

Town of Boxford Other Postemployment Benefits Plan

GASB 74 & GASB 75 Actuarial Valuation

With a Valuation Date of July 1, 2019

As of the Measurement Date:
June 30, 2020

For the Reporting Date:
June 30, 2020

Delivered September 24, 2020



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September 24, 2020

Personal and Confidential

Ms. Kathleen Benevento
Town Accountant / Finance Director
Town of Boxford
7A Spofford Road
Boxford, MA 01921

Dear Ms. Benevento:

We have performed an actuarial valuation of the Town of Boxford Other Postemployment Benefits Plan for the Reporting Date & fiscal year ending June 30, 2020 with a Measurement Date of June 30, 2020 and a Valuation Date of July 1, 2019. The figures presented in this report reflect the adoption, by the Town of Boxford, of Statement Nos. 74 and 75 of the Governmental Accounting Standards Board ("GASB 74/75") effective for the fiscal years ending June 30, 2017 and June 30, 2018 respectively.

The financial results of the actuarial valuation are summarized in the report. The Executive Summaries highlight the results of the valuation. Additional information summarizing census data, actuarial assumptions, claim rates and the methodology for developing them, as well as a glossary of selected terms used in this study, is also included in the report.

All costs, liabilities and other factors under the plan were determined in accordance with generally accepted actuarial principles and procedures. In our opinion, the actuarial assumptions used are reasonable, reflecting the experience of the plan and reasonable expectations and, in combination, represent our best estimate of the anticipated experience under the plan.

We will be pleased to answer any questions that you may have regarding this actuarial valuation report.

Very truly yours,

A handwritten signature in black ink, appearing to read 'P. Elmore', written over a light blue rectangular background.

Parker E. Elmore, ASA, EA, FCA, MAAA
President, CEO & Actuary

September 24, 2020

ACTUARIAL CERTIFICATION

This is to certify that Odyssey Advisors has conducted an actuarial valuation of certain benefit obligations of the Town of Boxford other postemployment benefit programs with a Valuation Date of July 1, 2019 with a Measurement Date of June 30, 2020 for the Reporting Date & fiscal year ending June 30, 2020 in accordance with Government Account Standards Board Statement No. 74 & 75 and Actuarial Standards of Practice as issued by the American Academy of Actuaries. The actuarial calculations presented in this report have been made on a basis consistent with our understanding of GASB Statements Numbers 74 & 75 for the determination of the liability for postemployment benefits other than pensions.

The actuarial data is based on the plan of benefits verified by the Town and on participant claims or premium data provided by the Town and/or vendors employed by the Town.

The actuarial computations made are for purposes of fulfilling plan accounting requirements. Determinations for purposes other than meeting financial accounting requirements may yield results significantly different than those reported here. As such, additional determinations may be needed for other purposes including determining the benefit security at termination and/or adequacy of the funding of an ongoing plan.

To the best of our knowledge, this report is complete and accurate and in our opinion represents the information necessary to comply with GASB Statements Number 74 and 75 with respect to the benefit obligations addressed. The signing actuaries are members of the Society of Actuaries, the American Academy of Actuaries and other professional actuarial organizations and meet their "General Qualification Standards for Statements of Actuarial Opinion" to render the actuarial opinion contained herein. Further, in our opinion, the assumptions as approved by the Town are reasonably related to the experience and expectations of the postemployment benefits programs.

A handwritten signature in black ink, appearing to read 'P. Elmore', with a long horizontal flourish extending to the right.

Parker E. Elmore, ASA, EA, FCA, MAAA
President, CEO & Actuary

EXECUTIVE SUMMARY

How did plan liabilities change from FY 19 to FY 20?

Plan Experience

For the year ending on the Measurement Date of June 30, 2020, the Plan saw an experience gain of \$442,134 or 3.31% of the beginning Total OPEB Liability ("TOL"). This was mainly due to premiums for Medicare Supplement plans increasing 3% instead of the expected 10% increase, as well as fewer retirees than expected.

Assumption Changes

Some key assumptions have changed since the prior valuation - their impact is detailed below.

- ✓ Based on recommendations by PERAC, the mortality table has been updated from the RP-2000 Employees Mortality Table projected generationally with scale BB and a base year 2009 to the RP-2014 Mortality Table projected generationally with scale MP-2016 for males and females increasing the disclosed liability by \$450 thousand.
- ✓ The expected long-term medical trend has been updated to 4.50% decreasing the disclosed liability by \$880 thousand.
- ✓ Based on recent research by the Society of Actuaries, we have updated the assumption for morbidity or age-related costs of medical care increasing the disclosed liability by \$1.3 million.
- ✓ Assumption changes caused Service Cost to increase by \$8,600.

It is important to remember that actuarial assumptions or changes in such do not impact the actual cost of the Plan. Rather, they impact the timing of the recognition of such costs.

Investment Experience

- ✓ During the period there was an investment loss of \$139,035 due to asset performance below the expected rate of return.

Changes in Benefits Terms

- ✓ To the best of our knowledge there have been no material changes in benefit terms that would impact the figures shown in this report.

EXECUTIVE SUMMARY

Recognition Period

- ✓ Changes in assumptions & plan experience are amortized into the net OPEB expense over 5.11 years.
- ✓ Differences between projected & actual earnings on OPEB plan investments are amortized into the net OPEB expense over 5.00 years
- ✓ Changes in benefit terms are to be recognized in full immediately

Events Subsequent to the Measurement Date

To the best of our knowledge there were no material events subsequent to the Measurement Date that would impact the figures shown in this report.

Discount Rate Determinants

- ✓ Employer Current and Future Benefit Payments
- ✓ Municipal Bond Rate – The municipal bond rate was 2.66% as of June 30, 2020.
- ✓ Current Asset Level – The Town had \$3,034,544 of OPEB assets as of June 30, 2020.
- ✓ Funding Policy - The Town is expected to contribute \$300,000 annually.
- ✓ Investment Policy - The Town is expected to earn 7.01% on assets based on its investment policy.

EXECUTIVE SUMMARY

Key Drivers of Plan Liabilities

Several key drivers of plan costs and liabilities are:

- ✓ Premiums for Post 65 (Medicare supplement) plans - represent 73.63% of the total plan liabilities
- ✓ Age at which plan participants retire
- ✓ Percentage of plan participants who elect coverage for themselves and/or a spouse
- ✓ Medical care cost inflation rate - We currently assume medical costs increase at 4.50% per year for Active plans and 4.50% per year for Medicare supplement plans.
- ✓ Discount Rate (7.00%) – Higher discount rates yield lower liabilities and vice versa
- ✓ Cost Sharing - Under Massachusetts law you may charge retirees up to 50% of premiums for health insurance

Medicare Buy-In

Recently, some of our clients have seen substantial cost savings by “buying into” Medicare for retirees who would otherwise be ineligible. To buy into Medicare the Town would need to pay the Medicare Part A premium and the Medicare Part A and B penalties. While the cost to buy into Medicare is significant, it is likely still far less than the cost of the claims that the associated retirees are expected to incur. Under Actuarial Standards of Practice for OPEB, we are required to reflect the projected higher healthcare costs that occur as retirees age. The Town currently has three retirees or covered spouses who are over the age of 65 and are enrolled in Active medical plans rather than Medicare Supplement (Senior) plans. You may wish to review their Medicare eligibility to see if they are already eligible for Medicare or if a “buy-in” is appropriate as this could yield a reduction in your OPEB annual costs and disclosed liabilities. If you are in this situation, we encourage you to talk to your healthcare consultant to see if this might be viable.

EXECUTIVE SUMMARY

Key Plan Metrics

While an actuarial valuation under GASB 74/75 can be very complex with many variables, we find it helpful to look at several key metrics (shown below) to better allow you to manage your plan.

Representative Plan Statistics		
Valuation Date	July 1, 2019	July 1, 2017
Measurement Date & Period Ending	June 30, 2020	June 30, 2019
Reporting Date/Fiscal Year End	June 30, 2020	June 30, 2019
Total OPEB Liability	14,308,230	13,354,141
Per Eligible Active Plan Participant	41,817	33,951
Per Retiree/Spouse Plan Participant	46,160	49,443
Total Annual Service Cost (Annual Benefit Accrual)	286,453	316,568
Per Eligible Active Plan Participant	1,583	1,684
Expected Employer Share of Retiree Costs	727,697	650,522
Per Retiree/Spouse Plan Participant	4,984	4,614
Net OPEB Liability as a % of Covered Payroll	95.70%	97.20%

EXECUTIVE SUMMARY

Liabilities & Benefit Payments in Today's Dollars

With the growth of medical care costs over time, the nominal accrued liabilities ("TOL") and benefit payments can appear daunting. However, it is important to remember that a dollar paid in the future is worth less than a dollar paid today.

For the Period Ending on the Measurement Date of:	Number of Retirees, Spouses, & Surviving Spouses	Total OPEB Liability	Present Value at 3.00% of Total OPEB Liability	Employer Share of Premiums/Claims Including "Implicit Cost"	Present Value at 3.00% of Employer Share of Premiums / Claims Including "Implicit Cost"
June 30, 2020	146	14,308,230	14,308,230	727,697	727,697
June 30, 2025	186	16,767,628	14,463,903	939,525	810,443
June 30, 2030	200	19,258,347	14,330,019	1,192,086	887,024
June 30, 2035	198	21,998,117	14,119,754	1,349,174	865,983
June 30, 2040	187	25,645,743	14,199,426	1,415,594	783,780
June 30, 2045	176	30,573,350	14,602,002	1,755,441	838,408
June 30, 2050	165	37,033,388	15,257,266	1,885,334	776,733

PRINCIPAL RESULTS OF THE VALUATION

Town of Boxford

Assuming Funding - 7.00% discount rate

Comparison of Plan Liabilities to Prior Valuation

Valuation Date	July 1, 2019	July 1, 2017
For the Measurement Period ending on the Measurement Date of:	June 30, 2020	June 30, 2019
For the Reporting Period & Fiscal Year ending on:	June 30, 2020	June 30, 2019
I. Total OPEB Liability		
A. Actives	7,568,928	6,382,720
B. Retirees/Disabled	<u>6,739,302</u>	<u>6,971,421</u>
C. Total	14,308,230	13,354,141
II. Fiduciary Net Position [Plan Assets]	3,034,544	2,675,677
III. Net OPEB Liability (Asset) [I. - II.]	11,273,686	10,678,464
IV. Funded Ratio [II. / I.]	21.21%	20.04%
V. Number of Eligible Participants		
A. Actives	181	188
B. Retirees/Disabled & Dependents	<u>146</u>	<u>141</u>
C. Total	327	329
VI. Service Cost	286,453	316,568
VII. Financial Statement Expense	1,493,609	1,402,434
VIII. Employer Contribution to the OPEB Trust	(300,000)	(350,000)
IX. Deferred Inflow of Resources	(393,615)	(57,007)
X. Deferred Outflow of Resources	1,596,467	1,130,549
XI. Money Weighted Rate of Return	2.03%	5.72%
XII. 20-year Municipal Bond Rate (SAPIHG)	2.66%	2.79%
XIII. Expected Long Term Rate of Return (Net of Expense)	7.01%	7.04%
XIV. Crossover Year	N/A	N/A
XV. Discount Rate	7.00%	7.00%

PRINCIPAL RESULTS OF THE VALUATION

Town of Boxford Plan Liabilities as of the June 30, 2020 Measurement Date

	Town Employees and Retirees	School Employees and Retirees	Total
I. Total OPEB Liability			
A. Actives	1,789,597	5,779,331	7,568,928
B. Retirees/Disabled	<u>1,683,711</u>	<u>5,055,591</u>	<u>6,739,302</u>
C. Total	3,473,308	10,834,922	14,308,230
II. Fiduciary Net Position [Plan Assets]	736,632	2,297,912	3,034,544
III. Net OPEB Liability (Asset) [I. - II.]	2,736,676	8,537,010	11,273,686
IV. Number of Eligible Participants			
A. Actives	54	127	181
B. Retirees/Disabled	<u>42</u>	<u>104</u>	<u>146</u>
C. Total	96	231	327
For the Reporting Date and Fiscal Year Ending June 30, 2020			
V. Service Cost	69,838	216,615	286,453
VI. Financial Statement Expense	362,956	1,130,653	1,493,609
VII. Employer Share of Costs	(174,841)	(552,856)	(727,697)
VIII. Employer (Payments)/Withdrawals to/from OPEB Trust	(72,872)	(227,128)	(300,000)
IX. Total Employer Contribution [VII. + VIII.]	(247,713)	(779,984)	(1,027,697)

PRINCIPAL RESULTS OF THE VALUATION

Town of Boxford

Assuming Funding - 7.00% discount rate

For the Period Ending on the June 30, 2020 Measurement Date

	Actives			Retirees/Disabled			Grand Total
	Under Age 65	Age 65+	Actives Total	Under Age 65	Age 65 +	Retirees Total	
Present Value of Future Benefits							
A. Participants	2,721,487	3,525,665	6,247,152	545,017	5,633,062	6,178,079	12,425,231
B. Spouses	<u>1,024,581</u>	<u>2,382,332</u>	<u>3,406,913</u>	<u>233,070</u>	<u>328,153</u>	<u>561,223</u>	<u>3,968,136</u>
C. Total	3,746,068	5,907,997	9,654,065	778,087	5,961,215	6,739,302	16,393,367
Total OPEB Liability							
A. Participants	2,166,162	2,726,519	4,892,681	545,017	5,633,062	6,178,079	11,070,760
B. Spouses	<u>829,210</u>	<u>1,847,037</u>	<u>2,676,247</u>	<u>233,070</u>	<u>328,153</u>	<u>561,223</u>	<u>3,237,470</u>
C. Total	2,995,372	4,573,556	7,568,928	778,087	5,961,215	6,739,302	14,308,230
Service Cost							
A. Participants	75,024	111,417	186,441	0	0	0	186,441
B. Spouses	<u>25,804</u>	<u>74,208</u>	<u>100,012</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>100,012</u>
C. Total	100,828	185,625	286,453	0	0	0	286,453

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES (As of the June 30, 2020 Measurement Date)

The GASB Standards for accounting and financial reporting for postemployment benefits other than pensions require the following disclosures in the financial statements:

1. OPEB Expense Development

Components of the Town's OPEB Expenses for the Fiscal Year Ending June 30, 2020	
Description	Amount
I. Service Cost	286,453
II. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	929,803
III. Deferred (Inflows)/Outflows from Plan Experience*	284,324
IV. Deferred (Inflows)/Outflows from Changes of Assumptions*	177,625
V. Projected Earnings on OPEB Plan Investments	(197,902)
VI. Deferred (Inflows)/Outflows from Earnings on Plan Investments**	13,306
VII. Financial Statement Expense Prior to Plan Design Changes [I. + II. + III. + IV. + V. + VI.]	1,493,609
VIII. Expense Related to Change in Benefit Terms***	0
IX. Financial Statement Expense [VII. + VIII.]	1,493,609

* Amortized over 5.11 years

** Amortized over 5.00 years

*** Recognized Immediately

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES (As of the June 30, 2020 Measurement Date)

2. Changes in Net OPEB Liability

Changes in Net OPEB Liability			
		Increase (Decrease)	
	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability
I. Balances for June 30, 2019	13,354,141	2,675,677	10,678,464
II. Prior Period Adjustment	0	0	0
III. Balances for June 30, 2019 with Adjustment [I. + II.]	13,354,141	2,675,677	10,678,464
Changes for the year:			
IV. Service Cost	286,453	0	286,453
V. Interest on Total OPEB Liability, Service Cost, and Benefit Payments	929,803	0	929,803
VI. Changes in Benefit Terms *	0	0	0
VII. Change in Assumptions **	907,664	0	907,664
VIII. Differences Between Actual and Expected Experience **	(442,134)	0	(442,134)
IX. Net Investment Income	0	58,867	(58,867)
X. Employer Contributions to Trust	0	1,027,697	(1,027,697)
XI. Benefit Payments Withdrawn from Trust	0	(727,697)	727,697
XII. Benefit Payments Excluding Implicit Cost	(552,947)	0	(552,947)
XIII. Implicit Cost Amount	(174,750)	0	(174,750)
XIV. Total Benefit Payments Including Implicit Cost [XII. + XIII.]	(727,697)	0	(727,697)
XV. Administrative Expense	0	0	0
XVI. Other Charges	0	0	0
XVII. Net Changes [IV.+V.+VI.+VII.+VIII.+IX.+X.+XI.+XIV.+XV.+XVI.]	954,089	358,867	595,222
XVIII. Balances at June 30, 2020 [III.+XVII.]	14,308,230	3,034,544	11,273,686

* Recognized Immediately

** Amortized over 5.11 years

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the June 30, 2020 Measurement Date)

3. Changes in Net OPEB Expense

Deferred (Inflows)/Outflows in OPEB Expense Arising from the Recognition of the Effects of Differences Between Expected & Actual Experience									
Fiscal	Differences Between Actual & Expected Experience	Recognition Period (Years)	Remaining Balance	2020	2021	2022	2023	2024	2025
2017									
2018	1,854,235	5.00	741,694	370,847	370,847	370,847			
2019	0	5.00	0	0	0	0	0		
2020	(442,134)	5.11	(355,611)	(86,523)	(86,523)	(86,523)	(86,523)	(86,523)	(9,519)
2021									
2022									
2023									
2024									
2025									
2026									
Total Remaining Balance			386,083						
Net increase (decrease) in OPEB Expense				284,324	284,324	284,324	(86,523)	(86,523)	(9,519)

Deferred (Inflows)/Outflows in OPEB Expense Arising from the Recognition of the Effects of Changes in Assumptions									
Fiscal	Differences from Changes in Actuarial Assumptions	Recognition Period (years)	Remaining Balance	2020	2021	2022	2023	2024	2025
2017									
2018	0	5.00	0	0	0	0			
2019	0	5.00	0	0	0	0	0		
2020	907,664	5.11	730,039	177,625	177,625	177,625	177,625	177,625	19,539
2021									
2022									
2023									
2024									
2025									
2026									
Total Remaining Balance			730,039						
Net increase (decrease) in OPEB Expense				177,625	177,625	177,625	177,625	177,625	19,539

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the June 30, 2020 Measurement Date)

3. Changes in Net OPEB Expense (Continued)

Deferred (Inflows)/Outflows in OPEB Expense Arising from the Recognition of Differences Between Projected & Actual Earnings on OPEB Plan Investments									
Fiscal	Differences Between Actual & Expected Earnings	Recognition Period (years)	Remaining Balance	2020	2021	2022	2023	2024	2025
2017									
2018	(95,013)	5.00	(38,004)	(19,003)	(19,003)	(19,001)			
2019	22,510	5.00	13,506	4,502	4,502	4,502	4,502		
2020	139,035	5.00	111,228	27,807	27,807	27,807	27,807	27,807	
2021									
2022									
2023									
2024									
2025									
2026									
Total Remaining Balance			86,730						
Net increase (decrease) in OPEB Expense				13,306	13,306	13,308	32,309	27,807	0

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES
(As of the June 30, 2020 Measurement Date)

3. Changes in Net OPEB Expense (Continued)

Statement of Outflows & Inflows Arising from Current & Prior Reporting Periods for the Measurement Period Ending on June 30, 2020 to be Reported for the Fiscal Year Ending June 30, 2020			
	Deferred Outflows of Resources	Deferred Inflows of Resources	Total
I. Contributions made subsequent to the Measurement Date	0	0	0
II. Differences Between Actual & Expected Experience	741,694	(355,611)	386,083
III. Changes of Assumptions	730,039	0	730,039
IV. Net Difference Between Projected & Actual Earnings on OPEB Plan Investments	<u>124,734</u>	<u>(38,004)</u>	<u>86,730</u>
V. Total [I.+II.+III.+IV.]	1,596,467	(393,615)	1,202,852

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the June 30, 2020 Measurement Date)

3. Changes in Net OPEB Expense (Continued)

Annual Amortization of Deferred (Inflows)/Outflows

The balance of deferred (inflows)/outflows as of June 30, 2020 will be recognized in future years as shown below.

Year ending June 30:

2021	475,255
2022	475,257
2023	123,411
2024	118,909
2025	10,020
Thereafter	0

4. Discount Rate

The discount rate used to measure the Total OPEB liability was 7.00% as of June 30, 2020 and 7.00% as of June 30, 2019. The projection of cash flows used to determine the discount rate assumed that contributions will be made in accordance with the Town's funding policy. Based on these assumptions, the OPEB Plan's Fiduciary Net Position is projected to be sufficient to make all projected benefit payments to current plan members. Therefore, the long-term expected rate of return on the OPEB Plan assets was applied to all projected future benefits payments.

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the June 30, 2020 Measurement Date)

5. Funding Policy

The contribution requirements of plan members and the Town are established and may be amended through Town ordinances. For the period ending on the June 30, 2020 Measurement Date, total Town premiums plus implicit costs for the retiree medical program were \$727,697. The Town also contributed \$300,000 to an OPEB Trust for a total contribution during the measurement period of \$1,027,697 to be reported on the financial statement for the fiscal year ending June 30, 2020.

6. Investment Policy

The chart below shows how the long-term rate of return on assets is developed based on the Town's Investment Policy.

Investment Target Allocation & Expected Long-Term Real Rate of Return			
Asset Class	Target Allocation	Asset Class	Long-Term Expected Real Rate of Return*
Domestic Equity - Large Cap	14.50%	Domestic Equity - Large Cap	4.80%
Domestic Equity - Small/Mid Cap	3.50%	Domestic Equity - Small/Mid Cap	5.29%
International Equity - Developed Market	16.00%	International Equity - Developed Market	5.45%
International Equity-Emerging Market	6.00%	International Equity-Emerging Market	6.42%
Domestic Fixed Income	20.00%	Domestic Fixed Income	2.05%
International Fixed Income	3.00%	International Fixed Income	3.00%
Alternatives	23.00%	Alternatives	6.50%
Real Estate	14.00%	Real Estate	6.25%
Cash & Cash Equivalents	0.00%	Cash & Cash Equivalents	0.00%
Total	100.00%		
		I. Real Rate of Return**	5.01%
		II. Inflation Assumption	2.50%
		III. Total Nominal Return [I. + II.]	7.51%
		IV. Investment Expense	0.50%
		V. Net Investment Return* [III.-IV.]	7.01%

* Based on 2019 Horizon Survey of Capital Market Assumptions

** Geometric Mean

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the June 30, 2020 Measurement Date)

7. Schedule of The Town's Contributions

For the Fiscal Year Ending	Actuarial Determined Contribution	Contributions in Relation to the Actuarially Determined Contribution	Contribution Deficiency (Excess)	Covered Employee Payroll	Contributions as a Percentage of Covered Employee Payroll
June 30, 2020	1,135,524	(1,027,697)	107,827	11,777,211	8.73%
June 30, 2019	1,120,810	(1,000,522)	120,288	10,980,482	9.11%
June 30, 2018	989,774	(989,372)	402	10,660,662	9.28%
June 30, 2017	992,163	(797,053)	195,110	11,605,943	6.87%

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the June 30, 2020 Measurement Date)

8. Effect of 1% Change in Healthcare Trend

<u>Impact of a 1% Change in the Healthcare Trend Rate as of the June 30, 2020 Measurement Date</u>			
	<u>1% Decrease</u>	<u>Current Trend Rate</u>	<u>1% Increase</u>
I. Total OPEB Liability	12,707,805	14,308,230	16,235,805
II. Fiduciary Net Position	<u>3,034,544</u>	<u>3,034,544</u>	<u>3,034,544</u>
III. Net OPEB Liability (Asset) [I.-II.]	9,673,261	11,273,686	13,201,261
IV. Service Cost	234,770	286,453	354,063

9. Effect of 1% Change in Discount Rates

<u>Impact of a 1% Change in the Discount Rate as of the June 30, 2020 Measurement Date</u>			
	<u>1% Decrease</u>	<u>Current Discount Rate</u>	<u>1% Increase</u>
I. Total OPEB Liability	16,018,570	14,308,230	12,597,890
II. Fiduciary Net Position	<u>3,034,544</u>	<u>3,034,544</u>	<u>3,034,544</u>
III. Net OPEB Liability (Asset) [I.-II.]	12,984,026	11,273,686	9,563,346
IV. Service Cost	359,121	286,453	213,785

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the June 30, 2020 Measurement Date)

10. Money Weighted Rate of Return

	Plan Investments / Net External Cash Flows	Periods Invested	Period Weight
I. Beginning value - June 30, 2019	2,675,677	12	1.0000
Monthly net external cash flows:			
July	0	11	0.9167
August	0	10	0.8333
September	300,000	9	0.7500
October	0	8	0.6667
November	0	7	0.5833
December	0	6	0.5000
January	0	5	0.4167
February	0	4	0.3333
March	0	3	0.2500
April	0	2	0.1667
May	0	1	0.0833
<u>June</u>	<u>0</u>	<u>0</u>	<u>0.0000</u>
II. Total net external cash flow	300,000		
III. Earnings and increase in fair value	58,867		
IV. Ending value - June 30, 2020 [I.+II.+III.]	3,034,544		
Money Weighted Rate of Return	2.03%		
Asset Value - June 30, 2020	3,034,544		

EXHIBIT A
FINANCIAL STATEMENT DISCLOSURES
(As of the June 30, 2020 Measurement Date)

11. OPEB Liability, OPEB Expense

	Fiscal Year Ending June 30, 2020		
	Town Employees and Retirees	School Employees and Retirees	Total
I. Total OPEB Liability as of June 30, 2020	3,473,308	10,834,922	14,308,230
II. Fiduciary Net Position as of June 30, 2020	736,632	2,297,912	3,034,544
III. Net OPEB Liability (Asset) as of June 30, 2020 [I. - II.]	2,736,676	8,537,010	11,273,686
IV. Service Cost	69,838	216,615	286,453
V. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	225,791	704,012	929,803
VI. Projected Earnings on OPEB Plan Investments	(48,041)	(149,861)	(197,902)
VII. Net Recognition of Deferred (Inflows)/Outflows	115,368	359,887	475,255
VIII. Expense Related to Change in Benefit Terms	0	0	0
IX. Financial Statement Expense [IV. + V. + VII. + VIII.]	362,956	1,130,653	1,493,609
X. Employer Share of Costs	(174,841)	(552,856)	(727,697)
XI. Employer (Payments) Withdrawals to/from OPEB Trust	(72,872)	(227,128)	(300,000)
XII. Total Employer Contribution [X. + XI.]	(247,713)	(779,984)	(1,027,697)
XIII. Net OPEB Expense [IX. + XII.]	115,243	350,669	465,912

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the June 30, 2020 Measurement Date)

12. OPEB Liability, OPEB Expense and Deferred Inflow/Outflow

Valuation Date	July 1, 2019
For the Measurement Period ending on the Measurement Date of:	June 30, 2020
For the Reporting Period & Fiscal Year ending on:	June 30, 2020
Source of Deferred Inflow/Outflow	
I. Deferred (Inflow)/Outflow from Actual vs. Expected Experience	386,083
II. Deferred (Inflow)/Outflow from Investment Experience	86,730
III. Deferred (Inflow)/Outflow from Changes in Assumptions	730,039
Change in Deferred Inflow/Outflow	
I. Deferred Outflow at the beginning of the period	1,130,549
II. Deferred Outflow created during the period	1,046,699
III. Deferred Outflow recognized during the period	580,781
IV. Change in Deferred Outflow (II. - III.)	465,918
V. Deferred Outflow at end of the period (I. + IV.)	1,596,467
VI. Deferred Inflow at the beginning of the period	(57,007)
VII. Deferred Inflow created during the period	(442,134)
VIII. Deferred Inflow recognized during the period	(105,526)
IX. Change in Deferred Inflow (VII. - VIII.)	(336,608)
X. Deferred Inflow at end of the period (VI. + IX.)	(393,615)
Net OPEB Liability	
I. Net OPEB Liability at beginning of period	10,678,464
II. Service Cost	286,453
III. Interest on Total OPEB Liability, Service Cost, and Payments	929,803
IV. Projected Investment Income	(197,902)
V. Total Employer Contributions	(1,027,697)
VI. Expense Related to Change in Benefit Terms	0
VII. Net OPEB Expense - Before Recognition of Deferred (Inflow)/Outflow (II. + III. + IV. + V. + VI.)	(9,343)
VIII. Deferred Outflow created during the period	1,046,699
IX. Deferred Inflow created during the period	(442,134)
X. Net OPEB Liability at end of period (I. + VII. + VIII. + IX.)	11,273,686
Net OPEB Expense	
I. Service Cost	286,453
II. Interest on Total OPEB Liability, Service Cost, and Payments	929,803
III. Projected Investment Income	(197,902)
IV. Recognition of Deferred (Inflow)/Outflow	475,255
V. Expense Related to Change in Benefit Terms	0
VI. Financial Statement Expense (I. + II. + III. + IV. + V.)	1,493,609
VII. Benefit Payments	(727,697)
VIII. Contributions to Trust	(300,000)
IX. Total Employer Payments (VII. + VIII.)	(1,027,697)
X. Total Net OPEB Expense under GASB 75 (VI. + IX.)	465,912

EXHIBIT B

REQUIRED SUPPLEMENTARY INFORMATION

(As of the June 30, 2020 Measurement Date)

The Town's Actuarially Determined Contribution (ADC) is an amount actuarially determined in accordance with the parameters of GASB Statement No. 74/75 which is composed of the service cost and an amortization of the unfunded liability. We have used a 30 year flat dollar amortization of the Town's unfunded liability for the purpose of calculating ADC. The following table shows the components of the Town's annual ADC and the amount actually contributed to the plan:

Actuarially Determined Contribution - Deficiency / (Excess)				
	<u>June 30, 2020</u>	<u>June 30, 2019</u>	For the Fiscal Year Ending:	
			<u>June 30, 2018</u>	<u>June 30, 2017</u>
I. Service Cost	286,453	316,568	297,469	314,494
II. 30 Year Level Dollar Amortization of NOL	<u>849,071</u>	<u>804,242</u>	<u>692,305</u>	<u>677,669</u>
III. Actuarial Determined Contribution [I. + II.]	1,135,524	1,120,810	989,774	992,163
IV. Contributions in Relation to the Actuarially Determined Contribution	<u>(1,027,697)</u>	<u>(1,000,522)</u>	<u>(989,372)</u>	<u>(797,053)</u>
V. Contribution Deficiency / (Excess) [III. + IV.]	<u>107,827</u>	<u>120,288</u>	<u>402</u>	<u>195,110</u>
Covered Employee Payroll	11,777,211	10,980,482	10,660,662	11,605,943
Contributions as a % of Covered Employee Payroll	8.73%	9.11%	9.28%	6.87%
Discount Rate	7.00%	7.00%	7.00%	6.75%
Money Weighted Rate of Return	2.03%	5.72%	9.02%	13.49%

EXHIBIT B

REQUIRED SUPPLEMENTARY INFORMATION

(As of the June 30, 2020 Measurement Date)

Schedule of Changes in the Town's Net OPEB Liability and Related Ratios				
Valuation Date	July 1, 2019	July 1, 2017	July 1, 2017	July 1, 2017
GASB 75 Measurement Date	June 30, 2019	June 30, 2019	June 30, 2018	June 30, 2017
For the Reporting Period & Fiscal Year Ending on:	June 30, 2020	June 30, 2019	June 30, 2018	June 30, 2017
Total OPEB Liability	14,308,230	13,354,141	12,792,821	10,851,613
I. Service Cost	286,453	316,568	297,469	314,494
II. Interest on Total OPEB Liability, Service Cost, and Benefit Payments	929,803	895,274	758,436	655,663
III. Changes in Benefit Terms	0	0	0	0
IV. Difference Between Expected & Actual Plan Experience	(442,134)	0	1,894,235	0
V. Changes of Assumptions	907,664	0	(369,560)	0
VI. Benefit Payments Excluding Implicit Cost	(552,947)	(600,537)	(583,770)	N/A
VII. Implicit Cost Amount	(174,750)	(49,985)	(55,602)	N/A
VIII. Total Benefit Payments Including Implicit Cost [VI.+VII.]	(727,697)	(650,522)	(639,372)	(497,053)
IX. Net Change in OPEB Liability [I.+II.+III.+IV.+V.+VIII.]	954,089	561,320	1,941,208	473,104
X. Total OPEB Liability - Beginning of Period	13,354,141	12,792,821	10,851,613	10,378,509
XI. Prior Period Adjustment	0	0	0	0
XII. Total OPEB Liability - Beginning of Period with Adjustment	13,354,141	12,792,821	10,851,613	10,378,509
XIII. Total OPEB Liability - End of Period [IX.+XII.]	14,308,230	13,354,141	12,792,821	10,851,613
Plan Fiduciary Net Position	3,034,544	2,675,677	2,182,433	1,659,410
XIV. Earning from Plan Investments	58,867	143,244	173,023	187,870
XV. Employer Contribution to Trust	1,027,697	1,000,522	989,372	797,053
XVI. Benefit Payments from Trust, Including Refunds of Member Contributions	(727,697)	(650,522)	(639,372)	(497,053)
XVII. Administrative Expense	0	0	0	0
XVIII. Other	0	0	0	0
XIX. Net Change in Plan Fiduciary Net Position [XIV.+XV.+XVI.+XVII.+XVIII.]	358,867	493,244	523,023	487,870
XX. Plan Fiduciary Net Position - Beginning of Period	2,675,677	2,182,433	1,659,410	1,171,540
XXI. Prior Period Adjustment	0	0	0	0
XXII. Plan Fiduciary Net Position - Beginning of Period with Adjustment	2,675,677	2,182,433	1,659,410	1,171,540
XXIII. Plan Fiduciary Net Position - End of Period [XIX.+XXII.]	3,034,544	2,675,677	2,182,433	1,659,410
XXIV. Net OPEB Liability [XIII.-XXIII.]	11,273,686	10,678,464	10,610,388	9,192,203
XXV. Plan Fiduciary Net Position as % of Total OPEB Liability [XXIII. / XIII.]	21.21%	20.04%	17.06%	15.29%
XXVI. Covered Employee Payroll	11,777,211	10,980,482	10,660,662	11,605,943
XXVII. Plan NOL as % of Covered Employee Payroll [XXIV. / XXVI.]	95.72%	97.25%	99.53%	79.20%
Single Discount Rate to calculate Plan Liabilities	7.00%	7.00%	7.00%	6.75%

EXHIBIT BREQUIRED SUPPLEMENTARY INFORMATION

(As of the June 30, 2020 Measurement Date)

Notes to Required Supplementary Information:

Valuation Date:	Actuarially Determined Contribution was calculated as of July 1, 2019.
Actuarial Cost Method:	Individual Entry Age Normal
Asset-Valuation Method:	Market Value of Assets as of the Measurement Date, June 30, 2020.

Actuarial Assumptions:

Investment Rate of Return:	7.01%, net of OPEB plan investment expense, including inflation.
Municipal Bond Rate	2.66% as of June 30, 2020 (source: S&P Municipal Bond 20-Year High Grade Index – SAPIHG)
Single Equivalent Discount Rate:	7.00%, net of OPEB plan investment expense, including inflation.
Inflation:	2.50% as of June 30, 2020 and for future periods
Salary Increases:	3.00% annually as of June 30, 2020 and for future periods
Cost of Living Adjustment:	Not Applicable

EXHIBIT B

REQUIRED SUPPLEMENTARY INFORMATION

(As of the June 30, 2020 Measurement Date)

Pre-Retirement Mortality:

General: RP-2014 Mortality Table for Blue Collar Employees projected generationally with scale MP-2016 for males and females, set forward 1 year for females
Teachers: RP-2014 Mortality Table for White Collar Employees projected generationally with scale MP-2016 for males and females

Post-Retirement Mortality:

General: RP-2014 Mortality Table for Blue Collar Healthy Annuitants projected generationally with scale MP-2016 for males and females, set forward 1 year for females
Teachers: RP-2014 Mortality Table for White Collar Healthy Annuitants projected generationally with scale MP-2016 for males and females

Disabled Mortality:

General: RP-2014 Mortality Table for Blue Collar Healthy Annuitants projected generationally with scale MP-2016 for males and females, set forward 1 year
Teachers: RP-2014 Mortality Table for White Collar Healthy Annuitants projected generationally with scale MP-2016 for males and females

EXHIBIT BREQUIRED SUPPLEMENTARY INFORMATION

(As of the June 30, 2020 Measurement Date)

Plan Membership

At July 1, 2019, OPEB plan membership consisted of the following:

Inactive employees or beneficiaries currently receiving benefits:	146
Active Employees:	<u>181</u>
Total:	327

Events Subsequent to the Measurement Date

To the best of our knowledge there were no material events subsequent to the Measurement Date that would impact the figures shown in this report.

Changes in Assumptions: From June 30, 2019 to June 30, 2020

- ✓ Based on recommendations by PERAC, the mortality table has been updated from the RP-2000 Employees Mortality Table projected generationally with scale BB and a base year 2009 to the RP-2014 Mortality Table projected generationally with scale MP-2016 for males and females
- ✓ The expected long-term medical trend has been updated to 4.50%
- ✓ Based on recent research by the Society of Actuaries, we have updated the assumption for morbidity or age-related costs of medical care

Contributions/Withdrawals:

The contribution requirements of plan members and the Town are established and may be amended through Town ordinances. The Town contributed beyond the pay-as-you-go cost \$300,000 for the period ending on the June 30, 2020 Measurement Date. For the year ending on the June 30, 2020 Measurement Date total Town premiums plus implicit costs for the retiree medical program were \$727,697. \$174,750 of the \$727,697 represents implicit cost.

EXHIBIT BREQUIRED SUPPLEMENTARY INFORMATION

(As of the June 30, 2020 Measurement Date)

Census Data Manipulation:

In the absence of data, the following was assumed:

Spouse Sex:	Male participants had female spouses and vice versa.
Spouse Age:	Male spouses were three years older than female spouses and same sex spouses were the same age.
Hire Age:	Participants who were not on the previous valuation were hired halfway between last valuation and the current valuation. If we did not have census data related to the last valuation, the participants were assumed to have been hired at age forty.
Retiree Age:	Retirees had the same birth date as they had the prior valuation. If we did not have census data related to the last valuation, retirees who were enrolled in Active plans were assumed to be age sixty-two and retirees who were enrolled in Medicare Supplement plans were assumed to be age seventy-two. Those not enrolled in a medical plan were assumed to be sixty-seven.
School Demographics:	Two thirds of school participants were teachers.
Other Material Changes:	No other data changes were deemed to be material.

APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

CURRENT FUNDING POLICY (OPEN GROUP)

Funding - 7.00% discount rate

For the Fiscal Year	Period Ending on the Measurement Date of:	I. Total OPEB Liability ("TOL") as of Measurement Date	II. Fiduciary Net Position as of Measurement Date with an expected 7.01% return	III. Net OPEB Liability (Asset) [I. - II.]	IV. Funded Ratio [II. / I.]	V. Service Cost	VI. Employer Share of Benefit Payments (With Implicit Cost)	VII. Trust Contributions Beyond Pay-as-you-go	VIII. Gross Trust Contributions [VI. + VII.]	IX. Benefit Payments Reimbursed from the Trust	X. Administrative & Investment Expenses Reimbursed from the Trust	XI. Total Employer Payments Less Reimbursements [VIII. - IX. - X.]
2020	June 30, 2020	14,308,230	3,034,544	11,273,686	21.21%	286,453	727,697	300,000	1,027,697	727,697	0	300,000
2021	June 30, 2021	14,826,491	3,557,602	11,268,889	23.99%	299,406	776,946	300,000	1,076,946	776,946	0	300,000
2022	June 30, 2022	15,245,182	4,117,327	11,127,855	27.01%	312,752	821,153	300,000	1,121,153	821,153	0	300,000
2023	June 30, 2023	15,754,855	4,716,289	11,038,566	29.94%	326,152	823,799	300,000	1,123,799	823,799	0	300,000
2024	June 30, 2024	16,261,871	5,357,238	10,904,633	32.94%	342,371	882,242	300,000	1,182,242	882,242	0	300,000
2025	June 30, 2025	16,767,628	6,043,117	10,724,511	36.04%	357,414	939,525	300,000	1,239,525	939,525	0	300,000
2026	June 30, 2026	17,283,232	6,777,076	10,506,156	39.21%	371,202	979,935	300,000	1,279,935	979,935	0	300,000
2027	June 30, 2027	17,780,467	7,562,486	10,217,981	42.53%	388,727	1,052,616	300,000	1,352,616	1,052,616	0	300,000
2028	June 30, 2028	18,267,418	8,402,953	9,864,465	46.00%	402,462	1,107,749	300,000	1,407,749	1,107,749	0	300,000
2029	June 30, 2029	18,777,435	9,302,337	9,475,098	49.54%	418,088	1,135,270	300,000	1,435,270	1,135,270	0	300,000
2030	June 30, 2030	19,258,347	10,264,768	8,993,579	53.30%	434,084	1,192,086	300,000	1,492,086	1,192,086	0	300,000
2031	June 30, 2031	19,759,347	11,294,665	8,464,682	57.16%	451,874	1,250,830	300,000	1,550,830	1,250,830	0	300,000
2032	June 30, 2032	20,297,110	12,396,758	7,900,352	61.08%	469,586	1,266,866	300,000	1,566,866	1,266,866	0	300,000
2033	June 30, 2033	20,801,807	13,576,108	7,225,699	65.26%	488,747	1,306,722	300,000	1,606,722	1,306,722	0	300,000
2034	June 30, 2034	21,365,474	14,838,130	6,527,344	69.45%	507,126	1,336,200	300,000	1,636,200	1,336,200	0	300,000
2035	June 30, 2035	21,998,117	16,188,620	5,809,497	73.59%	527,584	1,349,174	300,000	1,649,174	1,349,174	0	300,000
2036	June 30, 2036	22,647,538	17,633,779	5,013,759	77.86%	550,354	1,351,170	300,000	1,651,170	1,351,170	0	300,000
2037	June 30, 2037	23,249,217	19,180,244	4,068,973	82.50%	572,236	1,387,470	300,000	1,687,470	1,387,470	0	300,000
2038	June 30, 2038	23,976,175	20,835,116	3,141,059	86.90%	595,437	1,353,730	300,000	1,653,730	1,353,730	0	300,000
2039	June 30, 2039	24,752,786	22,605,995	2,146,791	91.33%	619,203	1,356,720	300,000	1,656,720	1,356,720	0	300,000
2040	June 30, 2040	25,645,743	24,501,012	1,144,731	95.54%	644,621	1,415,594	300,000	1,715,594	1,415,594	0	300,000
2041	June 30, 2041	26,578,357	26,528,870	49,487	99.81%	672,380	1,454,204	300,000	1,754,204	1,454,204	0	300,000
2042	June 30, 2042	27,520,195	28,698,881	(1,178,686)	104.28%	701,719	1,521,678	300,000	1,821,678	1,521,678	0	300,000
2043	June 30, 2043	28,497,769	29,806,406	(1,308,637)	104.59%	731,686	1,605,833	(874,147)	731,686	1,605,833	0	(874,147)
2044	June 30, 2044	29,539,068	30,956,236	(1,417,168)	104.80%	763,935	1,672,237	(908,302)	763,935	1,672,237	0	(908,302)
2045	June 30, 2045	30,573,350	32,136,333	(1,562,983)	105.11%	798,479	1,755,441	(956,962)	798,479	1,755,441	0	(956,962)
2046	June 30, 2046	31,666,687	33,363,736	(1,697,049)	105.36%	832,736	1,823,937	(991,201)	832,736	1,823,937	0	(991,201)
2047	June 30, 2047	32,838,629	34,665,466	(1,826,837)	105.56%	870,316	1,872,841	(1,002,525)	870,316	1,872,841	0	(1,002,525)
2048	June 30, 2048	34,113,956	36,081,460	(1,967,504)	105.77%	909,248	1,889,526	(980,278)	909,248	1,889,526	0	(980,278)
2049	June 30, 2049	35,509,789	37,650,698	(2,140,909)	106.03%	949,434	1,877,528	(928,094)	949,434	1,877,528	0	(928,094)
2050	June 30, 2050	37,033,388	39,367,479	(2,334,091)	106.30%	993,529	1,885,334	(891,805)	993,529	1,885,334	0	(891,805)
2051	June 30, 2051	38,655,003	41,205,144	(2,550,141)	106.60%	1,037,148	1,928,433	(891,285)	1,037,148	1,928,433	0	(891,285)

APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

CONTRIBUTION PROJECTION DISCLOSURES

Table 1: Projection of Contributions using a July 1, 2019 Valuation Date

For the Period Ending on the Measurement Date	I. Payroll for current employees	II. Payroll for future employees	III. Total Payroll [I.+II.]	IV. Contributions from current employees	V. Employer Payments for current plan members	VI. Employer Payments for future employees	VII. Total Payments [IV.+V.+VI.]
June 30, 2020	11,777,211	0	11,777,211	0	727,697	0	727,697
June 30, 2021	11,068,411	1,062,116	12,130,527	0	776,946	0	776,946
June 30, 2022	10,436,392	2,058,051	12,494,443	0	821,153	0	821,153
June 30, 2023	9,768,474	3,100,802	12,869,276	0	823,799	0	823,799
June 30, 2024	9,189,549	4,065,805	13,255,354	0	882,242	0	882,242
June 30, 2025	8,649,060	5,003,955	13,653,015	0	939,525	0	939,525
June 30, 2026	8,121,232	5,941,373	14,062,605	0	979,935	0	979,935
June 30, 2027	7,696,244	6,788,239	14,484,483	0	1,052,616	0	1,052,616
June 30, 2028	7,218,740	7,700,277	14,919,017	0	1,107,749	0	1,107,749
June 30, 2029	6,768,766	8,597,822	15,366,588	0	1,135,270	0	1,135,270
June 30, 2030	6,310,190	9,517,396	15,827,586	0	1,192,086	0	1,192,086
June 30, 2031	5,935,493	10,366,921	16,302,414	0	1,246,163	4,667	1,250,830
June 30, 2032	5,584,831	11,206,655	16,791,486	0	1,254,689	12,177	1,266,866
June 30, 2033	5,254,647	12,040,584	17,295,231	0	1,283,659	23,063	1,306,722
June 30, 2034	4,921,436	12,892,652	17,814,088	0	1,297,328	38,872	1,336,200
June 30, 2035	4,586,586	13,761,925	18,348,511	0	1,290,186	58,988	1,349,174
June 30, 2036	4,287,334	14,611,632	18,898,966	0	1,276,001	75,169	1,351,170
June 30, 2037	3,985,981	15,479,954	19,465,935	0	1,293,336	94,134	1,387,470
June 30, 2038	3,729,908	16,320,005	20,049,913	0	1,238,149	115,581	1,353,730
June 30, 2039	3,459,956	17,191,454	20,651,410	0	1,223,971	132,749	1,356,720
June 30, 2040	3,196,055	18,074,897	21,270,952	0	1,264,064	151,530	1,415,594
June 30, 2041	2,964,376	18,944,705	21,909,081	0	1,276,529	177,675	1,454,204
June 30, 2042	2,758,724	19,807,629	22,566,353	0	1,311,168	210,510	1,521,678
June 30, 2043	2,561,068	20,682,276	23,243,344	0	1,354,116	251,717	1,605,833
June 30, 2044	2,386,883	21,553,761	23,940,644	0	1,369,098	303,139	1,672,237
June 30, 2045	2,249,356	22,409,507	24,658,863	0	1,390,973	364,468	1,755,441
June 30, 2046	2,066,029	23,332,600	25,398,629	0	1,405,480	418,457	1,823,937
June 30, 2047	1,901,349	24,259,239	26,160,588	0	1,394,203	478,638	1,872,841
June 30, 2048	1,737,548	25,207,858	26,945,406	0	1,344,270	545,256	1,889,526
June 30, 2049	1,548,593	26,205,175	27,753,768	0	1,274,725	602,803	1,877,528
June 30, 2050	1,418,217	27,168,164	28,586,381	0	1,220,784	664,550	1,885,334
June 30, 2051	1,287,106	28,156,866	29,443,972	0	1,192,538	735,895	1,928,433
June 30, 2052	1,175,782	29,151,509	30,327,291	0	1,169,476	814,252	1,983,728
June 30, 2053	1,005,728	30,231,382	31,237,110	0	1,136,844	901,551	2,038,395
June 30, 2054	898,484	31,275,739	32,174,223	0	1,128,624	998,280	2,126,904
June 30, 2055	790,784	32,348,666	33,139,450	0	1,116,680	1,104,864	2,221,544
June 30, 2056	705,019	33,428,615	34,133,634	0	1,119,265	1,207,790	2,327,055
June 30, 2057	626,951	34,530,692	35,157,643	0	1,115,210	1,317,634	2,432,844
June 30, 2058	550,803	35,661,569	36,212,372	0	1,070,846	1,435,084	2,505,930
June 30, 2059	470,750	36,827,993	37,298,743	0	1,027,947	1,551,794	2,579,741

APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

CONTRIBUTION PROJECTION DISCLOSURES (CONTINUED)

Table 1: Projection of Contributions using a July 1, 2019 Valuation Date

For the Period Ending on the Measurement Date	I. Payroll for current employees	II. Payroll for future employees	III. Total Payroll [I.+II.]	IV. Contributions from current employees	V. Employer Payments for current plan members	VI. Employer Payments for future employees	VII. Total Payments [IV.+V.+VI.]
June 30, 2060	370,305	38,047,400	38,417,705	0	1,001,291	1,674,950	2,676,241
June 30, 2061	314,289	39,255,947	39,570,236	0	962,770	1,809,181	2,771,951
June 30, 2062	265,287	40,492,056	40,757,343	0	925,885	1,952,872	2,878,757
June 30, 2063	187,459	41,792,604	41,980,063	0	882,413	2,107,634	2,990,047
June 30, 2064	109,984	43,129,481	43,239,465	0	857,362	2,275,052	3,132,414
June 30, 2065	75,986	44,460,663	44,536,649	0	825,691	2,454,491	3,280,182
June 30, 2066	54,065	45,818,683	45,872,748	0	796,520	2,636,337	3,432,857
June 30, 2067	35,943	47,212,987	47,248,930	0	766,883	2,828,648	3,595,531
June 30, 2068	11,901	48,654,497	48,666,398	0	729,479	3,032,160	3,761,639
June 30, 2069	9,682	50,116,708	50,126,390	0	698,410	3,234,417	3,932,827
June 30, 2070	0	51,630,182	51,630,182	0	668,015	3,446,130	4,114,145
June 30, 2071	0	53,179,087	53,179,087	0	636,913	3,669,295	4,306,208
June 30, 2072	0	54,774,460	54,774,460	0	606,036	3,900,241	4,506,277
June 30, 2073	0	56,417,694	56,417,694	0	575,479	4,142,016	4,717,495
June 30, 2074	0	58,110,225	58,110,225	0	545,356	4,394,280	4,939,636
June 30, 2075	0	59,853,532	59,853,532	0	515,745	4,656,416	5,172,161
June 30, 2076	0	61,649,138	61,649,138	0	486,688	4,931,146	5,417,834
June 30, 2077	0	63,498,612	63,498,612	0	458,217	5,216,774	5,674,991
June 30, 2078	0	65,403,570	65,403,570	0	430,320	5,514,826	5,945,146
June 30, 2079	0	67,365,677	67,365,677	0	402,970	5,823,777	6,226,747
June 30, 2080	0	69,386,647	69,386,647	0	376,143	6,145,563	6,521,706
June 30, 2081	0	71,468,246	71,468,246	0	349,811	6,481,115	6,830,926
June 30, 2082	0	73,612,293	73,612,293	0	323,982	6,829,571	7,153,553
June 30, 2083	0	75,820,662	75,820,662	0	298,710	7,192,764	7,491,474
June 30, 2084	0	78,095,282	78,095,282	0	274,076	7,571,774	7,845,850
June 30, 2085	0	80,438,140	80,438,140	0	250,214	7,967,200	8,217,414
June 30, 2086	0	82,851,284	82,851,284	0	227,282	8,380,072	8,607,354
June 30, 2087	0	85,336,823	85,336,823	0	205,373	8,810,771	9,016,144
June 30, 2088	0	87,896,928	87,896,928	0	184,596	9,260,468	9,445,064
June 30, 2089	0	90,533,836	90,533,836	0	165,021	9,727,667	9,892,688
June 30, 2090	0	93,249,851	93,249,851	0	146,705	10,215,347	10,362,052
June 30, 2091	0	96,047,347	96,047,347	0	129,647	10,725,414	10,855,061
June 30, 2092	0	98,928,767	98,928,767	0	113,825	11,256,844	11,370,669
June 30, 2093	0	101,896,630	101,896,630	0	99,214	11,811,886	11,911,100
June 30, 2094	0	104,953,529	104,953,529	0	85,781	12,392,704	12,478,485

APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

FIDUCIARY NET POSITION PROJECTION DISCLOSURES

Table 2: Projection of OPEB Plan's Fiduciary Net Position using a July 1, 2019 Valuation Date

For the Period Ending on the Measurement Date	I. Beginning Fiduciary Net Position for Current Plan Members	II. Employer Share of Benefit Payments for Current Plan Members	III. Contributions to Trust for Current Plan Members beyond Pay-as-you- go	IV. Gross Contributions to Trust for Current Plan Members [II. + III.]	V. Administrative Expenses Withdrawn from the Trust for Current Plan Members	VI. Benefit Payments Withdrawn from the Trust for Current Plan Members	VII. Trust Withdrawals for Current Plan Members [V. + VI.]	VIII. Investment Earnings	IX. Ending Fiduciary Net Position for Current Plan Members
June 30, 2020	2,675,677	727,697	300,000	1,027,697	0	727,697	727,697	58,867	3,034,544
June 30, 2021	3,034,544	776,946	273,733	1,050,679	0	776,946	776,946	203,528	3,511,805
June 30, 2022	3,511,805	821,153	250,585	1,071,738	0	821,153	821,153	254,812	4,017,202
June 30, 2023	4,017,202	823,799	227,716	1,051,515	0	823,799	823,799	289,452	4,534,370
June 30, 2024	4,534,370	882,242	207,981	1,090,223	0	882,242	882,242	325,026	5,067,377
June 30, 2025	5,067,377	939,525	190,047	1,129,572	0	939,525	939,525	361,771	5,619,195
June 30, 2026	5,619,195	979,935	173,252	1,153,187	0	979,935	979,935	399,875	6,192,322
June 30, 2027	6,192,322	1,052,616	159,403	1,212,019	0	1,052,616	1,052,616	439,574	6,791,299
June 30, 2028	6,791,299	1,107,749	145,158	1,252,907	0	1,107,749	1,107,749	481,072	7,417,529
June 30, 2029	7,417,529	1,135,270	132,146	1,267,416	0	1,135,270	1,135,270	524,522	8,074,197
June 30, 2030	8,074,197	1,192,086	119,605	1,311,691	0	1,192,086	1,192,086	570,122	8,763,924
June 30, 2031	8,763,924	1,246,163	109,226	1,355,389	0	1,246,163	1,246,163	618,115	9,486,598
June 30, 2032	9,486,598	1,254,689	99,780	1,354,469	0	1,254,689	1,254,689	668,449	10,242,650
June 30, 2033	10,242,650	1,283,659	91,146	1,374,805	0	1,283,659	1,283,659	721,150	11,031,883
June 30, 2034	11,031,883	1,297,328	82,880	1,380,208	0	1,297,328	1,297,328	776,191	11,852,082
June 30, 2035	11,852,082	1,290,186	74,991	1,365,177	0	1,290,186	1,290,186	833,415	12,701,500
June 30, 2036	12,701,500	1,276,001	68,057	1,344,058	0	1,276,001	1,276,001	892,720	13,587,108
June 30, 2037	13,587,108	1,293,336	61,430	1,354,766	0	1,293,336	1,293,336	954,573	14,508,977
June 30, 2038	14,508,977	1,238,149	55,809	1,293,958	0	1,238,149	1,238,149	1,019,002	15,468,207
June 30, 2039	15,468,207	1,223,971	50,262	1,274,233	0	1,223,971	1,223,971	1,086,053	16,471,773
June 30, 2040	16,471,773	1,264,064	45,076	1,309,140	0	1,264,064	1,264,064	1,156,224	17,521,543
June 30, 2041	17,521,543	1,276,529	40,591	1,317,120	0	1,276,529	1,276,529	1,229,659	18,614,118
June 30, 2042	18,614,118	1,311,168	36,675	1,347,843	0	1,311,168	1,311,168	1,306,113	19,746,396
June 30, 2043	19,746,396	1,354,116	33,056	1,387,172	0	1,354,116	1,354,116	1,385,361	20,913,096
June 30, 2044	20,913,096	1,369,098	29,910	1,399,008	0	1,369,098	1,369,098	1,467,039	22,106,906
June 30, 2045	22,106,906	1,390,973	27,366	1,418,339	0	1,390,973	1,390,973	1,550,637	23,320,441
June 30, 2046	23,320,441	1,405,480	24,403	1,429,883	0	1,405,480	1,405,480	1,635,604	24,561,991
June 30, 2047	24,561,991	1,394,203	21,804	1,416,007	0	1,394,203	1,394,203	1,722,547	25,827,704
June 30, 2048	25,827,704	1,344,270	19,345	1,363,615	0	1,344,270	1,344,270	1,811,189	27,112,982
June 30, 2049	27,112,982	1,274,725	16,739	1,291,464	0	1,274,725	1,274,725	1,901,197	28,428,115
June 30, 2050	28,428,115	1,220,784	14,883	1,235,667	0	1,220,784	1,220,784	1,993,324	29,771,772
June 30, 2051	29,771,772	1,192,538	13,114	1,205,652	0	1,192,538	1,192,538	2,087,453	31,136,444
June 30, 2052	31,136,444	1,169,476	11,631	1,181,107	0	1,169,476	1,169,476	2,183,065	32,516,888
June 30, 2053	32,516,888	1,136,844	9,659	1,146,503	0	1,136,844	1,136,844	2,279,767	33,904,763
June 30, 2054	33,904,763	1,128,624	8,378	1,137,002	0	1,128,624	1,128,624	2,377,013	35,291,874
June 30, 2055	35,291,874	1,116,680	7,159	1,123,839	0	1,116,680	1,116,680	2,474,207	36,668,376
June 30, 2056	36,668,376	1,119,265	6,196	1,125,461	0	1,119,265	1,119,265	2,570,667	38,037,449
June 30, 2057	38,037,449	1,115,210	5,350	1,120,560	0	1,115,210	1,115,210	2,666,610	39,391,775
June 30, 2058	39,391,775	1,070,846	4,563	1,075,409	0	1,070,846	1,070,846	2,761,521	40,722,775
June 30, 2059	40,722,775	1,027,947	3,786	1,031,733	0	1,027,947	1,027,947	2,854,797	42,029,564

APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

FIDUCIARY POSITION PROJECTION DISCLOSURES (CONTINUED)

Table 2: Projection of OPEB Plan's Fiduciary Net Position using a July 1, 2019 Valuation Date

For the Period Ending on the Measurement Date	I. Beginning Fiduciary Net Position for Current Plan Members	II. Employer Share of Benefit Payments for Current Plan Members	III. Contributions to Trust for Current Plan Members beyond Pay-as-you- go	IV. Gross Contributions to Trust for Current Plan Members [III. + III.]	V. Administrative Expenses Withdrawn from the Trust for Current Plan Members	VI. Benefit Payments Withdrawn from the Trust for Current Plan Members	VII. Trust Withdrawals for Current Plan Members [V. + VI.]	VIII. Investment Earnings	IX. Ending Fiduciary Net Position for Current Plan Members
June 30, 2060	42,029,564	1,001,291	2,892	1,004,183	0	1,001,291	1,001,291	2,946,372	41,056,673
June 30, 2061	41,056,673	962,770	2,383	965,153	0	962,770	962,770	2,878,155	40,116,763
June 30, 2062	40,116,763	925,885	1,953	927,838	0	925,885	925,885	2,812,252	39,209,183
June 30, 2063	39,209,183	882,413	1,340	883,753	0	882,413	882,413	2,748,610	38,339,043
June 30, 2064	38,339,043	857,362	763	858,125	0	857,362	857,362	2,687,593	37,488,517
June 30, 2065	37,488,517	825,691	512	826,203	0	825,691	825,691	2,627,963	36,667,310
June 30, 2066	36,667,310	796,520	354	796,874	0	796,520	796,520	2,570,391	35,873,820
June 30, 2067	35,873,820	766,883	228	767,111	0	766,883	766,883	2,514,763	35,108,850
June 30, 2068	35,108,850	729,479	73	729,552	0	729,479	729,479	2,461,133	34,379,972
June 30, 2069	34,379,972	698,410	58	698,468	0	698,410	698,410	2,410,038	33,682,028
June 30, 2070	33,682,028	668,015	0	668,015	0	668,015	668,015	2,361,110	33,014,013
June 30, 2071	33,014,013	636,913	0	636,913	0	636,913	636,913	2,314,282	32,377,100
June 30, 2072	32,377,100	606,036	0	606,036	0	606,036	606,036	2,269,635	31,771,064
June 30, 2073	31,771,064	575,479	0	575,479	0	575,479	575,479	2,227,152	31,195,585
June 30, 2074	31,195,585	545,356	0	545,356	0	545,356	545,356	2,186,811	30,650,229
June 30, 2075	30,650,229	515,745	0	515,745	0	515,745	515,745	2,148,581	30,134,484
June 30, 2076	30,134,484	486,688	0	486,688	0	486,688	486,688	2,112,427	29,647,796
June 30, 2077	29,647,796	458,217	0	458,217	0	458,217	458,217	2,078,310	29,189,579
June 30, 2078	29,189,579	430,320	0	430,320	0	430,320	430,320	2,046,189	28,759,259
June 30, 2079	28,759,259	402,970	0	402,970	0	402,970	402,970	2,016,024	28,356,289
June 30, 2080	28,356,289	376,143	0	376,143	0	376,143	376,143	1,987,776	27,980,146
June 30, 2081	27,980,146	349,811	0	349,811	0	349,811	349,811	1,961,408	27,630,335
June 30, 2082	27,630,335	323,982	0	323,982	0	323,982	323,982	1,936,886	27,306,353
June 30, 2083	27,306,353	298,710	0	298,710	0	298,710	298,710	1,914,175	27,007,643
June 30, 2084	27,007,643	274,076	0	274,076	0	274,076	274,076	1,893,236	26,733,567
June 30, 2085	26,733,567	250,214	0	250,214	0	250,214	250,214	1,874,023	26,483,353
June 30, 2086	26,483,353	227,282	0	227,282	0	227,282	227,282	1,856,483	26,256,071
June 30, 2087	26,256,071	205,373	0	205,373	0	205,373	205,373	1,840,551	26,050,698
June 30, 2088	26,050,698	184,596	0	184,596	0	184,596	184,596	1,826,154	25,866,102
June 30, 2089	25,866,102	165,021	0	165,021	0	165,021	165,021	1,813,214	25,701,081
June 30, 2090	25,701,081	146,705	0	146,705	0	146,705	146,705	1,801,646	25,554,376
June 30, 2091	25,554,376	129,647	0	129,647	0	129,647	129,647	1,791,362	25,424,729
June 30, 2092	25,424,729	113,825	0	113,825	0	113,825	113,825	1,782,273	25,310,904
June 30, 2093	25,310,904	99,214	0	99,214	0	99,214	99,214	1,774,294	25,211,690
June 30, 2094	25,211,690	85,781	0	85,781	0	85,781	85,781	1,767,339	25,125,909

APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

BENEFIT PAYMENT PROJECTION DISCLOSURES

Table 3: Actuarial Present Values of Projected Benefit Payments using a July 1, 2019 Valuation Date

For the Period Ending on the Measurement Date	I. Beginning Fiduciary Net Position for Current Plan Members	II. Benefit Payments for Current Plan Members	III. Funded Portion of Benefit Payments	IV. Unfunded Portion of Benefit Payments [II. - III.]	V. Present Value of Funded Benefit Payments using the Long-Term Rate of Return [7.01%]	VI. Present Value of Unfunded Benefit Payments using the Municipal Bond Rate [2.66%]	VII. Present Value of Benefit Payments using the Single Equivalent Discount Rate [7.01%]	
June 30, 2020	2,675,677	727,697	727,697	0	727,697	0	727,697	Sum of Column V.
June 30, 2021	3,034,544	776,946	776,946	0	726,050	0	726,050	15,871,965
June 30, 2022	3,511,805	821,153	821,153	0	717,093	0	717,093	
June 30, 2023	4,017,202	823,799	823,799	0	672,277	0	672,277	Sum of Column VI.
June 30, 2024	4,534,370	882,242	882,242	0	672,807	0	672,807	0
June 30, 2025	5,067,377	939,525	939,525	0	669,555	0	669,555	
June 30, 2026	5,619,195	979,935	979,935	0	652,606	0	652,606	Sum of Column VII.
June 30, 2027	6,192,322	1,052,616	1,052,616	0	655,088	0	655,088	[V. + VI.]
June 30, 2028	6,791,299	1,107,749	1,107,749	0	644,238	0	644,238	15,871,965
June 30, 2029	7,417,529	1,135,270	1,135,270	0	616,993	0	616,993	
June 30, 2030	8,074,197	1,192,086	1,192,086	0	605,430	0	605,430	
June 30, 2031	8,763,924	1,246,163	1,246,163	0	591,435	0	591,435	
June 30, 2032	9,486,598	1,254,689	1,254,689	0	556,473	0	556,473	
June 30, 2033	10,242,650	1,283,659	1,283,659	0	532,026	0	532,026	
June 30, 2034	11,031,883	1,297,328	1,297,328	0	502,468	0	502,468	
June 30, 2035	11,852,082	1,290,186	1,290,186	0	466,968	0	466,968	
June 30, 2036	12,701,500	1,276,001	1,276,001	0	431,580	0	431,580	
June 30, 2037	13,587,108	1,293,336	1,293,336	0	408,787	0	408,787	
June 30, 2038	14,508,977	1,238,149	1,238,149	0	365,708	0	365,708	
June 30, 2039	15,468,207	1,223,971	1,223,971	0	337,838	0	337,838	
June 30, 2040	16,471,773	1,264,064	1,264,064	0	326,048	0	326,048	
June 30, 2041	17,521,543	1,276,529	1,276,529	0	307,694	0	307,694	
June 30, 2042	18,614,118	1,311,168	1,311,168	0	295,340	0	295,340	
June 30, 2043	19,746,396	1,354,116	1,354,116	0	285,033	0	285,033	
June 30, 2044	20,913,096	1,369,098	1,369,098	0	269,308	0	269,308	
June 30, 2045	22,106,906	1,390,973	1,390,973	0	255,688	0	255,688	
June 30, 2046	23,320,441	1,405,480	1,405,480	0	241,430	0	241,430	
June 30, 2047	24,561,991	1,394,203	1,394,203	0	223,804	0	223,804	
June 30, 2048	25,827,704	1,344,270	1,344,270	0	201,653	0	201,653	
June 30, 2049	27,112,982	1,274,725	1,274,725	0	178,694	0	178,694	
June 30, 2050	28,428,115	1,220,784	1,220,784	0	159,922	0	159,922	
June 30, 2051	29,771,772	1,192,538	1,192,538	0	145,988	0	145,988	
June 30, 2052	31,136,444	1,169,476	1,169,476	0	133,786	0	133,786	
June 30, 2053	32,516,888	1,136,844	1,136,844	0	121,534	0	121,534	
June 30, 2054	33,904,763	1,128,624	1,128,624	0	112,751	0	112,751	
June 30, 2055	35,291,874	1,116,680	1,116,680	0	104,250	0	104,250	
June 30, 2056	36,668,376	1,119,265	1,119,265	0	97,646	0	97,646	
June 30, 2057	38,037,449	1,115,210	1,115,210	0	90,919	0	90,919	
June 30, 2058	39,391,775	1,070,846	1,070,846	0	81,583	0	81,583	
June 30, 2059	40,722,775	1,027,947	1,027,947	0	73,185	0	73,185	

APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

BENEFIT PAYMENT PROJECTION DISCLOSURES (CONTINUED)

Table 3: Actuarial Present Values of Projected Benefit Payments using a July 1, 2019 Valuation Date

For the Period Ending on the Measurement Date	I. Beginning Fiduciary Net Position for Current Plan Members	II. Benefit Payments for Current Plan Members	III. Funded Portion of Benefit Payments	IV. Unfunded Portion of Benefit Payments [II. - III.]	V. Present Value of Funded Benefit Payments using the Long-Term Rate of Return [7.01%]	VI. Present Value of Unfunded Benefit Payments using the Municipal Bond Rate [2.66%]	VII. Present Value of Benefit Payments using the Single Equivalent Discount Rate [7.01%]
June 30, 2060	42,029,564	1,001,291	1,001,291	0	66,617	0	66,617
June 30, 2061	41,056,673	962,770	962,770	0	59,858	0	59,858
June 30, 2062	40,116,763	925,885	925,885	0	53,794	0	53,794
June 30, 2063	39,209,183	882,413	882,413	0	47,910	0	47,910
June 30, 2064	38,339,043	857,362	857,362	0	43,500	0	43,500
June 30, 2065	37,488,517	825,691	825,691	0	39,149	0	39,149
June 30, 2066	36,667,310	796,520	796,520	0	35,292	0	35,292
June 30, 2067	35,873,820	766,883	766,883	0	31,753	0	31,753
June 30, 2068	35,108,850	729,479	729,479	0	28,226	0	28,226
June 30, 2069	34,379,972	698,410	698,410	0	25,253	0	25,253
June 30, 2070	33,682,028	668,015	668,015	0	22,572	0	22,572
June 30, 2071	33,014,013	636,913	636,913	0	20,111	0	20,111
June 30, 2072	32,377,100	606,036	606,036	0	17,883	0	17,883
June 30, 2073	31,771,064	575,479	575,479	0	15,869	0	15,869
June 30, 2074	31,195,585	545,356	545,356	0	14,053	0	14,053
June 30, 2075	30,650,229	515,745	515,745	0	12,419	0	12,419
June 30, 2076	30,134,484	486,688	486,688	0	10,952	0	10,952
June 30, 2077	29,647,796	458,217	458,217	0	9,636	0	9,636
June 30, 2078	29,189,579	430,320	430,320	0	8,456	0	8,456
June 30, 2079	28,759,259	402,970	402,970	0	7,400	0	7,400
June 30, 2080	28,356,289	376,143	376,143	0	6,455	0	6,455
June 30, 2081	27,980,146	349,811	349,811	0	5,610	0	5,610
June 30, 2082	27,630,335	323,982	323,982	0	4,855	0	4,855
June 30, 2083	27,306,353	298,710	298,710	0	4,183	0	4,183
June 30, 2084	27,007,643	274,076	274,076	0	3,587	0	3,587
June 30, 2085	26,733,567	250,214	250,214	0	3,060	0	3,060
June 30, 2086	26,483,353	227,282	227,282	0	2,598	0	2,598
June 30, 2087	26,256,071	205,373	205,373	0	2,193	0	2,193
June 30, 2088	26,050,698	184,596	184,596	0	1,842	0	1,842
June 30, 2089	25,866,102	165,021	165,021	0	1,539	0	1,539
June 30, 2090	25,701,081	146,705	146,705	0	1,279	0	1,279
June 30, 2091	25,554,376	129,647	129,647	0	1,056	0	1,056
June 30, 2092	25,424,729	113,825	113,825	0	866	0	866
June 30, 2093	25,310,904	99,214	99,214	0	706	0	706
June 30, 2094	25,211,690	85,781	85,781	0	570	0	570

APPENDIX II – PLAN PROVISIONS

<u>Effective Date</u>	GASB 74 was adopted for the fiscal year ending June 30, 2017 GASB 75 was adopted for the fiscal year ending June 30, 2018
<u>Plan Year</u>	July 1 through June 30.
<u>Premium Effective Date</u>	Medicare Supplement Plans: effective January 1, 2020 Non-Medicare Plans: effective July 1, 2020 Dental Plans: N/A
<u>Creditable Service</u>	Elapsed time from date of hire to termination of service date.
<u>Benefits Offered</u>	Comprehensive Medical Insurance offered through Blue Cross Blue Shield of Massachusetts.
<u>Medicare Part B</u>	Medicare Part B Premium reimbursements by the Town were not reflected in this valuation. Medicare Part B Penalty reimbursements by the Town were not reflected in this valuation.
<u>Surviving Spouse Coverage</u>	Surviving spouses pay 100% of premiums.

APPENDIX II – PLAN PROVISIONS

Eligibility

Hire Date	Eligibility
Before April 2, 2012	<ul style="list-style-type: none"> • Age 55 with 10 years of creditable service • 20 years of service regardless of age
On or after April 2, 2012	<ul style="list-style-type: none"> • Age 60 with 10 years of creditable service

Participant Contributions

Group	Individual	Two-Person / Family
Medical	<ul style="list-style-type: none"> • 50% for Medex 2 • 34% for Managed Blue for Seniors • 21% for all other individual plans 	<ul style="list-style-type: none"> • 34% for all family plans
Dental	N/A	N/A
Life	N/A	N/A

APPENDIX III – ACTUARIAL METHODS & ASSUMPTIONS

Pre-Retirement Mortality

General: RP-2014 Mortality Table for Blue Collar Employees projected generationally with scale MP-2016 for males and females, set forward 1 year for females
Teachers: RP-2014 Mortality Table for White Collar Employees projected generationally with scale MP-2016 for males and females

Post-Retirement Mortality

General: RP-2014 Mortality Table for Blue Collar Healthy Annuitants projected generationally with scale MP-2016 for males and females, set forward 1 year for females
Teachers: RP-2014 Mortality Table for White Collar Healthy Annuitants projected generationally with scale MP-2016 for males and females

Disabled Mortality

General: RP-2014 Mortality Table for Blue Collar Healthy Annuitants projected generationally with scale MP-2016 for males and females, set forward 1 year
Teachers: RP-2014 Mortality Table for White Collar Healthy Annuitants projected generationally with scale MP-2016 for males and females

Assumption Experience Study

The actuarial assumptions used to calculate the actuarial accrued liability and the service cost primarily reflect the latest experience studies of the Massachusetts PERAC issued in 2014 and their most recent analysis of retiree mortality during 2015 and 2016.

Discount Rate

7.00% per annum (previously 7.00%, used in the calculation of the Interest Cost)

Net Long Term Rate of Return

7.01% (based on investment policy)

Municipal Bond Rate

2.66% as of June 30, 2020 (source: S&P Municipal Bond 20-Year High Grade Index – SAPIHG)

Actuarial Cost Method

Individual Entry Age Normal

Asset-Valuation Method

Market Value of Assets as of the Measurement Date, June 30, 2020

APPENDIX III – ACTUARIAL METHODS & ASSUMPTIONS

Employee Termination

It was assumed that employees would terminate employment in accordance with the sample rates shown in the following table:

Non-Public Safety Employees

Service	Male	Female
0	15.00%	15.00%
5	7.60%	7.60%
10	5.40%	5.40%
15	3.30%	3.30%
20	2.00%	2.00%

Public Safety Employees

Service	Male	Female
0	9.00%	9.00%
5	6.00%	6.00%
10	3.50%	3.50%
15	2.00%	2.00%
20	1.50%	1.50%
25	1.50%	1.50%
30	1.50%	1.50%

APPENDIX III – ACTUARIAL METHODS & ASSUMPTIONS

Retirement Rates for Eligible Employees

Age	Standard Male	Standard Female	Male Teachers	Female Teachers	Public Safety
45 - 49	0.00%	0.00%	0.00%	0.00%	6.00%
50 - 51	3.00%	3.00%	2.00%	1.50%	6.00%
52	3.00%	3.00%	2.00%	1.50%	6.00%
53	3.00%	3.00%	2.00%	1.50%	7.50%
54	3.00%	3.50%	2.00%	2.00%	15.00%
55	3.50%	5.00%	6.00%	5.00%	25.00%
56	3.50%	5.00%	20.00%	15.00%	15.00%
57	4.00%	5.50%	40.00%	35.00%	15.00%
58	5.00%	6.00%	50.00%	35.00%	15.00%
59	6.00%	6.50%	50.00%	35.00%	15.00%
60	9.00%	7.50%	40.00%	35.00%	20.00%
61	11.00%	10.00%	40.00%	35.00%	20.00%
62	15.00%	15.00%	35.00%	35.00%	20.00%
63	15.00%	15.00%	35.00%	35.00%	20.00%
64	16.00%	15.00%	35.00%	35.00%	30.00%
65	20.00%	20.00%	35.00%	35.00%	50.00%
66	20.00%	20.00%	40.00%	35.00%	25.00%
67	20.00%	20.00%	40.00%	30.00%	25.00%
68	20.00%	20.00%	40.00%	30.00%	25.00%
69	20.00%	20.00%	40.00%	30.00%	25.00%
70	100.00%	100.00%	100.00%	100.00%	100.00%
71	100.00%	100.00%	100.00%	100.00%	100.00%
72	100.00%	100.00%	100.00%	100.00%	100.00%

Permanent Disability Rates

Age	Standard	Teachers	Public
20	0.01%	0.05%	0.20%
30	0.01%	0.07%	0.21%
40	0.07%	0.21%	0.71%
50	0.13%	0.42%	1.10%
60	0.12%	0.50%	0.80%

APPENDIX III – ACTUARIAL METHODS & ASSUMPTIONS

<u>Trend Rate</u>	<p>Medicare Supplement Plans: Initial Trend of 4.50% for 2020 grading down 0.00% per year for an ultimate trend rate of 4.50%.</p> <p>Non-Medicare Plans: Initial Trend of 4.50% for 2020 grading down 0.00% per year for an ultimate trend rate of 4.50%.</p> <p>Dental Plans: N/A</p>
<u>Participation Rate</u>	It was assumed that 80% of employees eligible to receive retirement benefits would enroll in the retiree medical plans upon retirement.
<u>Spouse Participation Rate</u>	It was assumed that 80% of male employees and 70% of female employees who elect retiree healthcare coverage for themselves would also elect coverage for a spouse upon retirement.
<u>Spouse Demographics</u>	It was assumed that a male spouse is three years older than a female spouse and same sex spouses were assumed to be the same age. For current retirees, the actual census information was used, if available.
<u>Medicare Eligibility</u>	It was assumed that retirees who were over age 66 on the valuation date and were enrolled in an Active plan were ineligible for Medicare and all other participants would be eligible for Medicare at age 65, absent any information to the contrary.
<u>School Demographics</u>	In the absence of census data specifying which participants were teachers it was assumed that two thirds of school participants were teachers. If available, actual census data was used.
<u>Compensation Increases</u>	3.00% per year.
<u>Inflation Rate</u>	2.50% per year.

APPENDIX III – ACTUARIAL METHODS & ASSUMPTIONS

Implicit Subsidy

The implicit subsidy arises because retirees who are not eligible for Medicare are charged the same premium as active employees, even though their actual medical costs are higher on average. Consequently, a portion of the premiums being paid for active employees are being used to “subsidize” the premiums of retirees. Actuarial Standards of Practice and GASB standards require the liability associated with this implicit subsidy to be valued. The chart below shows a breakdown of how implicit cost impacts reported cash flows and liabilities. Actuarial Standard of Practice No. 6 (“ASOP 6”) requires us to recognize this implicit subsidy while the plan sponsor may only pay the premiums billed by an insurance provider.

Impact of Implicit Subsidy		
	As of the Measurement Date	
Impact on Liability	<u>June 30, 2020</u>	<u>June 30, 2019</u>
I. Total OPEB Liability	14,308,230	13,354,141
II. Total OPEB Liability (Excluding Implicit Subsidy)	<u>12,324,868</u>	<u>12,653,125</u>
III. Liability from Implicit Subsidy [I. - II.]	1,983,362	701,016

	For the Measurement Period Ending	
Impact on Payments	<u>June 30, 2020</u>	<u>June 30, 2019</u>
IV. Employer Payments (Including Implicit Subsidy)	727,697	650,522
V. Actual Employer Payments	<u>552,947</u>	<u>600,537</u>
VI. Implicit Subsidy [IV. - V.]	174,750	49,985

APPENDIX III – ACTUARIAL METHODS & ASSUMPTIONS

Pre-65 and post-65 per capita costs were developed using fully insured premium rates.

ANNUAL PER CAPITA CLAIMS*

ACTIVE EMPLOYEES			RETIREE - NOT MEDICARE ELIGIBLE			RETIREE - MEDICARE ELIGIBLE		
Age Bracket	Female	Male	Age Bracket	Female	Male	Age Bracket	Female	Male
24 & Under	4,250	2,678	44 & Under	8,728	5,720	65 to 69	3,958	3,958
25 to 29	6,270	2,788	45 to 49	9,587	7,222	70 to 74	3,958	3,958
30 to 34	7,922	3,499	50 to 54	11,278	9,511	75 to 79	3,958	3,958
35 to 39	8,161	4,393	55 to 59	13,038	12,365	80 to 84	3,958	3,958
40 to 44	8,352	5,474	60 to 64	15,515	15,867	85 to 89	3,958	3,958
45 to 49	9,174	6,911	65 to 69	18,599	19,792	90 & Over	3,958	3,958
50 to 54	10,792	9,101	70 to 74	21,932	23,718			
55 to 59	12,477	11,833	75 to 79	25,471	28,012			
60 to 64	14,847	15,184	80 to 84	29,204	32,198			
65 to 69	17,798	18,940	85 to 89	33,336	36,856			
70 & Over	20,988	22,697	90 & Over	33,336	36,856			

*Based on SOA 'Health Care Costs--From Birth to Death' study published in 2013

APPENDIX III – ACTUARIAL METHODS & ASSUMPTIONS

Open Group Forecast

For the projection of plan liabilities in future years, it was assumed that the number of active employees will remain constant and those who terminate employment or retire will be replaced with new employees with the demographics below:

Open Group Forecast Population Demographics		
Age	Male	Female
20	8.0%	5.0%
30	7.0%	14.0%
40	20.0%	19.0%
50	10.0%	10.0%
60	<u>3.0%</u>	<u>4.0%</u>
Total	48.0%	52.0%

Additional Comments

The liabilities being reported as of the Measurement Date of June 30, 2020 reflect a closed group and do not reflect any new entrants after the valuation date.

To the best of our knowledge all employees who are eligible on the valuation date are included in the actuarial valuation.

APPENDIX IV – PLAN DEMOGRAPHICS

Active Employees

Valuation Date	July 1, 2019	July 1, 2017
A. Average Age at Hire	36.75	38.42
B. Average Service	<u>11.47</u>	<u>10.22</u>
C. Average Current Age	48.22	48.64

Retired Employees & Spouses

Valuation Date	July 1, 2019	July 1, 2017
A. Under Age 65	24	37
B. Age 65 & Over	<u>122</u>	<u>104</u>
C. Total	146	141

Average Service Age

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
0-24	5									5
25-29	8	2								10
30-34	7	1	1							9
35-39	13	3	5	2						23
40-44	7	2	5	1	2					17
45-49	7	3	3	4	8	2				27
50-54	7	5	8	2	3	4	1			30
55-59	3	4	10	6	2	2	2	1		30
60-64	3	3	6	2	5	1				20
65-69	1	1	3	2	2		1			10
70+										
Total	61	24	41	19	22	9	4	1		181

APPENDIX IV – PLAN DEMOGRAPHICS

Plan Offerings

	Number of Contracts			
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>	<u>Total</u>
HMO Blue Benchmark	53		68	121
BCEP Benchmark	4		12	16
Blue Custom Network	1		2	3
Managed Blue	84			84
Medex 2	36			36
Total	178	0	82	260

	Per Contract Costs (monthly)		
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>
HMO Blue Benchmark	813.03		2,172.07
BCEP Benchmark	961.07		2,571.57
Blue Custom Network	756.13		2,020.02
Managed Blue	319.78	639.56	
Medex 2	377.98	755.96	
Dental Plan	N/A		N/A

APPENDIX V – OVERVIEW OF GASB 74 & 75

Before Statements 74 and 75, GASB statement 45 established the reporting standards for Other Postemployment Benefit (“OPEB”) plans. It was designed to recognize the Other Postemployment Benefits earned by employees throughout their working career vs. when they are paid in retirement – accrual accounting vs. “pay-as-you-go” accounting. Additionally, each eligible active employee earns benefits each year representing benefits to be paid in retirement or a “Service Cost”. These amounts are reflected in your financial statement each year so that OPEB benefits for an eligible employee shall be fully charged to the financial statement when that eligible employee terminates employment.

In 2012 GASB issued GASB Statements 67 and 68 to update and standardize the financial reporting of pension liabilities. This increased the transparency of pension liabilities by moving them to the balance sheet and made financial statement disclosures of pension liabilities more comparable between municipal entities. GASB Statements 74 and 75 are designed to have the same effect on OPEB plans.

GASB 74 and 75 require retiree medical plans to disclose information about asset and liability levels and show historical contribution information. GASB 74 only applies in situations where a separate trust is established to prefund these benefits. GASB 75 requires employers to perform periodic actuarial valuations to determine annual accounting costs and to keep a running tally of the extent to which these amounts are over or under funded.

GASB 74 and 75 apply to those benefits provided after retirement, except for pension benefits, such as medical, dental and life insurance. The philosophy behind the accounting standard is that these postemployment benefits are part of the compensation earned by employees in return for their services, and the cost of these benefits should be recognized while employees are providing those services, rather than after they have retired. This philosophy has already been applied for years to defined benefit pensions; GASB 74 and 75 extend this practice to all other postemployment benefits.

APPENDIX V – OVERVIEW OF GASB 74 & 75

The process of determining the liability for OPEB benefits is based on many assumptions about future events. The key actuarial assumptions are:

Turnover and retirement rates – How likely is it that an employee will qualify for postemployment benefits and when will they start?

Medical inflation and claims cost assumptions – When an employee starts receiving postemployment benefits many years from now, how much will be paid each year for the benefits and how rapidly will the costs grow?

Mortality assumption – How long is a retiree likely to receive benefits?

Discount rate assumption – What is the present value of those future benefit payments in terms of today's dollars?

Since the liability is being recognized over the employee's whole career with the Town, the present value is divided into three pieces: the part that is attributed to past years (the "Total OPEB Liability" or "Past Service Liability"), the part that is being earned this year (the "Service Cost"), and the part that will be earned in future years (the "Future Service Liability").

Once the Accrued Liability and the Service Cost have been calculated, the next step is to determine an actuarially determined contribution. This is an amount that if paid annually would fully prefund the benefits for current active and retired employees. This consists of two pieces:

- ✓ Service Cost – because the benefits earned by active employees each year should be paid for each year
- ✓ Past Service Cost – a catch-up payment to fund the Accrued Liability over a period of time determined by an actuary

The final step is to keep track going forward of how much of the contribution is actually paid. There is no requirement to actually fund these benefits, but the cumulative deficiency must be disclosed on the Town's financial statements as the Net OPEB Liability (NOL). If you decide to fully fund the NOL this will appear in the financial statement as a Net OPEB Asset. In addition, the Discount Rate used to calculate the liabilities must reflect the expected investment income of whatever funds are set aside to prefund the benefits; if there is no prefunding then the Discount Rate will be much lower and the liabilities significantly higher than if the benefits are prefunded.

GLOSSARY

Accrual Accounting – A system of accounting in which revenues are recorded when earned and outlays are recorded when goods are received or services performed, even though the actual receipt of revenues and payment for goods or services may occur, in whole or in part, at a different time.

Actuarially Determined Contribution – Amount of funding required annually to fully fund plan benefits. Determined by the actuary using a consistent methodology.

Amortization – Allows the recognition of liability over a fixed period of time.

Cash Basis Accounting – A system of accounting in which revenues are recorded when received and outlays are recorded when payment is made.

Deferred Inflows/Outflows of Resources – Amounts arising from experience gains and losses that have not been recognized into the OPEB Expense but will be recognized in the future.

Discount Rate – The interest rate used to calculate the present value of future cash flows. Under GASB 75, the rate should be the expected long-term rate of return on investments for a plan that is being fully funded, the 20-year municipal bond index for a pay-as-you-go plan, and a blend of the two rates for a plan that is being partially funded.

Entry Age Normal – Under this method, the annual service cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement. The annual service cost for each active member is a level percent of payroll. The total OPEB liability is the actuarial present value of the projected benefit times the ratio of past service to expected total service at retirement/termination.

Fiduciary Net Position – The value of cash, investments, other assets and property belonging to an OPEB trust.

GLOSSARY

Government Accounting Standards Board (GASB) – “The Governmental Accounting Standards Board (GASB) was organized in 1984 by the Financial Accounting Foundation (FAF) to establish standards of financial accounting and reporting for state and local governmental entities. Its standards guide the preparation of external financial reports of those entities.”

Implicit Subsidy – The liability that arises because retirees who are not eligible for Medicare are charged the same premium as active employees even though their actual medical costs are higher on average.

Irrevocable Contribution – The transfer of assets to a qualified trust in which assets may only be withdrawn for the purpose of providing retiree other postemployment benefits.

Net OPEB Liability (NOL) – Total OPEB Liability less the Fiduciary Net Position.

Other Postemployment Benefits (OPEB) – Benefits that an employee will begin to receive at the start of retirement. This does not include pension benefits paid to the retired employee.

OPEB Trust – An entity which holds assets for the sole purpose of funding OPEB. All contributions and earnings within this entity must be irrevocable and protected from creditors.

Pay-as-you-go funding – Paying benefits (such as pensions or OPEB) on a cash basis, with no money set aside for future liabilities which are already incurred.

Service Cost – The actuarially determined present value contribution needed to fund benefits which are earned for employee service rendered during the current year. Service cost depends on many factors, including the interest rate used to discount future cashflows, and expected inflation.

Total OPEB Liability (TOL) – That portion, as determined by the Individual Entry Age Normal Actuarial Cost Method, of the Actuarial Present Value of benefits and expenses which are not provided for by future Service Costs.