

Town of Reading

Actuarial Valuation and Review of Other Postemployment Benefits (OPEB)

Measured at June 30, 2020



This report has been prepared at the request of the Town of Reading to assist in administering the Plan. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Town of Reading 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.

© 2021 by The Segal Group, Inc. All rights reserved.

Segal



116 Huntington Avenue, 8th Floor
Boston, MA 02116
segalco.com
T 617.424.7300

August 12, 2021

Robert W. LeLacheur, Jr., CFA
Town Manager
16 Lowell Street
Town Hall
Reading, MA 01867

Dear Mr. LeLacheur:

We are pleased to submit this report on our actuarial valuation of postemployment welfare benefits as of June 30, 2020. The purpose of this report is to calculate an Actuarially Determined Contribution for the Town of Reading Other Postemployment Benefit (OPEB) Plan for the fiscal year ending June 30, 2021. 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, 2021 for the Town and for the year ending December 31, 2021 for the Light Department will be provided in a separate reports.

This report is based on information received from the Town of Reading and vendors employed by the Town of Reading. 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.

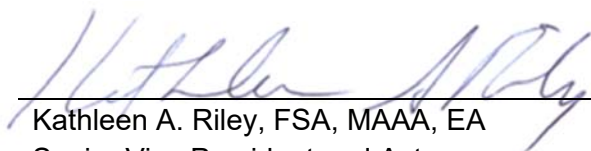
The measurements shown in this actuarial valuation may not be applicable for other purposes. Accordingly, additional determinations may be needed for other purposes, such as judging benefit security at termination of the plan, or determining short-term cash flow requirements.

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.

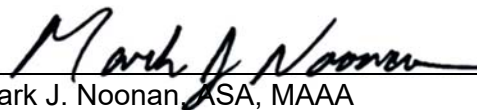
The actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. The actuarial calculations were directed under our supervision. We are members of the American Academy of Actuaries and collectively meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Town of Reading 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 this report, please send a copy (preferably the electronic version) to Jim Lamenzo at PERAC. His email address is jlamenzo@per.state.ma.us.

Sincerely,
Segal



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



Mark J. Noonan, FSA, MAAA
Vice President and Health Actuary

Table of Contents

Section 1: Actuarial Valuation Summary.....	5
Purpose and basis.....	5
Highlights of the valuation	5
OPEB Trust information.....	8
Other considerations	9
Important information about actuarial valuations.....	10
Section 2: Valuation Results	12
Summary of valuation results	12
Projection of actuarially determined contribution.....	14
Section 3: Supporting Information.....	16
Exhibit I: Summary of Participant Data.....	16
Exhibit II: Statements of Actuarial Assumption, Methods and Models	17
Exhibit III: Summary of Plan	29
Exhibit IV: Definition of Terms	31

Section 1: Actuarial Valuation Summary

Purpose and basis

This report presents the results of our actuarial valuation of the Town of Reading other postemployment welfare benefit plan as of June 30, 2020. The purpose of this report is to calculate a recommended Actuarially Determined Contribution for the OPEB plan for the fiscal year ending June 30, 2021 for the Town and for the year ending December 31, 2021 for the Light Department. 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 Town of Reading;
- The characteristics of covered active members, retired members and beneficiaries as of June 30, 2020, provided by the Town of Reading;
- The assets of the Plan as of June 30, 2020, provided by the Town of Reading;
- 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 long term impact of the Coronavirus (COVID-19) pandemic is still unknown. Our results do not include the impact of the following:
 - The short-term impact on health plan costs;
 - Short-term or long-term impacts on mortality of the covered population; or
 - The potential for federal or state fiscal relief.
- 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 investment allocation of the State Retiree Benefit Trust Fund (SRBFT) and the expectation that the OPEB Trust will be invested in the SRBFT, we recommend lowering the expected return on assets from 7.25% to 7.00%.

Section 1: Actuarial Valuation Summary

- The unfunded actuarial accrued liability (UAAL) as of June 30, 2020 is \$60,326,637 based on an actuarial accrued liability (AAL) of \$70,508,072 and an actuarial value of assets of \$10,181,435. 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.
- A summary of the valuation results appears on page 12 for the Town page 13 for the Light Department. The unfunded liability for the Town is \$55,645,149 and the unfunded liability for the Light Department is \$4,681,488.
- As of June 30, 2020 the ratio of assets to the AAL (the funded ratio) is 9.86%, compared to 6.03% in the prior valuation, for the Town and 46.68%, compared to 31.71% in the prior valuation, for the Light Department. 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.
- In addition to lowering the discount rate and the expected return on assets, the following assumptions were revised with this valuation:
 - The per capita health costs and contributions were updated to reflect current premiums;
 - The trend assumptions were revised to reflect future expectations;
 - The impact of the excise tax on high cost health plans (part of the Patient Protection and Affordable Care Act) was removed, as the tax was repealed effective December 20, 2019;
 - The mortality assumptions for teachers were updated; and
 - The retirement assumption for Group 1 employees hired on or after April 2, 2012 was updated.
- The report reflects all plan changes known at the time of the valuation: The Town pays the Part A premium for those retirees who did not have Medicare taxes withheld while working and the portion of the Part B premium that represents a penalty for not joining at the later of age 65 or retirement.
- The UAAL was expected to increase by \$4,679,153 from \$73,697,650 as of June 30, 2018 to \$78,376,803 as of June 30, 2020. The actual unfunded liability of \$60,326,637 is \$18,050,166 less than expected. The difference between the actual and expected increase was the net effect of the following:

Section 1: Actuarial Valuation Summary

	Town and Light Department
June 30, 2018 unfunded actuarial liability	\$73,697,650
June 30, 2020 expected unfunded actuarial liability	\$78,376,803
Change due to:	
• Experience loss	\$7,172,902
• Removing excise tax	-5,486,342
• Updating future trends	2,727,423
• Updating per capita costs and contributions	-12,003,741
• Updating teachers' mortality assumptions	76,319
• Updating the retirement assumption	22,165
• Lowering the discount rate	2,195,063
• Plan change (including change in Medicare enrollment assumption)	-12,753,955
Net decrease	-\$18,050,166
June 30, 2020 unfunded actuarial accrued liability	\$60,326,637

- The participant data received for the June 30, 2020 actuarial valuation included 635 active employees with health coverage and 775 retirees and beneficiaries receiving retiree health benefits compared to 582 active employees and 729 retirees and beneficiaries in the prior valuation-
- The Actuarially Determined Contribution (ADC) for the Town is \$5,528,662 for the fiscal year ending June 30, 2021 and for the Light Department is \$848,942 for the fiscal year ending December 31, 2020. The ADC is calculated using a 26-year amortization of the UAAL for the Town and a 10-year amortization of the UAAL for the Light Department.
- A projection of the ADC appears on page 14 for the Town and page 15 for the Light Department. This projection shows the assets, liabilities and Actuarially Determined Contribution for the Town through June 30, 2046 for the Light Department through June 30, 2030 assuming that the contribution to the OPEB trust each year is equal to the difference between the Actuarially Determined Contribution and projected benefit payments.

Section 1: Actuarial Valuation Summary

OPEB Trust information

As of June 30, 2020, the Town and the Light Department have \$10,181,435 in assets. The table below shows the increase in assets from June 30, 2018 to June 30, 2020.

Reconciliation of OPEB Balance from June 30, 2018 through June 30, 2020	Town	Light Department
Balance as of June 30, 2018	\$4,245,537	\$3,519,714
• Contributions	880,000	0
• Net investment income	86,238	88,775
Balance as of June 30, 2019	\$5,211,775	\$3,608,489
• Contributions	784,000	386,854
• Net investment income	87,609	102,708
Balance as of June 30, 2020	\$6,083,384	\$4,098,051

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:

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 Town of Reading 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 Town of Reading.
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

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

The actuarial valuation is prepared for use by the Town of Reading. 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 Town of Reading 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 Town of Reading 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 Town of Reading upon delivery and review. The Town of Reading 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: Valuation Results

Summary of valuation results

Town of Reading (excluding the Light Department)

	June 30, 2020 7.00% Discount Rate	June 30, 2018 7.25% Discount Rate
Actuarial Accrued Liability		
1. Current retirees, beneficiaries and dependents	\$34,779,836	\$42,124,093
2. Current active employees	<u>26,948,697</u>	<u>28,238,007</u>
3. Total: (1) + (2)	\$61,728,533	\$70,362,100
4. Actuarial value of assets	<u>6,083,384</u>	<u>4,245,537</u>
5. Unfunded actuarial accrued liability (UAAL)	\$55,645,149	\$66,116,563
6. Funded ratio: (4) / (3)	9.86%	6.03%
Actuarially Determined Contribution for Fiscal Year Ending:		
	June 30, 2021	June 30, 2019
7. Normal cost, including adjustment for timing	\$2,105,795	\$1,805,851
8. Amortization payment, including adjustment for timing	<u>3,422,868</u>	<u>4,124,620</u>
9. Total Actuarially Determined Contribution (ADC): (7) + (8)	\$5,528,662	\$5,930,470
10. Projected benefit payments	3,143,443	3,246,318

Notes:

Assumes payment at the middle of the year.

Fiscal 2021 figures reflect 26-year increasing (3.0% per year) amortization.

Fiscal 2019 figures reflect 28-year increasing (3.0% per year) amortization.

Section 2: Valuation Results

Summary of valuation results

Light Department

	June 30, 2020 7.00% Discount Rate	June 30, 2018 7.25% Discount Rate
Actuarial Accrued Liability		
1. Current retirees, beneficiaries and dependents	\$6,132,040	\$7,246,375
2. Current active employees	<u>2,647,499</u>	<u>3,854,426</u>
3. Total: (1) + (2)	\$8,779,540	\$11,100,801
4. Actuarial value of assets as of June 30, 2018 and June 30, 2020	<u>4,098,051</u>	<u>3,519,714</u>
5. Unfunded actuarial accrued liability (UAAL)	\$4,681,488	\$7,581,087
6. Funded ratio: (4) / (3)	46.68%	31.71%
Actuarially Determined Contribution for Fiscal Year Ending:		
	December 31, 2020	December 31, 2019
7. Normal cost, including adjustment for timing	\$277,545	\$337,692
8. Amortization payment, including adjustment for timing	<u>571,397</u>	<u>809,295</u>
9. Total Actuarially Determined Contribution (ADC): (7) + (8)	\$848,942	\$1,146,987
10. Projected benefit payments	568,236	542,072

Notes:

Assumes payment at end of Light Department's fiscal year (December 31, 2020).
 December 31, 2020 figures reflect 10-year increasing (3.0% per year) amortization.
 December 31, 2019 figures reflect 12-year increasing (3.0% per year) amortization.

Section 2: Valuation Results

Projection of actuarially determined contribution

Town

26-Year Closed Amortization

Fiscal Year Ending June 30	(1) Normal Cost	(2) Amortization of UAAL	(3) Actuarially Determined Contribution (1) + (2)	(4) Projected Benefits Paid by the Town	(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)
2021	\$2,105,795	\$3,422,868	\$5,528,662	\$3,143,443	\$2,385,219	\$8,976,511	\$64,976,178	\$55,999,667
2022	2,172,222	3,525,554	5,697,776	3,426,528	2,271,248	11,954,264	68,227,046	56,272,782
2023	2,240,745	3,631,321	5,872,066	3,679,544	2,192,522	15,059,024	71,514,634	56,455,610
2024	2,311,429	3,740,260	6,051,689	3,943,755	2,107,934	18,293,620	74,832,167	56,538,547
2025	2,384,343	3,852,468	6,236,811	4,223,965	2,012,846	21,656,278	78,167,499	56,511,221
2026	2,459,557	3,968,042	6,427,599	4,378,591	2,049,008	25,291,728	81,654,160	56,362,432
2027	2,537,144	4,087,083	6,624,227	4,582,986	2,041,241	29,173,625	85,253,716	56,080,091
2028	2,617,178	4,209,696	6,826,874	4,896,364	1,930,510	33,212,714	88,863,868	55,651,154
2029	2,699,737	4,335,987	7,035,724	5,028,069	2,007,655	37,614,338	92,675,893	55,061,555
2030	2,784,900	4,466,066	7,250,966	5,215,963	2,035,003	42,352,365	96,648,494	54,296,129
2031	2,872,750	4,600,048	7,472,798	5,450,681	2,022,117	47,408,725	100,747,256	53,338,531
2032	2,963,371	4,738,050	7,701,421	5,695,962	2,005,459	52,801,798	104,972,950	52,171,152
2033	3,056,851	4,880,191	7,937,042	5,952,280	1,984,762	58,550,978	109,326,001	50,775,023
2034	3,153,279	5,026,597	8,179,876	6,220,133	1,959,743	64,676,720	113,806,443	49,129,723
2035	3,252,749	5,177,395	8,430,144	6,500,039	1,930,105	71,200,606	118,413,871	47,213,265
2036	3,355,357	5,332,717	8,688,074	6,792,541	1,895,533	78,145,403	123,147,391	45,001,988
2037	3,461,202	5,492,698	8,953,900	7,098,205	1,855,695	85,535,127	128,005,563	42,470,436
2038	3,570,386	5,657,479	9,227,865	7,417,624	1,810,241	93,395,114	132,986,338	39,591,224
2039	3,683,014	5,827,204	9,510,218	7,751,417	1,758,801	101,752,089	138,086,993	36,334,904
2040	3,799,195	6,002,020	9,801,215	8,100,231	1,700,984	110,634,246	143,304,056	32,669,810
2041	3,919,041	6,182,080	10,101,121	8,464,741	1,636,380	120,071,328	148,633,231	28,561,903
2042	4,042,667	6,367,543	10,410,210	8,845,655	1,564,555	130,094,709	154,069,308	23,974,599
2043	4,170,193	6,558,569	10,728,762	9,243,709	1,485,053	140,737,489	159,606,074	18,868,585
2044	4,301,742	6,755,326	11,057,068	9,659,676	1,397,392	152,034,587	165,236,209	13,201,622
2045	4,437,440	6,957,986	11,395,426	10,094,362	1,301,064	164,022,839	170,951,178	6,928,339
2046	4,577,419	7,166,725	11,744,144	10,548,608	1,195,536	176,741,110	176,741,110	-

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

Amortization payments are assumed to increase 3.00% per year.

Section 2: Valuation Results

Light Department 10 Year- Closed Amortization

Year Ending June 30	(1) Normal Cost	(2) Amortization of UAAL	(3) Actuarially Determined Contribution (1) + (2)	(4) Projected Benefits Paid by the Town	(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)
2021	\$277,545	\$571,397	\$848,942	\$549,649	\$299,293	4,694,506	\$9,093,415	\$4,398,909
2022	286,300	585,978	872,278	602,653	269,625	5,302,024	9,367,115	4,065,091
2023	295,331	598,317	893,648	619,561	274,087	5,956,683	9,705,538	3,748,855
2024	304,647	619,259	923,906	623,248	300,658	6,684,654	10,033,437	3,348,783
2025	314,257	633,687	947,944	656,453	291,491	7,454,100	10,369,385	2,915,285
2026	324,170	649,929	974,099	663,309	310,790	8,297,371	10,749,765	2,452,394
2027	334,396	670,885	1,005,281	677,600	327,681	9,217,143	11,127,122	1,909,979
2028	344,945	683,810	1,028,755	682,938	345,817	10,220,059	11,570,990	1,350,931
2029	355,826	712,016	1,067,842	689,332	378,510	11,326,997	12,014,772	687,775
2030	367,051	711,440	1,078,491	757,680	320,811	12,451,736	12,451,736	-

Notes:

Assumes payment end of Light Department's fiscal year (December 31).

ADC is for the Light Department's fiscal year ending on December 31 prior to the June 30 year ending shown.

Normal cost is projected to increase at the payroll growth assumption of 3.00% per year and 0.15% for future mortality improvement.

Amortization payments are assumed to increase 3.00% per year.

Section 3: Supporting Information

Exhibit I: Summary of Participant Data

	June 20, 2018		
	Town	Light Department	Total
Active employees covered for medical benefits			
• Number of employees	526	56	582
• Average age	46.5	49.9	46.8
• Average service	11.6	14.0	11.9
Retired employees, spouses and beneficiaries covered for medical benefits			
• Number of individuals	634	95	729
• Average age	74.2	71.8	73.9
	June 30, 2020		
	Town	Light Department	Total
Active employees covered for medical benefits			
• Number of employees	588	47	635
• Average age	46.6	50.4	46.8
• Average service	10.3	12.5	10.4
Retired employees, spouses and beneficiaries covered for medical benefits			
• Number of individuals	669	106	775
• Average age	74.6	70.7	74.1

Section 3: Supporting Information

Exhibit II: Statements of Actuarial Assumption, Methods and Models

Data:	Detailed census data, premium rates and summary plan descriptions for postemployment welfare benefits were provided by the Town of Reading.
Actuarial Cost Method:	Entry Age Normal – Level percentage of payroll
Per Capita Cost Development: Fully Insured Plans	Per capita costs were based on the fully insured premium rates effective January 1, 2020 and 2021 for Medicare and July 1, 2020 for pre Medicare. Premiums were combined by taking a weighted average based on the number of participants in each plan, and were then trended to the midpoint of the valuation year at assumed trend rates. Actuarial factors were then applied to the weighted average cost to estimate individual retiree and spouse costs by age and by gender.
Valuation Date:	June 30, 2020
Roll-Forward Technique:	<p>The results of the June 30, 2020 actuarial valuation were used to determine the Actuarially Determined Contribution for the fiscal year ending June 30, 2021.</p> <p>To project the Actuarially Determined Contribution for fiscal year 2022 and later, liabilities were rolled forward from June 30, 2020 using standard actuarial techniques.</p>
Expected Return on Assets:	<p>7.00% (previously, 7.25%)</p> <p>Long-term rate of return on investments expected to be used to finance the benefits. The expected return was 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.</p>
Discount Rate:	7.00% (previously, 7.25%) The discount rate is equal to the expected return on assets.
Asset Valuation Method:	Market Value

Section 3: Supporting Information

Salary Increases:

Years of Service	Groups 1 and 2 (excluding Teachers)	Group 4	Teachers
0	6.00%	7.00%	7.50%
1	5.50%	6.50%	7.10%
2	5.50%	6.00%	7.00%
3	5.25%	5.75%	6.90%
4	5.25%	5.25%	6.80%
5	4.75%	5.25%	6.70%
6	4.75%	4.75%	6.60%
7	4.50%	4.75%	6.50%
8	4.50%	4.75%	6.30%
9	4.25%	4.75%	6.10%
10	4.25%	4.75%	5.90%
11	4.25%	4.75%	5.70%
12	4.25%	4.75%	5.20%
13	4.25%	4.75%	4.70%
14	4.25%	4.75%	4.35%
15-16	4.25%	4.75%	4.20%
17-19	4.25%	4.75%	4.10%
20 and later	4.25%	4.75%	4.00%

Note:

Total payroll is assumed to increase 3.00% per year.

Section 3: Supporting Information

Mortality Rates:

Pre-Retirement (non-Teachers): RP-2014 Blue Collar Employee Mortality Table projected generationally using Scale MP-2018

Healthy Retiree (non-Teachers): RP-2014 Blue Collar Healthy Annuitant Mortality Table projected generationally using Scale MP-2018

Disabled Retiree (non-Teachers): RP-2014 Healthy Annuitant Mortality Table set forward one year projected generationally using Scale MP-2018

Pre-Retirement (Teachers): Pub-2010 Teacher Employee Mortality Table (headcount weighted) projected generationally with Scale MP-2020 (*previously*, RP-2014 White Collar Employee Mortality Table projected generationally with Scale MP-2016)

Healthy (Teachers) Pub-2010 Teacher Retiree Mortality Table (headcount weighted) projected generationally with Scale MP-2020 (*previously*, RP-2014 White Collar Healthy Annuitant Mortality Table projected generationally using Scale MP-2016)

Disabled (Teachers): Pub-2010 Teacher Retiree Mortality Table (headcount weighted) projected generationally with Scale-2020 (*previously*, RP-2014 White Collar Healthy Annuitant Mortality Table projected generationally with Scale MP-2016)

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	Healthy		Disabled	
	Male	Female	Male	Female
60	0.85	0.57	0.83	0.56
70	1.97	1.40	1.84	1.42
80	5.19	3.82	4.98	3.88
90	14.64	11.19	15.13	11.97

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 rates shown represent accidental disability and death.
Rates shown are before generational projection.

Section 3: Supporting Information

Group 4 - Rate per year (%)			
Mortality			
Age	Male	Female	Disability
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 rates shown represent accidental disability and 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:

35% of the disability rates shown represent accidental disability.

75% of the death rates shown represent accidental death.

Mortality rates shown are before generational projection.

Section 3: Supporting Information

Withdrawal Rates:

		Rate per year (%)			
Years of Service	Groups 1 and 2 (excluding Teachers)	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+	0.0				

		Teachers - Rate per year (%)					
		0 Years of Service		5 Years of Service		10+ Years of Service	
Age		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

Section 3: Supporting Information

Retirement Rates:

Age	Rate per year (%)			Group 4
	Groups 1 and 2 (excluding Teachers)		Group 4	
	Male	Female		
45 - 49	--	--	1.0	
50	1.0	1.5	2.0	
51	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	2.5	6.5	10.0	
57	2.5	6.5	10.0	
58	5.0	6.5	10.0	
59	6.5	6.5	15.0	
60	12.0 ¹	5.0 ²²	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	25.0	20.0	100.0	
67	25.0	20.0	100.0	
68	30.0	25.0	100.0	
69	30.0	20.0	100.0	
70	100.0	100.0	100.0	

Note: Rates are 0.0% if a participant is not eligible to retire.

¹ 18.00% for those hired on or after April 2, 2012 (previously, 12.00%)

² 7.50% for those hired on or after April 2, 2012 (previously, 5.00%)

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

Dependents:

Demographic data was available for spouses of current retirees. For future retirees, husbands were assumed to be three years older than their wives and 60% were assumed to have an eligible spouse who also opts for health coverage at that time.

Section 3: Supporting Information

Per Capita Health Costs:

Fiscal year 2021 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.

Age	Non-Medicare Plans				Medicare Plans			
	Retiree		Spouse		Retiree		Spouse	
	Male	Female	Male	Female	Male	Female	Male	Female
45	\$9,428	\$11,827	\$5,848	\$8,828	N/A	N/A	N/A	N/A
50	11,190	12,746	7,816	10,234	N/A	N/A	N/A	N/A
55	13,289	13,721	10,459	11,846	N/A	N/A	N/A	N/A
60	15,782	14,789	14,002	13,739	N/A	N/A	N/A	N/A
65	18,744	15,932	18,744	15,932	3,696	3,142	3,696	3,142
70	21,724	17,170	21,724	17,170	4,284	3,386	4,284	3,386
75	23,411	18,482	23,411	18,482	4,616	3,644	4,616	3,644
80	25,211	19,925	25,211	19,925	4,971	3,929	4,971	3,929

Weighted Average Annual Retiree Contribution Amount:

Non-Medicare Plans:	\$3,587
Medicare Plans:	\$1,166

Medicare Premiums and Penalties:

The Town of Reading pays the Part A premium for those retirees who did not have Medicare taxes withheld while working. The Part A premium in 2020 is \$458 a month for those with less than 30 quarters where Medicare taxes were withheld, and \$252 for those with 30 to 39 quarters where Medicare taxes were withheld. In addition, there is a Part A penalty for individuals who do not apply for Part A benefits when first eligible. The penalty is 10% of the respective premium.

The Town of Reading pays the Part B premium penalty for those retirees who did not enroll when first eligible. The Part B premium for 2020 is \$144.60 per month. The Part B penalty for individuals who do not apply for Part B benefits when first eligible is 10% for each year the individual was without Medicare coverage. There is no limit to the number of years the cumulative 10% penalty would apply.

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,	Medical and Prescription Drug	Part A and B premiums
2021	7.00%	3.00%
2022	6.75%	3.00%
2023	6.50%	3.00%
2024	6.25%	3.00%
2025	6.00%	3.00%
2026	5.75%	3.00%
2027	5.50%	3.00%
2028	5.25%	3.00%
2029	5.00%	3.00%
2030	4.75%	3.00%
2031 and later	4.50%	3.00%

The trend rate assumptions were developed using Segal’s internal guidelines, which are established each year using data sources such as the 2021 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 for fully-insured plans were assumed to be included in the fully-insured premium rates and are included in the per capita health costs.

Participation and Coverage Election:

100% of active employees with coverage are assumed to elect retiree coverage.

100% of retirees over age 65 are assumed to remain with their current medical plan for life.

For future retirees hired before 1986 and current retirees under age 65, 100% (previously 90%) are assumed to enroll in a Medicare Supplement plan upon reaching age 65. The Town is assumed to pay the Part A premium for 10% of this group.

For future retirees hired after 1986, 100% are assumed to be eligible for Medicare and are assumed to enroll in a Medicare Supplement Plan upon reaching age 65.

Section 3: Supporting Information

Plan Design:	Development of plan liabilities was based on the substantive plan of benefits in effect as described in Exhibit II.
Missing Participant Data:	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.
Demographic and Salary Increase Assumptions:	<p>The assumptions other than the mortality assumption used in this valuation for teachers are the same as used in the Massachusetts Teachers' Retirement System Actuarial Valuation Report as of January 1, 2019, dated October 17, 2019, completed by PERAC. The mortality assumption for teachers has been updated to the recently released public sector mortality table for teachers, to be consistent with the assumption expected to be used in 2021 for the Massachusetts Teachers' Retirement System. 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> <p>The remaining demographic assumptions, such as percent married, enrollment elections, and many of the demographic assumptions used in this valuation for non-teachers (including mortality, disability, turnover, retirement, salary scale and relative ages of spouses) were based on the experience of the Plan and the experience of similar plans.</p>
Actuarial Models:	<p>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.</p> <p>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.</p>
Justification for Assumption Changes Since Prior Valuation:	<p>Based on past experience and future expectations, the following actuarial assumptions were changed:</p> <ul style="list-style-type: none">• The expected rate of return on assets and the discount rate were decreased from 7.25% to 7.00%.• The per capita health costs and contributions were updated to reflect current premiums.• The trend assumptions were revised to reflect future expectations.• The mortality assumptions for teachers were updated.• The retirement assumption for Group 1 employees hired on or after April 2, 2012 was updated.• The Medicare enrollment assumption was updated to be consistent with the plan change. <p>The impact of the excise tax on high cost health plans (part of the Patient Protection and Affordable Care Act) was removed, as the tax was repealed effective December 20, 2019</p>

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.

Eligibility:	<p>Retired and receiving a pension from the Reading Contributory Retirement System or the Massachusetts Teachers' Retirement System.</p> <ul style="list-style-type: none">• Members hired before April 2, 2012<ul style="list-style-type: none">– Groups 1 and Group 2 (including Teachers):<ul style="list-style-type: none">• Retirees with at least 10 years of creditable service are eligible at age 55;• Retirees with at least 20 years of creditable service are eligible at any age.– Group 4<ul style="list-style-type: none">• Retirees are eligible at age 55;• Retirees with at least 20 years of creditable service are eligible at any age.• Members hired on or after April 2, 2012<ul style="list-style-type: none">– Group 1 (including Teachers):<ul style="list-style-type: none">• Retirees with at least 10 years of creditable service are eligible at age 60.– Group 2<ul style="list-style-type: none">• Retirees with at least 10 years of creditable service are eligible at age 55.– Group 4<ul style="list-style-type: none">• Retirees are eligible at age 55;• Retirees with at least 10 years of creditable service are eligible at age 50.
Disability:	<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>
Pre-Retirement Death:	<p>Surviving spouses of members who die in active service on Accidental (job-related) Death are eligible at any age. Surviving spouses of members who die in active service on Ordinary (non-job related) Death are eligible after two years of service.</p>
Post-Retirement Death:	<p>Surviving spouse is eligible.</p>
Benefit Types:	<p>The Town participates in the Massachusetts Interlocal Insurance Association (MIIA) Health Benefits Trust. Medical and prescription drug benefits are provided to all eligible retirees through a variety of plans offered by Blue Cross Blue Shield of Massachusetts. The Town of Reading pays 71% of the premium. (Dental coverage is offered but it is 100% retiree paid and therefore has no impact on this valuation.) The Town pays the Medicare Part A premium for those retirees who did not have Medicare taxes withheld while working and Medicare Part B</p>

Section 3: Supporting Information

	premium penalty for those who did not enroll when first eligible. A life insurance benefit of \$5,000 is also provided, for which the Town pays 50% of the premium.						
Duration of Coverage:	Lifetime.						
Dependent Benefits:	Medical and Prescription Drugs.						
Dependent Coverage:	Benefits are payable to a spouse for their lifetime, regardless of when the retirees dies.						
Retiree Life:	\$5,000						
Retiree Contributions:	Premium rates and retiree contributions are summarized on the following page:						
	Subscribers			Monthly Premium	Town cost	Retiree cost	
	Non-Medicare Plans	Active²	Retiree	Total	(eff. 7/1/2020)		
	BCBS Network Blue						
	• Individual	90	13	103	\$817.39	\$580.35	\$237.04
	• Family	149	13	162	\$2,189.51	\$1,554.55	\$634.96
	BCBS PPO						
	• Individual	152	30	182	\$824.77	\$585.59	\$239.18
	• Family	243	20	263	\$2,209.29	\$1,568.60	\$640.69
	Non-Medicare Total¹	634	76	710			
	Subscribers			Monthly Premium	Town Cost	Retiree Cost	
	Medicare Supplement Plans	Active	Retiree	Total	(average of 1/1/2020 and 1/1/2021 premiums)		
	Medex	N/A ²	500	500	\$334.92	\$237.79	\$97.13
	Medicare Total		500	500			
	Retiree Total		576				
Plan Changes Since the Prior Valuation:	The Town pays the Part A premium for those retirees who did not have Medicare taxes withheld while working and the portion of the Part B premium that represents a penalty for not joining at the later of age 65 or retirement.						

¹ In addition, there are 199 spouses of retirees and Beneficiaries covered under an individual or family policy.

² One active employee was listed with Medex coverage and was not listed here. This person was included when determining the liability for this valuation.

Section 3: Supporting Information

Exhibit IV: Definition of Terms

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

Assumptions or Actuarial Assumptions:	The estimates on which the cost of the Plan is calculated including: <ol style="list-style-type: none">1. Investment return — the rate of investment yield that the Plan will earn over the long-term future;2. Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;3. Retirement rates — the rate or probability of retirement at a given age;4. Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.
Actuarial Accrued Liability (AAL):	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.
Unfunded Actuarial Accrued Liability (UAAL):	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.
Normal Cost:	The amount of contributions required to fund the benefit allocated to the current year of service.
Actuarially Determined Contribution (ADC):	A target or recommended contribution to an OPEB plan for the reporting period based on the most recent measurement available.
Valuation Date:	The date at which the actuarial valuation is performed
Covered Employee Payroll:	The payroll of the employees that are provided OPEB benefits
Entry Age Actuarial Cost Method:	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
Health Care Cost Trend Rates:	The rate of change in per capita health costs over time
Discount Rate:	The interest rate used to determine the actuarial present value of projected benefit payments.
Expected Return on Assets:	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.