

# City of Gloucester

## **Actuarial Valuation and Review of Other Postemployment Benefits (OPEB)**

Measured at June 30, 2021



This report has been prepared at the request of the City of Gloucester to assist in administering the Plan. This valuation report may not otherwise be copied or reproduced in any form without the consent of the City of Gloucester and may only be provided to other parties in its entirety. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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# Segal



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November 21, 2022

Mr. Kenny Costa  
City Auditor  
9 Dale Avenue  
City Hall  
Gloucester, MA 01930

Dear Mr. Costa:

We are pleased to submit this report on our actuarial valuation of postemployment welfare benefits as of June 30, 2021. The purpose of this report is to calculate an Actuarially Determined Contribution for the City of Gloucester Other Postemployment Benefit (OPEB) Plan for the fiscal years ending June 30, 2022 and June 30, 2023. It summarizes the actuarial data used in the valuation and analyzes the experience and changes in assumptions since the prior valuation. The GASB Statements No. 74 and 75 disclosure information for the fiscal year ending June 30, 2022 will be provided in a separate report.

This report is based on information received from the City of Gloucester and vendors employed by the City of Gloucester. Segal does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. Segal, however, does review the data for reasonableness and consistency.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Accordingly, additional determinations may be needed for other purposes, such as judging benefit security at termination of the plan, or determining short-term cash flow requirements.

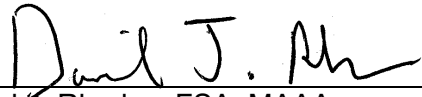
Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: retiree group benefits program experience or rates of return on assets differing from that anticipated by the assumptions; changes in assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in retiree group benefits program provisions or applicable law. Retiree group benefits models necessarily rely on the use of approximations and estimates, and are sensitive to

changes in these approximations and estimates. Small variations in these approximations and estimates may lead to significant changes in actuarial measurements.

The actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. The actuarial calculations were directed under my supervision. I am a member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of my knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in my opinion, the assumptions as approved by the City of Gloucester are reasonably related to the experience of and the expectations for the Plan.

We look forward to discussing this with you at your convenience. Once you've reviewed the report, please send a copy (preferably the electronic version) to Jim Lamenzo at PERAC. His email address is [james.r.lamenzo@mass.gov](mailto:james.r.lamenzo@mass.gov).

Sincerely,  
Segal



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Daniel J. Rhodes, FSA, MAAA  
Senior Vice President and Consulting Actuary

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# Section 1: Actuarial Valuation Summary

## Purpose and basis

This report presents the results of our actuarial valuation of the City of Gloucester other postemployment welfare benefit plan as of June 30, 2021. The purpose of this report is to calculate a recommended Actuarially Determined Contribution for the OPEB plan for the fiscal years ending June 30, 2022 and June 30, 2023. Determinations for purposes other than meeting funding requirements may be significantly different from the results reported here. This valuation is based on:

- The benefit provisions of the OPEB plan, as administered by the provided by the City;
- The characteristics of covered active members, retired members and beneficiaries as of June 30, 2021, provided by the City;
- The assets of the Plan as of June 30, 2021 provided by the City;
- Economic assumptions regarding future salary increases and investment earnings;
- Health care assumptions regarding per capita costs, trend rates and participation; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

## Highlights of the valuation

- The discount rate used to determine the liabilities that are the basis of the Actuarially Determined Contribution is the expected return on assets. Based on the current investment allocation of the OPEB trust, we recommend maintaining the expected return on assets of 6.75%.
- The unfunded actuarial accrued liability (UAAL) as of June 30, 2021, is \$96,745,000 based on an actuarial accrued liability (AAL) of \$97,784,000 and an actuarial value of assets of \$1,039,000 million. Going forward, net unfunded plan obligations will be expected to change due to normal plan operations, which consist of continuing accruals for active members, plus interest on the unfunded actuarial accrued liability, less employer contributions. Future valuations will analyze the difference between actual and expected unfunded actuarial accrued liabilities.
- As of June 30, 2021, the ratio of assets to the AAL (the funded ratio) is 1.06%, compared to 0.34% in the prior valuation. This funded percentage is not necessarily appropriate for assessing the sufficiency of OPEB assets to cover the estimated cost of settling the benefit obligations or the need for or the amount of future contributions.

## Section 1: Actuarial Valuation Summary

- The following assumptions were revised with this valuation:
  - The following were updated to match the assumptions used in the Commonwealth of Massachusetts (OPEB) Actuarial Valuation GASB 74 as of June 30, 2021:
    - The per capita health costs and contributions were updated, and the trend assumptions were revised.
  - The following coverage election assumption was updated based on actual plan enrollment:
    - The percentage of participants assumed to have an eligible spouse who also opts for health coverage was decreased from 70% to 65% based on actual plan enrollment.
  - The following was updated to match the assumptions used in the Teachers' Retirement System Actuarial Valuation Report as of January 1, 2021, dated November 4, 2021, completed by PERAC:
    - The mortality table for teachers was updated.
  - The following was updated to match the assumptions used in the Gloucester Contributory Retirement System Actuarial Valuation and Review as of January 1, 2022, dated August 26, 2022, completed by Segal:
    - The mortality projection scale for non-teachers was updated.
- The UAAL was expected to increase by \$8.6 million from \$110.1 million as of June 30, 2019 to \$118.7 million as of June 30, 2021. The actual unfunded liability of \$96.7 million is \$22.0 million less than expected. The difference between the actual and expected increase was the net effect of the following:

June 30, 2019 unfunded actuarial liability	\$110,134,415
June 30, 2021 expected unfunded actuarial liability	118,669,403
Change due to:	
• Experience loss	\$1,188,544
• Investment gain	-79,259
• Updating per capita costs and contributions	-20,377,459
• Updating future trends	-763,196
• Updating mortality assumptions	-822,739
• Updating spouse coverage assumption	-1,070,032
Net decrease	-\$21,924,141
June 30, 2021 unfunded actuarial accrued liability	\$96,745,262

## Section 1: Actuarial Valuation Summary

- The participant data received for the June 30, 2021 actuarial valuation included 666 active employees with health coverage and 1,033 retirees and beneficiaries receiving retiree health benefits compared to 656 active employees and 1,002 retirees and beneficiaries in the prior valuation.
- The Actuarially Determined Contribution (ADC) for fiscal year 2022 is \$8,113,560. The ADC is calculated using a 26-year amortization of the UAAL.
- A projection of the ADC appears on page 13. The projection assumes that 100% of the ADC will be contributed beginning in fiscal year 2023.

## Section 1: Actuarial Valuation Summary

### OPEB Trust information

As of June 30, 2021 the City of Gloucester has \$1,039,022 in assets. The table below shows the increase in assets from June 30, 2019 to June 30, 2021.

#### Reconciliation of OPEB Balance from June 30, 2019 through June 30, 2020

<b>Balance as of June 30, 2019</b>	<b>\$372,177</b>
• Contributions	250,000
• Net investment income	<u>5,953</u>
<b>Balance as of June 30, 2020</b>	<b>\$628,131</b>
Rate of return as of June 30, 2020	1.20%

#### Reconciliation of OPEB Balance from June 30, 2020 through June 30, 2021

<b>Balance as of June 30, 2020</b>	<b>\$628,131</b>
• Contributions	250,000
• Net investment income	<u>160,891</u>
<b>Balance as of June 30, 2021</b>	<b>\$1,039,022</b>
Rate of return as of June 30, 2021	21.36%

Assets as of June 30, 2022 in the amount of \$1,324,992 were also provided by the City, and are reflected in the projection of the ADC on page 13. The City contributed \$450,000 to the OPEB trust in fiscal year 2022.



## Section 1: Actuarial Valuation Summary

### Other considerations

Employer decisions regarding plan design, cost sharing between the Employer and its retirees, actuarial cost method, amortization techniques, and integration with Medicare are just some of the decisions that affect the magnitude of OPEB obligations. We are available to assist you with any investigation of such options you may wish to undertake.

Calculations are based on the benefits provided under the terms of the substantive plan in effect at the time of the valuation and on the pattern of sharing costs between the employer and plan members. The projection of benefits does not incorporate the potential effect of legal or contractual funding limitations on the pattern of cost sharing between the employer and plan members in the future.

Actuarial calculations reflect a long-term perspective, and the methods and assumptions use techniques designed to reduce short-term volatility in accrued liabilities and the actuarial value of assets, if any.

The calculation of an accounting obligation does not, in and of itself, imply that there is any legal liability to provide the benefits valued, nor is there any implication that the Employer is required to implement a funding policy to satisfy the projected expense.

Actuarial valuations involve estimates of the value of reported amounts and assumptions about the probability of events far into the future, and the actuarially determined amounts are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future.

## Section 1: Actuarial Valuation Summary

### Important information about actuarial valuations

An actuarial valuation is a budgeting tool with respect to defining future uncertain obligations of a postretirement health plan. As such, it will never forecast the precise future stream of benefit payments. It is an estimated forecast – the actual cost of the plan will be determined by the benefits and expenses paid, not by the actuarial valuation.

In order to prepare a valuation, Segal relies on a number of input items. These include:

<b>Plan of benefits</b>	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. For example, a plan may provide health benefits to post-65 retirees that coordinates with Medicare. If so, changes in the Medicare law or administration may change the plan's costs without any change in the terms of the plan itself. It is important for the City of Gloucester to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
<b>Participant data</b>	An actuarial valuation for a plan is based on data provided to the actuary by the plan. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is not necessary to have perfect data for an actuarial valuation: the valuation is an estimated forecast, not a prediction. The uncertainties in other factors are such that even perfect data does not produce a "perfect" result. Notwithstanding the above, it is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
<b>Assets</b>	The valuation is based on the asset values as of the valuation date, provided by the City of Gloucester.
<b>Actuarial assumptions</b>	In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. To determine the future costs of benefits, Segal collects claims, premiums, and enrollment data in order to establish a baseline cost for the valuation measurement, and then develops short- and long-term health care cost trend rates to project increases in costs in future years. This forecast also requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year, as well as forecasts of the plan's benefits for each of those events. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets or, if there are no assets, a rate of return based on a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale). All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions the actuary selects within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model necessarily uses approximations and estimates that may lead to significant changes in our results but will have no impact on the actual cost of the plan. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.

## Section 1: Actuarial Valuation Summary

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

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The actuarial valuation is prepared for use by the City of Gloucester. It includes information for compliance with accounting standards and for the plan's auditor. Segal is not responsible for the use or misuse of its report, particularly by any other party.

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If the City of Gloucester is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.

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An actuarial valuation is a measurement at a specific date – it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

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Sections of this report include actuarial results that are not rounded, but that does not imply precision.

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Critical events for a plan include, but are not limited to, decisions about changes in benefits and contributions. The basis for such decisions needs to consider many factors such as the risk of changes in plan enrollment, emerging claims experience, health care cost trend, and investment losses, not just the current valuation results.

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Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The City of Gloucester should look to their other advisors for expertise in these areas.

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While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.

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Segal's report shall be deemed to be final and accepted by the City of Gloucester upon delivery and review. The City of Gloucester should notify Segal immediately of any questions or concerns about the final content.

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As Segal has no discretionary authority with respect to the management or assets of the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Plan.

# Section 2: Valuation Results

## Summary of key valuation results

	June 30, 2021 (6.75% discount rate)	June 30, 2019 (6.75% discount rate)
<b>Actuarial Accrued Liability by Participant Category</b>		
1. Retirees, beneficiaries and dependents	\$62,875,841	\$66,042,681
2. Active employees	<u>34,908,443</u>	<u>44,463,911</u>
3. Total AAL: (1) + (2)	\$97,784,284	\$110,506,592
4. Actuarial value of assets	<u>1,039,022</u>	<u>372,177</u>
5. Unfunded actuarial accrued liability (UAAL): (3) - (4)	\$96,745,262	\$110,134,415
6. Funded ratio: (4) / (3)	1.06%	0.34%
<b>Actuarially Determined Contribution for Fiscal Year Ending:</b>		
	<b>June 30, 2022</b>	<b>June 30, 2020</b>
7. Normal Cost, including adjustment for timing	\$2,313,073	\$2,843,466
8. Amortization payment, including adjustment for timing	<u>5,800,487</u>	<u>6,318,917</u>
9. Total Actuarially Determined Contribution: (7) + (8)	\$8,113,560	\$9,162,383
10. Projected benefit payments	5,309,347	5,701,826
<b>Actuarially Determined Contribution for Fiscal Year Ending:</b>		
	<b>June 30, 2023</b>	<b>June 30, 2021</b>
11. Normal Cost, including adjustment for timing	\$2,386,039	\$2,933,163
12. Amortization payment, including adjustment for timing	<u>6,139,182</u>	<u>6,704,524</u>
13. Total Actuarially Determined Contribution: (11) + (12)	\$8,525,221	\$9,637,687
14. Projected benefit payments	5,651,541	5,978,765

### Notes:

Assumes payment in the middle of the year

Amortization payments for fiscal 2020 and fiscal 2021 are 28-year and 27-year payments, respectively, increasing 3.0% per year

Amortization payments for fiscal 2022 and fiscal 2023 are 26-year and 25-year payments, respectively, increasing 3.0% per year

## Section 2: Valuation Results

### Projection of the Actuarially Determined Contribution

6.75% Discount Rate – 26-year Closed Amortization

Fiscal Year Ending June 30	(1) Normal Cost with Interest	(2) Amortization of UAAL	(3) Actuarially Determined Contribution: (1) + (2)	(4) Projected Benefit Payments Paid by the City	(5) Contribution to OPEB Trust: (3) - (4)	(6) Assets at End of Year	(7) AAL at End of Year	(8) UAAL at End of Year: (7) - (6)
2022	\$2,313,073	\$5,800,487	\$8,113,560	\$5,309,347	\$450,000	\$1,324,992	\$101,288,976	\$99,963,984
2023	2,386,039	6,139,182	8,525,221	5,651,541	2,873,680	4,383,512	104,752,069	100,368,557
2024	2,461,307	6,323,357	8,784,664	5,920,549	2,864,115	7,638,600	108,248,749	100,610,149
2025	2,538,949	6,513,058	9,052,007	6,429,425	2,622,582	10,863,855	111,535,904	100,672,049
2026	2,619,040	6,708,450	9,327,490	6,818,377	2,509,113	14,189,578	114,725,827	100,536,249
2027	2,701,658	6,909,703	9,611,361	7,118,506	2,492,855	17,722,990	117,906,338	100,183,348
2028	2,786,882	7,116,995	9,903,877	7,321,663	2,582,214	21,587,232	121,179,685	99,592,453
2029	2,874,794	7,330,504	10,205,298	7,651,138	2,554,160	25,683,326	124,424,400	98,741,074
2030	2,965,479	7,550,419	10,515,898	7,995,439	2,520,459	30,021,087	127,626,098	97,605,011
2031	3,059,025	7,776,932	10,835,957	8,355,234	2,480,723	34,610,591	130,768,822	96,158,231
2032	3,155,522	8,010,240	11,165,762	8,731,219	2,434,543	39,462,173	133,834,913	94,372,740
2033	3,255,063	8,250,547	11,505,610	9,124,124	2,381,486	44,586,419	136,804,862	92,218,443
2034	3,357,744	8,498,064	11,855,808	9,534,710	2,321,098	49,994,158	139,657,156	89,662,998
2035	3,463,664	8,753,006	12,216,670	9,963,772	2,252,898	55,696,455	142,368,109	86,671,654
2036	3,572,925	9,015,596	12,588,521	10,412,141	2,176,380	61,704,599	144,911,686	83,207,087
2037	3,685,633	9,286,064	12,971,697	10,880,688	2,091,009	68,030,087	147,259,302	79,229,215
2038	3,801,896	9,564,646	13,366,542	11,370,319	1,996,223	74,684,613	149,379,618	74,695,005
2039	3,921,827	9,851,585	13,773,412	11,881,983	1,891,429	81,680,047	151,238,318	69,558,271
2040	4,045,541	10,147,132	14,192,673	12,416,672	1,776,001	89,028,413	152,797,861	63,769,448
2041	4,173,158	10,451,546	14,624,704	12,975,423	1,649,281	96,741,867	154,017,226	57,275,359
2042	4,304,800	10,765,093	15,069,893	13,559,317	1,510,576	104,832,668	154,851,632	50,018,964
2043	4,440,595	11,088,046	15,528,641	14,169,486	1,359,155	113,313,150	155,252,238	41,939,088
2044	4,580,674	11,420,687	16,001,361	14,807,113	1,194,248	122,195,683	155,165,818	32,970,135
2045	4,725,171	11,763,308	16,488,479	15,473,433	1,015,046	131,492,636	154,534,418	23,041,782
2046	4,874,227	12,116,207	16,990,434	16,169,737	820,697	141,216,332	153,294,983	12,078,651
2047	5,027,984	12,479,693	17,507,677	16,897,375	610,302	151,378,998	151,378,998	-

**Notes:**

Assumes payment in the middle of the fiscal year.

Normal cost is projected to increase at the payroll growth assumption of 3.00% per year and 0.15% for future mortality improvement and does not reflect the future impact of pension reform for new hires.

Amortization payments are assumed to increase 3.00% per year.

Assets are assumed to return 6.75% per year.

## Section 2: Valuation Results

### Department Results

	June 30, 2021 6.75% discount rate			
	All Other	Sewer	Water	Total
<b>Actuarial Accrued Liability by Participant Category</b>				
1. Retirees, beneficiaries and dependents	\$60,181,537	\$1,351,891	\$1,342,413	\$62,875,841
2. Active employees	<u>33,412,575</u>	<u>750,565</u>	<u>745,303</u>	<u>34,908,443</u>
3. Total AAL: <b>(1) + (2)</b>	\$93,594,112	\$2,102,456	\$2,087,716	\$97,784,284
4. Actuarial value of assets	<u>994,499</u>	<u>22,340</u>	<u>22,183</u>	<u>1,039,022</u>
5. Unfunded actuarial accrued liability (UAAL): <b>(3) - (4)</b>	\$92,599,613	\$2,080,116	\$2,065,533	\$96,745,262
6. Funded ratio: <b>(4) / (3)</b>	1.06%	1.06%	1.06%	1.06%
<b>Actuarially Determined Contribution for Fiscal Year Ending June 30, 2022:</b>				
7. Normal Cost, including adjustment for timing	\$2,226,152	\$43,813	\$43,108	\$2,313,073
8. Amortization payment, including adjustment for timing	<u>5,551,930</u>	<u>124,716</u>	<u>123,841</u>	<u>5,800,487</u>
9. Total Actuarially Determined Contribution: <b>(7) + (8)</b>	\$7,778,082	\$168,529	\$166,949	\$8,113,560
10. Projected benefit payments	5,074,326	117,517	117,504	5,309,347
<b>Actuarially Determined Contribution for Fiscal Year Ending June 30, 2023:</b>				
11. Normal Cost, including adjustment for timing	\$2,296,376	\$45,195	\$44,468	\$2,386,039
12. Amortization payment, including adjustment for timing	<u>5,876,112</u>	<u>131,998</u>	<u>131,072</u>	<u>6,139,182</u>
13. Total Actuarially Determined Contribution: <b>(11) + (12)</b>	\$8,172,488	\$177,193	\$175,540	\$8,525,221
14. Projected benefit payments	5,452,303	99,632	99,606	5,651,541

**Notes:**

Assumes payment in the middle of the year.

Retiree liabilities and projected benefits for All Other, Sewer and Water are estimated based on distribution of active liabilities in these subgroups.

Assets as of June 30, 2021 are allocated in proportion to liabilities.

Amortization payments for fiscal 2022 and fiscal 2023 are 26-year and 25-year payments, respectively, increasing 3.0% per year

# Section 3: Supporting Information

## Exhibit I: Summary of Participant Data

	June 30, 2021	June 30, 2019
<b>Retirees, Beneficiaries and Dependents Covered for Medical Benefits</b>		
• Number	1,033	1,002
• Average age	73.2	72.9
<b>Active Employees Covered for Medical Benefits</b>		
• Number of employees	666	656
• Average age	48.0	48.9
• Average service	12.2	12.7

## Section 3: Supporting Information

### Exhibit II: Actuarial Assumptions and Actuarial Cost Method

<b>Data:</b>	Detailed census data for postemployment welfare benefits were provided by the City of Gloucester.
<b>Actuarial Cost Method:</b>	Entry Age Normal – Level percentage of payroll
<b>Per Capita Cost Development:</b>	Per capita costs were taken from the June 30, 2021 Commonwealth of Massachusetts Postemployment Benefit Plans Other than Pensions GASB Statement Nos. 74/75 Valuation Report, dated January 2022, completed by Deloitte Consulting. Costs for each plan offering were combined by taking a weighted average based on the number of participants enrolled in each plan, and were then trended to the valuation year at assumed trend rates. Segal did not review the accuracy of the costs or the underlying claims experience.
<b>Valuation Date:</b>	June 30, 2021
<b>Roll-Forward Technique:</b>	The results of the June 30, 2021 actuarial valuation are used to determine the Actuarially Determined Contribution for the fiscal years ending June 30, 2022 and later.
<b>Expected Return:</b>	6.75% The long-term expected rate of return on OPEB investments determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of OPEB plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce a long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.
<b>Discount Rate:</b>	6.75% The discount rate is equal to the expected return on assets.



## Section 3: Supporting Information

### Salary Increases:

Group 1 and Group 4 employees: 4.0% per year

Teachers:

Years of Service	Rate per year (%)	Years of Service	Rate per year (%)
0	7.50	9	6.10
1	7.10	10	5.90
2	7.00	11	5.70
3	6.90	12	5.20
4	6.80	13	4.70
5	6.70	14	4.35
6	6.60	15-16	4.20
7	6.50	17-19	4.10
8	6.30	20 and later	4.00

Note:

Total payroll is assumed to increase 3.00% per year.

### Asset Valuation Method:

Market Value

## Section 3: Supporting Information

### Mortality Rates:

*Pre-Retirement (Non-Teachers):* RP-2014 Blue Collar Employee Mortality Table projected generationally using Scale MP-2021 (previously, projected generationally using Scale MP-2017)

*Healthy Retiree (Non-Teachers):* RP-2014 Blue Collar Healthy Annuitant Mortality Table projected generationally using Scale MP-2021 (previously, projected generationally using Scale MP-2017)

*Disabled Retiree (Non-Teachers):* RP-2014 Blue Collar Healthy Annuitant Mortality Table set forward one year projected generationally using Scale MP-2021 (previously, projected generationally using Scale MP-2017)

*Pre-Retirement (Teachers):* Pub-2010 Teacher Employee Headcount-weighted Mortality Table projected generationally with Scale MP-2020 (previously, RP-2014 White Collar Employee Mortality Table projected generationally using Scale MP-2019)

*Healthy (Teachers):* Pub-2010 Teacher Healthy Retiree Headcount-weighted Mortality Table projected generationally with Scale MP-2020 (previously, RP-2014 White Collar Healthy Annuitant Mortality Table projected generationally using Scale MP-2019)

*Disabled (Teachers):* Pub-2010 Teacher Healthy Retiree Headcount-weighted Mortality Table projected generationally with Scale MP-2020 (previously, RP-2014 White Collar Healthy Annuitant Mortality Table projected generationally with Scale MP-2019)

The underlying tables with generational projection to the ages of participants as of the measurement date reasonably reflect the mortality experience of the plan as of the measurement date. The mortality tables were then adjusted to future years using generational projection to reflect future mortality improvement between the measurement date and those years.

### Non-Teacher Annuitant Mortality Rates:

Age	Rate per year (%)			
	Healthy		Disabled	
	Male	Female	Male	Female
60	0.85	0.57	0.91	0.62
70	1.97	1.40	2.16	1.54
80	5.19	3.82	5.74	4.24
90	14.64	11.19	16.18	12.43

Note:  
Rates shown are before generational projection.

## Section 3: Supporting Information

### Teacher Annuitant Mortality Rates:

Age	Rate per year (%)							
	Healthy				Disabled			
	Current		Previous		Current		Previous	
	Male	Female	Male	Female	Male	Female	Male	Female
60	0.42	0.32	0.52	0.39	0.42	0.32	0.52	0.39
70	1.16	0.80	1.24	1.06	1.16	0.80	1.24	1.06
80	4.09	2.88	3.73	3.04	4.09	2.88	3.73	3.04
90	13.75	10.40	12.62	10.02	13.75	10.40	12.62	10.02

Note:  
Rates shown are before generational projection.

### Termination Rates Before Retirement:

Age	Groups 1 and 2 (excluding Teachers) - Rate per year (%)		
	Mortality		
	Male	Female	Disability
20	0.05	0.02	0.01
25	0.06	0.02	0.02
30	0.06	0.02	0.03
35	0.07	0.03	0.06
40	0.08	0.04	0.10
45	0.13	0.07	0.15
50	0.22	0.12	0.19
55	0.36	0.19	0.24
60	0.61	0.27	0.28

Notes:  
55% of the disability rates shown represent accidental disability.  
55% of the mortality rates shown represent accidental death.  
Rates shown are before generational projection.

## Section 3: Supporting Information

Group 4 - Rate per year (%)			
Age	Mortality		Disability
	Male	Female	
20	0.05	0.02	0.10
25	0.06	0.02	0.20
30	0.06	0.02	0.30
35	0.07	0.03	0.30
40	0.08	0.04	0.30
45	0.13	0.07	1.00
50	0.22	0.12	1.25
55	0.36	0.19	1.20
60	0.61	0.27	0.85

**Notes:**

90% of the disability rates shown represent accidental disability.

90% of the mortality rates shown represent accidental death.

Rates shown are before generational projection.

## Section 3: Supporting Information

Teachers – Rate per year (%)					
Mortality					
Age	Current		Previous		Disability
	Male	Female	Male	Female	
20	0.04	0.01	0.03	0.01	0.00
25	0.02	0.01	0.03	0.01	0.01
30	0.03	0.02	0.03	0.02	0.01
35	0.04	0.02	0.04	0.02	0.01
40	0.05	0.03	0.04	0.03	0.01
45	0.08	0.05	0.07	0.06	0.03
50	0.13	0.08	0.12	0.09	0.05
55	0.19	0.12	0.20	0.14	0.07
60	0.29	0.18	0.33	0.21	0.07

**Notes:**

75% of the death rates shown represent accidental death.

35% of the disability rates shown represent accidental disability.

Rates shown are before generational projection.

## Section 3: Supporting Information

### Withdrawal Rates:

Rate per year (%)			
Years of Service	Group 1 and 2	Years of Service	Group 4
0	15.0	0 – 10	1.5
1	12.0	11+	0.0
2	10.0		
3	9.0		
4	8.0		
5 – 9	7.6		
10 – 14	5.4		
15 – 19	3.3		
20 – 24	2.0		
25 - 29	1.0		
30+	0		

### Teachers - Rate per year (%)

Age	0 – 4 Years of Service		5 – 9 Years of Service		10+ Years of Service	
	Male	Female	Male	Female	Male	Female
20	13.0	10.0	5.5	7.0	1.5	5.0
30	15.0	15.0	5.4	8.8	1.5	4.5
40	13.3	10.5	5.2	5.0	1.7	2.2
50	16.2	9.8	7.0	5.0	2.3	2.0

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Retirement Rates:	Rate per year (%)		
	Groups 1 and 2 (excluding Teachers)		
	Age	Male	Female
45 – 49	--	--	1.0
50 – 54	1.0	1.5	2.0
52	1.0	2.0	2.0
53	1.0	2.5	5.0
54	2.0	2.5	7.5
55	2.0	5.5	15.0
56 – 57	2.5	6.5	10.0
58	5.0	6.5	10.0
59	6.5	6.5	15.0
60	12.0	5.0	20.0
61	20.0	13.0	20.0
62	30.0	15.0	25.0
63	25.0	12.5	25.0
64	22.0	18.0	30.0
65	40.0	15.0	100.0
66 – 67	25.0	20.0	--
68	30.0	25.0	--
69	30.0	20.0	--
70	100.0	100.0	--

## Section 3: Supporting Information

Age	Teachers - Rate per year (%)					
	Years of Service					
	Less than 20		20 - 29		30 or more	
	Male	Female	Male	Female	Male	Female
50 – 52	--	--	1.0	1.0	2.0	1.5
53	--	--	1.5	1.0	2.0	1.5
54	--	--	2.5	1.0	2.0	2.0
55	5.0	3.0	3.0	3.0	6.0	5.0
56	5.0	3.0	6.0	5.0	20.0	15.0
57	5.0	4.0	10.0	8.0	40.0	35.0
58	5.0	8.0	15.0	10.0	50.0	35.0
59	10.0	8.0	20.0	15.0	50.0	35.0
60	10.0	10.0	25.0	20.0	40.0	35.0
61	20.0	12.0	30.0	25.0	40.0	35.0
62	20.0	12.0	35.0	30.0	35.0	35.0
63	25.0	15.0	40.0	30.0	35.0	35.0
64	25.0	20.0	40.0	30.0	35.0	35.0
65	25.0	25.0	40.0	40.0	35.0	35.0
66	30.0	25.0	30.0	30.0	40.0	35.0
67	30.0	30.0	30.0	30.0	40.0	30.0
68	30.0	30.0	30.0	30.0	40.0	30.0
69	30.0	30.0	30.0	30.0	40.0	30.0
70	100.0	100.0	100.0	100.0	100.0	100.0

Note: All teachers are assumed to be enrolled in Retirement Plus.

### Dependents:

For future retirees, husbands were assumed to be three years older than their wives. For future retirees who elect to continue their health coverage at retirement, 65% (previously, 70%) were assumed to have an eligible spouse who also opts for health coverage at that time.



## Section 3: Supporting Information

<b>Per Capita Health Costs:</b>	Fiscal year 2021 - 2022 medical and prescription drug claims costs are shown in the table below for retirees and for spouses at selected ages. These costs are net of deductibles and other benefit plan cost sharing provisions.		
	<b>Age</b>	<b>Non-Medicare Plans</b>	<b>Medicare Plans</b>
	45	\$6,786	N/A
	50	8,272	N/A
	55	10,153	N/A
	60	12,405	N/A
	65	15,499	\$3,323
	70	18,620	3,661
	75	22,050	3,941
	80	25,624	4,147
<b>Annual Medicare Part B Reimbursement:</b>	\$294		
<b>Weighted Average Annual Retiree Contribution Amount:</b>	Non-Medicare Plans	\$2,073	
	Medicare Plans	\$1,210	

## Section 3: Supporting Information

### Health Care Cost Trend Rates:

Health care trend measures the anticipated overall rate at which health plan costs are expected to increase in future years. The rates shown below are “net” and are applied to the net per capita costs shown above. The trend shown for a particular plan year is the rate that is applied to that year’s cost to yield the next year’s projected cost.

Year Ending June 30	Rate (%)	
	Non-Medicare	Medicare
2022	7.92	1.87
2023	7.06	4.49
2024	6.83	4.57
2025	6.59	4.66
2026	6.36	4.75
2027	6.00	4.50
2028	5.75	4.50
2029	5.50	4.50
2030	5.25	4.50
2031	5.00	4.50
2032	4.75	4.50
2033 & later	4.50	4.50

The City portion of the Medicare Part B Reimbursement is not assumed to increase.

The trend rate assumptions for the first year reflect known increases from FY2022 to FY2023 rates (including the migration out of Fallon plans no longer offered), the next 4 years are the same as used in the June 30, 2021 Commonwealth of Massachusetts Postemployment Benefit Other than Pensions GASB Statement Nos. 74/75 Valuation Report, dated January 2022, completed by Deloitte Consulting.

The trend rate assumptions for 2027 and later were developed using Segal’s internal guidelines, which are established each year using data sources such as the 2022 Segal Health Trend Survey, internal client results, trends from other published surveys prepared by the S&P Dow Jones Indices, consulting firms and brokers, and CPI statistics published by the Bureau of Labor Statistics.

### Retiree Contribution Increase Rate:

Retiree contributions for medical and prescription drug coverage are expected to increase with medical trend.

### Administrative Expenses:

Administrative expenses are assumed to be included in the fully insured premium rates.

## Section 3: Supporting Information

<p><b>Participation and Coverage Election:</b></p>	<p>100% of active employees with coverage are assumed to elect retiree coverage</p> <p>100% of retirees over age 65 are assumed to remain with their current medical plan for life</p> <p>For future retirees hired before 1986 and current retirees under age 65, 100% of non-Teachers and 90% of Teachers are assumed to be eligible for Medicare and are assumed to enroll in a Medicare plan upon reaching age 65 and the remaining retirees are assumed to be ineligible for Medicare and to remain enrolled in a non-Medicare plan. For future retirees hired after 1986, 100% are assumed to be eligible for Medicare and are assumed to enroll in a Medicare Plan upon reaching age 65.</p> <p>100% of current and future retirees with medical coverage are assumed to have life insurance coverage.</p> <p>The participation and coverage elections assumptions were based on a review of recent experience.</p>
<p><b>Plan Design:</b></p>	<p>Development of plan liabilities was based on the substantive plan of benefits in effect as described in Exhibit III.</p>
<p><b>Missing Participant Data:</b></p>	<p>A missing census item for a given participant was assumed to equal the average value of that item over all other participants of the same status for whom the item is known.</p>
<p><b>Health Care Reform Assumption:</b></p>	<p>The valuation does not reflect the potential impact of any future changes due to prior or pending legislation.</p>
<p><b>Demographic and Salary Increase Assumptions:</b></p>	<p>Many of the demographic assumptions used in this valuation for non-teachers (including mortality, disability, turnover, and retirement) and the ultimate salary increase assumptions are the same as used in the Gloucester Contributory Retirement System Actuarial Valuation and Review as of January 1, 2022, dated August 26, 2022 completed by Segal. The assumptions used in this valuation for teachers are the same as used in the Massachusetts Teachers' Retirement System Actuarial Valuation Report as of January 1, 2021, dated November 4, 2021, completed by PERAC.</p> <p>The remaining demographic assumptions, such as percent married, relative ages of spouses, and enrollment elections, were based on the experience of the Plan and the experience of similar plans.</p> <p>A review of these demographic assumptions is beyond the scope of this assignment, however, we have no reason to doubt the reasonableness of these assumptions.</p>

## Section 3: Supporting Information

### Actuarial Models:

Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems Unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the model and reviews the test lives and results, under the supervision of the responsible actuary.

Our claims costs assumptions are based on proprietary modeling software as well as models that were developed by others. These models generate per capita claims cost calculations that are used in our valuation software. Our Health Technical Services Unit, comprised of actuaries and programmers, is responsible for the initial development and maintenance of our health models. They are also responsible for testing models that we purchase from other vendors for reasonableness. The client team inputs the paid claims, enrollments, plan provisions and assumptions into these models and reviews the results for reasonableness, under the supervision of the responsible actuary.

### Justification for Assumption Changes Since Prior Valuation:

Based on past experience and future expectations, the following actuarial assumptions were changed:

- The following were updated to match the assumptions used in the Commonwealth of Massachusetts (OPEB) Actuarial Valuation GASB 74 as of June 30, 2021:
  - The per capita health costs and contributions were updated, and the trend assumptions were revised.
- The following coverage election assumptions was updated based on actual plan enrollment:
  - The percentage of participants assumed to have an eligible spouse who also opts for health coverage was decreased from 70% to 65% based on actual plan enrollment.
- The following was updated to match the assumptions used in the Teachers' Retirement System Actuarial Valuation Report as of January 1, 2021, dated November 4, 2021, completed by PERAC:
  - The mortality table for teachers was updated.
- The following was updated to match the assumptions used in the Gloucester Contributory Retirement System Actuarial Valuation and Review as of January 1, 2022, dated August 26, 2022, completed by Segal:
  - The mortality projection scale for non-teachers was updated.

## Section 3: Supporting Information

### Exhibit III: Summary of Plan

This exhibit summarizes the major benefit provisions as included in the valuation. To the best of our knowledge, the summary represents the substantive plans as of the measurement date. It is not intended to be, nor should it be interpreted as, a complete statement of all benefit provisions.

<b>Eligibility:</b>	<p>Retired and receiving a pension from the City of Gloucester Contributory Retirement System or the Massachusetts Teachers' Retirement System.</p> <ul style="list-style-type: none"><li>• Members hired before April 2, 2012<ul style="list-style-type: none"><li>– Group 1 and Group 2 (including Teachers):<ul style="list-style-type: none"><li>• Retirees with at least 10 years of creditable service are eligible at age 55;</li><li>• Retirees with at least 20 years of creditable service are eligible at any age.</li></ul></li><li>– Group 4<ul style="list-style-type: none"><li>• Retirees are eligible at age 55;</li><li>• Retirees with at least 20 years of creditable service are eligible at any age.</li></ul></li></ul></li><li>• Members hired on or after April 2, 2012<ul style="list-style-type: none"><li>– Group 1 (including Teachers):<ul style="list-style-type: none"><li>• Retirees with at least 10 years of creditable service are eligible at age 60.</li></ul></li><li>– Group 2<ul style="list-style-type: none"><li>• Retirees with at least 10 years of creditable service are eligible at age 55.</li></ul></li><li>– Group 4<ul style="list-style-type: none"><li>• Retirees are eligible at age 55;</li><li>• Retirees with at least 10 years of creditable service are eligible at age 50.</li></ul></li></ul></li></ul>
<b>Disability:</b>	<p>Accidental (job-related) Disability has no age or service requirement.</p> <p>Ordinary (non-job related) Disability has no age requirement but requires 10 years of creditable service.</p>
<b>Pre-Retirement Death:</b>	<p>Surviving spouses of members who die in active service on Accidental (job-related) Death are eligible at any age.</p> <p>Surviving spouses of members who die in active service on Ordinary (non-job related) Death are eligible after two years of service.</p>
<b>Post-Retirement Death:</b>	<p>Surviving spouse is eligible.</p>
<b>Benefit Types:</b>	<p>Medical and prescription drug benefits are provided to all eligible retirees through plans offered through the Commonwealth of Massachusetts Group Insurance Commission (GIC). (Dental coverage is offered but is 100% retiree paid and therefore has no impact on this valuation.) A life insurance benefit of \$2,000 is also provided of which the City of Gloucester pays 75% of the premium. The City of Gloucester also pays \$294 of the Medicare Part B premium.</p>

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<b>Duration of Coverage:</b>	Lifetime.				
<b>Dependent Benefits:</b>	Medical and Prescription Drugs.				
<b>Dependent Coverage:</b>	Benefits are payable to a spouse for their lifetime, regardless of when the retirees dies.				
<b>Retiree Contributions:</b>	Premium rates and retiree contributions as of July 1, 2021, are summarized below:				
	<b>Non-Medicare Actives and Retirees</b>	<b>Monthly Premium</b>	<b>Town Cost</b>	<b>Retiree Cost</b>	<b>Retiree Cost %</b>
	<b>Allways Health Partners (formerly NHP Prime)</b>				
	• Individual	\$767.96	\$652.77	\$115.19	15%
	• Family	\$2,005.69	\$1,704.84	\$300.85	15%
	<b>Fallon Health Direct Care</b>				
	• Individual	\$637.52	\$541.89	\$95.63	15%
	• Family	\$1,611.71	\$1,369.95	\$241.76	15%
	<b>Fallon Health Select Care</b>				
	• Individual	\$862.99	\$733.54	\$129.45	15%
	• Family	\$2,100.58	\$1,785.49	\$315.09	15%
	<b>Harvard Pilgrim Independence Plan</b>				
	• Individual	\$964.26	\$752.12	\$212.14	22%
	• Family	\$2,356.13	\$1,837.78	\$518.35	22%
	<b>Harvard Pilgrim Primary Choice Plan</b>				
	• Individual	\$697.95	\$593.26	\$104.69	15%
	• Family	\$1,781.96	\$1,514.67	\$267.29	15%
	<b>Tufts Health Plan Navigator</b>				
	• Individual	\$836.65	\$652.59	\$184.06	22%
	• Family	\$2,045.93	\$1,595.83	\$450.10	22%
	<b>Tufts Health Plan Spirit</b>				
	• Individual	\$638.72	\$542.91	\$95.81	15%
	• Family	\$1,541.91	\$1,310.62	\$231.29	15%

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<b>Unicare State Indemnity Plan/Basic with CIC (Comprehensive)</b>					
• Individual		\$1,204.17	\$903.13	\$301.04	25%
• Family		\$2,674.11	\$2,005.58	\$668.53	25%
<b>Unicare State Indemnity Plan/Basic without CIC (Comprehensive)</b>					
• Individual		\$1,143.57	\$857.68	\$285.89	25%
• Family		\$2,536.14	\$1,902.10	\$634.04	25%
<b>Unicare State Indemnity Plan/Community Choice</b>					
• Individual		\$593.83	\$463.19	\$130.64	22%
• Family		\$1,475.84	\$1,151.16	\$324.68	22%
<b>Unicare State Indemnity Plan/PLUS</b>					
• Individual		\$781.99	\$609.95	\$172.04	22%
• Family		\$1,866.72	\$1,456.04	\$410.68	22%
	<b>Medicare Retirees</b>	<b>Monthly Premium</b>	<b>Town Cost</b>	<b>Retiree Cost</b>	<b>Retiree Cost %</b>
	Harvard Pilgrim Medicare Enhance	\$413.42	\$310.06	\$103.36	25%
	Health New England Medicare Sup Plus	\$414.18	\$310.63	\$103.55	25%
	Tufts Health Plan Medicare Complement	\$392.59	\$294.44	\$98.15	25%
	Tufts Health Plan Medicare Preferred	\$332.70	\$282.79	\$49.91	15%
	UniCare State Indemnity Plan/Medicare Extension (OME) with CIC (Comprehensive)	\$408.84	\$306.63	\$102.21	25%
<b>Plan Changes Since the Prior Valuation:</b>	None. Effective July 1, 2022, Fallon plans are no longer offered by the GIC. We have accounted for migration away from these plans through our medical trend assumption.				

## Section 3: Supporting Information

### Exhibit IV: Definition of Terms

The following list defines certain technical terms for the convenience of the reader:

<b>Assumptions or Actuarial Assumptions:</b>	The estimates on which the cost of the Plan is calculated including: <ol style="list-style-type: none"><li>1. Investment return — the rate of investment yield that the Plan will earn over the long-term future;</li><li>2. Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;</li><li>3. Retirement rates — the rate or probability of retirement at a given age;</li><li>4. Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.</li></ol>
<b>Actuarial Accrued Liability (AAL):</b>	Present value of all future benefit payments for current retirees and active employees taking into account assumptions about demographics, turnover, mortality, disability, retirement, health care trends, and other actuarial assumptions.
<b>Unfunded Actuarial Accrued Liability (UAAL):</b>	The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There are many approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.
<b>Normal Cost:</b>	The amount of contributions required to fund the benefit allocated to the current year of service.
<b>Actuarially Determined Contribution (ADC):</b>	A target or recommended contribution to an OPEB plan for the reporting period based on the most recent measurement available.
<b>Valuation Date:</b>	The date at which the actuarial valuation is performed
<b>Covered Employee Payroll:</b>	The payroll of the employees that are provided OPEB benefits
<b>Entry Age Actuarial Cost Method:</b>	An actuarial cost method where the present value of the projected benefits for an individual is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age
<b>Health Care Cost Trend Rates:</b>	The rate of change in per capita health costs over time
<b>Discount Rate:</b>	The interest rate used to determine the actuarial present value of projected benefit payments.
<b>Expected Return on Assets:</b>	The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.
<b>Real Rate of Return:</b>	The rate of return on an investment after removing inflation