - 18%
Value Added Fixed Income	5% - 11%
Private Equity	13% - 19%
Real Estate	7% - 13%
Timberland	1% - 7%
Portfolio Completion Strategies	7% - 13%
Total	**100%**

Health Care Reform

The Patient Protection and Affordable Care Act ("PPACA") was signed into law on March 23, 2010. The primary objective of the act is to increase the number of Americans with health insurance coverage. There are several provisions within PPACA with potentially significant short- and long-term cost implications for employers. On December 18, 2015, the Consolidated Appropriations Act, 2016 became law. This legislation delayed the effective date of the high cost plan excise tax from 2018 to 2020 and made it tax deductible. On January 22, 2018, the Federal Register Printing Savings Act further delayed the effective date from 2020 to 2022. The excise tax on these "Cadillac Plans" was repealed on December 20, 2019 so there is no longer any liability associated with this tax and it has been removed for purposes of determining the liabilities presented in this report. On December 20, 2019, the health insurance provider fee for calendar years beginning after December 31, 2020 was repealed. The health insurance provider fee remains only for calendar year 2020. In future years, there may continue to be increased cost impact to the extent the health & welfare program experiences increased utilization due to these changes, all of which are assumed to be in place indefinitely.

The provisions of PPACA considered are as follows:

- Prohibiting lifetime and annual limits on the dollar value of coverage for "essential health benefits"
- Increasing the dependent child age limit to age 26
- Elimination of cost sharing for in-network preventive services
- Reflecting manufacturer discounts available to certain Medicare beneficiaries receiving applicable covered Part D drugs (mostly brand) while in the coverage gap
- Out-of-pocket limit includes both medical and Rx expenses.

The impact of applicable provisions was incorporated in the per capita claims costs summarized in the Actuarial Assumptions section of this report.

Inflation Reduction Act

The Inflation Reduction Act of 2022 ("IRA") was signed into law on August 16, 2022 and includes provisions to reform Medicare prescription drugs. The IRA impacts the duration of Medicare Part D Retiree Drug Subsidy ("RDS") payments. Since RDS payments should not be reflected in GASB actuarial valuations, there is no effect on the per capita claims costs assumption in this report.

The IRA's effect on Employer Group Waiver Plans ("EGWPs") is not currently estimable due to the lack of guidance from the Centers for Medicare & Medicaid Services ("CMS") and the unknown effect of prescription drug negotiations.

The impacts of applicable plan enhancements required by IRA were considered in the per capita claims costs assumption summarized in the Actuarial Assumptions section of this report.

- Limit cost-sharing for insulin to no more than $35/month
- Eliminate cost-sharing for adult vaccines covered under Medicare Part D
- Eliminate 5% member cost share in the catastrophic phase
- Limit Medicare Part D Base Beneficiary Premium to 6% cap over prior year
- Expand eligibility for Part D Low-Income Subsidy full benefits up to 150% FPL

Actuarial Methods and Assumptions

The Public Employee Retirement Administration Commission (PERAC) performs experience studies of the Commonwealth of Massachusetts State Employees' Retirement System (SERS) periodically to determine reasonable and appropriate economic and demographic assumptions for purposes of valuing the defined benefit pension plan. The most recent SERS experience study covered the years 2006 through 2011 and was published in February 2014. The approved recommendations from that study were used to determine the assumptions for this valuation, where applicable. PERAC updated the mortality projection scale in the January 1, 2023 SERS Actuarial Valuation Report to MP-

2021. The long-term expected rate of return assumption of 7.00% as of June 30, 2023 is based on the assumption adopted by PERAC at the March 8, 2023 meeting for the Commonwealth's pension valuations, which includes SERS. Based on documentation provided by PERAC, the inflation assumption underlying the 7.00% long-term rate of return assumption is 2.50%. In addition, Deloitte reviews actuarial assumptions only applicable to the OPEB Plan outside of the experience study, such as medical trend rates and age-graded medical rates.

One significant assumption where the PERAC recommendations is not applicable to this OPEB Plan is the discount rate. For June 30, 2023, the single discount rate was based on the long-term expected rate of return on SRBT investments of 7.00% and a municipal bond rate of 3.65% (based on the 20-year Bond Buyer GO Index as of the end of June 2023). Based on the stated assumptions and the projection of cash flows, the Plan's Fiduciary Net Position and future contributions were not sufficient to finance the future benefit payments of the current plan members. Therefore, the long-term expected rate of return on SRBT investments was applied to projected benefit payments through year 2042 and the municipal bond rate was applied to all remaining future years to determine the Total OPEB Liability. The resulting single discount rate was 4.34% as of June 20, 2023, increased from 4.30% in the prior year. The projection of cash flows used to determine the single discount rate for each fiscal year end assumed that employer contributions will be made based on the current funding policy for future years. The analysis is provided in the Development of June 30, 2023 Discount Rate section of this report.

The actuarial methods and assumptions are described in the Basis for the Valuation section of this report.

Cash Costs vs. Implicit Rate Subsidy

GASB Nos. 74/75 require that employers recognize the expected claims of the retiree population less the expected contributions by those retirees. This is not necessarily the same determination as the expected cash payments of the employer for retiree health benefits. The difference is that many post-employment health plans (including the Commonwealth's OPEB Plan) charge the same premium rates for all participants in a non-Medicare plan regardless of their age. This single premium rate is called a blended premium rate because it blends the expected claims of both active and retired participants. Retirees are generally older than the average participant in a non-Medicare plan, which means they are expected to generate higher claims than the average participant of the plan; therefore, they are receiving a subsidy even if they pay 100% of the blended premium rate because they would be paying less in premiums than their expected claims costs. This subsidy is referred to as the “Implicit Rate Subsidy”.

Another way of considering the Implicit Rate Subsidy is to assume the retirees were removed from a blended plan and, instead, separately rated. In this scenario, the premium rate for the remaining active population would be lower; therefore, the retirees' premium rate is being subsidized by the premiums for active employees. Since the employer generally pays a portion of the premiums for the active employees, this subsidy creates a liability for the employer.

By comparison, the cash costs are the actual dollars paid by the employer to cover a portion or all of the retirees' premium rates. This is sometimes referred to as the “Explicit Rate Subsidy”. This is the benefit that is explicitly stated by the Commonwealth that will be paid on behalf of retirees.

GASB Nos. 74/75 Disclosures

GASB Nos. 74/75 requires disclosure of notes to the financial statements and required supplementary information that includes information shown in this section.

Schedule of Changes in Net OPEB Liability

(All dollar amounts are in thousands)

	Discount Rate	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (a)-(b)
Measurement Date of June 30, 2022	**4.30%**	**$ 15,340,605**	**$ 1,988,383**	**$ 13,352,222**
Service Cost		530,964		530,964
Interest		672,136		672,136
Changes In Benefit Terms		-		-
Changes In Assumptions - Discount Rate		(85,661)		(85,661)
Changes In Assumptions - Others		(93,771)		(93,771)
Differences Between Expected And Actual Experience		591,887		591,887
Benefit Payments*		(486,104)	(486,104)	-
Contributions - Employer	$ 653,178		653,178	(653,178)
Contributions - Employee			-	-
Contributions - Retiree		-	-	-
Other Additions			176	(176)
Administrative Expenses			(246)	246
Net Investment Income				
Expected Investment Earnings	$ 144,933			
Differences Between Projected And Actual Earnings	(33,478)			
Total			$ 111,455	$ (111,455)
Net Change		$ 1,129,451	$ 278,459	$ 850,992
Measurement Date of June 30, 2023	**4.34%**	**$ 16,470,056**	**$ 2,266,842**	**$ 14,203,214**

Measurement Date	**June 30, 2023**	**June 30, 2022**
Plan Fiduciary Net Position As A Percentage Of Total OPEB Liability	13.8%	13.0%
Covered Employee Payroll	$ 5,721,250	$ 5,772,086
Net OPEB Liability As A Percentage Of Covered Employee Payroll	248.3%	231.3%

Sensitivity of Liability to Changes in Discount Rate	**$ Change**	**% Change**
A one percentage point change in discount rate would have the following effect on Total OPEB Liability as of June 30, 2023:		
One Percent Increase (5.34%)	$ (1,962,648)	-12%
One Percent Decrease (3.34%)	$ 2,391,847	15%
Net OPEB Liability at a one percentage point change in discount rate as of June 30, 2023 is as follows:		**Net OPEB Liability**
One Percent Increase (5.34%)		$ 12,240,566
One Percent Decrease (3.34%)		$ 16,595,061

Sensitivity of Liability to Changes in Trend Rate	**$ Change**	**% Change**
A one percentage point change in trend rate would have the following effect on Total OPEB Liability as of June 30, 2023:		
One Percent Increase (8.50% / 6.79% grading to 4.94%)	$ 2,911,887	18%
One Percent Decrease (6.50% / 4.79% grading to 2.94%)	$ (2,301,999)	-14%
Net OPEB Liability at a one percentage point change in trend rate as of June 30, 2023 is as follows:		**Net OPEB Liability**
One Percent Increase (8.50% / 6.79% grading to 4.94%)		$ 17,115,101
One Percent Decrease (6.50% / 4.79% grading to 2.94%)		$ 11,901,215

Key Assumptions	**June 30, 2023**	**June 30, 2022**
Discount Rate	4.34%	4.30%
Investment Rate of Return	7.00%	7.00%
Inflation	2.50%	2.50%
Initial Medical Trend Rate	7.50% / 5.79%	7.60% / 5.00%
Ultimate Medical Trend Rate	3.94%	3.94%
Year Ultimate Trend Rate Reached	2075	2075

*Benefit Payments reflect actual claims, including the effect of implicit subsidy, net of retiree contributions.

Development of OPEB Expense for Fiscal Year Ending June 30, 2024 (Measurement Year June 30, 2023)

(All dollar amounts are in thousands)

Components of OPEB Expense	**Measurement Year Ended 06/30/2023**	**Measurement Year Ended 06/30/2022**
Service Cost	$ 530,964	$ 774,039
Interest	672,136	510,542
Expected Investment Earnings	(144,933)	(138,947)
Contributions - Employee	-	-
Administrative Expenses	246	240
Other	(176)	(175)
Changes In Benefit Terms	-	-
Recognition of Deferred Outflows and (Inflows)		
Changes in assumptions	(988,884)	(1,282,786)
Differences between expected and actual experience	(355,232)	(459,245)
Differences between expected and actual investment earnings	7,351	(2,653)
OPEB Expense	**$ (278,528)**	**$ (598,985)**

Assumptions Used to Determine OPEB Expense	**Measurement Year Ended 06/30/2023**	**Measurement Year Ended 06/30/2022**
Assumptions as of Measurement Date	6/30/2022	6/30/2021
Discount Rate	4.30%	2.77%
Investment Rate of Return	7.00%	7.00%
Inflation	2.50%	2.50%
Initial Medical Trend Rate	7.60% / 5.00%	7.30% / 4.40%
Ultimate Medical Trend Rate	3.94%	4.04%
Year Ultimate Trend Rate Reached	2075	2075

Schedule of Deferred Outflows and Deferred Inflows of Resources*

(All dollar amounts are in thousands)

Measurement Date Established	Initial Amount	Deferred Outflows of Resources as of 06/30/2023	Deferred (Inflows) of Resources as of 06/30/2023**	Initial Years	Remaining Years	Outflows/(Inflows) Recognized in Measurement Year Ended 06/30/2023
Changes In Assumptions						
06/30/2018	$ 21,504	$ -	$ -	5.79	0.00	$ 2,934
06/30/2019	(1,935,139)	-	(246,534)	5.73	0.73	(337,721)
06/30/2020	2,050,139	623,955	-	5.75	1.75	356,546
06/30/2021	(2,297,649)	-	(1,100,958)	5.76	2.76	(398,897)
06/30/2022	(3,328,161)	-	(2,168,523)	5.74	3.74	(579,819)
06/30/2023	(179,432)	-	(147,505)	5.62	4.62	(31,927)
Total		$ 623,955	$ (3,663,520)			$ (988,884)
Differences Between Expected And Actual Plan Experience						
06/30/2018	$ 218,891	$ -	$ -	5.79	0.00	$ 29,866
06/30/2019	715,192	91,116	-	5.73	0.73	124,815
06/30/2020	(600,057)	-	(182,625)	5.75	1.75	(104,358)
06/30/2021	(2,926,517)	-	(1,402,289)	5.76	2.76	(508,076)
06/30/2022	(16,054)	-	(10,460)	5.74	3.74	(2,797)
06/30/2023	591,887	486,569	-	5.62	4.62	105,318
Total		$ 577,685	$ (1,595,374)			$ (355,232)
Net Difference Between Projected And Actual Earnings On Investments						
06/30/2019	$ 21,885	$ -	$ -	5.00	0.00	$ 4,377
06/30/2020	76,637	15,329	-	5.00	1.00	15,327
06/30/2021	(307,322)	-	(122,930)	5.00	2.00	(61,464)
06/30/2022	212,073	127,243	-	5.00	3.00	42,415
06/30/2023	33,478	26,782	-	5.00	4.00	6,696
Total***		$ 169,354	$ (122,930)			$ 7,351
Contributions subsequent to measurement date****						
		TBD				
Balance as of 06/30/2023		**$ 1,370,994**	**$ (5,381,824)**			**$ (1,336,765)**

Deferred Outflows And Deferred (Inflows) Of Resources Will Be Recognized In Expense As Follows:

Measurement Year Ending:	**Outflows/(Inflows)**
06/30/2024	$ (1,316,452)
06/30/2025	(1,239,411)
06/30/2026	(1,149,417)
06/30/2027	(351,050)
06/30/2028	45,500
Thereafter	-

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*Deferred Outflows and Inflows of Resources established on or prior to June 30, 2019 were prepared by the prior plan actuary.

** Deferred (Inflows) should be disclosed as positive numbers in the Annual Financial Report.

*** Per GASB 75 Paragraph 43.b, Deferred outflows of resources and deferred inflows of resources arising from differences between projected and actual OPEB plan investment earnings in different measurement periods should be aggregated and reported as a net deferred outflow of resources related to OPEB or a net deferred inflow or resources related to OPEB. Therefore, a net deferred outflow of $46,424 is recognized as of June 30, 2023.

**** This will be recognized as a reduction in Net OPEB Liability next year.

Schedule of Net OPEB Liability

(All dollar amounts are in thousands)

Measurement Year Ended*	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (c)	Plan Fiduciary Net Position As A Percentage Of Total OPEB Liability (d)	Covered Employee Payroll (e)	Net OPEB Liability As A Percentage Of Covered Employee Payroll (f)
			(a)-(b)	(b)/(a)		(c)/(e)
June 30, 2017	$18,480,936	$996,407	$17,484,529	5.4%	$5,927,012	295.0%
June 30, 2018	$19,761,333	$1,187,569	$18,573,764	6.0%	$5,296,859	350.7%
June 30, 2019	$19,662,106	$1,368,548	$18,293,558	7.0%	$5,491,214	333.1%
June 30, 2020	$22,105,511	$1,414,312	$20,691,199	6.4%	$5,625,684	367.8%
June 30, 2021	$17,910,405	$1,910,940	$15,999,465	10.7%	$5,594,324	286.0%
June 30, 2022	$15,340,605	$1,988,383	$13,352,222	13.0%	$5,772,086	231.3%
June 30, 2023	$16,470,056	$2,266,842	$14,203,214	13.8%	$5,721,250	248.3%

*Information for measurement year ended on or prior to June 30, 2019 were prepared by the prior plan actuary.

Basis for the Valuation

Plan Participation Summary

The participant data used in the valuation was provided by the Commonwealth as of January 1, 2023. While the participant data was checked for reasonableness, the data was not audited, and the valuation results presented in this report are dependent upon the accuracy of the participant data provided. This section presents a summary of the basic participant information for the active, terminated vested, and retired participants covered under the terms of the Plan.

a. Active Participants	**Job Group**				
	1	**2**	**3**	**4**	**Total**
Counts	59,013	1,344	1,860	5,642	67,859
Average Age	48.6	48.7	41.3	42.3	47.8
Average Service	13.0	18.2	14.7	13.4	13.1

b. Terminated Vested - Eligible for Participation	
Counts	4,915
Average Age	53.2

c. Retired Participants	Former Employees[1]	Dependent Spouses
Counts		
Under Age 65 Non-Medicare	11,091	8,004
Under Age 65 Medicare	205	234
Over Age 65 Non-Medicare	4,097	385
Over Age 65 Medicare	44,961	17,869
Total Counts[2]	60,354	26,492
Average Age	73.3	69.2

d. Total Participants[3]	133,128

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[1] Former employees include 53,294 retirees and disabled participants and 7,060 surviving spouses.

[2] Retired participants cover 7,885 dependent children in addition to the total counts.

[3] Total participant count includes active participants, vested terminated participants, and former employees.

Plan Participation Summary (cont.)

Distribution of Service Groups by Age Groups

Age Group	Retired Participant	Active Participants - Years of Service							
		0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	Total
<25	-	501	-	-	-	-	-	-	501
25-29	1	4,151	666	3	-	-	-	-	4,820
30-34	11	4,004	2,929	473	7	-	-	-	7,413
35-39	38	2,726	2,730	1,866	637	3	-	-	7,962
40-44	76	1,921	2,056	1,588	1,886	424	5	-	7,880
45-49	292	1,500	1,474	1,343	1,494	1,564	364	6	7,745
50-54	1,066	1,439	1,355	1,262	1,617	1,836	1,547	608	9,664
55-59	3,003	1,207	1,214	1,096	1,416	1,463	1,346	1,840	9,582
60-64	6,809	737	1,017	916	1,104	1,161	993	1,589	7,517
65-69	11,115	225	503	452	538	565	415	689	3,387
70+	37,943	55	124	145	222	197	171	474	1,388
Total	**60,354**	**18,466**	**14,068**	**9,144**	**8,921**	**7,213**	**4,841**	**5,206**	**67,859**

Actuarial Experience

Actuarial gains and losses arise from experience different from that assumed, changes in actuarial assumptions and methods, and changes in plan provisions. The following summarizes the changes in the Total OPEB Liability due to these sources from June 30, 2022 to June 30, 2023. Dollar amounts are in thousands.

1.	Total OPEB Liability as of June 30, 2022			$15,340,605
2.	Service Cost for year ending June 30, 2023			$530,964
3.	Actual Benefit Payments for the year ended June 30, 2023			($486,104)
4.	Interest at 4.30% on (1), (2) and (3)			$672,136
5.	Expected Total OPEB Liability as of June 30, 2023 (1) + (2) + (3) + (4)			$16,057,601
6.	(Gain)/Loss			
	i. Assumption Changes - Discount Rate was increased from 4.30% to 4.34% (based on a blend of the Bond Buyer Index rate of 3.65% and the expected rate of return on assets of 7.00%)		(85,661)	
	ii. Assumption Changes - Others		(93,771)	
	a. Mortality projection scale was updated from MP-2020 to MP-2021, consistent with the January 1, 2023 SERS Actuarial Valuation Report.	56,939		
	b. Healthcare trend rates were updated to reflect short-term expectations based on a review of the Commonwealth's emerging experience, industry surveys, and an adjustment to estimate the impact of recent general inflation. Long-term expectations were updated based on the most recent SOA-Getzen trend model.	(150,710)		
	iii. Experience		591,887	
	a. Per capita claims costs were updated to reflect FY24 rates, including the new plan offerings as of FY24	615,154		
	b. Demographic and benefit payment experience	(23,267)		
	iv. Total (Gain)/Loss			412,455
7.	Actual Total OPEB Liability as of June 30, 2023 (5) + (6)(iv)			$16,470,056

OPEB Plan Provisions Summary

This section summarizes overall provisions for the OPEB Plan.

Covered Employees

Commonwealth retirees entitled to a pension or retirement allowance from SERS may continue Basic Life and Health Insurance coverage, and Additional Life Insurance by applying to continue the coverage and continue paying the required premium. Membership in the SERS is mandatory for nearly all state employees who are regularly employed on a part-time (minimum of half-time) or full-time permanent basis. SERS also covers active and retirees who are non-Commonwealth employees.

There are four group classifications in SERS:

Group 1: Officials and general employees including clerical, administrative and technical workers, laborers, mechanics, and all others not otherwise classified

Group 2: Probation officers, court officers, certain correctional positions whose major duties require them to have the care, custody, instruction or supervision of prisoners, and certain positions who provide direct care, custody, instruction, or supervision of persons with mental illness or developmental disabilities

Group 3: State police officers

Group 4: Certain public safety officers and officials, correction officers and certain other correction positions, and parole officers or parole supervisors

Covered Family Members

Spouses and dependents are eligible for subsidized Health Insurance coverage while the retiree is alive. Surviving spouses may elect to remain insured only for Health Insurance coverage until their remarriage or death.

Eligibility

Eligible employees who meet one of the following SERS eligibility criteria are eligible to receive subsidized Basic Life and Health Insurance coverage.

Superannuation Retirement

- An employee hired before April 2, 2012:
    - completion of 20 years of creditable service; or
    - attainment of age 55 if hired prior to 1978 or classified in Group 4; or
    - attainment of age 55 with 10 years of service, if hired after 1978, and classified in Group 1 or 2
- An employee hired on or after April 2, 2012:
    - attainment of age 60 with 10 years of creditable service if classified in Group 1; or
    - attainment of age 55 with 10 years of creditable service if classified in Group 2; or
    - attainment of age 55 if classified in Group 4
- An employee classified in Group 3:
    - completion of 20 years of creditable service; or
    - attainment of age 55

Deferred Vested

Deferred retirees (eligible employees who have at least ten years of full-time creditable service upon termination) retain the right to receive a retirement allowance from SERS so long as they do not withdraw their pension monies from SERS.

OPEB Plan Provisions Summary (cont.)

Disability Retirement

Ordinary Disability: Non-veterans who become totally and permanently disabled by reason of a non-job related condition with at least ten years of creditable service

Accidental Disability: Applies to members who became permanently and totally unable to perform the essential duties of the position as a result of a personal injury sustained or hazard undergone while in the performance of duties. There is no minimum age or service requirement.

Death in Active Service

If a participant dies during active service and had GIC health coverage, their survivor is eligible to continue health coverage.

Retiree Contributions

Eligible retirees and surviving spouses are required to contribute a specified percentage of the health care/benefit costs, as determined by the GIC.

- Retirements on or before July 1, 1994: 10%
- Retirements after July 1, 1994 and on or before October 1, 2009: 15%
- Retirements after October 1, 2009: 20%
- Surviving spouses of deceased retirees, regardless of retirement date: 10%

Changes in OPEB Plan Provisions

None.

GIC Benefits Provisions Summary

This section summarizes the various medical and prescription drug plans, and life insurance coverage offered by the GIC effective July 1, 2023.

Non-Medicare Medical Plans

The following tables list the non-Medicare medical plans and sample 10% retiree contribution rate effective July 1, 2023 offered to retirees and provide the basic benefit provisions.

Medical	Benefit Provisions		Sample 10% Monthly Retiree Contribution Rate
Harvard Pilgrim Access America *PPO*	Out-of-pocket Maximum	$5,000 individual, $10,000 family	Individual: $118.33
	Fiscal Year Deductible	$500 individual, $1,000 family	Family: $262.76
	Primary Care Provider Office Visit	$20/visit	
	Specialist Physician Office Visit	$45/visit (no tiering)	
	Retail Clinic and Urgent Care Center	$20/visit	
	Emergency Room Care	$100/visit (waived if admitted)	
UniCare Total Choice *Indemnity*	Out-of-pocket Maximum	$5,000 individual, $10,000 family	Individual: $135.08
	Fiscal Year Deductible	$500 individual, $1,000 family	Family: $298.07
	Primary Care Provider Office Visit	$20/visit	
	Specialist Physician Office Visit	$45/visit (no tiering)	
	Retail Clinic and Urgent Care Center	$20/visit	
	Emergency Room Care	$100/visit (waived if admitted)	
UniCare Plus *PPO-Type*	Out-of-pocket Maximum	$5,000 individual, $10,000 family	Individual: $88.78
	Fiscal Year Deductible	$500 individual, $1,000 family	Family: $209.81
	Primary Care Provider Office Visit	Tier 1: $10/visit	
		Tier 2: $20/visit	
		Tier 3: $40/visit	
	Specialist Physician Office Visit	Tier 1: $30/visit	
		Tier 2: $60/visit	
		Tier 3: $75/visit	
	Retail Clinic and Urgent Care Center	$20/visit	
	Emergency Room Care	$100/visit (waived if admitted)	
Harvard Pilgrim Explorer *POS*	Out-of-pocket Maximum	$5,000 individual, $10,000 family	Individual: $97.99
	Fiscal Year Deductible	$500 individual, $1,000 family	Family: $241.20
	Primary Care Provider Office Visit	Tier 1: $10/visit	
		Tier 2: $20/visit	
		Tier 3: $40/visit	
	Specialist Physician Office Visit	Tier 1: $30/visit	
		Tier 2: $60/visit	
		Tier 3: $75/visit	
	Retail Clinic and Urgent Care Center	$20/visit	
	Emergency Room Care	$100/visit (waived if admitted)	

GIC Benefits Provisions Summary (cont.)

Medical	Benefit Provisions		Sample 10% Monthly Retiree Contribution Rate
Mass General Brigham Health Plan Complete *HMO*	Out-of-pocket Maximum	$5,000 individual, $10,000 family	Individual: $89.62 Family: $235.18
	Fiscal Year Deductible	$500 individual, $1,000 family	
	Primary Care Provider Office Visit	Tier 1: $10/visit Tier 2: $20/visit Tier 3: $40/visit	
	Specialist Physician Office Visit	Tier 1: $30/visit Tier 2: $60/visit Tier 3: $75/visit	
	Retail Clinic and Urgent Care Center	$20/visit	
	Emergency Room Care	$100/visit (waived if admitted)	
Harvard Pilgrim Quality *HMO*	Out-of-pocket Maximum	$5,000 individual, $10,000 family	Individual: $72.56 Family: $183.02
	Fiscal Year Deductible	$400 individual, $800 family	
	Primary Care Provider Office Visit	$20/visit	
	Specialist Physician Office Visit	Tier 1: $30/visit Tier 2: $60/visit Tier 3: N/A	
	Retail Clinic and Urgent Care Center	$20/visit	
	Emergency Room Care	$100/visit (waived if admitted)	
UniCare Community Choice *PPO-Type*	Out-of-pocket Maximum	$5,000 individual, $10,000 family	Individual: $68.11 Family: $167.06
	Fiscal Year Deductible	$400 individual, $800 family	
	Primary Care Provider Office Visit	$20/visit	
	Specialist Physician Office Visit	Tier 1: $30/visit Tier 2: $60/visit Tier 3: $75/visit	
	Retail Clinic and Urgent Care Center	$20/visit	
	Emergency Room Care	$100/visit (waived if admitted)	
Health New England *HMO*	Out-of-pocket Maximum	$5,000 individual, $10,000 family	Individual: $73.92 Family: $175.88
	Fiscal Year Deductible	$400 individual, $800 family	
	Primary Care Provider Office Visit	$20/visit	
	Specialist Physician Office Visit	Tier 1: $30/visit Tier 2: $60/visit Tier 3: N/A	
	Retail Clinic and Urgent Care Center	$20/visit	
	Emergency Room Care	$100/visit (waived if admitted)	

GIC Benefits Provisions Summary (cont.)

Medicare Medical Plans

The following tables list the Medicare medical plans and sample 10% retiree contribution rate effective July 1, 2023 offered to retirees and provide the basic benefit provisions.

Medical	Benefit Provisions		Sample 10% Monthly Retiree Contribution Rate
Tufts Medicare Preferred *Medicare Advantage*	Calendar Year Deductible Physician's Office Visit (except behavioral health) Retail Clinic Emergency Room Care (includes out-of-area)	None $15/visit $15/visit $50/visit (waived if admitted)	$35.81 per person
Harvard Pilgrim Medicare Enhance *Medicare Supplement*	Calendar Year Deductible Physician's Office Visit (except behavioral health) Retail Clinic Emergency Room Care (includes out-of-area)	None $15/visit $15/visit $50/visit (waived if admitted)	$42.70 per person
Health New England Medicare Supplement Plus *Medicare Supplement*	Calendar Year Deductible Physician's Office Visit (except behavioral health) Retail Clinic Emergency Room Care (includes out-of-area)	None $15/visit $15/visit $50/visit (waived if admitted)	$43.54 per person
UniCare Medicare Extension *Medicare Supplement*	Calendar Year Deductible Physician's Office Visit (except behavioral health) Retail Clinic Emergency Room Care (includes out-of-area)	None $10/visit $10/visit $50/visit (waived if admitted)	$43.02 per person

GIC Benefits Provisions Summary (cont.)

Prescription Drug

Prescription Drug Deductible: $100 for individual coverage and $200 for family coverage, separate from the health plan deductible. Once the prescription drug deductible is reached, covered prescriptions are subject to a copay.

The co-payments for all prescriptions covered by the plan are:

Retail (30-day supply): $10 Tier 1 / $30 Tier 2 / $65 Tier 3

Mail Order Maintenance Drugs (90-day supply): $25 Tier 1 / $75 Tier 2 / $165 Tier 3

Life Insurance

$5,000 in basic life insurance coverage.

Sample 10% retiree contribution rate: $0.64/month

Changes in GIC Benefits Provisions

There are changes to multiple benefits and plan offerings effective July 1, 2023. UniCare – Basic members are assumed to migrate to UniCare Total Choice. Tufts Spirit members are assumed to migrate to Harvard Pilgrim Quality. Members in all other discontinued plans will migrate to the auto-enrolled plans.

Actuarial Methods

Actuarial Cost Method

The Actuarial Cost Method used to determine the Total OPEB Liability is the Entry Age Normal (EAN) method as prescribed by GASB Nos. 74/75. This method is in the family of future benefit cost methods, which requires an estimate of the projected benefit payable at retirement to determine costs and liabilities.

The Normal Cost (or Service Cost) is the annual allocation required for each participant from entry date to the assumed retirement date so that the accumulated allocation at retirement is equal to the liability for the projected benefit. The projected benefits are based on estimates of future years of service and projected health benefit costs. The normal cost is developed as a level percent of compensation as prescribed by GASB Nos. 74/75.

The Present Value of Future Benefits is equal to the value of the projected benefit payable at retirement discounted back to the participant's current age. Discounts include such items as interest and mortality. The present value of future normal cost allocations is equal to the discounted value of the normal costs allocated from the participant's current age to retirement age.

The difference between the Present Value of Future Benefits and the Present Value of Future Normal Cost allocations represents the Total OPEB Liability at the participant's current age.

The Total OPEB Liability for participants currently receiving payments is calculated as the actuarial present value of future benefits expected to be paid. No normal cost is allocated for these participants.

Financial and Census Data

The Commonwealth of Massachusetts provided the participant data, financial information and plan descriptions used in this valuation. The actuary has checked the data for reasonableness but has not independently audited the data. The actuary has no reason to believe the data is not complete and accurate and knows of no further information that is essential to the preparation of the actuarial valuation.

Plan Fiduciary Net Position

Market Value of Assets as of the measurement date.

Census Date

January 1, 2023.

Measurement Date

June 30, 2023.

Method Changes Since Prior Valuation

None.

Actuarial Assumptions

Economic Assumptions

The economic assumptions were selected for consistency with SERS where applicable. The discount rate was selected based on the requirements prescribed in GASB Nos. 74/75.

Discount Rate	4.34% (4.30% in 2022)
Long-Term Expected Rate of Return[1]	7.00%
Inflation[1]	2.50%
Payroll Growth[1]	4.00%
Salary Scale[1]	Percent of salary increases each year is based on Group classifications and years of service.

Salary Increases (%)

Service	Groups 1 and 2	Group 3	Group 4
0	7.00	7.00	9.00
1	6.50	7.00	8.00
2	6.00	7.00	7.50
3	5.50	7.00	7.00
4	5.50	6.75	6.75
5	5.25	6.25	6.25
6	5.00	5.25	5.75
7	4.75	4.75	5.25
8-12	4.75	4.75	4.75
13-15	4.50	4.75	4.75
16-19	4.25	4.75	4.75
20+	4.00	4.50	4.50

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[1] For consistency with the pension plan of which these participants are members, these assumptions are based on those used for the SERS Actuarial Valuation Report as of January 1, 2023 and experience study issued in 2014.

Actuarial Assumptions (cont.)

Demographic Assumptions

The demographic assumptions were selected for consistency with SERS where applicable. The retiree health specific assumptions were selected based on recent experience.

<table>
<tr>
<td>Mortality[1]</td>
<td>Pre-Retirement Mortality:
RP-2014 Blue Collar Employees table projected generationally with Scale MP-2021 set forward 1 year for females.
Post-Retirement Mortality:
RP-2014 Blue Collar Healthy Annuitant table projected generationally with Scale MP-2021 set forward 1 year for females. For disabled retirees, table is set forward 1 year.</td>
</tr>
<tr>
<td>Disability Incidence[1]</td>
<td>Percent of employees expected to become disabled each year is based on Group classifications and age.
Sample Disability Rates (%)
<table>
<tr><th>Age</th><th>Group 1</th><th>Group 2</th><th>Group 3</th><th>Group 4</th></tr>
<tr><td>25</td><td>0.01</td><td>0.062</td><td>0.11</td><td>0.20</td></tr>
<tr><td>30</td><td>0.01</td><td>0.072</td><td>0.16</td><td>0.21</td></tr>
<tr><td>35</td><td>0.034</td><td>0.10</td><td>0.23</td><td>0.40</td></tr>
<tr><td>40</td><td>0.068</td><td>0.21</td><td>0.36</td><td>0.71</td></tr>
<tr><td>45</td><td>0.10</td><td>0.30</td><td>0.58</td><td>1.00</td></tr>
<tr><td>50</td><td>0.133</td><td>0.42</td><td>0.94</td><td>1.10</td></tr>
<tr><td>55</td><td>0.14</td><td>0.50</td><td>1.90</td><td>0.80</td></tr>
</table>
</td>
</tr>
</table>

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[1] For consistency with the pension plan of which these participants are members, these assumptions are based on those used for the SERS Actuarial Valuation Report as of January 1, 2023 and experience study issued in 2014.

Actuarial Assumptions (cont.)

Withdrawal[1]

Percent of employees expected to terminate each year is based on Group classifications. age and years of service. No withdrawal is assumed after a member is first assumed to retire.

Sample Withdrawal Rates (%)

	Group 1 and 2										
	Years of Service										
Age	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10+**
20	27.0	25.0	22.0	15.0	15.0	12.0	9.0	8.0	8.0	6.0	4.5
25	25.0	22.0	19.0	14.0	13.0	11.0	9.0	8.0	8.0	6.0	4.5
30	23.0	18.0	15.0	13.0	12.0	10.0	9.0	8.0	5.5	5.5	4.5
35	18.0	14.0	13.0	12.0	11.0	9.0	8.0	6.5	5.0	5.0	3.3
40	16.0	12.0	11.0	9.5	9.0	8.0	7.0	6.0	4.5	3.5	3.0
45	15.0	10.0	8.5	8.0	7.0	7.0	5.5	5.0	4.0	3.5	3.0
50	18.0	9.0	8.0	7.0	6.5	6.0	5.0	5.0	3.5	3.0	3.0
55	18.0	10.0	8.0	6.0	6.0	5.0	4.0	4.0	3.0	2.5	0.0*
60	18.0	10.0	8.0	7.5	7.5	5.0	5.0	3.5	3.5	3.5	0.0
65+	25.0	15.0	15.0	15.0	15.0	12.0	10.0	10.0	8.0	7.0	0.0

* For members hired on or after April 2, 2012, probability of withdrawal is 3.0% for ages 55 to 59 with 10+ years of service.

	All Ages				
	Years of Service				
Group	**1**	**5**	**10**	**15**	**20+**
3	0.7	0.7	0.5	0.5	0.5
4	9.0	6.0	3.5	2.0	1.5

Retirement[1]

Percent of employees expected to retire each year is based on Group classifications. age and years of service.

Sample Retirement Rates (%)

	Group 1		**Group 2**		**Group 3**		**Group 4**	
Age	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
50*	3.0	3.0	2.0	2.0	5.0	5.0	6.0	6.0
55*	3.5	5.0	7.5	7.5	10.0	10.0	25.0	25.0
60	9.0	7.5	15.0	15.0	14.0	14.0	20.0	20.0
65	20.0	20.0	20.0	20.0	25.0	25.0	50.0	50.0
70	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* For Group 1 and 2 members hired on or after April 2, 2012, probability of retirement is 0% until retirement eligibility.

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[1] For consistency with the pension plan of which these participants are members, these assumptions are based on those used for the SERS Actuarial Valuation Report as of January 1, 2023 and experience study issued in 2014.

Actuarial Assumptions (cont.)

<table>
<tr><td>Spouse Age Difference[1]</td><td>Females are assumed to be 3 years younger than males.
For all retired participants, spouse age is based on actual data.</td></tr>
<tr><td>Proportion of Retirees Covering a Spouse</td><td>60% of active employees are assumed to cover an adult member at retirement.
Retirees are assumed to continue their current coverage status (Individual/Family coverage).</td></tr>
<tr><td>Participation Rate</td><td>100% of employees currently electing healthcare coverage are assumed to elect coverage at retirement.
In addition, 35% of employees currently opting out of active employee health coverage are assumed to elect to enroll in retiree coverage. An 8% load was applied to the active liability to estimate the impact of this population. This assumption is based on the percentage of actives and retirees in the OPEB plan vs. SERS and assumes SERS and the OPEB plan have an exact overlap of participant eligibility.
85% of current and future vested terminated participants will elect health care benefits at age 55 or, if later, the participant’s current age.
Retirees who currently elect to waive their coverage are assumed to remain uncovered in the future.</td></tr>
<tr><td>Surviving Spouse Continuing Coverage</td><td>100% of spouses are assumed to elect to continue coverage after the retiree’s death.</td></tr>
<tr><td>Health Plan Election</td><td>Current non-Medicare eligible retirees and spouses (if covered) under age 65 who are in a POS/PPO plan are assumed to move to a Medicare Supplement plan if they are Medicare eligible at 65. All others are assumed to remain in their currently elected product type (Indemnity-Medicare Supplement/HMO-Medicare Advantage/POS/PPO).
Future retirees are assumed to enroll in the existing plans in the same proportion as the current retiree mix, as shown in the table below. These proportions are established separately for non-Medicare and Medicare coverage for each product type and reflects the migration of members to the new plans, as stated in the GIC Provisions section above.
<table>
<tr><th></th><th>Under 65</th><th></th><th>Age 65+</th></tr>
<tr><td>Indemnity</td><td>27%</td><td>Medicare Supplement</td><td>96%</td></tr>
<tr><td>HMO</td><td>10%</td><td>Medicare Advantage</td><td>4%</td></tr>
<tr><td>POS/PPO</td><td>63%</td><td></td><td></td></tr>
</table></td></tr>
<tr><td>Medicare Eligibility</td><td>Current non-Medicare eligible retirees and spouses (if covered) over age 65 are assumed to remain non-Medicare eligible.
Current Medicare eligible retirees and spouses (if covered) under age 65 are assumed to remain Medicare eligible.
All other retirees and spouses (if covered) are assumed to be non-Medicare eligible prior to age 65 and Medicare eligible at age 65, unless their spouse is over age 65 and non-Medicare eligible.</td></tr>
</table>

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[1] For consistency with the pension plan of which these participants are members, these assumptions are based on those used for the SERS Actuarial Valuation Report as of January 1, 2023 and experience study issued in 2014.

Actuarial Assumptions (cont.)

Benefit Assumptions

Per Capita Claims Costs

The per capita claims costs used in the valuation were developed from the Fiscal Year 2024 premiums which represents the expected claims costs and administrative expenses effective July 1, 2023. Adjustments were made to offset cross-subsidizations between plans, Medicare and non-Medicare groups, and coverage tiers.

The first-year per capita claims costs below are on a “net basis” – they reflect plan costs after reduction from the total benefit costs of the member cost-sharing (deductibles, coinsurance, co-pays, provider savings, Medicare, etc.). These claims were blended based on the current enrollment mix by plan (see Health Plan Election section above), separately for the non-Medicare eligible and Medicare eligible population, resulting in an average claims cost per member.

Age-graded claims were developed to project the increases in costs related to aging for retirees, spouses, and surviving spouses. Average claims costs associated with the Medicare Supplement and Non-Medicare plans were age-graded using the retiree age and gender distribution. The aging factors are based on the Society of Actuaries age-curve study “Health Care Costs—From Birth to Death.” The Medicare Advantage Plan was not age-graded as “the age-independent cost curve created by federal subsidies supports the practice of not age-rating the premiums for these individual or group MA, MA-PD, or stand-alone Medicare Part D drug plans.”[*] These claims costs are the basis for projecting the gross cost for each individual, before member contributions for coverage. Future year per capita costs were projected by applying trend assumptions to the first-year costs.

2023 Annual Per Capita Claims Costs

Age	Non-Medicare Indemnity	Non-Medicare PPO	Non-Medicare HMO	Medicare Supplement	Medicare Advantage
45	$ 8,018	$ 8,008	$ 7,419	$ 3,656	$ 3,956
50	9,772	9,759	9,042	3,656	3,956
55	11,992	11,976	11,096	3,656	3,956
60	14,652	14,632	13,557	3,656	3,956
65	18,306	18,282	16,938	3,656	3,956
70	21,992	21,962	20,349	4,041	3,956
75	26,043	26,008	24,097	4,360	3,956
80	30,265	30,224	28,003	4,595	3,956
85	34,412	34,366	31,841	4,706	3,956
90	38,092	38,041	35,246	4,696	3,956
95	40,167	40,113	37,165	4,559	3,956

* Actuarial Standard of Practice (ASOP) No. 6 Practice Note: Development of Age-Specific Retiree Health Cost Assumptions, Including Applications to Pooled and Non-Pooled Health Plans (www.actuary.org/sites/default/files/2021-03/ASOP_No_6_Practice_Note.pdf).

Expenses

Per Capita Claims Costs were developed to include administrative expenses.

Actuarial Assumptions (cont.)

Trend Rates

The trend rates illustrated below are used to project age-graded claims and flat rates into future years. Trend rates were developed based on the most recently published SOA-Getzen trend rate model, version 2023_1f. The short-term trend assumptions were based on a review of the Commonwealth's emerging experience and enrollment by plan type (including migration assumptions for discontinued plans), along with industry surveys, separately for non-Medicare and Medicare benefits. The industry surveys were used to predict short-term future per capita cost increases. The most recently published SOA Getzen model was then used to determine the trend rates beginning in 2027 and thereafter, based on the plan's long-term inflation assumption and reasonable macro-economic assumptions for the growth of health care expenditures during this period relative to the general economy.

The short-term trend rates also reflect an estimated impact of recent general inflation. CPI-U for the 12-month period ending in June 2022 was 9.1%. Based on historical information available regarding how general inflation impacts medical inflation, 60% of the increase in general inflation (over the long-term assumption of 2.50%) is assumed to be reflected in higher medical costs. Based on historical observations of CPI-U for medical care lagging general CPI-U, this increase is spread out over a two-year period, in 2024 and 2025.

Year	Medicare Benefits	Non-Medicare Benefits
2023	5.79%	7.50%
2024	7.26%	8.59%
2025	7.14%	8.29%
2026	5.45%	6.59%
2027	5.33%	6.28%
2032	4.77%	
2042	4.50%	
2052	4.44%	
2062	4.38%	
2072	4.06%	
2075+	3.94%	

Model Use

Actuarial Standard of Practice No. 56 – Modeling requires disclosure of certain information regarding the actuary's use of models when issuing actuarial reports for work performed on or after October 1, 2020. For this valuation, the liability calculations were determined using industry-leading defined benefit valuation software developed and maintained by a third-party vendor. The model was designed specifically for the measurement of defined benefit pension and postretirement medical plan liabilities and the actuary has updated the applicable parameters for the specific plan provisions and assumptions selected for this valuation.

The medical inflation trend rate assumptions were set using the Getzen Model of Long-Run Medical Cost Trends ("Getzen Model"), which adds transparency to the economic assumptions behind medical and prescription drug trends. The Getzen Model is an excel based projection of expected growth rates in medical premiums and expenditures from 2027 to 2102. Development of the model was sponsored by the Society of Actuaries, and it is used primarily in the estimation of reportable liabilities for retiree health benefits in accordance with FASB and GASB standards. It projects medical care cost increases and the health share of GDP for the next 80 years using linked formulas and assumptions developed by the author, Professor Thomas Getzen, with the assistance of a Society of Actuaries project oversight group.

Changes in Assumptions

Please see the Actuarial Experience section of this report for the changes and their impacts.

Rationale for Assumptions

Discount Rate	The single discount rate was based on the long-term expected rate of return on SRBT investments of 7.00% and a municipal bond rate of 3.65% (based on the 20-year Bond Buyer GO Index as of the end of June 2023). Based on the stated assumptions and the projection of cash flows, the Plan's Fiduciary Net Position and future contributions were not sufficient to finance the future benefit payments of the current plan members. Therefore, the long-term expected rate of return on SRBT investments was applied to projected benefit payments through year 2042 and the municipal bond rate was applied to all remaining future years to determine the Total OPEB Liability. The projection of cash flows used to determine the single discount rate for each fiscal year end assumed that employer contributions will be made based on the current funding policy for future years.
Long-Term Expected Rate of Return, Inflation, Payroll Growth, Salary Scale, Mortality, Disability Incidence, Withdrawal, Retirement and Spouse Age Difference	Consistent with the assumptions used for the SERS Actuarial Valuation Report as of January 1, 2023 and experience study issued in 2014.
Proportion of Retirees Covering a Spouse	This assumption is based on the experience of the retiree population in 2015-2018. Due to the level of benefits, employees in this program are not expected to change their behavior upon retirement.
Participation Rate – Employees	This assumption is based on the percentage of actives and retirees in the OPEB plan vs. SERS and assumes SERS and OPEB have an exact overlap of participant eligibility.

Development of June 30, 2023 Discount Rate

Projection of Contributions

(All dollar amounts are in thousands)

Year Ending June 30	**Total Employer Contributions**	**Contributions Related to Service Cost of Future Employees***	**Employer Contributions for Current Participants**
	(a)	(b)	(c) = (a)-(b)
2024	642,171	29,880	612,291
2025	692,166	53,780	638,386
2026	747,062	76,188	670,874
2027	797,340	98,408	698,932
2028	843,089	122,535	720,554
2029	887,525	150,913	736,612
2030	929,650	175,405	754,245
2031	970,519	199,617	770,902
2032	1,009,413	224,673	784,740
2033	1,045,414	253,943	791,471
2034	1,077,397	285,702	791,695
2035	1,106,568	314,163	792,405
2036	1,133,951	342,903	791,048
2037	1,160,189	371,278	788,911
2038	1,187,413	405,026	782,387
2039	1,215,544	440,070	775,474
2040	1,244,551	472,749	771,802
2041	1,274,323	506,285	768,038
2042	1,303,077	540,896	762,181
2043	1,330,288	579,685	750,603
2044	1,357,571	619,595	737,976
2045	1,382,978	658,276	724,702
2046	1,405,106	696,537	708,569
2047	1,423,490	737,115	686,375
2048	1,438,584	781,243	657,341
2049	1,450,003	828,597	621,406
2050	1,454,674	873,723	580,951
2051	1,454,192	919,776	534,416
2052	1,446,989	967,605	479,384
2053	1,430,833	1,019,543	411,290

* Determined using an open group valuation assuming a level population.

Development of June 30, 2023 Discount Rate (cont.)

Projection of Fiduciary Net Position

(All dollar amounts are in thousands)

Year Ending June 30	Beginning Fiduciary Net Position	Employer Contributions for Current Participants	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Ending Fiduciary Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2024	2,266,842	612,291	616,171	246	157,642	2,420,358
2025	2,420,358	638,386	666,166	252	167,566	2,559,892
2026	2,559,892	670,874	721,062	235	176,563	2,686,032
2027	2,686,032	698,932	771,340	204	184,629	2,798,049
2028	2,798,049	720,554	817,089	165	191,642	2,892,991
2029	2,892,991	736,612	861,525	124	197,313	2,965,267
2030	2,965,267	754,245	903,650	88	201,530	3,017,304
2031	3,017,304	770,902	944,519	56	204,341	3,047,972
2032	3,047,972	784,740	983,413	34	205,626	3,054,891
2033	3,054,891	791,471	1,019,414	19	205,104	3,032,033
2034	3,032,033	791,695	1,051,397	10	202,412	2,974,733
2035	2,974,733	792,405	1,080,568	5	197,422	2,883,987
2036	2,883,987	791,048	1,107,951	2	190,081	2,757,163
2037	2,757,163	788,911	1,134,189	1	180,227	2,592,111
2038	2,592,111	782,387	1,161,413	-	167,512	2,380,597
2039	2,380,597	775,474	1,189,544	-	151,500	2,118,027
2040	2,118,027	771,802	1,218,551	-	131,995	1,803,273
2041	1,803,273	768,038	1,248,323	-	108,809	1,431,797
2042	1,431,797	762,181	1,277,077	-	81,615	998,516
2043	998,516	750,603	1,304,288	-	49,950	494,781
2044	494,781	737,976	1,331,571	-	13,316	-
2045	-	724,702	1,356,978	-	-	-
2046	-	708,569	1,379,106	-	-	-
2047	-	686,375	1,397,490	-	-	-
2048	-	657,341	1,412,584	-	-	-
2049	-	621,406	1,424,003	-	-	-
2050	-	580,951	1,428,674	-	-	-
2051	-	534,416	1,428,192	-	-	-
2052	-	479,384	1,420,989	-	-	-
2053	-	411,290	1,404,833	-	-	-

Development of June 30, 2023 Discount Rate (cont.)

Development of the Single Discount Rate

(All dollar amounts are in thousands)

Year Ending June 30	Beginning Fiduciary Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments at 7.00%	Present Value of Unfunded Benefit Payments at 3.65%	Present Value of Benfit Payments Using the Single Discount Rate of 4.34%
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
2024	2,266,842	616,171	616,171	-	595,675	-	603,220
2025	2,420,359	666,166	666,166	-	601,875	-	625,039
2026	2,559,892	721,062	721,062	-	608,854	-	648,407
2027	2,686,032	771,340	771,340	-	608,699	-	664,769
2028	2,798,049	817,089	817,089	-	602,618	-	674,907
2029	2,892,992	861,525	861,525	-	593,823	-	682,013
2030	2,965,267	903,650	903,650	-	582,111	-	685,606
2031	3,017,305	944,519	944,519	-	568,634	-	686,808
2032	3,047,973	983,413	983,413	-	553,317	-	685,347
2033	3,054,892	1,019,414	1,019,414	-	536,049	-	680,887
2034	3,032,034	1,051,397	1,051,397	-	516,698	-	673,040
2035	2,974,735	1,080,568	1,080,568	-	496,294	-	662,943
2036	2,883,989	1,107,951	1,107,951	-	475,580	-	651,471
2037	2,757,164	1,134,189	1,134,189	-	454,993	-	639,160
2038	2,592,112	1,161,413	1,161,413	-	435,434	-	627,279
2039	2,380,597	1,189,544	1,189,544	-	416,804	-	615,750
2040	2,118,026	1,218,551	1,218,551	-	399,036	-	604,530
2041	1,803,273	1,248,323	1,248,323	-	382,042	-	593,541
2042	1,431,796	1,277,077	1,277,077	-	365,273	-	581,957
2043	998,515	1,304,288	-	1,304,288	-	648,294	569,636
2044	494,780	1,331,571	-	1,331,571	-	638,548	557,363
2045	-	1,356,978	-	1,356,978	-	627,816	544,373
2046	-	1,379,106	-	1,379,106	-	615,585	530,238
2047	-	1,397,490	-	1,397,490	-	601,824	514,958
2048	-	1,412,584	-	1,412,584	-	586,903	498,870
2049	-	1,424,003	-	1,424,003	-	570,813	481,986
2050	-	1,428,674	-	1,428,674	-	552,518	463,454
2051	-	1,428,192	-	1,428,192	-	532,881	444,027
2052	-	1,420,989	-	1,420,989	-	511,523	423,413
2053	-	1,404,833	-	1,404,833	-	487,899	401,188
2054	-	1,383,384	-	1,383,384	-	463,531	378,630
2055	-	1,356,689	-	1,356,689	-	438,578	355,880
2056	-	1,323,671	-	1,323,671	-	412,836	332,777
2057	-	1,287,551	-	1,287,551	-	387,430	310,232
2058	-	1,248,950	-	1,248,950	-	362,580	288,415
2059	-	1,207,821	-	1,207,821	-	338,292	267,316
2060	-	1,164,181	-	1,164,181	-	314,587	246,941
2061	-	1,120,235	-	1,120,235	-	292,052	227,736
2062	-	1,082,045	-	1,082,045	-	272,162	210,823
2063	-	1,050,066	-	1,050,066	-	254,817	196,083

Development of June 30, 2023 Discount Rate (cont.)

Development of the Single Discount Rate

(All dollar amounts are in thousands)

Year Ending June 30	Beginning Fiduciary Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments at 7.00%	Present Value of Unfunded Benefit Payments at 3.65%	Present Value of Benfit Payments Using the Single Discount Rate of 4.34%
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
2064	-	1,021,948	-	1,021,948	-	239,261	182,895
2065	-	996,810	-	996,810	-	225,157	170,976
2066	-	974,918	-	974,918	-	212,458	160,266
2067	-	954,310	-	954,310	-	200,643	150,353
2068	-	932,382	-	932,382	-	189,130	140,788
2069	-	909,136	-	909,136	-	177,920	131,568
2070	-	884,494	-	884,494	-	167,002	122,678
2071	-	858,126	-	858,126	-	156,318	114,070
2072	-	829,950	-	829,950	-	145,862	105,736
2073	-	800,024	-	800,024	-	135,651	97,684
2074	-	768,368	-	768,368	-	125,695	89,917
2075	-	735,013	-	735,013	-	116,005	82,436
2076	-	700,048	-	700,048	-	106,596	75,249
2077	-	663,721	-	663,721	-	97,505	68,376
2078	-	626,288	-	626,288	-	88,766	61,837
2079	-	587,914	-	587,914	-	80,393	55,633
2080	-	548,810	-	548,810	-	72,403	49,773
2081	-	509,218	-	509,218	-	64,814	44,261
2082	-	469,412	-	469,412	-	57,643	39,104
2083	-	429,694	-	429,694	-	50,908	34,307
2084	-	390,401	-	390,401	-	44,624	29,873
2085	-	351,872	-	351,872	-	38,804	25,805
2086	-	314,441	-	314,441	-	33,455	22,101
2087	-	278,442	-	278,442	-	28,581	18,757
2088	-	244,183	-	244,183	-	24,182	15,765
2089	-	211,950	-	211,950	-	20,251	13,115
2090	-	181,995	-	181,995	-	16,776	10,793
2091	-	154,506	-	154,506	-	13,741	8,781
2092	-	129,619	-	129,619	-	11,122	7,061
2093	-	107,408	-	107,408	-	8,891	5,607
2094	-	87,878	-	87,878	-	7,018	4,397
2095	-	70,961	-	70,961	-	5,468	3,403
2096	-	56,518	-	56,518	-	4,202	2,598
2097	-	44,367	-	44,367	-	3,182	1,954

Development of June 30, 2023 Discount Rate (cont.)

Development of the Single Discount Rate

(All dollar amounts are in thousands)

Year Ending June 30	Beginning Fiduciary Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments at 7.00%	Present Value of Unfunded Benefit Payments at 3.65%	Present Value of Benfit Payments Using the Single Discount Rate of 4.34%
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
2098	-	34,305	-	34,305	-	2,374	1,448
2099	-	26,106	-	26,106	-	1,743	1,056
2100	-	19,533	-	19,533	-	1,258	757
2101	-	14,354	-	14,354	-	892	533
2102	-	10,352	-	10,352	-	621	369
2103	-	7,322	-	7,322	-	424	250
2104	-	5,075	-	5,075	-	283	166
2105	-	3,445	-	3,445	-	185	108
2106	-	2,289	-	2,289	-	119	69
2107	-	1,488	-	1,488	-	75	43
2108	-	946	-	946	-	46	26
2109	-	588	-	588	-	27	16
2110	-	357	-	357	-	16	9
2111	-	213	-	213	-	9	5
2112	-	124	-	124	-	5	3
2113	-	70	-	70	-	3	2
2114	-	39	-	39	-	2	1
2115	-	21	-	21	-	1	-
2116	-	11	-	11	-	-	-
2117	-	6	-	6	-	-	-
2118	-	3	-	3	-	-	-
2119	-	1	-	1	-	-	-
2120	-	1	-	1	-	-	-
2121	-	-	-	-	-	-	-
Total					**9,793,809**	**12,889,979**	**22,683,791**

Glossary

Brief explanations of terms used in this report:

Annual OPEB Expense

The change in Net OPEB Liability less the change in the Deferred Outflows of Resources plus the change in the Deferred Inflows of Resources.

Collective deferred outflows of resources and deferred inflows of resources related to OPEB

Deferred outflows of resources and deferred inflows of resources related to OPEB arising from certain changes in the collective net OPEB liability or collective total OPEB liability.

Covered Employee Payroll

Annual compensation paid (or expected to be paid) to active employees covered by an OPEB plan, in aggregate.

Implicit Rate Subsidy

Many post-employment health plans charge the same premium rates for all participants in a non-Medicare plan regardless of their age. This single premium rate is called a blended premium rate because it blends the expected claims of both active and retired participants. Retirees are generally older than the average participant in a non-Medicare plan, which means they are expected to generate higher claims than the average participant of the plan; therefore, they are receiving a subsidy even if they pay 100% of the blended premium rate because they would be paying less in premiums than their expected claims costs. This subsidy is referred to as the “Implicit Rate Subsidy”.

Net OPEB Liability (NOL)

The liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit OPEB plan that is administered through a trust that meets the criteria of the GASB Statements.

Normal Cost or Service Cost

The portion of the Total Present Value of Future Benefits attributed to employee service during the current fiscal year by the actuarial cost method. These terms are used interchangeably.

Other Postemployment Benefits (OPEB)

Retiree health care benefits and post-employment benefits provided separately from a pension plan (excluding termination offers and benefits).

Fiduciary Net Position (FNP)

Set equal to the market value of assets as of the measurement date

Present Value of Future Benefits (PVFB)

The value, as of the valuation date, of the projected benefits payable to all members for their accrued service and their expected future service, discounted to reflect the time value (present value) of money and adjusted for the probabilities of retirement, withdrawal, death and disability.

Total OPEB Liability (TOL)

The portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service in conformity with the GASB Statements. The total OPEB liability is the liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit OPEB plan that is not administered through a trust that meets the criteria of the GASB Statements.