

Town of Halifax 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 August 11, 2020



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August 11, 2020

Personal and Confidential

Ms. Linda Cole
Assistant Town Treasurer
Town of Halifax
499 Plymouth Street
Halifax, MA 02338

Dear Ms. Cole:

We have performed an actuarial valuation of the Town of Halifax 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 Halifax, 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,



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

August 11, 2020

ACTUARIAL CERTIFICATION

This is to certify that Odyssey Advisors has conducted an actuarial valuation of certain benefit obligations of the Town of Halifax 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 horizontal line.

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 horizontal line.

Andrew D. Taggart, ASA, MAAA
Consulting Actuary

EXECUTIVE SUMMARY

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

For the year ending on the Measurement Date of June 30, 2020, the Plan saw an experience gain of \$65,782 or 0.50% of the beginning Total OPEB Liability ("TOL"). This was due to the repeal of the ACA excise tax. During the period there was an investment loss of \$13,864 due to asset performance below the expected rate of return.

Assumption Changes

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

- ✓ Due to the GASB 75 standards the discount rate has been changed from 4.25% to 4.00% increasing the disclosed liability by \$440 thousand.
- ✓ Assumption changes caused Service Cost to increase by \$26 thousand.

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.

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 5.22 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 \$357,110 of OPEB assets as of June 30, 2020.
- ✓ Funding Policy - The Town is expected to contribute \$37,000 in fiscal 2021, increasing by \$5,000 annually thereafter.
- ✓ Investment Policy - The Town is expected to earn 6.72% 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 67.78% 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 (4.00%) – 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. While the Town currently has no retirees or covered spouses who are over the age of 65 and enrolled in an Active medical plan, it is something you’ll want to monitor to avoid larger OPEB costs than they otherwise would be. 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	13,988,184	13,086,832
Per Eligible Active Plan Participant	55,807	53,602
Per Retiree/Spouse Plan Participant	56,582	51,416
Total Annual Service Cost (Annual Benefit Accrual)	461,151	425,597
Per Eligible Active Plan Participant	3,547	3,274
Expected Employer Share of Retiree Costs	497,642	449,805
Per Retiree/Spouse Plan Participant	4,182	3,780
Net OPEB Liability as a % of Covered Payroll	138.90%	134.10%

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	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	119	13,988,184	13,988,184	497,642	497,642
June 30, 2025	135	16,598,605	14,318,102	644,037	555,552
June 30, 2030	137	19,856,343	14,774,984	722,885	537,894
June 30, 2035	139	23,654,747	15,183,082	915,636	587,712
June 30, 2040	136	28,224,491	15,627,216	1,071,171	593,081
June 30, 2045	134	33,410,821	15,957,194	1,353,848	646,605
June 30, 2050	132	39,951,106	16,459,327	1,615,842	665,706

PRINCIPAL RESULTS OF THE VALUATION

Town of Halifax

Assuming Funding - 4.00% 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	7,254,958	6,968,311
B. Retirees/Disabled	<u>6,733,226</u>	<u>6,118,521</u>
C. Total	13,988,184	13,086,832
II. Fiduciary Net Position [Plan Assets]	357,110	312,766
III. Net OPEB Liability (Asset) [I. - II.]	13,631,074	12,774,066
IV. Funded Ratio [II. / I.]	2.55%	2.39%
V. Number of Eligible Participants		
A. Actives	130	130
B. Retirees/Disabled & Dependents	<u>119</u>	<u>119</u>
C. Total	249	249
VI. Service Cost	461,151	425,597
VII. Financial Statement Expense	707,612	760,606
VIII. Employer Contribution to the OPEB Trust	(36,000)	(35,000)
IX. Deferred Inflow of Resources	(3,393,141)	(4,381,641)
X. Deferred Outflow of Resources	1,508,623	1,814,085
XI. Money Weighted Rate of Return	2.52%	3.95%
XII. 20-year Municipal Bond Rate (SAPIHG)	2.66%	2.79%
XIII. Expected Long Term Rate of Return (Net of Expense)	6.72%	6.80%
XIV. Crossover Year	Immediate	Immediate
XV. Discount Rate	4.00%	4.25%

PRINCIPAL RESULTS OF THE VALUATION

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

	Town Employees and Retirees	School Employees and Retirees	Public Safety Employees and Retirees	Water Enterprise Employees and Retirees	Total
I. Total OPEB Liability					
A. Actives	2,131,260	3,827,030	1,087,327	209,341	7,254,958
B. Retirees/Disabled	<u>2,477,027</u>	<u>2,809,443</u>	<u>1,446,756</u>	<u>0</u>	<u>6,733,226</u>
C. Total	4,608,287	6,636,473	2,534,083	209,341	13,988,184
II. Fiduciary Net Position [Plan Assets]	117,647	169,425	64,694	5,344	357,110
III. Net OPEB Liability (Asset) [I. - II.]	4,490,640	6,467,048	2,469,389	203,997	13,631,074
IV. Number of Eligible Participants					
A. Actives	48	58	21	3	130
B. Retirees/Disabled	<u>50</u>	<u>54</u>	<u>15</u>	<u>0</u>	<u>119</u>
C. Total	98	112	36	3	249
For the Reporting Date and Fiscal Year Ending June 30, 2020					
V. Service Cost	150,269	180,744	122,243	7,895	461,151
VI. Financial Statement Expense	221,731	302,897	171,006	11,978	707,612
VII. Employer Share of Costs	(192,819)	(216,153)	(88,215)	(455)	(497,642)
VIII. Employer (Payments)/Withdrawals to/from OPEB Trust	(11,755)	(17,047)	(6,637)	(561)	(36,000)
IX. Total Employer Contribution [VII. + VIII.]	(204,574)	(233,200)	(94,852)	(1,016)	(533,642)

PRINCIPAL RESULTS OF THE VALUATION

Town of Halifax

Assuming Funding - 4.00% 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	3,509,648	3,783,396	7,293,044	858,996	3,649,237	4,508,233	11,801,277
B. Spouses	<u>1,932,791</u>	<u>2,699,472</u>	<u>4,632,263</u>	<u>350,268</u>	<u>1,874,725</u>	<u>2,224,993</u>	<u>6,857,256</u>
C. Total	5,442,439	6,482,868	11,925,307	1,209,264	5,523,962	6,733,226	18,658,533
Total OPEB Liability							
A. Participants	2,147,851	2,307,792	4,455,643	858,996	3,649,237	4,508,233	8,963,876
B. Spouses	<u>1,150,352</u>	<u>1,648,963</u>	<u>2,799,315</u>	<u>350,268</u>	<u>1,874,725</u>	<u>2,224,993</u>	<u>5,024,308</u>
C. Total	3,298,203	3,956,755	7,254,958	1,209,264	5,523,962	6,733,226	13,988,184
Service Cost							
A. Participants	126,428	153,905	280,333	0	0	0	280,333
B. Spouses	<u>72,470</u>	<u>108,348</u>	<u>180,818</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>180,818</u>
C. Total	198,898	262,253	461,151	0	0	0	461,151

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	461,151
II. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	565,324
III. Deferred (Inflows)/Outflows from Plan Experience*	(557,855)
IV. Deferred (Inflows)/Outflows from Changes of Assumptions*	257,279
V. Projected Earnings on OPEB Plan Investments	(22,208)
VI. Deferred (Inflows)/Outflows from Earnings on Plan Investments**	3,921
VII. Financial Statement Expense Prior to Plan Design Changes [I. + II. + III. + IV. + V. + VI.]	707,612
VIII. Deferred (Inflows)/Outflows from Plan Design Changes***	0
IX. Financial Statement Expense [VII. + VIII.]	707,612

* Amortized over 5.22 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	13,086,832	312,766	12,774,066
II. Prior Period Adjustment	0	0	0
III. Balances for June 30, 2019 with Adjustment [I. + II.]	13,086,832	312,766	12,774,066
Changes for the year:			
IV. Service Cost	461,151	0	461,151
V. Interest on Total OPEB Liability, Service Cost, and Benefit Payments	565,324	0	565,324
VI. Changes in Benefit Terms *	0	0	0
VII. Change in Assumptions **	438,301	0	438,301
VIII. Differences Between Actual and Expected Experience **	(65,782)	0	(65,782)
IX. Net Investment Income	0	8,344	(8,344)
X. Employer Contributions to Trust	0	533,642	(533,642)
XI. Benefit Payments Withdrawn from Trust	0	(497,642)	497,642
XII. Benefit Payments Excluding Implicit Cost	(391,523)	0	(391,523)
XIII. Implicit Cost Amount	(106,119)	0	(106,119)
XIV. Total Benefit Payments Including Implicit Cost [XII. + XIII.]	(497,642)	0	(497,642)
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.]	901,352	44,344	857,008
XVIII. Balances at June 30, 2020 [III.+XVII.]	13,988,184	357,110	13,631,074

* Recognized Immediately

** Amortized over 5.22 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	2,564,102	5.17	580,270	495,958	495,958	84,312			
2018	(55,834)	5.00	(22,333)	(11,167)	(11,167)	(11,166)			
2019	(5,376,838)	5.22	(3,316,748)	(1,030,045)	(1,030,045)	(1,030,045)	(1,030,045)	(226,613)	
2020	(65,782)	5.22	(53,181)	(12,601)	(12,601)	(12,601)	(12,601)	(12,601)	(2,777)
2021									
2022									
2023									
2024									
2025									
2026									
Total Remaining Balance			(2,811,992)						
Net increase (decrease) in OPEB Expense				(557,855)	(557,855)	(969,500)	(1,042,646)	(239,214)	(2,777)

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	5.17	0	0	0	0			
2018	0	5.00	0	0	0	0			
2019	904,704	5.22	558,076	173,314	173,314	173,314	173,314	38,134	
2020	438,301	5.22	354,336	83,965	83,965	83,965	83,965	83,965	18,476
2021									
2022									
2023									
2024									
2025									
2026									
Total Remaining Balance			912,412						
Net increase (decrease) in OPEB Expense				257,279	257,279	257,279	257,279	122,099	18,476

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	(312)	5.00	(64)	(62)	(64)				
2018	(2,036)	5.00	(815)	(407)	(407)	(408)			
2019	8,084	5.00	4,850	1,617	1,617	1,617	1,616		
2020	13,864	5.00	11,091	2,773	2,773	2,773	2,773	2,772	
2021									
2022									
2023									
2024									
2025									
2026									
Total Remaining Balance			15,062						
Net increase (decrease) in OPEB Expense				3,921	3,919	3,982	4,389	2,772	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	580,270	(3,392,262)	(2,811,992)
III. Changes of Assumptions	912,412	0	912,412
IV. Net Difference Between Projected & Actual Earnings on OPEB Plan Investments	<u>15,941</u>	<u>(879)</u>	<u>15,062</u>
V. Total [I.+II.+III.+IV.]	1,508,623	(3,393,141)	(1,884,518)

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	(296,657)
2022	(708,239)
2023	(780,978)
2024	(114,343)
2025	15,699
Thereafter	0

4. Discount Rate

The discount rate used to measure the Total OPEB liability was 4.00% as of June 30, 2020 and 4.25% 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 \$497,642. The Town also contributed \$36,000 to an OPEB Trust for a total contribution during the measurement period of \$533,642 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	20.00%	Domestic Equity - Large Cap	4.80%
Domestic Equity - Small/Mid Cap	10.00%	Domestic Equity - Small/Mid Cap	5.29%
International Equity - Developed Market	10.00%	International Equity - Developed Market	5.45%
International Equity-Emerging Market	5.00%	International Equity-Emerging Market	6.42%
Domestic Fixed Income	25.00%	Domestic Fixed Income	2.05%
International Fixed Income	10.00%	International Fixed Income	3.00%
Alternatives	20.00%	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**	4.47%
		II. Inflation Assumption	2.50%
		III. Total Nominal Return [I. + II.]	6.97%
		IV. Investment Expense	0.25%
		V. Net Investment Return [III.-IV.]	6.72%

* 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	1,219,119	(533,642)	685,477	9,813,489	5.44%
June 30, 2019	1,155,872	(484,805)	671,067	9,527,659	5.09%
June 30, 2018	1,650,114	(462,943)	1,187,171	8,497,180	5.45%
June 30, 2017	1,670,569	(423,896)	1,246,673	8,249,689	5.14%
June 30, 2016	1,634,432	(423,896)	1,210,536	8,249,689	5.14%

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	11,994,092	13,988,184	16,544,407
II. Fiduciary Net Position	<u>357,110</u>	<u>357,110</u>	<u>357,110</u>
III. Net OPEB Liability (Asset) [I.-II.]	11,636,982	13,631,074	16,187,297
IV. Service Cost	357,297	461,151	605,535

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	16,222,922	13,988,184	12,212,496
II. Fiduciary Net Position	<u>357,110</u>	<u>357,110</u>	<u>357,110</u>
III. Net OPEB Liability (Asset) [I.-II.]	15,865,812	13,631,074	11,855,386
IV. Service Cost	600,582	461,151	358,612

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	312,766	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	36,000	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
June	0	0	0.0000
II. Total net external cash flow	36,000		
III. Earnings and increase in fair value	8,344		
IV. Ending value - June 30, 2020 [I.+II.+III.]	357,110		
Money Weighted Rate of Return	2.52%		
Asset Value - June 30, 2020	357,110		

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	Water Enterprise Employees and Retirees	Total
I. Total OPEB Liability as of June 30, 2020	4,608,287	6,636,473	2,534,083	209,341	13,988,184
II. Fiduciary Net Position as of June 30, 2020	117,647	169,425	64,694	5,344	357,110
III. Net OPEB Liability (Asset) as of June 30, 2020 [I. - II.]	4,490,640	6,467,048	2,469,389	203,997	13,631,074
IV. Service Cost	150,269	180,744	122,243	7,895	461,151
V. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	176,505	273,431	106,532	8,856	565,324
VI. Projected Earnings on OPEB Plan Investments	(7,313)	(10,535)	(4,027)	(333)	(22,208)
VII. Net Recognition of Deferred (Inflows)/Outflows	(97,730)	(140,743)	(53,742)	(4,440)	(296,655)
VIII. Expense Related to Change in Benefit Terms	0	0	0	0	0
IX. Financial Statement Expense [IV. + V. + VII. + VIII.]	221,731	302,897	171,006	11,978	707,612
X. Employer Share of Costs	(192,819)	(216,153)	(88,215)	(455)	(497,642)
XI. Employer (Payments) Withdrawals to/from OPEB Trust	(11,755)	(17,047)	(6,637)	(561)	(36,000)
XII. Total Employer Contribution [X. + XI.]	(204,574)	(233,200)	(94,852)	(1,016)	(533,642)
XIII. Net OPEB Expense [IX. + XII.]	17,157	69,697	76,154	10,962	173,970

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	(2,811,992)
II. Deferred (Inflow)/Outflow from Investment Experience	15,062
III. Deferred (Inflow)/Outflow from Changes in Assumptions	912,412
Change in Deferred Inflow/Outflow	
I. Deferred Outflow at the beginning of the period	1,814,085
II. Deferred Outflow created during the period	452,165
III. Deferred Outflow recognized during the period	757,627
IV. Change in Deferred Outflow (II. - III.)	(305,462)
V. Deferred Outflow at end of the period (I. + IV.)	1,508,623
VI. Deferred Inflow at the beginning of the period	(4,381,641)
VII. Deferred Inflow created during the period	(65,782)
VIII. Deferred Inflow recognized during the period	(1,054,282)
IX. Change in Deferred Inflow (VII. - VIII.)	988,500
X. Deferred Inflow at end of the period (VI. + IX.)	(3,393,141)
Net OPEB Liability	
I. Net OPEB Liability at beginning of period	12,774,066
II. Service Cost	461,151
III. Interest on Total OPEB Liability, Service Cost, and Payments	565,324
IV. Projected Investment Income	(22,208)
V. Total Employer Contributions	(533,642)
VI. Expense Related to Change in Benefit Terms	0
VII. Net OPEB Expense - Before Recognition of Deferred (Inflow)/Outflow (II. + III. + IV. + V. + VI.)	470,625
VIII. Deferred Outflow created during the period	452,165
IX. Deferred Inflow created during the period	(65,782)
X. Net OPEB Liability at end of period (I. + VII. + VIII. + IX.)	13,631,074
Net OPEB Expense	
I. Service Cost	461,151
II. Interest on Total OPEB Liability, Service Cost, and Payments	565,324
III. Projected Investment Income	(22,208)
IV. Recognition of Deferred (Inflow)/Outflow	(296,655)
V. Expense Related to Change in Benefit Terms	0
VI. Financial Statement Expense (I. + II. + III. + IV. + V.)	707,612
VII. Benefit Payments	(497,642)
VIII. Contributions to Trust	(36,000)
IX. Total Employer Payments (VII. + VIII.)	(533,642)
X. Total Net OPEB Expense under GASB 75 (VI. + IX.)	173,970

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>	<u>June 30, 2018</u>	<u>For the Fiscal Year Ending: June 30, 2017</u>	<u>June 30, 2016</u>
I. Service Cost	461,151	425,597	519,257	690,747	641,713
II. 30 Year Level Dollar Amortization of NOL	<u>757,968</u>	<u>730,275</u>	<u>1,130,857</u>	<u>979,822</u>	<u>992,719</u>
III. Actuarial Determined Contribution [I. + II.]	1,219,119	1,155,872	1,650,114	1,670,569	1,634,432
IV. Contributions in Relation to the Actuarially Determined Contribution	<u>(533,642)</u>	<u>(484,805)</u>	<u>(462,943)</u>	<u>(423,896)</u>	<u>(423,896)</u>
V. Contribution Deficiency / (Excess) [III. + IV.]	<u>685,477</u>	<u>671,067</u>	<u>1,187,171</u>	<u>1,246,673</u>	<u>1,210,536</u>
Covered Employee Payroll	9,813,489	9,527,659	8,497,180	8,249,689	8,249,689
Contributions as a % of Covered Employee Payroll	5.44%	5.09%	5.45%	5.14%	5.14%
Discount Rate	4.00%	4.25%	4.25%	3.00%	3.00%
Money Weighted Rate of Return	2.52%	3.95%	5.07%	7.84%	2.31%

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	July 1, 2016
GASB 75 Measurement Date	June 30, 2020	June 30, 2019	June 30, 2018	June 30, 2017	June 30, 2016
For the Reporting Period & Fiscal Year Ending on:	June 30, 2020	June 30, 2019	June 30, 2018	June 30, 2017	June 30, 2016
Total OPEB Liability	13,988,184	13,086,832	16,858,077	20,010,932	19,174,741
I. Service Cost	461,151	425,597	519,257	690,747	641,713
II. Interest on Total OPEB Liability, Service Cost, and Benefit Payments	565,324	725,097	863,534	590,174	489,214
III. Changes in Benefit Terms	0	0	0	0	0
IV. Difference Between Expected & Actual Plan Experience	(65,782)	(5,376,838)	(871,730)	(55,834)	2,564,102
V. Changes of Assumptions	438,301	904,704	(3,235,973)	0	0
VI. Benefit Payments Excluding Implicit Cost	(391,523)	(363,382)	N/A	N/A	N/A
VII. Implicit Cost Amount	(106,119)	(86,423)	N/A	N/A	N/A
VIII. Total Benefit Payments Including Implicit Cost [VI.+VII.]	(497,642)	(449,805)	(427,943)	(388,896)	(368,764)
IX. Net Change in OPEB Liability [I.+II.+III.+IV.+V.+VIII.]	901,352	(3,771,245)	(3,152,855)	836,191	3,326,265
X. Total OPEB Liability - Beginning of Period	13,086,832	16,858,077	20,010,932	19,174,741	15,848,476
XI. Prior Period Adjustment	0	0	0	0	0
XII. Total OPEB Liability - Beginning of Period with Adjustment	13,086,832	16,858,077	20,010,932	19,174,741	15,848,476
XIII. Total OPEB Liability - End of Period [IX.+XII.]	13,988,184	13,086,832	16,858,077	20,010,932	19,174,741
Plan Fiduciary Net Position	357,110	312,766	266,554	229,842	179,434
XIV. Earning from Plan Investments	8,344	11,212	1,712	15,408	3,260
XV. Employer Contribution to Trust	533,642	484,805	462,943	423,896	403,764
XVI. Benefit Payments from Trust, Including Refunds of Member Contributions	(497,642)	(449,805)	(427,943)	(388,896)	(368,764)
XVII. Administrative Expense	0	0	0	0	0
XVIII. Other	0	0	0	0	0
XIX. Net Change in Plan Fiduciary Net Position [XIV.+XV.+XVI.+XVII.+XVIII.]	44,344	46,212	36,712	50,408	38,260
XX. Plan Fiduciary Net Position - Beginning of Period	312,766	266,554	229,842	179,434	141,174
XXI. Prior Period Adjustment	0	0	0	0	0
XXII. Plan Fiduciary Net Position - Beginning of Period with Adjustment	312,766	266,554	229,842	179,434	141,174
XXIII. Plan Fiduciary Net Position - End of Period [XIX.+XXII.]	357,110	312,766	266,554	229,842	179,434
XXIV. Net OPEB Liability [XIII.-XXIII.]	13,631,074	12,774,066	16,591,523	19,781,090	18,995,307
XXV. Plan Fiduciary Net Position as % of Total OPEB Liability [XXIII. / XIII.]	2.55%	2.39%	1.58%	1.15%	0.94%
XXVI. Covered Employee Payroll	9,813,489	9,527,659	8,497,180	8,249,689	8,249,689
XXVII. Plan NOL as % of Covered Employee Payroll [XXIV. / XXVI.]	138.90%	134.07%	195.26%	239.78%	230.25%
Single Discount Rate to calculate Plan Liabilities	4.00%	4.25%	4.25%	3.00%	3.00%

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:	6.72%, 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:	4.00%, 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, 2018, OPEB plan membership consisted of the following:

Inactive employees or beneficiaries currently receiving benefits:	119
Active Employees:	<u>130</u>
Total:	249

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

- ✓ Due to the GASB 75 standards the discount rate has been changed from 4.25% to 4.00%

Contributions:

The contribution requirements of plan members and the Town are established and may be amended through Town ordinances. The Town contributed \$36,000 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 \$497,642. \$106,119 of the \$497,642 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 - 4.00% 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 6.72% 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	13,988,184	357,110	13,631,074	2.55%	461,151	497,642	36,000	533,642	497,642	0	36,000
2021	June 30, 2021	14,483,480	419,331	14,064,149	2.90%	478,048	537,530	37,000	574,530	537,530	0	37,000
2022	June 30, 2022	15,009,255	490,898	14,518,357	3.27%	496,837	551,339	42,000	593,339	551,339	0	42,000
2023	June 30, 2023	15,532,385	572,440	14,959,945	3.69%	516,916	591,013	47,000	638,013	591,013	0	47,000
2024	June 30, 2024	16,045,513	664,627	15,380,886	4.14%	538,500	637,863	52,000	689,863	637,863	0	52,000
2025	June 30, 2025	16,598,605	768,174	15,830,431	4.63%	563,568	644,037	57,000	701,037	644,037	0	57,000
2026	June 30, 2026	17,169,703	883,845	16,285,858	5.15%	588,313	672,014	62,000	734,014	672,014	0	62,000
2027	June 30, 2027	17,760,554	1,012,454	16,748,100	5.70%	611,264	696,768	67,000	763,768	696,768	0	67,000
2028	June 30, 2028	18,424,385	1,154,871	17,269,514	6.27%	636,417	681,337	72,000	753,337	681,337	0	72,000
2029	June 30, 2029	19,122,610	1,312,023	17,810,587	6.86%	663,099	692,106	77,000	769,106	692,106	0	77,000
2030	June 30, 2030	19,856,343	1,484,901	18,371,442	7.48%	691,767	722,885	82,000	804,885	722,885	0	82,000
2031	June 30, 2031	20,648,603	1,674,562	18,974,041	8.11%	719,267	726,110	87,000	813,110	726,110	0	87,000
2032	June 30, 2032	21,409,404	1,882,134	19,527,270	8.79%	746,455	764,986	92,000	856,986	764,986	0	92,000
2033	June 30, 2033	22,147,616	2,108,820	20,038,796	9.52%	776,509	825,151	97,000	922,151	825,151	0	97,000
2034	June 30, 2034	22,865,627	2,355,904	20,509,723	10.30%	806,698	865,342	102,000	967,342	865,342	0	102,000
2035	June 30, 2035	23,654,747	2,624,757	21,029,990	11.10%	840,117	915,636	107,000	1,022,636	915,636	0	107,000
2036	June 30, 2036	24,432,124	2,916,843	21,515,281	11.94%	871,079	967,180	112,000	1,079,180	967,180	0	112,000
2037	June 30, 2037	25,317,121	3,233,722	22,083,399	12.77%	907,985	985,994	117,000	1,102,994	985,994	0	117,000
2038	June 30, 2038	26,274,110	3,577,061	22,697,049	13.61%	948,104	994,125	122,000	1,116,125	994,125	0	122,000
2039	June 30, 2039	27,241,154	3,948,637	23,292,517	14.50%	986,677	1,044,181	127,000	1,171,181	1,044,181	0	127,000
2040	June 30, 2040	28,224,491	4,350,348	23,874,143	15.41%	1,024,830	1,071,171	132,000	1,203,171	1,071,171	0	132,000
2041	June 30, 2041	29,160,651	4,784,220	24,376,431	16.41%	1,065,729	1,137,235	137,000	1,274,235	1,137,235	0	137,000
2042	June 30, 2042	30,167,842	5,252,413	24,915,429	17.41%	1,111,017	1,199,644	142,000	1,341,644	1,199,644	0	142,000
2043	June 30, 2043	31,230,605	5,757,234	25,473,371	18.43%	1,159,379	1,243,736	147,000	1,390,736	1,243,736	0	147,000
2044	June 30, 2044	32,297,062	6,301,144	25,995,918	19.51%	1,213,959	1,306,027	152,000	1,458,027	1,306,027	0	152,000
2045	June 30, 2045	33,410,821	6,886,770	26,524,051	20.61%	1,264,764	1,353,848	157,000	1,510,848	1,353,848	0	157,000
2046	June 30, 2046	34,612,110	7,516,916	27,095,194	21.72%	1,322,152	1,403,971	162,000	1,565,971	1,403,971	0	162,000
2047	June 30, 2047	35,852,496	8,194,573	27,657,923	22.86%	1,382,604	1,466,849	167,000	1,633,849	1,466,849	0	167,000
2048	June 30, 2048	37,125,953	8,922,934	28,203,019	24.03%	1,445,505	1,504,425	172,000	1,676,425	1,504,425	0	172,000
2049	June 30, 2049	38,527,755	9,705,406	28,822,349	25.19%	1,509,364	1,523,032	177,000	1,700,032	1,523,032	0	177,000
2050	June 30, 2050	39,951,106	10,545,625	29,405,481	26.40%	1,577,229	1,615,842	182,000	1,797,842	1,615,842	0	182,000
2051	June 30, 2051	41,486,278	11,447,472	30,038,806	27.59%	1,652,402	1,669,467	187,000	1,856,467	1,669,467	0	187,000

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	9,813,489	0	9,813,489	0	497,642	0	497,642
June 30, 2021	9,180,215	927,679	10,107,894	0	537,530	0	537,530
June 30, 2022	8,692,728	1,718,403	10,411,131	0	551,339	0	551,339
June 30, 2023	8,260,242	2,463,223	10,723,465	0	591,013	0	591,013
June 30, 2024	7,841,899	3,203,270	11,045,169	0	637,863	0	637,863
June 30, 2025	7,445,434	3,931,090	11,376,524	0	644,037	0	644,037
June 30, 2026	7,098,691	4,619,129	11,717,820	0	672,014	0	672,014
June 30, 2027	6,765,907	5,303,448	12,069,355	0	696,768	0	696,768
June 30, 2028	6,375,558	6,055,878	12,431,436	0	681,337	0	681,337
June 30, 2029	6,002,227	6,802,152	12,804,379	0	692,106	0	692,106
June 30, 2030	5,641,943	7,546,567	13,188,510	0	718,351	4,534	722,885
June 30, 2031	5,357,009	8,227,156	13,584,165	0	714,698	11,412	726,110
June 30, 2032	5,081,478	8,910,212	13,991,690	0	743,801	21,185	764,986
June 30, 2033	4,771,927	9,639,514	14,411,441	0	789,971	35,180	825,151
June 30, 2034	4,491,551	10,352,233	14,843,784	0	812,434	52,908	865,342
June 30, 2035	4,215,525	11,073,573	15,289,098	0	849,615	66,021	915,636
June 30, 2036	3,965,723	11,782,048	15,747,771	0	885,358	81,822	967,180
June 30, 2037	3,662,098	12,558,106	16,220,204	0	886,031	99,963	985,994
June 30, 2038	3,418,746	13,288,064	16,706,810	0	879,938	114,187	994,125
June 30, 2039	3,229,566	13,978,448	17,208,014	0	914,054	130,127	1,044,181
June 30, 2040	3,026,754	14,697,500	17,724,254	0	918,517	152,654	1,071,171
June 30, 2041	2,815,757	15,440,225	18,255,982	0	955,634	181,601	1,137,235
June 30, 2042	2,573,804	16,229,857	18,803,661	0	983,297	216,347	1,199,644
June 30, 2043	2,328,079	17,039,692	19,367,771	0	984,212	259,524	1,243,736
June 30, 2044	2,091,361	17,857,443	19,948,804	0	995,281	310,746	1,306,027
June 30, 2045	1,952,542	18,594,726	20,547,268	0	1,000,098	353,750	1,353,848
June 30, 2046	1,775,785	19,387,901	21,163,686	0	1,001,117	402,854	1,403,971
June 30, 2047	1,618,237	20,180,360	21,798,597	0	1,009,488	457,361	1,466,849
June 30, 2048	1,482,392	20,970,163	22,452,555	0	1,000,412	504,013	1,504,425
June 30, 2049	1,358,392	21,767,740	23,126,132	0	968,028	555,004	1,523,032
June 30, 2050	1,202,076	22,617,840	23,819,916	0	1,003,150	612,692	1,615,842
June 30, 2051	1,047,670	23,486,843	24,534,513	0	993,411	676,056	1,669,467
June 30, 2052	923,442	24,347,106	25,270,548	0	978,375	743,513	1,721,888
June 30, 2053	807,947	25,220,717	26,028,664	0	936,484	816,409	1,752,893
June 30, 2054	700,835	26,108,689	26,809,524	0	933,895	896,690	1,830,585
June 30, 2055	575,877	27,037,933	27,613,810	0	863,565	975,549	1,839,114
June 30, 2056	508,803	27,933,421	28,442,224	0	828,443	1,059,953	1,888,396
June 30, 2057	418,564	28,876,927	29,295,491	0	816,959	1,149,945	1,966,904
June 30, 2058	324,804	29,849,552	30,174,356	0	799,913	1,241,198	2,041,111
June 30, 2059	237,220	30,842,367	31,079,587	0	780,600	1,337,494	2,118,094

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	196,635	31,815,340	32,011,975	0	777,336	1,440,378	2,217,714
June 30, 2061	142,843	32,829,491	32,972,334	0	743,012	1,548,554	2,291,566
June 30, 2062	115,297	33,846,207	33,961,504	0	710,165	1,661,921	2,372,086
June 30, 2063	96,499	34,883,850	34,980,349	0	697,051	1,783,083	2,480,134
June 30, 2064	69,067	35,960,692	36,029,759	0	647,386	1,912,424	2,559,810
June 30, 2065	38,889	37,071,763	37,110,652	0	626,359	2,045,231	2,671,590
June 30, 2066	31,723	38,192,249	38,223,972	0	605,975	2,184,440	2,790,415
June 30, 2067	20,175	39,350,516	39,370,691	0	588,385	2,331,202	2,919,587
June 30, 2068	10,057	40,541,755	40,551,812	0	570,101	2,481,192	3,051,293
June 30, 2069	4,427	41,763,939	41,768,366	0	551,169	2,636,778	3,187,947
June 30, 2070	0	43,021,417	43,021,417	0	531,746	2,799,992	3,331,738
June 30, 2071	0	44,312,060	44,312,060	0	511,946	2,970,078	3,482,024
June 30, 2072	0	45,641,422	45,641,422	0	491,776	3,146,672	3,638,448
June 30, 2073	0	47,010,665	47,010,665	0	471,271	3,331,924	3,803,195
June 30, 2074	0	48,420,985	48,420,985	0	450,464	3,525,579	3,976,043
June 30, 2075	0	49,873,615	49,873,615	0	429,378	3,726,818	4,156,196
June 30, 2076	0	51,369,823	51,369,823	0	408,070	3,935,095	4,343,165
June 30, 2077	0	52,910,918	52,910,918	0	386,557	4,152,708	4,539,265
June 30, 2078	0	54,498,246	54,498,246	0	364,876	4,378,885	4,743,761
June 30, 2079	0	56,133,193	56,133,193	0	343,103	4,613,138	4,956,241
June 30, 2080	0	57,817,189	57,817,189	0	321,331	4,857,253	5,178,584
June 30, 2081	0	59,551,705	59,551,705	0	299,634	5,112,425	5,412,059
June 30, 2082	0	61,338,256	61,338,256	0	278,120	5,377,473	5,655,593
June 30, 2083	0	63,178,404	63,178,404	0	256,888	5,653,120	5,910,008
June 30, 2084	0	65,073,756	65,073,756	0	236,024	5,941,404	6,177,428
June 30, 2085	0	67,025,969	67,025,969	0	215,646	6,242,264	6,457,910
June 30, 2086	0	69,036,748	69,036,748	0	195,821	6,554,795	6,750,616
June 30, 2087	0	71,107,850	71,107,850	0	176,678	6,881,531	7,058,209
June 30, 2088	0	73,241,086	73,241,086	0	158,304	7,223,470	7,381,774
June 30, 2089	0	75,438,319	75,438,319	0	140,826	7,579,389	7,720,215
June 30, 2090	0	77,701,469	77,701,469	0	124,315	7,951,147	8,075,462
June 30, 2091	0	80,032,513	80,032,513	0	108,881	8,340,558	8,449,439
June 30, 2092	0	82,433,488	82,433,488	0	94,584	8,746,942	8,841,526
June 30, 2093	0	84,906,493	84,906,493	0	81,476	9,171,470	9,252,946
June 30, 2094	0	87,453,688	87,453,688	0	69,580	9,615,847	9,685,427

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	312,766	497,642	36,000	533,642	0	497,642	497,642	8,344	357,110
June 30, 2021	357,110	537,530	33,604	571,134	0	537,530	537,530	22,906	413,620
June 30, 2022	413,620	551,339	35,068	586,407	0	551,339	551,339	28,954	477,642
June 30, 2023	477,642	591,013	36,204	627,217	0	591,013	591,013	33,294	547,140
June 30, 2024	547,140	637,863	36,919	674,782	0	637,863	637,863	37,988	622,047
June 30, 2025	622,047	644,037	37,304	681,341	0	644,037	644,037	43,035	702,386
June 30, 2026	702,386	672,014	37,560	709,574	0	672,014	672,014	48,442	788,388
June 30, 2027	788,388	696,768	37,559	734,327	0	696,768	696,768	54,221	880,168
June 30, 2028	880,168	681,337	36,926	718,263	0	681,337	681,337	60,368	977,462
June 30, 2029	977,462	692,106	36,095	728,201	0	692,106	692,106	66,879	1,080,436
June 30, 2030	1,080,436	718,351	35,079	753,430	0	718,351	718,351	73,765	1,184,746
June 30, 2031	1,184,746	714,698	34,309	749,007	0	714,698	714,698	80,749	1,288,392
June 30, 2032	1,288,392	743,801	33,412	777,213	0	743,801	743,801	87,684	1,388,303
June 30, 2033	1,388,303	789,971	32,119	822,090	0	789,971	789,971	94,356	1,479,598
June 30, 2034	1,479,598	812,434	30,864	843,298	0	812,434	812,434	100,449	1,558,003
June 30, 2035	1,558,003	849,615	29,502	879,117	0	849,615	849,615	105,673	1,627,157
June 30, 2036	1,627,157	885,358	28,205	913,563	0	885,358	885,358	110,277	1,683,817
June 30, 2037	1,683,817	886,031	26,416	912,447	0	886,031	886,031	114,026	1,724,296
June 30, 2038	1,724,296	879,938	24,965	904,903	0	879,938	879,938	116,698	1,751,772
June 30, 2039	1,751,772	914,054	23,835	937,889	0	914,054	914,054	118,507	1,763,987
June 30, 2040	1,763,987	918,517	22,542	941,059	0	918,517	918,517	119,285	1,753,160
June 30, 2041	1,753,160	955,634	21,131	976,765	0	955,634	955,634	118,511	1,711,201
June 30, 2042	1,711,201	983,297	19,437	1,002,734	0	983,297	983,297	115,635	1,629,926
June 30, 2043	1,629,926	984,212	17,670	1,001,882	0	984,212	984,212	110,115	1,498,187
June 30, 2044	1,498,187	995,281	15,935	1,011,216	0	995,281	995,281	101,205	1,304,581
June 30, 2045	1,304,581	1,000,098	14,919	1,015,017	0	1,000,098	1,000,098	88,161	1,053,911
June 30, 2046	1,053,911	1,001,117	13,593	1,014,710	0	1,001,117	1,001,117	71,272	735,922
June 30, 2047	735,922	1,009,488	12,397	1,021,885	0	1,009,488	1,009,488	49,864	340,822
June 30, 2048	340,822	1,000,412	11,356	1,011,768	0	1,000,412	1,000,412	23,279	34,635
June 30, 2049	34,635	968,028	10,397	978,425	0	968,028	968,028	2,671	13,068
June 30, 2050	13,068	1,003,150	9,185	1,012,335	0	1,003,150	1,003,150	1,182	10,367
June 30, 2051	10,367	993,411	7,985	1,001,396	0	993,411	993,411	961	8,946
June 30, 2052	8,946	978,375	7,016	985,391	0	978,375	978,375	833	7,849
June 30, 2053	7,849	936,484	6,115	942,599	0	936,484	936,484	730	6,845
June 30, 2054	6,845	933,895	5,281	939,176	0	933,895	933,895	635	5,916
June 30, 2055	5,916	863,565	4,317	867,882	0	863,565	863,565	540	4,857
June 30, 2056	4,857	828,443	3,792	832,235	0	828,443	828,443	452	4,244
June 30, 2057	4,244	816,959	3,100	820,059	0	816,959	816,959	388	3,488
June 30, 2058	3,488	799,913	2,390	802,303	0	799,913	799,913	313	2,703
June 30, 2059	2,703	780,600	1,733	782,333	0	780,600	780,600	239	1,972

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	1,972	777,336	1,425	778,761	0	777,336	777,336	180	1,605
June 30, 2061	1,605	743,012	1,027	744,039	0	743,012	743,012	142	1,169
June 30, 2062	1,169	710,165	822	710,987	0	710,165	710,165	106	928
June 30, 2063	928	697,051	681	697,732	0	697,051	697,051	85	766
June 30, 2064	766	647,386	483	647,869	0	647,386	647,386	67	550
June 30, 2065	550	626,359	269	626,628	0	626,359	626,359	46	315
June 30, 2066	315	605,975	217	606,192	0	605,975	605,975	28	245
June 30, 2067	245	588,385	137	588,522	0	588,385	588,385	21	158
June 30, 2068	158	570,101	67	570,168	0	570,101	570,101	13	80
June 30, 2069	80	551,169	29	551,198	0	551,169	551,169	6	35
June 30, 2070	35	531,746	0	531,746	0	531,746	531,746	2	2
June 30, 2071	2	511,946	0	511,946	0	511,946	511,946	0	0
June 30, 2072	0	491,776	0	491,776	0	491,776	491,776	0	0
June 30, 2073	0	471,271	0	471,271	0	471,271	471,271	0	0
June 30, 2074	0	450,464	0	450,464	0	450,464	450,464	0	0
June 30, 2075	0	429,378	0	429,378	0	429,378	429,378	0	0
June 30, 2076	0	408,070	0	408,070	0	408,070	408,070	0	0
June 30, 2077	0	386,557	0	386,557	0	386,557	386,557	0	0
June 30, 2078	0	364,876	0	364,876	0	364,876	364,876	0	0
June 30, 2079	0	343,103	0	343,103	0	343,103	343,103	0	0
June 30, 2080	0	321,331	0	321,331	0	321,331	321,331	0	0
June 30, 2081	0	299,634	0	299,634	0	299,634	299,634	0	0
June 30, 2082	0	278,120	0	278,120	0	278,120	278,120	0	0
June 30, 2083	0	256,888	0	256,888	0	256,888	256,888	0	0
June 30, 2084	0	236,024	0	236,024	0	236,024	236,024	0	0
June 30, 2085	0	215,646	0	215,646	0	215,646	215,646	0	0
June 30, 2086	0	195,821	0	195,821	0	195,821	195,821	0	0
June 30, 2087	0	176,678	0	176,678	0	176,678	176,678	0	0
June 30, 2088	0	158,304	0	158,304	0	158,304	158,304	0	0
June 30, 2089	0	140,826	0	140,826	0	140,826	140,826	0	0
June 30, 2090	0	124,315	0	124,315	0	124,315	124,315	0	0
June 30, 2091	0	108,881	0	108,881	0	108,881	108,881	0	0
June 30, 2092	0	94,584	0	94,584	0	94,584	94,584	0	0
June 30, 2093	0	81,476	0	81,476	0	81,476	81,476	0	0
June 30, 2094	0	69,580	0	69,580	0	69,580	69,580	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 [6.72%]	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 [4.03%]	
June 30, 2020	312,766	497,642	312,766	184,876	312,766	184,876	497,642	Sum of Column V.
June 30, 2021	357,110	537,530	357,110	180,420	334,623	175,745	516,726	8,893,815
June 30, 2022	413,620	551,339	413,620	137,719	363,170	130,674	509,489	
June 30, 2023	477,642	591,013	477,642	113,371	392,975	104,784	525,014	Sum of Column VI.
June 30, 2024	547,140	637,863	547,140	90,723	421,808	81,679	544,702	8,848,528
June 30, 2025	622,047	644,037	622,047	21,990	449,360	19,285	528,689	
June 30, 2026	702,386	672,014	672,014	0	454,887	0	530,305	Sum of Column VII.
June 30, 2027	788,388	696,768	696,768	0	441,944	0	528,559	[V. + VI.]
June 30, 2028	880,168	681,337	681,337	0	404,944	0	496,849	17,742,343
June 30, 2029	977,462	692,106	692,106	0	385,443	0	485,169	
June 30, 2030	1,080,436	718,351	718,351	0	374,868	0	484,078	
June 30, 2031	1,184,746	714,698	714,698	0	349,477	0	462,977	
June 30, 2032	1,288,392	743,801	743,801	0	340,806	0	463,181	
June 30, 2033	1,388,303	789,971	789,971	0	339,169	0	472,893	
June 30, 2034	1,479,598	812,434	812,434	0	326,849	0	467,518	
June 30, 2035	1,558,003	849,615	849,615	0	320,284	0	469,992	
June 30, 2036	1,627,157	885,358	885,358	0	312,742	0	470,809	
June 30, 2037	1,683,817	886,031	886,031	0	293,272	0	452,931	
June 30, 2038	1,724,296	879,938	879,938	0	272,915	0	432,408	
June 30, 2039	1,751,772	914,054	914,054	0	265,645	0	431,789	
June 30, 2040	1,763,987	918,517	918,517	0	250,133	0	417,104	
June 30, 2041	1,753,160	955,634	955,634	0	243,854	0	417,164	
June 30, 2042	1,711,201	983,297	983,297	0	235,113	0	412,627	
June 30, 2043	1,629,926	984,212	984,212	0	220,513	0	397,026	
June 30, 2044	1,498,187	995,281	995,281	0	208,952	0	385,953	
June 30, 2045	1,304,581	1,000,098	1,000,098	0	196,742	0	372,811	
June 30, 2046	1,053,911	1,001,117	1,001,117	0	184,541	0	358,748	
June 30, 2047	735,922	1,009,488	735,922	273,566	127,114	134,648	347,747	
June 30, 2048	340,822	1,000,412	340,822	659,590	55,163	316,235	331,283	
June 30, 2049	34,635	968,028	34,635	933,393	5,253	435,912	308,153	
June 30, 2050	13,068	1,003,150	13,068	990,082	1,857	450,405	306,974	
June 30, 2051	10,367	993,411	10,367	983,044	1,380	435,615	292,228	
June 30, 2052	8,946	978,375	8,946	969,429	1,116	418,450	276,667	
June 30, 2053	7,849	936,484	7,849	928,635	918	390,454	254,571	
June 30, 2054	6,845	933,895	6,845	927,050	750	379,687	244,042	
June 30, 2055	5,916	863,565	5,916	857,649	607	342,161	216,930	
June 30, 2056	4,857	828,443	4,857	823,586	467	320,057	200,053	
June 30, 2057	4,244	816,959	4,244	812,715	383	307,648	189,645	
June 30, 2058	3,488	799,913	3,488	796,425	295	293,669	178,501	
June 30, 2059	2,703	780,600	2,703	777,897	214	279,405	167,450	

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 [6.72%]	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 [4.03%]
June 30, 2060	1,972	777,336	1,972	775,364	146	271,278	160,296
June 30, 2061	1,605	743,012	1,605	741,407	112	252,676	147,288
June 30, 2062	1,169	710,165	1,169	708,996	76	235,369	135,329
June 30, 2063	928	697,051	928	696,123	57	225,107	127,689
June 30, 2064	766	647,386	766	646,620	44	203,680	114,001
June 30, 2065	550	626,359	550	625,809	29	192,017	106,030
June 30, 2066	315	605,975	315	605,660	16	181,019	98,609
June 30, 2067	245	588,385	245	588,140	12	171,228	92,041
June 30, 2068	158	570,101	158	569,943	7	161,630	85,729
June 30, 2069	80	551,169	80	551,089	3	152,234	79,675
June 30, 2070	35	531,746	35	531,711	1	143,074	73,892
June 30, 2071	2	511,946	2	511,944	0	134,186	68,387
June 30, 2072	0	491,776	0	491,776	0	125,559	63,150
June 30, 2073	0	471,271	0	471,271	0	117,206	58,175
June 30, 2074	0	450,464	0	450,464	0	109,128	53,455
June 30, 2075	0	429,378	0	429,378	0	101,325	48,980
June 30, 2076	0	408,070	0	408,070	0	93,801	44,748
June 30, 2077	0	386,557	0	386,557	0	86,553	40,748
June 30, 2078	0	364,876	0	364,876	0	79,582	36,974
June 30, 2079	0	343,103	0	343,103	0	72,894	33,422
June 30, 2080	0	321,331	0	321,331	0	66,499	30,090
June 30, 2081	0	299,634	0	299,634	0	60,402	26,972
June 30, 2082	0	278,120	0	278,120	0	54,612	24,067
June 30, 2083	0	256,888	0	256,888	0	49,136	21,369
June 30, 2084	0	236,024	0	236,024	0	43,976	18,874
June 30, 2085	0	215,646	0	215,646	0	39,138	16,577
June 30, 2086	0	195,821	0	195,821	0	34,619	14,470
June 30, 2087	0	176,678	0	176,678	0	30,425	12,550
June 30, 2088	0	158,304	0	158,304	0	26,554	10,810
June 30, 2089	0	140,826	0	140,826	0	23,011	9,244
June 30, 2090	0	124,315	0	124,315	0	19,786	7,845
June 30, 2091	0	108,881	0	108,881	0	16,881	6,605
June 30, 2092	0	94,584	0	94,584	0	14,284	5,515
June 30, 2093	0	81,476	0	81,476	0	11,986	4,567
June 30, 2094	0	69,580	0	69,580	0	9,970	3,749

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 July 1, 2019 Non-Medicare Plans: effective July 1, 2019 Dental Plans: effective July 1, 2019
<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 of Massachusetts and Harvard Pilgrim Health Group as well as \$5,000 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	50%	50%
Dental	100%	100%
Life	50%	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

4.00% per annum (previously 4.25%, used in the calculation of the Interest Cost)

Net Long Term Rate of Return

6.72% (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

	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)
Age						
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: Initial Trend of 4.50% for 2020 grading down 0.00% per year for an ultimate trend rate of 4.50%.

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	13,988,184	13,086,832
II. Total OPEB Liability (Excluding Implicit Subsidy)	<u>12,130,805</u>	<u>11,325,690</u>
III. Liability from Implicit Subsidy [I. - II.]	1,857,379	1,761,142

	For the Measurement Period Ending	
Impact on Payments	<u>June 30, 2020</u>	<u>June 30, 2019</u>
IV. Employer Payments (Including Implicit Subsidy)	497,642	449,805
V. Actual Employer Payments	<u>391,523</u>	<u>363,382</u>
VI. Implicit Subsidy [IV. - V.]	106,119	86,423

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	5,194	3,275	44 & Under	10,210	6,690	65 to 69	4,536	4,536
25 to 29	7,664	3,408	45 to 49	11,215	8,447	70 to 74	4,536	4,536
30 to 34	9,684	4,277	50 to 54	13,193	11,125	75 to 79	4,536	4,536
35 to 39	9,976	5,370	55 to 59	15,252	14,464	80 to 84	4,536	4,536
40 to 44	10,210	6,690	60 to 64	18,149	18,560	85 to 89	4,536	4,536
45 to 49	11,215	8,447	65 to 69	21,756	23,151	90 & Over	4,536	4,536
50 to 54	13,193	11,125	70 to 74	25,655	27,744			
55 to 59	15,252	14,464	75 to 79	29,794	32,767			
60 to 64	18,149	18,560	80 to 84	34,161	37,664			
65 to 69	21,756	23,151	85 to 89	38,995	43,111			
70 & Over	25,655	27,744	90 & Over	38,995	43,111			

*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	35.22
B. Average Service	<u>10.69</u>
C. Average Current Age	45.91

Retired Employees & Spouses

Valuation Date	July 1, 2018
A. Under Age 65	18
B. Age 65 & Over	<u>101</u>
C. Total	119

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	1								6
25-29	6	2								8
30-34	10	2	3							15
35-39	5	2	7	1						15
40-44	4	2	4	3						13
45-49	7	3	6	2	3					21
50-54	4	2	4	3	1	1				15
55-59	3	1	3	5	8	1				21
60-64	1	1	2	3	2	3				12
65-69	1			1						2
70+	1					1				2
Total	47	16	29	18	14	6				130

APPENDIX IV - PLAN DEMOGRAPHICS

Plan Offerings

	Number of Contracts			
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>	<u>Total</u>
Network Blue	26		17	43
Blue Care PPO			3	3
Network Blue Rate Saver			4	4
Blue Care Elect Benchmark			1	1
Network Blue Benchmark	1			1
Harvard Pilgrim	10		9	19
Harvard Pilgrim Rate Saver			1	1
Medex	31	34		65
Total	68	34	35	137

	Per Contract Costs (monthly)		
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>
Network Blue	935.00		2,491.00
Blue Care PPO	1,327.00		3,142.00
Network Blue Rate Saver	842.00		2,245.00
Blue Care Elect Benchmark	1,101.00		2,611.00
Network Blue Benchmark	777.00		2,070.00
Harvard Pilgrim	1,012.00		2,695.00
Harvard Pilgrim Rate Saver	912.00		2,429.00
Medex	378.00	756.00	
Dental Plan	30.84		116.01

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.