

Barnstable County

Governmental Accounting Standards Board (GASB) Statements No. 74 and 75 Accounting Valuation Report

Measured at June 30, 2022



This report has been prepared at the request of the Barnstable County to assist in administering the Plan. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Barnstable County 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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October 5, 2022

Carol Coppola
Finance Director
Barnstable County
P.O. Box 427
Barnstable, MA 02630

Dear Ms. Coppola:

We are pleased to submit this Governmental Accounting Standards Board (GASB) Statements No. 74 and 75 Accounting Valuation as of June 30, 2022 for the Barnstable County. It contains the actuarial information that will need to be disclosed in order to comply with GASB 74 and 75. Except as otherwise noted, please refer to the Barnstable County Actuarial Valuation and Review of Other Postretirement Benefits (OPEB) as of June 30, 2020 for the data, assumptions and plan of benefits underlying these calculations.

This report is based on information received from the Barnstable County and vendors employed by the Barnstable County. 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. The assumptions used in this actuarial valuation were selected by the Barnstable County based upon my analysis and recommendations. In my opinion, the assumptions are reasonable and take into account the experience of the Barnstable County and reasonable expectations.

We look forward to discussing this with you at your convenience.

Sincerely,



Kathleen A. Riley, FSA, MAAA, EA
Senior Vice President and Actuary

Table of Contents

Section 1: Actuarial Valuation Summary	1
Purpose	1
Significant issues	1
Important information about actuarial valuations	2
Section 2: GASB Information	5
General information about the OPEB plan	5
Net OPEB liability	6
Determination of discount rate and investment rate of return	8
Sensitivity	9
Schedule of changes in net OPEB liability – last two fiscal years	10
OPEB expense	12
Deferred outflows of resources and deferred inflows of resources	13
Schedule of reconciliation of net OPEB liability	14
Schedule of contributions – last ten fiscal years	15

Section 1: Actuarial Valuation Summary

Purpose

This report has been prepared by Segal to present certain disclosure information for the Barnstable County (the “Employer”) Other Postemployment Benefits (OPEB) plan and the Barnstable County OPEB Trust (the “Plan”) as of June 30, 2022, required by Governmental Accounting Standards Board (GASB) Statements No. 74 and 75. The actuarial computations made are for purposes of fulfilling plan accounting requirements. Determinations for purposes other than meeting financial accounting requirements may be significantly different from the results reported here. This report is based on financial information as of June 30, 2022 provided by the Barnstable County and the Barnstable County Actuarial Valuation and Review as of June 30, 2020, which reflects:

- The benefit provisions of the OPEB plan;
- The characteristics of covered active participants and retired participants and beneficiaries as of June 30, 2020;
- The assets as of June 30, 2020;
- 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.

Significant issues

Accounting and Financial Reporting

- The NOL measured as of June 30, 2022 and June 30, 2021 was determined based upon the results of the actuarial valuation as of June 30, 2020.
- The discount rate used to measure the TOL and NOL as of June 30, 2022 and June 30, 2021 was 3.54% and 2.16%, respectively.

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 (“Segal”) relies on a number of input items. These include:

Plan of benefits	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 Barnstable County 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.
Participant data	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.
Assets	The valuation is based on the market value of assets as of the valuation date, as provided by the Barnstable County.
Actuarial assumptions	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

Models

Segal accounting results are based on proprietary actuarial modeling software. The accounting valuation models generate a comprehensive set of liability and cost calculations that are presented to meet accounting standards and client requirements. Our Actuarial Technology and Systems unit, comprising 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 models, and reviews 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.

Section 1: Actuarial Valuation Summary

Given the above, the user of Segal's actuarial valuation (or other actuarial calculations) needs to keep the following in mind:

The actuarial valuation is prepared for use by the Barnstable County. 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.

If the Barnstable County 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.

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.

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

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.

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 Barnstable County should look to their other advisors for expertise in these areas.

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.

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

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: GASB Information

General information about the OPEB plan

Plan description

Plan membership. At June 30, 2020, the Barnstable County's plan membership consisted of the following:

	June 30, 2020
Retired members or beneficiaries currently receiving benefits	182
Active members	<u>131</u>
Total	313

We have assumed other general information about the Plan will be provided by the Barnstable County's auditors.

Section 2: GASB Information

Net OPEB liability

The components of the net OPEB liability of the Barnstable County are as follows:

Components of the Net OPEB Liability	June 30, 2022	June 30, 2021
Total OPEB Liability	\$37,189,723	\$44,574,525
Plan Fiduciary Net Position	1,060,853	1,063,660
Net OPEB Liability	36,128,870	43,510,865
Plan Fiduciary Net Position as a percentage of the Total OPEB Liability*	2.85%	2.39%

* These funded percentages are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligation or the need for or the amount of future contributions.

Actuarial assumptions. The Total OPEB Liability as of June 30, 2022 was measured by an actuarial valuation as of June 30, 2020, using the following actuarial assumptions, applied to all periods included in the measurement, unless otherwise specified:

Wage inflation	3.25%
Salary increases	<ul style="list-style-type: none"> • Service-related increases for Group 1 (excluding Teachers) and Group 2 employees: 6.00% decreasing over 11 years to an ultimate level of 4.00% • Service-related increases for Group 4 employees: 7.00% decreasing over 8 years to an ultimate level of 4.50% • Service-related increases for Teachers: 7.50% decreasing over 20 years to an ultimate level of 4.00%
Discount rate	3.54% as of June 30, 2022 and 2.16% as of June 30, 2021
Investment rate of return	6.50% as of June 30, 2022 and 6.50% as of June 30, 2021

Section 2: GASB Information

Health care cost trend rates

- CCMHG:
 - Non-Medicare*: 2.50% for 1 year, then 6.75% decreasing by 0.25% each year to an ultimate level of 4.50% per year
 - Medicare*: 2.50% for 1 year, then 6.75% decreasing by 0.25% each year to an ultimate level of 4.50% per year
 - GIC:
 - Non-Medicare: 6.60%, 6.50%, 6.40%, 6.20%, then 6.00% decreasing by 0.25% each year to an ultimate level of 4.50% per year
 - Medicare: 4.80%, 4.70%, 4.60%, 4.70%, then 6.00% decreasing by 0.25% each year to an ultimate level of 4.50% per year
 - Dental: 3.00%
 - Part B*: 8.70% for 1 year, then 4.50%
 - Contributions: Retiree contributions are expected to increase with respective trend shown above.
- *First year trends reflect known increases

Mortality rates

- Preretirement mortality rates:
 - Healthy Non-Teachers: RP-2014 Blue Collar Employee Mortality Table projected generationally with Scale MP-2017
 - Healthy Teachers: Pub-2010 Teachers Employee Headcount-Weighted Mortality Table projected generationally with Scale MP-2020
- Postretirement mortality rates:
 - Healthy Non-Teachers: RP-2014 Blue Collar Healthy Annuitant Mortality Table projected generationally with Scale MP-2017
 - Healthy Teachers: Pub-2010 Teacher Healthy Retiree Headcount-Weighted Mortality Table projected generationally with Scale MP-2020
 - Disabled Non-Teachers: RP-2014 Blue Collar Healthy Annuitant Mortality Table set forward one year projected generationally with Scale MP-2017
 - Disabled Teachers: Pub-2010 Teacher Healthy Retiree Headcount-Weighted Mortality Table projected generationally with Scale MP-2020

Section 2: GASB Information

Determination of discount rate and investment rate of return

Development of long-term rate

The long-term expected rate of return on OPEB plan investments was determined using a building block method in which expected future rates of return (expected returns, net of inflation) are developed for each major asset class. These returns are combined to produce the 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. The projected arithmetic real rates of return for each major asset class, after deducting inflation, but before investment expenses, used in the derivation of the long-term expected investment rate of return assumption are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return
Domestic equity	6.11%
International developed markets equity	6.49%
International emerging markets equity	8.12%
Core fixed income	0.38%
High-yield fixed income	2.48%
Real estate	3.72%
Commodities	3.44%
Hedge fund, GTAA, Risk parity	2.63%
Private equity	9.93%

Nature of Assets: The assets are in an irrevocable OPEB Trust and are invested with Rockland Trust.

Development of blended discount rate

The discount rate is a blend of the long-term expected rate of return on OPEB Trust assets and a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (2.16% as of June 30, 2021 and 3.54% as of June 30, 2022). The blending is based on the sufficiency of projected assets to make benefit payments. Since assets are not sufficient to cover projected benefit payments, the discount rate used to measure the total OPEB liability was 2.16% as of June 30, 2021 and 3.54% as of June 30, 2022.

Section 2: GASB Information

Sensitivity

The following presents the NOL of the Barnstable County as well as what the NOL would be if it were calculated using a discount rate that is 1-percentage-point lower (2.54%) or 1-percentage-point higher (4.54%) than the current rate. Also, shown is the NOL as if it were calculated using health care cost trend rates that were 1-percentage-point lower or 1-percentage-point higher than the current health care cost trend rates.

	1% Decrease (2.54%)	Current Discount Rate (3.54%)	1% Increase (4.54%)
Net OPEB Liability (Asset)	\$42,071,848	\$36,128,870	\$31,344,818
	1% Decrease in Health Care Cost Trend Rates	Current Health Care Cost Trend Rates	1% Increase in Health Care Cost Trend Rates
Net OPEB Liability (Asset)	\$30,476,566	\$36,128,870	\$43,351,901

Section 2: GASB Information

Schedule of changes in net OPEB liability – last two fiscal years

Reporting Date for Employer under GASB 75 Measurement Date for Employer under GASB 75	June 30, 2022 June 30, 2022	June 30, 2021 June 30, 2021
Total OPEB Liability		
Service cost	\$1,524,632	\$1,798,433
Interest	981,618	1,048,628
Changes of benefit terms	0	0
Differences between expected and actual experience	0	759,877
Changes of assumptions	-8,576,242	-4,058,244
Benefit payments, including refunds of member contributions	-1,314,810	-1,243,123
Net change in Total OPEB Liability	-7,384,802	-1,694,429
Total OPEB Liability – beginning	44,574,525	46,268,954
Total OPEB Liability – ending	\$37,189,723	\$44,574,525
Plan Fiduciary Net Position		
Contributions – employer	\$1,414,810	\$1,243,123
Contributions – employee	0	0
Net investment income	-102,807	177,994
Benefit payments, including refunds of member contributions	-1,314,810	-1,243,123
Administrative expenses	0	0
Net change in Plan Fiduciary Net Position	-\$2,807	\$177,994
Plan Fiduciary Net Position – beginning	1,063,660	885,666
Plan Fiduciary Net Position – ending	\$1,060,853	\$1,063,660
Net OPEB Liability – ending	36,128,870	43,510,865
Plan Fiduciary Net Position as a percentage of the Total OPEB Liability	2.85%	2.39%
Covered employee payroll	N/A	N/A
Plan Net OPEB Liability as percentage of covered employee payroll	N/A	N/A

Note:

Please enter covered payroll for missing years.

Section 2: GASB Information

Notes to schedule:

Changes in Actuarial Assumptions:

Changes as of June 30, 2021:

- Per capita health costs, contributions, and trends for CCMHG retirees were updated to reflect current experience and future expectations.
- Per capita health costs, contributions and trends for GIC retirees were updated based on June 30, 2020 Commonwealth of Massachusetts Postemployment Benefit Other than Pensions GASB Statement No. 74 Valuation Report, dated January 2021, completed by Deloitte Consulting.
- The mortality assumption for Teachers was updated to be consistent with the companion pension fund.
- The Medicare enrollment assumption for Town of Eastham, Town of Mashpee, Cotuit Fire Department and GIC retirees under age 65 and future retirees was updated.
- The life insurance enrollment for future retirees was updated, if applicable.
- The discount rate was updated from 2.21% as of June 30, 2020 to 2.16% as of June 30, 2021.
- The expected return on assets was lowered from 7.00% to 6.50%.

Changes as of June 30, 2022:

- The discount rate was updated from 2.16% as of June 30, 2021 to 3.54% as of June 30, 2022.

Changes in Plan Provisions:

Changes as of June 30, 2021:

- None

Changes as of June 30, 2022:

- None

Section 2: GASB Information

OPEB expense

Reporting Date for Employer under GASB 75	June 30, 2022	June 30, 2021
Measurement Date for Employer under GASB 75	June 30, 2022	June 30, 2021
Components of OPEB Expense		
Service cost	\$1,524,632	\$1,798,433
Interest on the Total OPEB Liability	981,618	1,048,628
Current-period benefit changes	0	0
Expensed portion of current-period difference between expected and actual experience in the Total OPEB Liability	0	151,977
Expensed portion of current-period changes of assumptions	-1,715,250	-811,648
Member contributions	0	0
Projected earnings on OPEB plan investments	-72,388	-61,997
Expensed portion of current-period differences between actual and projected earnings on OPEB plan investments	35,039	-23,201
Administrative expenses	0	0
Recognition of beginning of year deferred outflows of resources as OPEB expense	2,655,043	2,503,071
Recognition of beginning of year deferred inflows of resources as OPEB expense	-834,848	-695,077
OPEB Expense	\$2,573,846	\$3,910,186

Section 2: GASB Information

Deferred outflows of resources and deferred inflows of resources

Reporting Date for Employer under GASB 75	June 30, 2022	June 30, 2021
Measurement Date for Employer under GASB 75	June 30, 2022	June 30, 2021
Deferred Outflows of Resources		
Changes of assumptions	\$3,553,685	\$5,778,525
Net difference between projected and actual earnings on OPEB plan investments	90,597	0
Difference between expected and actual experience in the Total OPEB Liability	<u>455,925</u>	<u>875,132</u>
Total Deferred Outflows of Resources	\$4,100,207	\$6,653,657
Deferred Inflows of Resources		
Changes of assumptions	\$9,295,939	\$3,246,596
Net difference between projected and actual earnings on OPEB plan investments	0	61,762
Difference between expected and actual experience in the Total OPEB Liability	<u>0</u>	<u>0</u>
Total Deferred Inflows of Resources	\$9,295,939	\$3,308,358
Deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized as follows:		
Reporting Date for Employer under GASB 75 Year Ended June 30:		
2022	N/A	\$1,820,195
2023	-\$378,654	1,301,555
2024	-773,787	906,422
2025	-2,363,082	-682,873
2026	-1,680,209	0
2027	0	0
Thereafter	0	0

Note: Average expected remaining service lives is 5 years.

Section 2: GASB Information

Schedule of reconciliation of net OPEB liability

Measurement Date	June 30, 2022	June 30, 2021
Beginning Net OPEB Liability	\$43,510,865	\$45,383,288
OPEB expense	2,573,846	3,910,186
Employer contributions	-1,414,810	-1,243,123
New net deferred inflows/outflows	-6,720,836	-2,731,492
Recognition of prior deferred inflows/outflows	-1,820,195	-1,807,994
Ending Net OPEB Liability	\$36,128,870	\$43,510,865

Section 2: GASB Information

Schedule of contributions – last ten fiscal years

Year Ended June 30	Actuarially Determined Contribution ¹	Contributions in Relation to the Actuarially Determined Contribution	Contribution Deficiency / (Excess)	Covered- Employee Payroll	Contributions as a Percentage of Covered Employee Payroll
2017	\$967,715	\$967,715	\$0	N/A	N/A
2018	1,011,262	1,011,262	0	N/A	N/A
2019	1,836,278	1,960,329	-124,051	N/A	N/A
2020	1,895,957	1,188,797	707,160	N/A	N/A
2021	1,827,648	1,243,123	584,525	N/A	N/A
2022	1,887,855	1,414,810	473,045	N/A	N/A

Note:

Please enter covered payroll for the missing years shown.

Notes to Schedule:

Methods and assumptions used to establish “actuarially determined contribution” rates:

Valuation date	Actuarially determined contribution for 2022 was determined with the June 30, 2020 actuarial valuation.
Actuarial cost method	Entry Age Normal - Level Percentage of Payroll
Amortization method	Level percent of payroll - payments increase 3.25% per year
Remaining amortization period	25 years from July 1, 2021
Asset valuation method	Market value
Investment rate of return	6.50%
Wage inflation	3.25%

¹ Prior to 2019 the Actuarial Determined Contribution was the statutorily required contribution.

Section 2: GASB Information

Health care trend cost rates

- CCMHG:
 - Non-Medicare*: 2.50% for 1 year, then 6.75% decreasing by 0.25% each year to an ultimate level of 4.50% per year
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 - GIC:
 - Non-Medicare: 6.60%, 6.50%, 6.40%, 6.20%, then 6.00% decreasing by 0.25% each year to an ultimate level of 4.50% per year
 - Medicare: 4.80%, 4.70%, 4.60%, 4.70%, then 6.00% decreasing by 0.25% each year to an ultimate level of 4.50% per year
 - Dental: 3.00%
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 - Contributions: Retiree contributions are expected to increase with respective trend shown above.
- *First year trends reflect known increases

Mortality rates

- Preretirement mortality rates:
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