

Town of Avon Other Postemployment Benefits Plan

GASB 74 & GASB 75 Actuarial Valuation

With a Valuation Date of July 1, 2018

As of the Measurement Date:
June 30, 2020

For the Reporting Date:
June 30, 2020

Delivered September 3, 2020



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September 3, 2020

Personal and Confidential

Ms. Debra Morin
Treasurer/Collector
Town of Avon
65 E Main Street
Avon, MA 02322

Dear Ms. Morin:

We have performed an actuarial valuation of the Town of Avon 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, 2018. The figures presented in this report reflect the adoption, by the Town of Avon, of Statement Nos. 74 and 75 of the Governmental Accounting Standards Board ("GASB 74/75") effective for the fiscal years ending July 1, 2015 and July 1, 2016 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 3, 2020

ACTUARIAL CERTIFICATION

This is to certify that Odyssey Advisors has conducted an actuarial valuation of certain benefit obligations of the Town of Avon other postemployment benefit programs with a Valuation Date of July 1, 2018 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', written over a light blue background.

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

A handwritten signature in black ink, appearing to read 'Andrew D. Taggart', written over a light blue background.

Andrew D. Taggart, ASA, MAAA
Consulting 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 \$45,190 or 0.27% of the beginning Total OPEB Liability ("TOL"). This was due to the repeal of the ACA excise tax.

Assumption Changes

None.

Investment Experience

- ✓ During the period there was an investment loss of \$50,202 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 5.91 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 \$1,581,499 of OPEB assets as of June 30, 2020.
- ✓ Funding Policy - The Town is expected to contribute \$145,000 in fiscal year 2021. The town intends to fund 1% - 2% of pay annually thereafter (1.5% used for the purposes of this valuation).
- ✓ Investment Policy - The Town is expected to earn 6.98% 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 61.41% 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 (6.25%) – 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 five 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, 2018	July 1, 2018
Measurement Date & Period Ending	June 30, 2020	June 30, 2019
Reporting Date/Fiscal Year End	June 30, 2020	June 30, 2019
Total OPEB Liability	17,125,373	16,460,532
Per Eligible Active Plan Participant	36,548	36,003
Per Retiree/Spouse Plan Participant	61,919	58,111
Total Annual Service Cost (Annual Benefit Accrual)	495,808	476,615
Per Eligible Active Plan Participant	2,175	2,090
Expected Employer Share of Retiree Costs	820,302	765,781
Per Retiree/Spouse Plan Participant	5,777	5,393
Net OPEB Liability as a % of Covered Payroll	114.80%	115.40%

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	142	17,125,373	17,125,373	820,302	820,302
June 30, 2025	180	20,264,228	17,480,101	1,140,060	983,426
June 30, 2030	193	23,839,348	17,738,714	1,320,678	982,708
June 30, 2035	200	27,653,704	17,749,860	1,621,511	1,040,786
June 30, 2040	197	32,485,921	17,986,667	1,663,595	921,092
June 30, 2045	197	38,887,268	18,572,776	2,022,299	965,861
June 30, 2050	196	46,907,570	19,325,298	2,192,958	903,470

PRINCIPAL RESULTS OF THE VALUATION

Town of Avon

Assuming Funding - 6.25% discount rate

Comparison of Plan Liabilities to Prior Valuation

Valuation Date	July 1, 2018	July 1, 2018
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	8,332,875	8,208,743
B. Retirees/Disabled	<u>8,792,498</u>	<u>8,251,789</u>
C. Total	17,125,373	16,460,532
II. Fiduciary Net Position [Plan Assets]	1,581,499	1,298,875
III. Net OPEB Liability (Asset) [I. - II.]	15,543,874	15,161,657
IV. Funded Ratio [II. / I.]	9.23%	7.89%
V. Number of Eligible Participants		
A. Actives	228	228
B. Retirees/Disabled & Dependents	<u>142</u>	<u>142</u>
C. Total	370	370
VI. Service Cost	495,808	476,615
VII. Financial Statement Expense	1,806,382	1,792,842
VIII. Employer Contribution to the OPEB Trust	(234,131)	(197,664)
IX. Deferred Inflow of Resources	(2,196,766)	(2,710,031)
X. Deferred Outflow of Resources	3,897,522	4,780,519
XI. Money Weighted Rate of Return	3.57%	6.10%
XII. 20-year Municipal Bond Rate (SAPIHG)	2.66%	2.79%
XIII. Expected Long Term Rate of Return (Net of Expense)	6.98%	6.80%
XIV. Crossover Year	2065	2070
XV. Discount Rate	6.25%	6.25%

PRINCIPAL RESULTS OF THE VALUATION

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

	Town Employees and Retirees	School Employees and Retirees	Public Safety Employees and Retirees	Total
I. Total OPEB Liability				
A. Actives	967,463	5,262,247	2,103,165	8,332,875
B. Retirees/Disabled	<u>2,051,331</u>	<u>4,795,477</u>	<u>1,945,690</u>	<u>8,792,498</u>
C. Total	3,018,794	10,057,724	4,048,855	17,125,373
II. Fiduciary Net Position [Plan Assets]	278,780	928,814	373,905	1,581,499
III. Net OPEB Liability (Asset) [I. - II.]	2,740,014	9,128,910	3,674,950	15,543,874
IV. Number of Eligible Participants				
A. Actives	38	164	26	228
B. Retirees/Disabled	<u>55</u>	<u>63</u>	<u>24</u>	<u>142</u>
C. Total	93	227	50	370
For the Reporting Date and Fiscal Year Ending June 30, 2020				
V. Service Cost	70,301	334,675	90,832	495,808
VI. Financial Statement Expense	229,969	1,157,612	418,801	1,806,382
VII. Employer Share of Costs	(170,240)	(455,752)	(194,310)	(820,302)
VIII. Employer (Payments)/Withdrawals to/from OPEB Trust	(39,762)	(139,150)	(55,219)	(234,131)
IX. Total Employer Contribution [VII. + VIII.]	(210,002)	(594,902)	(249,529)	(1,054,433)

PRINCIPAL RESULTS OF THE VALUATION

Town of Avon

Assuming Funding - 6.25% 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	3,872,195	3,348,631	7,220,826	969,460	4,984,761	5,954,221	13,175,047
B. Spouses	<u>2,428,019</u>	<u>2,387,314</u>	<u>4,815,333</u>	<u>1,138,585</u>	<u>1,699,692</u>	<u>2,838,277</u>	<u>7,653,610</u>
C. Total	6,300,214	5,735,945	12,036,159	2,108,045	6,684,453	8,792,498	20,828,657
Total OPEB Liability							
A. Participants	2,788,574	2,235,163	5,023,737	969,460	4,984,761	5,954,221	10,977,958
B. Spouses	<u>1,712,252</u>	<u>1,596,886</u>	<u>3,309,138</u>	<u>1,138,585</u>	<u>1,699,692</u>	<u>2,838,277</u>	<u>6,147,415</u>
C. Total	4,500,826	3,832,049	8,332,875	2,108,045	6,684,453	8,792,498	17,125,373
Service Cost							
A. Participants	143,160	151,837	294,997	0	0	0	294,997
B. Spouses	<u>93,092</u>	<u>107,719</u>	<u>200,811</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>200,811</u>
C. Total	236,252	259,556	495,808	0	0	0	495,808

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	495,808
II. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	1,034,525
III. Deferred (Inflows)/Outflows from Plan Experience*	(197,293)
IV. Deferred (Inflows)/Outflows from Changes of Assumptions*	546,796
V. Projected Earnings on OPEB Plan Investments	(98,695)
VI. Deferred (Inflows)/Outflows from Earnings on Plan Investments**	25,241
VII. Financial Statement Expense Prior to Plan Design Changes [I. + II.+ III. + IV. + V. + VI.]	1,806,382
VIII. Expense Related to Change in Benefit Terms***	0
IX. Financial Statement Expense [VII. + VIII.]	1,806,382

* Amortized over 5.91 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	16,460,532	1,298,875	15,161,657
II. Prior Period Adjustment	0	0	0
III. Balances for June 30, 2019 with Adjustment [I. + II.]	16,460,532	1,298,875	15,161,657
Changes for the year:			
IV. Service Cost	495,808	0	495,808
V. Interest on Total OPEB Liability, Service Cost, and Benefit Payments	1,034,525	0	1,034,525
VI. Changes in Benefit Terms *	0	0	0
VII. Change in Assumptions **	0	0	0
VIII. Differences Between Actual and Expected Experience **	(45,190)	0	(45,190)
IX. Net Investment Income	0	48,493	(48,493)
X. Employer Contributions to Trust	0	1,054,433	(1,054,433)
XI. Benefit Payments Withdrawn from Trust	0	(820,302)	820,302
XII. Benefit Payments Excluding Implicit Cost	(601,953)	0	(601,953)
XIII. Implicit Cost Amount	(218,349)	0	(218,349)
XIV. Total Benefit Payments Including Implicit Cost [XII. + XIII.]	(820,302)	0	(820,302)
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.]	664,841	282,624	382,217
XVIII. Balances at June 30, 2020 [III.+XVII.]	17,125,373	1,581,499	15,543,874

* Recognized Immediately

** Amortized over 5.91 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	2,653,076	8.86	1,455,300	299,444	299,444	299,444	299,444	299,444	257,524
2018	0	7.00	0	0	0	0	0	0	
2019	(2,890,532)	5.91	(1,912,350)	(489,091)	(489,091)	(489,091)	(489,091)	(445,077)	
2020	(45,190)	5.91	(37,544)	(7,646)	(7,646)	(7,646)	(7,646)	(7,646)	(6,960)
2021									
2022									
2023									
2024									
2025									
2026									
Total Remaining Balance			(494,594)						
Net increase (decrease) in OPEB Expense				(197,293)	(197,293)	(197,293)	(197,293)	(153,279)	250,564

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	0	8.86	0	0	0	0	0	0	0
2018	(432,026)	7.00	(246,872)	(61,718)	(61,718)	(61,718)	(61,718)	(61,718)	
2019	3,596,318	5.91	2,379,290	608,514	608,514	608,514	608,514	553,748	
2020	0	5.91	0	0	0	0	0	0	0
2021									
2022									
2023									
2024									
2025									
2026									
Total Remaining Balance			2,132,418						
Net increase (decrease) in OPEB Expense				546,796	546,796	546,796	546,796	492,030	0

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	48,013	5.00	9,601	9,603	9,601				
2018	18,137	5.00	7,256	3,627	3,627	3,629			
2019	9,855	5.00	5,913	1,971	1,971	1,971	1,971		
2020	50,202	5.00	40,162	10,040	10,040	10,040	10,040	10,042	
2021									
2022									
2023									
2024									
2025									
2026									
Total Remaining Balance			62,932						
Net increase (decrease) in OPEB Expense				25,241	25,239	15,640	12,011	10,042	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	1,455,300	(1,949,894)	(494,594)
III. Changes of Assumptions	2,379,290	(246,872)	2,132,418
IV. Net Difference Between Projected & Actual Earnings on OPEB Plan Investments	<u>62,932</u>	<u>0</u>	<u>62,932</u>
V. Total [I.+II.+III.+IV.]	3,897,522	(2,196,766)	1,700,756

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	374,742
2022	365,143
2023	361,514
2024	348,793
2025	250,564
Thereafter	0

4. Discount Rate

The discount rate used to measure the Total OPEB liability was 6.25% as of June 30, 2020 and 6.25% 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 insufficient to make all projected benefit payments to current plan members. Therefore, the long-term expected rate of return on the OPEB Plan assets is applied to the projected benefits payments which the Fiduciary Net Position is expected to be sufficient to cover and the Municipal Bond Rate is applied thereafter. The Municipal Bond Rate is based on the S&P Municipal Bond 20 - Year High Grade Index ("SAPIHG"), which was 2.66% as of June 30, 2020. The S&P Municipal Bond 20 - Year High Grade Index is the index rate for 20 year, tax exempt general obligation municipal bonds with an average rate of AA/Aa or higher.

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 \$820,302. The Town also contributed \$234,131 to an OPEB Trust for a total contribution during the measurement period of \$1,054,433 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	28.75%	Domestic Equity - Large Cap	4.80%
Domestic Equity - Small/Mid Cap	14.25%	Domestic Equity - Small/Mid Cap	5.29%
International Equity - Developed Market	11.50%	International Equity - Developed Market	5.45%
International Equity-Emerging Market	5.75%	International Equity-Emerging Market	6.42%
Domestic Fixed Income	18.25%	Domestic Fixed Income	2.05%
International Fixed Income	5.00%	International Fixed Income	3.00%
Alternatives	16.50%	Alternatives	6.50%
Real Estate	0.00%	Real Estate	6.25%
Cash & Cash Equivalents	0.00%	Cash & Cash Equivalents	0.00%
Total	100.00%		
		I. Real Rate of Return**	4.73%
		II. Inflation Assumption	2.50%
		III. Total Nominal Return [I. + II.]	7.23%
		IV. Investment Expense	0.25%
		V. Net Investment Return [III.-IV.]	6.98%

* 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	1,587,212	(1,054,433)	532,779	13,538,318	7.79%
June 30, 2019	1,541,182	(963,445)	577,737	13,143,998	7.33%
June 30, 2018	1,432,295	(848,794)	583,501	11,509,679	7.37%
June 30, 2017	1,359,350	(792,342)	567,008	11,174,445	7.09%

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	15,203,415	17,125,373	19,448,267
II. Fiduciary Net Position	<u>1,581,499</u>	<u>1,581,499</u>	<u>1,581,499</u>
III. Net OPEB Liability (Asset) [I.-II.]	13,621,916	15,543,874	17,866,768
IV. Service Cost	399,082	495,808	623,623

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	19,197,041	17,125,373	15,351,994
II. Fiduciary Net Position	<u>1,581,499</u>	<u>1,581,499</u>	<u>1,581,499</u>
III. Net OPEB Liability (Asset) [I.-II.]	17,615,542	15,543,874	13,770,495
IV. Service Cost	618,382	495,808	396,919

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 - July 1, 2019	1,298,875	12	1.0000
Monthly net external cash flows:			
July	0	11	0.9167
August	0	10	0.8333
September	0	9	0.7500
October	0	8	0.6667
November	0	7	0.5833
December	0	6	0.5000
January	0	5	0.4167
February	78,044	4	0.3333
March	78,044	3	0.2500
April	78,043	2	0.1667
May	0	1	0.0833
<u>June</u>	<u>0</u>	0	0.0000
II. Total net external cash flow	234,131		
III. Earnings and increase in fair value	48,493		
IV. Ending value - June 30, 2020 [I.+II.+III.]	1,581,499		
Money Weighted Rate of Return	3.57%		
Asset Value - June 30, 2020	1,581,499		

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	Public Safety Employees and Retirees	Total
I. Total OPEB Liability as of June 30, 2020	3,018,794	10,057,724	4,048,855	17,125,373
II. Fiduciary Net Position as of June 30, 2020	278,780	928,814	373,905	1,581,499
III. Net OPEB Liability (Asset) as of June 30, 2020 [I. - II.]	2,740,014	9,128,910	3,674,950	15,543,874
IV. Service Cost	70,301	334,675	90,832	495,808
V. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	110,981	660,843	262,701	1,034,525
VI. Projected Earnings on OPEB Plan Investments	(17,371)	(57,993)	(23,331)	(98,695)
VII. Net Recognition of Deferred (Inflows)/Outflows	66,058	220,087	88,599	374,744
VIII. Expense Related to Change in Benefit Terms	0	0	0	0
IX. Financial Statement Expense [IV. + V. + VII. + VIII.]	229,969	1,157,612	418,801	1,806,382
X. Employer Share of Costs	(170,240)	(455,752)	(194,310)	(820,302)
XI. Employer (Payments) Withdrawals to/from OPEB Trust	(39,762)	(139,150)	(55,219)	(234,131)
XII. Total Employer Contribution [X. + XI.]	(210,002)	(594,902)	(249,529)	(1,054,433)
XIII. Net OPEB Expense [IX. + XII.]	19,967	562,710	169,272	751,949

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, 2018
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	(494,594)
II. Deferred (Inflow)/Outflow from Investment Experience	62,932
III. Deferred (Inflow)/Outflow from Changes in Assumptions	2,132,418
Change in Deferred Inflow/Outflow	
I. Deferred Outflow at the beginning of the period	4,780,519
II. Deferred Outflow created during the period	50,202
III. Deferred Outflow recognized during the period	933,199
IV. Change in Deferred Outflow (II. - III.)	(882,997)
V. Deferred Outflow at end of the period (I. + IV.)	3,897,522
VI. Deferred Inflow at the beginning of the period	(2,710,031)
VII. Deferred Inflow created during the period	(45,190)
VIII. Deferred Inflow recognized during the period	(558,455)
IX. Change in Deferred Inflow (VII. - VIII.)	513,265
X. Deferred Inflow at end of the period (VI. + IX.)	(2,196,766)
Net OPEB Liability	
I. Net OPEB Liability at beginning of period	15,161,657
II. Service Cost	495,808
III. Interest on Total OPEB Liability, Service Cost, and Payments	1,034,525
IV. Projected Investment Income	(98,695)
V. Total Employer Contributions	(1,054,433)
VI. Expense Related to Change in Benefit Terms	0
VII. Net OPEB Expense - Before Recognition of Deferred (Inflow)/Outflow (II. + III. + IV. + V. + VI.)	377,205
VIII. Deferred Outflow created during the period	50,202
IX. Deferred Inflow created during the period	(45,190)
X. Net OPEB Liability at end of period (I. + VII. + VIII. + IX.)	15,543,874
Net OPEB Expense	
I. Service Cost	495,808
II. Interest on Total OPEB Liability, Service Cost, and Payments	1,034,525
III. Projected Investment Income	(98,695)
IV. Recognition of Deferred (Inflow)/Outflow	374,744
V. Expense Related to Change in Benefit Terms	0
VI. Financial Statement Expense (I. + II. + III. + IV. + V.)	1,806,382
VII. Benefit Payments	(820,302)
VIII. Contributions to Trust	(234,131)
IX. Total Employer Payments (VII. + VIII.)	(1,054,433)
X. Total Net OPEB Expense under GASB 75 (VI. + IX.)	751,949

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)				
	For the Fiscal Year Ending:			
	<u>June 30, 2020</u>	<u>June 30, 2019</u>	<u>June 30, 2018</u>	<u>June 30, 2017</u>
I. Service Cost	495,808	476,615	402,652	392,206
II. 30 Year Level Dollar Amortization of NOL	<u>1,091,404</u>	<u>1,064,567</u>	<u>1,029,643</u>	<u>967,144</u>
III. Actuarial Determined Contribution [I. + II.]	1,587,212	1,541,182	1,432,295	1,359,350
IV. Contributions in Relation to the Actuarially Determined Contribution	<u>(1,054,433)</u>	<u>(963,445)</u>	<u>(848,794)</u>	<u>(792,342)</u>
V. Contribution Deficiency / (Excess) [III. + IV.]	<u>532,779</u>	<u>577,737</u>	<u>583,501</u>	<u>567,008</u>
Covered Employee Payroll	13,538,318	13,143,998	11,509,679	11,174,445
Contributions as a % of Covered Employee Payroll	7.79%	7.33%	7.37%	7.09%
Discount Rate	6.25%	6.25%	6.75%	6.50%
Money Weighted Rate of Return	3.57%	6.10%	5.01%	8.27%

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, 2018	July 1, 2018	July 1, 2016	July 1, 2016
GASB 75 Measurement Date	June 30, 2020	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	17,125,373	16,460,532	15,023,104	14,319,708
I. Service Cost	495,808	476,615	402,652	392,206
II. Interest on Total OPEB Liability, Service Cost, and Benefit Payments	1,034,525	1,020,808	1,461,564	923,658
III. Changes in Benefit Terms	0	0	0	0
IV. Difference Between Expected & Actual Plan Experience	(45,190)	(2,890,532)	0	0
V. Changes of Assumptions	0	3,596,318	(432,026)	0
VI. Benefit Payments Excluding Implicit Cost	(601,953)	(562,653)	N/A	N/A
VII. Implicit Cost Amount	(218,349)	(203,128)	N/A	N/A
VIII. Total Benefit Payments Including Implicit Cost [VI.+VII.]	(820,302)	(765,781)	(728,794)	(695,551)
IX. Net Change in OPEB Liability [I.+II.+III.+IV.+V.+VIII.]	664,841	1,437,428	703,396	620,313
X. Total OPEB Liability - Beginning of Period	16,460,532	15,023,104	14,319,708	13,699,395
XI. Prior Period Adjustment	0	0	0	0
XII. Total OPEB Liability - Beginning of Period with Adjustment	16,460,532	15,023,104	14,319,708	13,699,395
XIII. Total OPEB Liability - End of Period [IX.+XII.]	17,125,373	16,460,532	15,023,104	14,319,708
Plan Fiduciary Net Position	1,581,499	1,298,875	1,034,135	869,156
XIV. Earning from Plan Investments	48,493	67,076	44,979	62,632
XV. Employer Contribution to Trust	1,054,433	963,445	848,794	792,342
XVI. Benefit Payments from Trust, Including Refunds of Member Contributions	(820,302)	(765,781)	(728,794)	(695,551)
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.]	282,624	264,740	164,979	159,423
XX. Plan Fiduciary Net Position - Beginning of Period	1,298,875	1,034,135	869,156	709,733
XXI. Prior Period Adjustment	0	0	0	0
XXII. Plan Fiduciary Net Position - Beginning of Period with Adjustment	1,298,875	1,034,135	869,156	709,733
XXIII. Plan Fiduciary Net Position - End of Period [XIX.+XXII.]	1,581,499	1,298,875	1,034,135	869,156
XXIV. Net OPEB Liability [XIII.-XXIII.]	15,543,874	15,161,657	13,988,969	13,450,552
XXV. Plan Fiduciary Net Position as % of Total OPEB Liability [XXIII. / XIII.]	9.23%	7.89%	6.88%	6.07%
XXVI. Covered Employee Payroll	13,538,318	13,143,998	11,509,679	11,174,445
XXVII. Plan NOL as % of Covered Employee Payroll [XXIV. / XXVI.]	114.81%	115.35%	121.54%	120.37%
Single Discount Rate to calculate Plan Liabilities	6.25%	6.25%	6.75%	6.50%

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, 2018.
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:	6.98%, 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:	6.25%, 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 BREQUIRED 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, 2018, OPEB plan membership consisted of the following:

Inactive employees or beneficiaries currently receiving benefits:	142
Active Employees:	<u>228</u>
Total:	370

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

✓ None

Contributions:

The contribution requirements of plan members and the Town are established and may be amended through Town ordinances. The Town contributed \$234,131 beyond the pay-as-you-go cost 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 \$820,302. \$218,349 of the \$820,302 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 - 6.25% 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 6.98% 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	17,125,373	1,581,499	15,543,874	9.23%	495,808	820,302	234,131	1,054,433	820,302	0	234,131
2021	June 30, 2021	17,733,501	1,841,863	15,891,638	10.39%	511,946	897,663	145,000	1,042,663	897,663	0	145,000
2022	June 30, 2022	18,342,084	2,193,259	16,148,825	11.96%	528,968	1,000,023	215,442	1,215,465	1,000,023	0	215,442
2023	June 30, 2023	18,983,453	2,575,867	16,407,586	13.57%	544,286	1,019,362	221,905	1,241,267	1,019,362	0	221,905
2024	June 30, 2024	19,627,291	2,992,067	16,635,224	15.24%	561,515	1,072,445	228,562	1,301,007	1,072,445	0	228,562
2025	June 30, 2025	20,264,228	3,444,410	16,819,818	17.00%	579,221	1,140,060	235,419	1,375,479	1,140,060	0	235,419
2026	June 30, 2026	20,934,322	3,935,632	16,998,690	18.80%	596,565	1,163,696	242,482	1,406,178	1,163,696	0	242,482
2027	June 30, 2027	21,652,104	4,468,665	17,183,439	20.64%	615,022	1,193,179	249,756	1,442,935	1,193,179	0	249,756
2028	June 30, 2028	22,325,575	5,046,653	17,278,922	22.60%	630,649	1,269,396	257,249	1,526,645	1,269,396	0	257,249
2029	June 30, 2029	23,097,141	5,672,967	17,424,174	24.56%	647,278	1,261,081	264,966	1,526,047	1,261,081	0	264,966
2030	June 30, 2030	23,839,348	6,351,219	17,488,129	26.64%	667,083	1,320,678	272,915	1,593,593	1,320,678	0	272,915
2031	June 30, 2031	24,565,625	7,085,281	17,480,344	28.84%	685,292	1,393,215	281,102	1,674,317	1,393,215	0	281,102
2032	June 30, 2032	25,355,599	7,879,303	17,476,296	31.08%	703,131	1,417,302	289,535	1,706,837	1,417,302	0	289,535
2033	June 30, 2033	26,104,482	8,737,732	17,366,750	33.47%	721,946	1,520,423	298,221	1,818,644	1,520,423	0	298,221
2034	June 30, 2034	26,864,038	9,665,333	17,198,705	35.98%	743,488	1,604,636	307,168	1,911,804	1,604,636	0	307,168
2035	June 30, 2035	27,653,704	10,667,212	16,986,492	38.57%	767,121	1,621,511	316,383	1,937,894	1,621,511	0	316,383
2036	June 30, 2036	28,454,001	11,748,839	16,705,162	41.29%	790,693	1,630,621	325,874	1,956,495	1,630,621	0	325,874
2037	June 30, 2037	29,326,234	12,916,075	16,410,159	44.04%	816,532	1,667,935	335,650	2,003,585	1,667,935	0	335,650
2038	June 30, 2038	30,291,905	14,175,199	16,116,706	46.80%	845,168	1,658,185	345,720	2,003,905	1,658,185	0	345,720
2039	June 30, 2039	31,309,768	15,532,938	15,776,830	49.61%	874,718	1,646,907	356,092	2,002,999	1,646,907	0	356,092
2040	June 30, 2040	32,485,921	16,996,497	15,489,424	52.32%	906,011	1,663,595	366,775	2,030,370	1,663,595	0	366,775
2041	June 30, 2041	33,678,285	18,573,593	15,104,692	55.15%	941,684	1,710,690	377,778	2,088,468	1,710,690	0	377,778
2042	June 30, 2042	34,912,282	20,272,492	14,639,790	58.07%	979,705	1,806,503	389,111	2,195,614	1,806,503	0	389,111
2043	June 30, 2043	36,172,322	22,102,047	14,070,275	61.10%	1,019,686	1,886,150	400,784	2,286,934	1,886,150	0	400,784
2044	June 30, 2044	37,494,342	24,071,742	13,422,600	64.20%	1,062,752	1,932,491	412,808	2,345,299	1,932,491	0	412,808
2045	June 30, 2045	38,887,268	26,191,731	12,695,537	67.35%	1,110,294	2,022,299	425,192	2,447,491	2,022,299	0	425,192
2046	June 30, 2046	40,302,948	28,472,888	11,830,060	70.65%	1,159,185	2,114,284	437,948	2,552,232	2,114,284	0	437,948
2047	June 30, 2047	41,839,706	30,926,859	10,912,847	73.92%	1,209,279	2,100,385	451,086	2,551,471	2,100,385	0	451,086
2048	June 30, 2048	43,440,485	33,566,114	9,874,371	77.27%	1,261,917	2,139,524	464,619	2,604,143	2,139,524	0	464,619
2049	June 30, 2049	45,092,266	36,404,007	8,688,259	80.73%	1,320,704	2,194,100	478,558	2,672,658	2,194,100	0	478,558
2050	June 30, 2050	46,907,570	39,454,834	7,452,736	84.11%	1,380,315	2,192,958	492,915	2,685,873	2,192,958	0	492,915
2051	June 30, 2051	48,755,229	42,733,903	6,021,326	87.65%	1,444,542	2,273,877	507,702	2,781,579	2,273,877	0	507,702

APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

CONTRIBUTION PROJECTION DISCLOSURES

Table 1: Projection of Contributions using a July 1, 2018 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	13,538,318	0	13,538,318	0	820,302	0	820,302
June 30, 2021	12,630,830	1,313,638	13,944,468	0	897,663	0	897,663
June 30, 2022	11,760,418	2,602,384	14,362,802	0	1,000,023	0	1,000,023
June 30, 2023	10,964,588	3,829,098	14,793,686	0	1,019,362	0	1,019,362
June 30, 2024	10,247,888	4,989,609	15,237,497	0	1,072,445	0	1,072,445
June 30, 2025	9,682,257	6,012,365	15,694,622	0	1,140,060	0	1,140,060
June 30, 2026	9,203,151	6,962,310	16,165,461	0	1,163,696	0	1,163,696
June 30, 2027	8,768,456	7,881,969	16,650,425	0	1,193,179	0	1,193,179
June 30, 2028	8,368,811	8,781,127	17,149,938	0	1,269,396	0	1,269,396
June 30, 2029	7,998,174	9,666,262	17,664,436	0	1,261,081	0	1,261,081
June 30, 2030	7,487,052	10,707,317	18,194,369	0	1,311,274	9,404	1,320,678
June 30, 2031	7,029,198	11,711,002	18,740,200	0	1,369,072	24,143	1,393,215
June 30, 2032	6,668,513	12,633,893	19,302,406	0	1,372,924	44,378	1,417,302
June 30, 2033	6,313,267	13,568,211	19,881,478	0	1,447,267	73,156	1,520,423
June 30, 2034	5,992,962	14,484,960	20,477,922	0	1,495,989	108,647	1,604,636
June 30, 2035	5,697,605	15,394,655	21,092,260	0	1,492,051	129,460	1,621,511
June 30, 2036	5,433,860	16,291,168	21,725,028	0	1,476,108	154,513	1,630,621
June 30, 2037	5,144,676	17,232,103	22,376,779	0	1,485,238	182,697	1,667,935
June 30, 2038	4,887,032	18,161,050	23,048,082	0	1,460,091	198,094	1,658,185
June 30, 2039	4,683,205	19,056,319	23,739,524	0	1,429,999	216,908	1,646,907
June 30, 2040	4,484,240	19,967,470	24,451,710	0	1,412,696	250,899	1,663,595
June 30, 2041	4,238,414	20,946,847	25,185,261	0	1,412,852	297,838	1,710,690
June 30, 2042	4,006,981	21,933,838	25,940,819	0	1,450,215	356,288	1,806,503
June 30, 2043	3,813,450	22,905,594	26,719,044	0	1,451,986	434,164	1,886,150
June 30, 2044	3,640,153	23,880,462	27,520,615	0	1,407,045	525,446	1,932,491
June 30, 2045	3,418,052	24,928,181	28,346,233	0	1,435,781	586,518	2,022,299
June 30, 2046	3,172,485	26,024,135	29,196,620	0	1,455,228	659,056	2,114,284
June 30, 2047	2,989,688	27,082,831	30,072,519	0	1,363,383	737,002	2,100,385
June 30, 2048	2,833,678	28,141,017	30,974,695	0	1,350,653	788,871	2,139,524
June 30, 2049	2,656,477	29,247,459	31,903,936	0	1,346,688	847,412	2,194,100
June 30, 2050	2,389,261	30,471,793	32,861,054	0	1,273,128	919,830	2,192,958
June 30, 2051	2,191,084	31,655,802	33,846,886	0	1,272,339	1,001,538	2,273,877
June 30, 2052	2,015,043	32,847,250	34,862,293	0	1,242,650	1,091,116	2,333,766
June 30, 2053	1,836,296	34,071,866	35,908,162	0	1,222,057	1,196,253	2,418,310
June 30, 2054	1,637,740	35,347,667	36,985,407	0	1,217,878	1,310,436	2,528,314
June 30, 2055	1,478,150	36,616,819	38,094,969	0	1,199,177	1,411,940	2,611,117
June 30, 2056	1,295,894	37,941,924	39,237,818	0	1,169,177	1,524,799	2,693,976
June 30, 2057	1,111,243	39,303,710	40,414,953	0	1,165,294	1,642,832	2,808,126
June 30, 2058	917,140	40,710,262	41,627,402	0	1,143,288	1,755,931	2,899,219
June 30, 2059	753,826	42,122,398	42,876,224	0	1,054,533	1,874,926	2,929,459

APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

CONTRIBUTION PROJECTION DISCLOSURES (CONTINUED)

Table 1: Projection of Contributions using a July 1, 2018 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	615,458	43,547,053	44,162,511	0	1,040,938	2,002,473	3,043,411
June 30, 2061	469,112	45,018,274	45,487,386	0	1,011,839	2,139,534	3,151,373
June 30, 2062	335,070	46,516,938	46,852,008	0	954,319	2,285,214	3,239,533
June 30, 2063	236,692	48,020,876	48,257,568	0	930,261	2,443,734	3,373,995
June 30, 2064	181,877	49,523,418	49,705,295	0	889,109	2,612,417	3,501,526
June 30, 2065	111,772	51,084,682	51,196,454	0	863,209	2,784,786	3,647,995
June 30, 2066	62,962	52,669,386	52,732,348	0	839,880	2,967,568	3,807,448
June 30, 2067	31,607	54,282,711	54,314,318	0	802,326	3,159,626	3,961,952
June 30, 2068	23,984	55,919,764	55,943,748	0	775,875	3,354,016	4,129,891
June 30, 2069	15,313	57,606,747	57,622,060	0	748,399	3,554,368	4,302,767
June 30, 2070	3,099	59,347,623	59,350,722	0	719,987	3,761,038	4,481,025
June 30, 2071	0	61,131,244	61,131,244	0	690,930	3,977,185	4,668,115
June 30, 2072	0	62,965,181	62,965,181	0	661,347	4,203,354	4,864,701
June 30, 2073	0	64,854,136	64,854,136	0	631,290	4,439,061	5,070,351
June 30, 2074	0	66,799,760	66,799,760	0	600,870	4,684,275	5,285,145
June 30, 2075	0	68,803,753	68,803,753	0	570,185	4,943,823	5,514,008
June 30, 2076	0	70,867,866	70,867,866	0	539,341	5,214,173	5,753,514
June 30, 2077	0	72,993,902	72,993,902	0	508,442	5,495,178	6,003,620
June 30, 2078	0	75,183,719	75,183,719	0	477,612	5,789,057	6,266,669
June 30, 2079	0	77,439,231	77,439,231	0	446,956	6,093,703	6,540,659
June 30, 2080	0	79,762,408	79,762,408	0	416,595	6,407,504	6,824,099
June 30, 2081	0	82,155,280	82,155,280	0	386,631	6,733,590	7,120,221
June 30, 2082	0	84,619,938	84,619,938	0	357,168	7,074,006	7,431,174
June 30, 2083	0	87,158,536	87,158,536	0	328,363	7,428,174	7,756,537
June 30, 2084	0	89,773,292	89,773,292	0	300,329	7,797,581	8,097,910
June 30, 2085	0	92,466,491	92,466,491	0	273,214	8,185,497	8,458,711
June 30, 2086	0	95,240,486	95,240,486	0	247,161	8,589,792	8,836,953
June 30, 2087	0	98,097,701	98,097,701	0	222,310	9,013,946	9,236,256
June 30, 2088	0	101,040,632	101,040,632	0	198,760	9,458,789	9,657,549
June 30, 2089	0	104,071,851	104,071,851	0	176,620	9,921,829	10,098,449
June 30, 2090	0	107,194,007	107,194,007	0	155,932	10,403,843	10,559,775
June 30, 2091	0	110,409,827	110,409,827	0	136,745	10,908,421	11,045,166
June 30, 2092	0	113,722,122	113,722,122	0	119,068	11,435,766	11,554,834
June 30, 2093	0	117,133,786	117,133,786	0	102,874	11,986,339	12,089,213
June 30, 2094	0	120,647,800	120,647,800	0	88,145	12,562,478	12,650,623

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, 2018 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	1,298,875	820,302	234,131	1,054,433	0	820,302	820,302	48,493	1,581,499
June 30, 2021	1,581,499	897,663	131,340	1,029,003	0	897,663	897,663	104,496	1,817,335
June 30, 2022	1,817,335	1,000,023	176,406	1,176,429	0	1,000,023	1,000,023	132,903	2,126,644
June 30, 2023	2,126,644	1,019,362	164,469	1,183,831	0	1,019,362	1,019,362	154,083	2,445,196
June 30, 2024	2,445,196	1,072,445	153,718	1,226,163	0	1,072,445	1,072,445	175,949	2,774,863
June 30, 2025	2,774,863	1,140,060	145,234	1,285,294	0	1,140,060	1,140,060	198,669	3,118,766
June 30, 2026	3,118,766	1,163,696	138,047	1,301,743	0	1,163,696	1,163,696	222,426	3,479,239
June 30, 2027	3,479,239	1,193,179	131,527	1,324,706	0	1,193,179	1,193,179	247,364	3,858,130
June 30, 2028	3,858,130	1,269,396	125,532	1,394,928	0	1,269,396	1,269,396	273,605	4,257,267
June 30, 2029	4,257,267	1,261,081	119,972	1,381,053	0	1,261,081	1,261,081	301,274	4,678,513
June 30, 2030	4,678,513	1,311,274	112,306	1,423,580	0	1,311,274	1,311,274	330,414	5,111,829
June 30, 2031	5,111,829	1,369,072	105,438	1,474,510	0	1,369,072	1,369,072	360,423	5,553,547
June 30, 2032	5,553,547	1,372,924	100,027	1,472,951	0	1,372,924	1,372,924	391,070	6,000,266
June 30, 2033	6,000,266	1,447,267	94,699	1,541,966	0	1,447,267	1,447,267	422,068	6,443,877
June 30, 2034	6,443,877	1,495,989	89,894	1,585,883	0	1,495,989	1,495,989	452,867	6,877,991
June 30, 2035	6,877,991	1,492,051	85,464	1,577,515	0	1,492,051	1,492,051	483,016	7,317,011
June 30, 2036	7,317,011	1,476,108	81,508	1,557,616	0	1,476,108	1,476,108	513,524	7,757,530
June 30, 2037	7,757,530	1,485,238	77,170	1,562,408	0	1,485,238	1,485,238	544,123	8,196,126
June 30, 2038	8,196,126	1,460,091	73,305	1,533,396	0	1,460,091	1,460,091	574,605	8,645,942
June 30, 2039	8,645,942	1,429,999	70,248	1,500,247	0	1,429,999	1,429,999	605,897	9,105,179
June 30, 2040	9,105,179	1,412,696	67,263	1,479,959	0	1,412,696	1,412,696	637,849	9,559,392
June 30, 2041	9,559,392	1,412,852	63,576	1,476,428	0	1,412,852	1,412,852	669,427	9,994,557
June 30, 2042	9,994,557	1,450,215	60,105	1,510,320	0	1,450,215	1,450,215	699,682	10,398,056
June 30, 2043	10,398,056	1,451,986	57,202	1,509,188	0	1,451,986	1,451,986	727,747	10,748,841
June 30, 2044	10,748,841	1,407,045	54,602	1,461,647	0	1,407,045	1,407,045	752,143	11,030,140
June 30, 2045	11,030,140	1,435,781	51,271	1,487,052	0	1,435,781	1,435,781	771,663	11,266,556
June 30, 2046	11,266,556	1,455,228	47,587	1,502,815	0	1,455,228	1,455,228	788,038	11,443,125
June 30, 2047	11,443,125	1,363,383	44,845	1,408,228	0	1,363,383	1,363,383	800,269	11,551,237
June 30, 2048	11,551,237	1,350,653	42,505	1,393,158	0	1,350,653	1,350,653	807,735	11,612,606
June 30, 2049	11,612,606	1,346,688	39,847	1,386,535	0	1,346,688	1,346,688	811,927	11,616,968
June 30, 2050	11,616,968	1,273,128	35,839	1,308,967	0	1,273,128	1,273,128	812,094	11,545,071
June 30, 2051	11,545,071	1,272,339	32,866	1,305,205	0	1,272,339	1,272,339	806,974	11,383,373
June 30, 2052	11,383,373	1,242,650	30,226	1,272,876	0	1,242,650	1,242,650	795,597	11,118,080
June 30, 2053	11,118,080	1,222,057	27,544	1,249,601	0	1,222,057	1,222,057	776,987	10,726,358
June 30, 2054	10,726,358	1,217,878	24,566	1,242,444	0	1,217,878	1,217,878	749,543	10,190,031
June 30, 2055	10,190,031	1,199,177	22,172	1,221,349	0	1,199,177	1,199,177	712,025	9,512,288
June 30, 2056	9,512,288	1,169,177	19,438	1,188,615	0	1,169,177	1,169,177	664,625	8,671,552
June 30, 2057	8,671,552	1,165,294	16,669	1,181,963	0	1,165,294	1,165,294	605,846	7,651,235
June 30, 2058	7,651,235	1,143,288	13,757	1,157,045	0	1,143,288	1,143,288	534,528	6,443,589
June 30, 2059	6,443,589	1,054,533	11,307	1,065,840	0	1,054,533	1,054,533	450,150	5,030,120

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, 2018 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	5,030,120	1,040,938	9,232	1,050,170	0	1,040,938	1,040,938	351,419	3,994,079
June 30, 2061	3,994,079	1,011,839	7,037	1,018,876	0	1,011,839	1,011,839	279,028	2,985,118
June 30, 2062	2,985,118	954,319	5,026	959,345	0	954,319	954,319	208,534	2,032,290
June 30, 2063	2,032,290	930,261	3,550	933,811	0	930,261	930,261	141,976	1,102,726
June 30, 2064	1,102,726	889,109	2,728	891,837	0	889,109	889,109	77,064	213,899
June 30, 2065	213,899	863,209	1,677	864,886	0	863,209	863,209	14,988	16,665
June 30, 2066	16,665	839,880	944	840,824	0	839,880	839,880	1,196	2,140
June 30, 2067	2,140	802,326	474	802,800	0	802,326	802,326	166	640
June 30, 2068	640	775,875	360	776,235	0	775,875	775,875	57	417
June 30, 2069	417	748,399	230	748,629	0	748,399	748,399	37	267
June 30, 2070	267	719,987	46	720,033	0	719,987	719,987	20	66
June 30, 2071	66	690,930	0	690,930	0	690,930	690,930	5	5
June 30, 2072	5	661,347	0	661,347	0	661,347	661,347	0	0
June 30, 2073	0	631,290	0	631,290	0	631,290	631,290	0	0
June 30, 2074	0	600,870	0	600,870	0	600,870	600,870	0	0
June 30, 2075	0	570,185	0	570,185	0	570,185	570,185	0	0
June 30, 2076	0	539,341	0	539,341	0	539,341	539,341	0	0
June 30, 2077	0	508,442	0	508,442	0	508,442	508,442	0	0
June 30, 2078	0	477,612	0	477,612	0	477,612	477,612	0	0
June 30, 2079	0	446,956	0	446,956	0	446,956	446,956	0	0
June 30, 2080	0	416,595	0	416,595	0	416,595	416,595	0	0
June 30, 2081	0	386,631	0	386,631	0	386,631	386,631	0	0
June 30, 2082	0	357,168	0	357,168	0	357,168	357,168	0	0
June 30, 2083	0	328,363	0	328,363	0	328,363	328,363	0	0
June 30, 2084	0	300,329	0	300,329	0	300,329	300,329	0	0
June 30, 2085	0	273,214	0	273,214	0	273,214	273,214	0	0
June 30, 2086	0	247,161	0	247,161	0	247,161	247,161	0	0
June 30, 2087	0	222,310	0	222,310	0	222,310	222,310	0	0
June 30, 2088	0	198,760	0	198,760	0	198,760	198,760	0	0
June 30, 2089	0	176,620	0	176,620	0	176,620	176,620	0	0
June 30, 2090	0	155,932	0	155,932	0	155,932	155,932	0	0
June 30, 2091	0	136,745	0	136,745	0	136,745	136,745	0	0
June 30, 2092	0	119,068	0	119,068	0	119,068	119,068	0	0
June 30, 2093	0	102,874	0	102,874	0	102,874	102,874	0	0
June 30, 2094	0	88,145	0	88,145	0	88,145	88,145	0	0

APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

BENEFIT PAYMENT PROJECTION DISCLOSURES

Table 3: Actuarial Present Values of Projected Benefit Payments using a July 1, 2018 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 [6.98%]	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 [6.11%]	
June 30, 2020	1,298,875	820,302	820,302	0	820,302	0	820,302	Sum of Column V.
June 30, 2021	1,581,499	897,663	897,663	0	839,094	0	845,981	17,738,409
June 30, 2022	1,817,335	1,000,023	1,000,023	0	873,785	0	888,187	
June 30, 2023	2,126,644	1,019,362	1,019,362	0	832,570	0	853,237	Sum of Column VI.
June 30, 2024	2,445,196	1,072,445	1,072,445	0	818,775	0	845,987	2,528,214
June 30, 2025	2,774,863	1,140,060	1,140,060	0	813,607	0	847,546	
June 30, 2026	3,118,766	1,163,696	1,163,696	0	776,290	0	815,309	Sum of Column VII.
June 30, 2027	3,479,239	1,193,179	1,193,179	0	744,025	0	787,835	[V. + VI.]
June 30, 2028	3,858,130	1,269,396	1,269,396	0	739,906	0	789,904	20,266,623
June 30, 2029	4,257,267	1,261,081	1,261,081	0	687,100	0	739,549	
June 30, 2030	4,678,513	1,311,274	1,311,274	0	667,832	0	724,711	
June 30, 2031	5,111,829	1,369,072	1,369,072	0	651,775	0	713,091	
June 30, 2032	5,553,547	1,372,924	1,372,924	0	610,964	0	673,926	
June 30, 2033	6,000,266	1,447,267	1,447,267	0	602,026	0	669,516	
June 30, 2034	6,443,877	1,495,989	1,495,989	0	581,691	0	652,211	
June 30, 2035	6,877,991	1,492,051	1,492,051	0	542,306	0	613,042	
June 30, 2036	7,317,011	1,476,108	1,476,108	0	501,507	0	571,574	
June 30, 2037	7,757,530	1,485,238	1,485,238	0	471,685	0	541,997	
June 30, 2038	8,196,126	1,460,091	1,460,091	0	433,444	0	502,144	
June 30, 2039	8,645,942	1,429,999	1,429,999	0	396,814	0	463,480	
June 30, 2040	9,105,179	1,412,696	1,412,696	0	366,435	0	431,510	
June 30, 2041	9,559,392	1,412,852	1,412,852	0	342,564	0	406,711	
June 30, 2042	9,994,557	1,450,215	1,450,215	0	328,682	0	393,432	
June 30, 2043	10,398,056	1,451,986	1,451,986	0	307,612	0	371,233	
June 30, 2044	10,748,841	1,407,045	1,407,045	0	278,641	0	339,031	
June 30, 2045	11,030,140	1,435,781	1,435,781	0	265,781	0	326,037	
June 30, 2046	11,266,556	1,455,228	1,455,228	0	251,805	0	311,427	
June 30, 2047	11,443,125	1,363,383	1,363,383	0	220,520	0	274,973	
June 30, 2048	11,551,237	1,350,653	1,350,653	0	204,207	0	256,722	
June 30, 2049	11,612,606	1,346,688	1,346,688	0	190,323	0	241,231	
June 30, 2050	11,616,968	1,273,128	1,273,128	0	168,188	0	214,924	
June 30, 2051	11,545,071	1,272,339	1,272,339	0	157,117	0	202,425	
June 30, 2052	11,383,373	1,242,650	1,242,650	0	143,439	0	186,319	
June 30, 2053	11,118,080	1,222,057	1,222,057	0	131,858	0	172,682	
June 30, 2054	10,726,358	1,217,878	1,217,878	0	122,833	0	162,183	
June 30, 2055	10,190,031	1,199,177	1,199,177	0	113,056	0	150,499	
June 30, 2056	9,512,288	1,169,177	1,169,177	0	103,036	0	138,286	
June 30, 2057	8,671,552	1,165,294	1,165,294	0	95,993	0	129,891	
June 30, 2058	7,651,235	1,143,288	1,143,288	0	88,035	0	120,101	
June 30, 2059	6,443,589	1,054,533	1,054,533	0	75,903	0	104,399	

APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

BENEFIT PAYMENT PROJECTION DISCLOSURES (CONTINUED)

Table 3: Actuarial Present Values of Projected Benefit Payments using a July 1, 2018 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 [6.98%]	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 [6.11%]
June 30, 2060	5,030,120	1,040,938	1,040,938	0	70,036	0	97,120
June 30, 2061	3,994,079	1,011,839	1,011,839	0	63,636	0	88,970
June 30, 2062	2,985,118	954,319	954,319	0	56,103	0	79,081
June 30, 2063	2,032,290	930,261	930,261	0	51,120	0	72,649
June 30, 2064	1,102,726	889,109	889,109	0	45,671	0	65,438
June 30, 2065	213,899	863,209	416,703	446,506	20,008	137,002	59,874
June 30, 2066	16,665	839,880	211,773	628,107	9,505	187,728	54,902
June 30, 2067	2,140	802,326	184,604	617,722	7,745	179,840	49,427
June 30, 2068	640	775,875	174,548	601,327	6,845	170,530	45,046
June 30, 2069	417	748,399	165,494	582,905	6,067	161,023	40,949
June 30, 2070	267	719,987	156,228	563,759	5,353	151,698	37,126
June 30, 2071	66	690,930	147,161	543,769	4,714	142,528	33,577
June 30, 2072	5	661,347	138,517	522,830	4,147	133,488	30,289
June 30, 2073	0	631,290	130,102	501,188	3,641	124,647	27,247
June 30, 2074	0	600,870	121,867	479,003	3,188	116,042	24,441
June 30, 2075	0	570,185	114,159	456,026	2,792	107,613	21,858
June 30, 2076	0	539,341	106,578	432,763	2,436	99,477	19,485
June 30, 2077	0	508,442	99,141	409,301	2,118	91,646	17,311
June 30, 2078	0	477,612	91,995	385,617	1,837	84,106	15,325
June 30, 2079	0	446,956	85,006	361,950	1,587	76,898	13,516
June 30, 2080	0	416,595	78,084	338,511	1,363	70,055	11,872
June 30, 2081	0	386,631	71,419	315,212	1,165	63,543	10,384
June 30, 2082	0	357,168	65,069	292,099	992	57,357	9,041
June 30, 2083	0	328,363	59,011	269,352	841	51,520	7,833
June 30, 2084	0	300,329	53,281	247,048	710	46,029	6,752
June 30, 2085	0	273,214	47,952	225,262	597	40,883	5,788
June 30, 2086	0	247,161	42,926	204,235	500	36,106	4,935
June 30, 2087	0	222,310	38,275	184,035	417	31,692	4,183
June 30, 2088	0	198,760	33,985	164,775	346	27,640	3,525
June 30, 2089	0	176,620	29,996	146,624	285	23,958	2,952
June 30, 2090	0	155,932	26,304	129,628	234	20,632	2,456
June 30, 2091	0	136,745	22,942	113,803	191	17,644	2,030
June 30, 2092	0	119,068	19,883	99,185	154	14,979	1,666
June 30, 2093	0	102,874	17,107	85,767	124	12,617	1,356
June 30, 2094	0	88,145	14,609	73,536	99	10,537	1,095

APPENDIX II – PLAN PROVISIONS

<u>Effective Date</u>	GASB 74 was adopted for the fiscal year ending July 1, 2015 GASB 75 was adopted for the fiscal year ending July 1, 2016
<u>Plan Year</u>	July 1 through June 30.
<u>Premium Effective Date</u>	Medicare Supplement Plans: effective January 1, 2019 Non-Medicare Plans: effective July 1, 2019 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 and \$2,000 of Group Term Life Insurance.
<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>	Spousal benefits do not change after the death of a plan participant.

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	- 25% of premiums for HMO plans - 50% of premiums for all other plans	- 25% of premiums for HMO plans - 50% of premiums for all other plans
Dental	N/A	N/A
Life	50%	N/A

APPENDIX III – ACTUARIAL METHODS & ASSUMPTIONSPre-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

6.25% per annum (previously 6.25%, used in the calculation of the Interest Cost)

Net Long Term Rate of Return

6.98% (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

Age	0-4 Years of Service (Males)	0-4 Years of Service (Females)	5-9 Years of Service (Males)	5-9 Years of Service (Females)	10+ Years of Service (Males)	10+ Years of Service (Females)
20	27.00%	27.00%	12.00%	12.00%	6.00%	6.00%
30	23.00%	23.00%	10.00%	10.00%	5.50%	5.50%
40	16.00%	16.00%	8.00%	8.00%	3.50%	3.50%
50	18.00%	18.00%	6.00%	6.00%	3.00%	3.00%
60	18.00%	18.00%	5.00%	5.00%	3.50%	3.50%

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

Trend Rate

Medicare Supplement Plans: Initial Trend of 4.50% for 2020 grading down 0.00% per year for an ultimate trend rate of 4.50%.

Non-Medicare Plans: Initial Trend of 4.50% for 2020 grading down 0.00% per year for an ultimate trend rate of 4.50%.

Dental Plans: N/A

Participation Rate

It was assumed that 80% of employees eligible to receive retirement benefits would enroll in the retiree medical plans upon retirement. For life insurance plans, it was assumed that 80% of eligible employees would elect coverage upon retirement.

Spouse Participation Rate

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.

Spouse Demographics

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.

Medicare Eligibility

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.

School Demographics

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.

Compensation Increases

3.00% per year.

Inflation Rate

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	17,125,373	16,460,532
II. Total OPEB Liability (Excluding Implicit Subsidy)	<u>13,473,844</u>	<u>12,923,904</u>
III. Liability from Implicit Subsidy [I. - II.]	3,651,529	3,536,628

	For the Measurement Period Ending	
Impact on Payments	<u>June 30, 2020</u>	<u>June 30, 2019</u>
IV. Employer Payments (Including Implicit Subsidy)	820,302	765,781
V. Actual Employer Payments	<u>601,953</u>	<u>562,653</u>
VI. Implicit Subsidy [IV. - V.]	218,349	203,128

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	4,792	3,021	44 & Under	9,419	6,172	65 to 69	4,012	4,012
25 to 29	7,070	3,143	45 to 49	10,346	7,793	70 to 74	4,012	4,012
30 to 34	8,934	3,945	50 to 54	12,171	10,263	75 to 79	4,012	4,012
35 to 39	9,203	4,954	55 to 59	14,070	13,343	80 to 84	4,012	4,012
40 to 44	9,419	6,172	60 to 64	16,742	17,122	85 to 89	4,012	4,012
45 to 49	10,346	7,793	65 to 69	20,070	21,357	90 & Over	4,012	4,012
50 to 54	12,171	10,263	70 to 74	23,667	25,594			
55 to 59	14,070	13,343	75 to 79	27,486	30,228			
60 to 64	16,742	17,122	80 to 84	31,514	34,745			
65 to 69	20,070	21,357	85 to 89	35,973	39,771			
70 & Over	23,667	25,594	90 & Over	35,973	39,771			

*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, 2018
A. Average Age at Hire	36.13
B. Average Service	<u>8.53</u>
C. Average Current Age	44.66

Retired Employees & Spouses

Valuation Date	July 1, 2018
A. Under Age 65	28
B. Age 65 & Over	<u>114</u>
C. Total	142

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	16									16
25-29	18	2								20
30-34	14	7	2							23
35-39	17	4	7	1						29
40-44	12	4	4	4	1					25
45-49	15	3	6	5	3		1			33
50-54	9		4	8	1	2				24
55-59	8	2	3	7	3	2	2	1	1	29
60-64	3	3	6	6	1	3				22
65-69		1					1			2
70+	2		2	1						5
Total	114	26	34	32	9	7	4	1	1	228

APPENDIX IV – PLAN DEMOGRAPHICS

Plan Offerings

Blue Care Elect
HMO VP
Medex
Total

Number of Contracts

<u>Single</u>	<u>Two-Person</u>	<u>Family</u>	<u>Total</u>
3			3
65		81	146
<u>37</u>	<u>39</u>		<u>76</u>
105	39	81	225

Per Contract Costs (monthly)

Blue Care Elect
HMO VP
Medex
Dental Plan

<u>Single</u>	<u>Two-Person</u>	<u>Family</u>
1,825.73		4,227.90
883.83		2,368.75
334.37	668.74	
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.