

Town of Hamilton Other Postemployment Benefits Plan

GASB 74 & GASB 75 Actuarial Valuation

With a Valuation Date of July 1, 2019

As of the Measurement Date:
July 1, 2019

As of the Measurement Date:
July 1, 2020

&

For the Reporting Date:
June 30, 2020

For the Reporting Date:
June 30, 2021

Delivered October 13, 2020

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East Coast
11 Hayward Ave, Building 4
Colchester, CT 06415
(860) 537-9080

West Coast
1350 E. Flamingo Road, Suite 254
Las Vegas, NV 89119
(702) 979-2880

October 13, 2020

Personal and Confidential

Ms. Marisa Batista
Finance Director/Town Accountant
Town of Hamilton
577 Bay Road, PO Box 429
Hamilton, MA 01936

Dear Ms. Batista:

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

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

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

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

Very truly yours,

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

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

October 13, 2020

ACTUARIAL CERTIFICATION

This is to certify that Odyssey Advisors has conducted an actuarial valuation of certain benefit obligations of the Town of Hamilton other postemployment benefit programs with a Valuation Date of July 1, 2019 with a Measurement Date of July 1, 2019 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.



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



Sarah F. Rothenberg, ASA, MAAA
Consulting Actuary

EXECUTIVE SUMMARY

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

For the year ending on the Measurement Date of July 1, 2019, the Plan saw an experience gain of \$1,250,224 or 14.86% of the beginning Total OPEB Liability ("TOL"). This was mainly due to premiums for Medicare Supplement plans increasing 2% rather than the expected 10% increase.

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 3.00% to 3.36% decreasing the disclosed liability by \$390 thousand.
- ✓ Based on recommendations by PERAC, the mortality table has been updated from the RP-2000 Employees Mortality Table projected generationally with scale BB and a base year 2009 to the RP-2014 Mortality Table projected generationally with scale MP-2016 for males and females increasing the disclosed liability by \$130 thousand.
- ✓ The expected long-term medical trend has been updated to 4.50% decreasing the disclosed liability by \$720 thousand.
- ✓ Based on recent research by the Society of Actuaries, we have updated the assumption for morbidity or age-related costs of medical care increasing the disclosed liability by \$640 thousand.
- ✓ Assumption changes caused Service Cost to decrease by \$30 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 5.94 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 3.36% as of July 1, 2019.
- ✓ Current Asset Level – The Town had \$0 of OPEB assets as of July 1, 2019.
- ✓ Funding Policy - The Town is not expected to make trust contributions beyond its pay-as-you-go costs.
- ✓ Investment Policy - To our knowledge, the Town does not have an 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 65.46% 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 (3.36%) – 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 retiree is 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 one retiree who is over the age of 65 and is enrolled in an Active medical plan rather than a Medicare Supplement (Senior) plan. You may wish to review the retiree's Medicare eligibility to see if the retiree is already eligible for Medicare or if a “buy-in” is appropriate as this could yield a reduction in your OPEB annual costs and disclosed liabilities. If you are in this situation, we encourage you to talk to your healthcare consultant to see if this might be viable.

EXECUTIVE SUMMARY

Key Plan Metrics

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

Representative Plan Statistics		
Valuation Date	July 1, 2019	July 1, 2017
Measurement Date & Period Ending	July 1, 2019	July 1, 2018
Reporting Date/Fiscal Year End	June 30, 2020	June 30, 2019
Total OPEB Liability	7,106,401	8,411,170
Per Eligible Active Plan Participant	68,575	81,647
Per Retiree/Spouse Plan Participant	80,538	90,061
Total Annual Service Cost (Annual Benefit Accrual)	224,658	284,193
Per Eligible Active Plan Participant	3,808	4,737
Expected Employer Share of Retiree Costs	199,203	180,976
Per Retiree/Spouse Plan Participant	5,242	4,640
Net OPEB Liability as a % of Covered Payroll	135.90%	170.30%
Average Annual Medical Premium		
Individual Active Plan	10,079	9,756
2-Person Active Plan	N/A	N/A
Family Active Plan	26,460	25,613
Medicare Supplement Plan	4,739	4,939

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"
July 1, 2019	38	7,106,401	7,106,401	199,203	199,203
July 1, 2024	46	8,641,416	7,454,161	249,889	215,556
July 1, 2029	54	10,014,106	7,451,435	380,887	283,416
July 1, 2034	57	11,407,097	7,321,781	394,375	253,134
July 1, 2039	55	13,222,869	7,321,182	454,685	251,748
July 1, 2044	52	15,454,497	7,381,154	533,584	254,843
July 1, 2049	50	18,387,226	7,575,294	604,163	248,907

PRINCIPAL RESULTS OF THE VALUATION

Town of Hamilton

Assuming Pay-as-you-go Funding - 3.36% discount rate
Comparison of Plan Liabilities to Prior Valuation

Valuation Date	July 1, 2019	July 1, 2017
For the Measurement Period ending on the Measurement Date of:	July 1, 2019	July 1, 2018
For the Reporting Period & Fiscal Year ending on:	June 30, 2020	June 30, 2019
I. Total OPEB Liability		
A. Actives	4,045,942	4,898,790
B. Retirees/Disabled	<u>3,060,459</u>	<u>3,512,380</u>
C. Total	7,106,401	8,411,170
II. Fiduciary Net Position [Plan Assets]		
	0	0
III. Net OPEB Liability (Asset) [I. - II.]		
	7,106,401	8,411,170
IV. Funded Ratio [II. / I.]		
	0.00%	0.00%
V. Number of Eligible Participants		
A. Actives	59	60
B. Retirees/Disabled & Dependents	<u>38</u>	<u>39</u>
C. Total	97	99
VI. Service Cost		
	224,658	284,193
VII. Financial Statement Expense		
	375,967	684,923
VIII. Employer Contribution to the OPEB Trust		
	0	0
IX. Deferred Inflow of Resources		
	(1,319,274)	0
X. Deferred Outflow of Resources		
	443,182	605,441
XI. Money Weighted Rate of Return		
	N/A	N/A
XII. 20-year Municipal Bond Rate (SAPIHG)		
	3.36%	2.98%
XIII. Expected Long Term Rate of Return (Net of Expense)		
	N/A	N/A
XIV. Crossover Year		
	Immediate	Immediate
XV. Discount Rate		
	3.36%	3.00%

PRINCIPAL RESULTS OF THE VALUATION

Town of Hamilton Plan Liabilities as of the July 1, 2019 Measurement Date

	Town Employees and Retirees	Public Safety Employees and Retirees	Public Service Employees and Retirees	Joint Employees and Retirees	Water Enterprise Employees and Retirees	Total
I. Total OPEB Liability						
A. Actives	538,053	2,553,216	475,997	41,497	437,179	4,045,942
B. Retirees/Disabled	<u>845,471</u>	<u>1,350,819</u>	<u>422,601</u>	<u>70,699</u>	<u>370,869</u>	<u>3,060,459</u>
C. Total	1,383,524	3,904,035	898,598	112,196	808,048	7,106,401
II. Fiduciary Net Position [Plan Assets]	0	0	0	0	0	0
III. Net OPEB Liability (Asset) [I. - II.]	1,383,524	3,904,035	898,598	112,196	808,048	7,106,401
IV. Number of Eligible Participants						
A. Actives	20	24	8	2	5	59
B. Retirees/Disabled	<u>14</u>	<u>14</u>	<u>8</u>	<u>1</u>	<u>1</u>	<u>38</u>
C. Total	34	38	16	3	6	97
For the Reporting Date and Fiscal Year Ending June 30, 2020						
V. Service Cost	79,044	105,095	25,402	6,026	9,091	224,658
VI. Financial Statement Expense	109,331	187,882	44,330	8,516	25,908	375,967
VII. Employer Share of Costs	(64,089)	(91,268)	(30,337)	(2,555)	(10,954)	(199,203)
VIII. Employer (Payments)/Withdrawals to/from OPEB Trust	0	0	0	0	0	0
IX. Total Employer Contribution [VII. + VIII.]	(64,089)	(91,268)	(30,337)	(2,555)	(10,954)	(199,203)

PRINCIPAL RESULTS OF THE VALUATION

Town of Hamilton

Assuming Pay-as-you-go Funding - 3.36% discount rate

For the Period Ending on the July 1, 2019 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	1,553,329	2,057,758	3,611,087	506,371	2,383,987	2,890,358	6,501,445
B. Spouses	<u>1,229,477</u>	<u>1,545,818</u>	<u>2,775,295</u>	<u>103,869</u>	<u>66,232</u>	<u>170,101</u>	<u>2,945,396</u>
C. Total	2,782,806	3,603,576	6,386,382	610,240	2,450,219	3,060,459	9,446,841
Total OPEB Liability							
A. Participants	1,028,331	1,253,540	2,281,871	506,371	2,383,987	2,890,358	5,172,229
B. Spouses	<u>816,241</u>	<u>947,830</u>	<u>1,764,071</u>	<u>103,869</u>	<u>66,232</u>	<u>170,101</u>	<u>1,934,172</u>
C. Total	1,844,572	2,201,370	4,045,942	610,240	2,450,219	3,060,459	7,106,401
Service Cost							
A. Participants	44,304	84,013	128,317	0	0	0	128,317
B. Spouses	<u>35,201</u>	<u>61,140</u>	<u>96,341</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>96,341</u>
C. Total	79,505	145,153	224,658	0	0	0	224,658

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the July 1, 2019 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	224,658
II. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	256,109
III. Deferred (Inflows)/Outflows from Plan Experience*	(106,843)
IV. Deferred (Inflows)/Outflows from Changes of Assumptions*	2,043
V. Projected Earnings on OPEB Plan Investments	0
VI. Deferred (Inflows)/Outflows from Earnings on Plan Investments**	0
VII. Financial Statement Expense Prior to Plan Design Changes [I. + II.+ III. + IV. + V. + VI.]	375,967
VIII. Deferred (Inflows)/Outflows from Plan Design Changes***	0
IX. Financial Statement Expense [VII. + VIII.]	375,967

* Amortized over 5.94 years

** Amortized over 5.00 years

*** Recognized Immediately

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the July 1, 2019 Measurement Date)

2. Changes in Net OPEB Liability

Changes in Net OPEB Liability				
		Increase (Decrease)		
		Total OPEB	Plan Fiduciary	Net OPEB
		Liability	Net Position	Liability
I.	Balances for June 30, 2019	8,411,170	0	8,411,170
II.	Prior Period Adjustment	0	0	0
III.	Balances for June 30, 2019 with Adjustment [I. + II.]	8,411,170	0	8,411,170
Changes for the year:				
IV.	Service Cost	224,658	0	224,658
V.	Interest on Total OPEB Liability, Service Cost, and Benefit Payments	256,109	0	256,109
VI.	Changes in Benefit Terms *	0	0	0
VII.	Change in Assumptions **	(336,109)	0	(336,109)
VIII.	Differences Between Actual and Expected Experience **	(1,250,224)	0	(1,250,224)
IX.	Net Investment Income	0	0	0
X.	Employer Contributions to Trust	0	199,203	(199,203)
XI.	Benefit Payments Withdrawn from Trust	0	(199,203)	199,203
XII.	Benefit Payments Excluding Implicit Cost	(144,637)	0	(144,637)
XIII.	Implicit Cost Amount	(54,566)	0	(54,566)
XIV.	Total Benefit Payments Including Implicit Cost [XII. + XIII.]	(199,203)	0	(199,203)
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.]	(1,304,769)	0	(1,304,769)
XVIII.	Balances at July 1, 2019 [III.+XVII.]	7,106,401	0	7,106,401

* Recognized Immediately

** Amortized over 5.94 years

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the July 1, 2019 Measurement Date)

3. Changes in Net OPEB Expense

Deferred (Inflows)/Outflows in OPEB Expense Arising from the Recognition of the Effects of Differences Between Expected & Actual Experience									
Fiscal	Differences Between Actual & Expected Experience	Recognition Period (Years)	Remaining Balance	2020	2021	2022	2023	2024	2025
2017									
2018	556,505	5.37	245,609	103,632	103,632	103,632	38,345		
2019	0	5.37	0	0	0	0	0	0	
2020	(1,250,224)	5.94	(1,039,749)	(210,475)	(210,475)	(210,475)	(210,475)	(210,475)	(197,849)
2021									
2022									
2023									
2024									
2025									
2026									
Total Remaining Balance			(794,140)						
Net increase (decrease) in OPEB Expense				(106,843)	(106,843)	(106,843)	(172,130)	(210,475)	(197,849)

Deferred (Inflows)/Outflows in OPEB Expense Arising from the Recognition of the Effects of Changes in Assumptions									
Fiscal	Differences from Changes in Actuarial Assumptions	Recognition Period (years)	Remaining Balance	2020	2021	2022	2023	2024	2025
2017									
2018	0	5.37	0	0	0	0	0		
2019	314,827	5.37	197,573	58,627	58,627	58,627	58,627	21,692	
2020	(336,109)	5.94	(279,525)	(56,584)	(56,584)	(56,584)	(56,584)	(56,584)	(53,189)
2021									
2022									
2023									
2024									
2025									
2026									
Total Remaining Balance			(81,952)						
Net increase (decrease) in OPEB Expense				2,043	2,043	2,043	2,043	(34,892)	(53,189)

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES
 (As of the July 1, 2019 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			2020	2021	2022	2023	2024	2025
	Actual & Expected Earnings	Recognition Period (years)	Remaining Balance						
2017									
2018	0	5.00	0	0	0	0			
2019	0	5.00	0	0	0	0	0		
2020	0	5.00	0	0	0	0	0	0	
2021									
2022									
2023									
2024									
2025									
2026									
Total Remaining Balance			0						
Net increase (decrease) in OPEB Expense				0	0	0	0	0	0

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the July 1, 2019 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 July 1, 2019 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	245,609	(1,039,749)	(794,140)
III. Changes of Assumptions	197,573	(279,525)	(81,952)
IV. Net Difference Between Projected & Actual Earnings on OPEB Plan Investments	<u>0</u>	<u>0</u>	<u>0</u>
V. Total [I.+II.+III.+IV.]	443,182	(1,319,274)	(876,092)

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the July 1, 2019 Measurement Date)

3. Changes in Net OPEB Expense (Continued)

Annual Amortization of Deferred (Inflows)/Outflows		
The balance of deferred (inflows)/outflows as of July 1, 2019 will be recognized in future years as shown below.		
	Year ending June 30:	
	2021	(104,800)
	2022	(104,800)
	2023	(170,087)
	2024	(245,367)
	2025	(251,038)
	Thereafter	0

4. Discount Rate

The discount rate used to measure the Total OPEB liability was 3.36% as of July 1, 2019 and 3.00% as of July 1, 2018. The projection of cash flows used to determine the discount rate assumed that contributions will be made in accordance with the Plan's funding policy. Because there is no funding policy, the discount rate was determined by a yield or index rate for 20 year, tax exempt general obligation municipal bonds with an average rate of AA/Aa or higher, which was based on the S&P Municipal Bond 20 - Year High Grade Index ("SAPIHG") as of July 1, 2019

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the July 1, 2019 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 July 1, 2019 Measurement Date, total Town premiums plus implicit costs for the retiree medical program were \$199,203. The Town also contributed \$0 to an OPEB Trust for a total contribution during the measurement period of \$199,203 to be reported on the financial statement for the fiscal year ending June 30, 2020.

6. Investment Policy

The Town has not established a formal Investment Policy. The chart below shows the development of a sample long-term rate.

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	15.00%	International Equity - Developed Market	5.45%
International Equity-Emerging Market	10.00%	International Equity-Emerging Market	6.42%
Domestic Fixed Income	30.00%	Domestic Fixed Income	2.05%
International Fixed Income	10.00%	International Fixed Income	3.00%
Alternatives	5.00%	Alternatives	6.50%
Real Estate	0.00%	Real Estate	6.25%
Cash & Cash Equivalents	0.00%	Cash & Cash Equivalents	0.00%
Total	<u>100.00%</u>		
		I. Real Rate of Return**	4.19%
		II. Inflation Assumption	2.50%
		III. Total Nominal Return [I. + II.]	6.69%
		IV. Investment Expense	0.25%
		V. Net Investment Return [III.-IV.]	6.44%

* Based on 2019 Horizon Survey of Capital Market Assumptions

** Geometric Mean

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the July 1, 2019 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, 2021	613,310	(208,167)	405,143	5,387,010	3.86%
June 30, 2020	659,391	(199,203)	460,188	5,230,107	3.81%
June 30, 2019	668,306	(180,976)	487,330	4,938,721	3.66%
June 30, 2018	628,305	(354,621)	273,684	4,794,875	7.40%

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the July 1, 2019 Measurement Date)

8. Effect of 1% Change in Healthcare Trend

<u>Impact of a 1% Change in the Healthcare Trend Rate as of the July 1, 2019 Measurement Date</u>			
	<u>1% Decrease</u>	<u>Current Trend Rate</u>	<u>1% Increase</u>
I. Total OPEB Liability	6,027,758	7,106,401	8,506,416
II. Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
III. Net OPEB Liability (Asset) [I.-II.]	6,027,758	7,106,401	8,506,416
IV. Service Cost	175,853	224,658	291,532

<u>Impact of a 1% Change in the Healthcare Trend Rate as of the July 1, 2020 Measurement Date</u>			
	<u>1% Decrease</u>	<u>Current Trend Rate</u>	<u>1% Increase</u>
I. Total OPEB Liability	6,253,263	7,373,550	8,827,617
II. Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
III. Net OPEB Liability (Asset) [I.-II.]	6,253,263	7,373,550	8,827,617
IV. Service Cost	181,726	232,207	301,377

9. Effect of 1% Change in Discount Rates

<u>Impact of a 1% Change in the Discount Rate as of the July 1, 2019 Measurement Date</u>			
	<u>1% Decrease</u>	<u>Current Discount Rate</u>	<u>1% Increase</u>
I. Total OPEB Liability	8,376,250	7,106,401	6,107,355
II. Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
III. Net OPEB Liability (Asset) [I.-II.]	8,376,250	7,106,401	6,107,355
IV. Service Cost	294,829	224,658	173,231

<u>Impact of a 1% Change in the Discount Rate as of the July 1, 2020 Measurement Date</u>			
	<u>1% Decrease</u>	<u>Current Discount Rate</u>	<u>1% Increase</u>
I. Total OPEB Liability	8,691,136	7,373,550	6,336,947
II. Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
III. Net OPEB Liability (Asset) [I.-II.]	8,691,136	7,373,550	6,336,947
IV. Service Cost	304,736	232,207	179,052

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the July 1, 2019 Measurement Date)

10. Money Weighted Rate of Return

	Plan Investments / Net External Cash Flows	Periods Invested	Period Weight
I. Beginning value - July 1, 2018	0	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	0	4	0.3333
March	0	3	0.2500
April	0	2	0.1667
May	0	1	0.0833
<u>June</u>	<u>0</u>	0	0.0000
II. Total net external cash flow	0		
III. Earnings and increase in fair value	0		
IV. Ending value - July 1, 2019 [I.+II.+III.]	0		
Money Weighted Rate of Return	N/A		
Asset Value - July 1, 2019	0		

EXHIBIT A
FINANCIAL STATEMENT DISCLOSURES
(As of the July 1, 2019 Measurement Date)

11. OPEB Liability, OPEB Expense

	Fiscal Year Ending June 30, 2020					Total
	Town Employees and Retirees	Public Safety Employees and Retirees	Public Service Employees and Retirees	Joint Employees and Retirees	Water Enterprise Employees and Retirees	
I. Total OPEB Liability as of July 1, 2019	1,383,524	3,904,035	898,598	112,196	808,048	7,106,401
II. Fiduciary Net Position as of July 1, 2019	0	0	0	0	0	0
III. Net OPEB Liability (Asset) as of July 1, 2019 [I. - II.]	1,383,524	3,904,035	898,598	112,196	808,048	7,106,401
IV. Service Cost	79,044	105,095	25,402	6,026	9,091	224,658
V. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	50,689	140,361	32,180	4,145	28,734	256,109
VI. Projected Earnings on OPEB Plan Investments	0	0	0	0	0	0
VII. Net Recognition of Deferred (Inflows)/Outflows	(20,402)	(57,574)	(13,252)	(1,655)	(11,917)	(104,800)
VIII. Expense Related to Change in Benefit Terms	0	0	0	0	0	0
IX. Financial Statement Expense [IV. + V. + VII. + VIII.]	109,331	187,882	44,330	8,516	25,908	375,967
X. Employer Share of Costs	(64,089)	(91,268)	(30,337)	(2,555)	(10,954)	(199,203)
XI. Employer (Payments) Withdrawals to/from OPEB Trust	0	0	0	0	0	0
XII. Total Employer Contribution [X. + XI.]	(64,089)	(91,268)	(30,337)	(2,555)	(10,954)	(199,203)
XIII. Net OPEB Expense [IX. + XII.]	45,242	96,614	13,993	5,961	14,954	176,764

	Fiscal Year Ending June 30, 2021					Total
	Town Employees and Retirees	Public Safety Employees and Retirees	Public Service Employees and Retirees	Joint Employees and Retirees	Water Enterprise Employees and Retirees	
I. Total OPEB Liability as of July 1, 2020	1,446,368	4,050,522	923,699	119,689	833,272	7,373,550
II. Fiduciary Net Position as of July 1, 2020	0	0	0	0	0	0
III. Net OPEB Liability (Asset) as of July 1, 2020 [I. - II.]	1,446,368	4,050,522	923,699	119,689	833,272	7,373,550
IV. Service Cost	81,701	108,626	26,256	6,228	9,396	232,207
V. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	48,116	133,236	30,547	3,935	27,275	243,109
VI. Projected Earnings on OPEB plan investments	0	0	0	0	0	0
VII. Net Recognition of Deferred (Inflows)/Outflows	(20,557)	(57,570)	(13,129)	(1,701)	(11,843)	(104,800)
VIII. Expense Related to Change in Benefit Terms	0	0	0	0	0	0
IX. Financial Statement Expense [IV. + V. + VI. + VII. + VIII.]	109,260	184,292	43,674	8,462	24,828	370,516
X. Employer Share of Costs	(66,973)	(95,375)	(31,702)	(2,670)	(11,447)	(208,167)
XI. Employer (Payments) Withdrawals to/from OPEB Trust	0	0	0	0	0	0
XII. Total Employer Contribution [X. + XI.]	(66,973)	(95,375)	(31,702)	(2,670)	(11,447)	(208,167)
XIII. Net OPEB Expense [IX. + XII.]	42,287	88,917	11,972	5,792	13,381	162,349

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the July 1, 2019 Measurement Date)

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

Valuation Date For the Measurement Period ending on the Measurement Date of: For the Reporting Period & Fiscal Year ending on:	July 1, 2019 July 1, 2019 June 30, 2020	July 1, 2019 July 1, 2020 June 30, 2021
Source of Deferred Inflow/Outflow		
I. Deferred (Inflow)/Outflow from Actual vs. Expected Experience	(794,140)	(687,297)
II. Deferred (Inflow)/Outflow from Investment Experience	0	0
III. Deferred (Inflow)/Outflow from Changes in Assumptions	(81,952)	(83,995)
Change in Deferred Inflow/Outflow		
I. Deferred Outflow at the beginning of the period	605,441	443,182
II. Deferred Outflow created during the period	0	0
III. Deferred Outflow recognized during the period	162,259	162,259
IV. Change in Deferred Outflow (II. - III.)	(162,259)	(162,259)
V. Deferred Outflow at end of the period (I. + IV.)	443,182	280,923
VI. Deferred Inflow at the beginning of the period	0	(1,319,274)
VII. Deferred Inflow created during the period	(1,586,333)	0
VIII. Deferred Inflow recognized during the period	(267,059)	(267,059)
IX. Change in Deferred Inflow (VII. - VIII.)	(1,319,274)	267,059
X. Deferred Inflow at end of the period (VI. + IX.)	(1,319,274)	(1,052,215)
Net OPEB Liability		
I. Net OPEB Liability at beginning of period	8,411,170	7,106,401
II. Service Cost	224,658	232,207
III. Interest on Total OPEB Liability, Service Cost, and Payments	256,109	243,109
IV. Projected Investment Income	0	0
V. Total Employer Contributions	(199,203)	(208,167)
VI. Expense Related to Change in Benefit Terms	0	0
VII. Net OPEB Expense - Before Recognition of Deferred (Inflow)/Outflow (II. + III. + IV. + V. + VI.)	281,564	267,149
VIII. Deferred Outflow created during the period	0	0
IX. Deferred Inflow created during the period	(1,586,333)	0
X. Net OPEB Liability at end of period (I. + VII. + VIII. + IX.)	7,106,401	7,373,550
Net OPEB Expense		
I. Service Cost	224,658	232,207
II. Interest on Total OPEB Liability, Service Cost, and Payments	256,109	243,109
III. Projected Investment Income	0	0
IV. Recognition of Deferred (Inflow)/Outflow	(104,800)	(104,800)
V. Expense Related to Change in Benefit Terms	0	0
VI. Financial Statement Expense (I. + II. + III. + IV. + V.)	375,967	370,516
VII. Benefit Payments	(199,203)	(208,167)
VIII. Contributions to Trust	0	0
IX. Total Employer Payments (VII. + VIII.)	(199,203)	(208,167)
X. Total Net OPEB Expense under GASB 75 (VI. + IX.)	176,764	162,349

EXHIBIT B

REQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2019 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, 2021</u>	<u>June 30, 2020</u>	For the Fiscal Year Ending:	
			<u>June 30, 2019</u>	<u>June 30, 2018</u>
I. Service Cost	232,207	224,658	284,193	232,636
II. 30 Year Level Dollar Amortization of NOL	<u>381,103</u>	<u>434,733</u>	<u>384,113</u>	<u>395,669</u>
III. Actuarial Determined Contribution [I. + II.]	613,310	659,391	668,306	628,305
IV. Contributions in Relation to the Actuarially Determined Contribution	<u>(208,167)</u>	<u>(199,203)</u>	<u>(180,976)</u>	<u>(354,621)</u>
V. Contribution Deficiency / (Excess) [III. + IV.]	<u>405,143</u>	<u>460,188</u>	487,330	273,684
Covered Employee Payroll	5,387,010	5,230,107	4,938,721	4,794,875
Contributions as a % of Covered Employee Payroll	3.86%	3.81%	3.66%	7.40%
Discount Rate	3.36%	3.36%	3.00%	3.25%
Money Weighted Rate of Return	N/A	N/A	N/A	N/A

EXHIBIT B

REQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2019 Measurement Date)

Schedule of Changes in the Town's Net OPEB Liability and Related Ratios				
Valuation Date	July 1, 2019	July 1, 2019	July 1, 2017	July 1, 2017
GASB 75 Measurement Date	July 1, 2020	July 1, 2019	July 1, 2018	July 1, 2017
For the Reporting Period & Fiscal Year Ending on:	June 30, 2021	June 30, 2020	June 30, 2019	June 30, 2018
Total OPEB Liability	7,373,550	7,106,401	8,411,170	7,754,655
I. Service Cost	232,207	224,658	284,193	232,636
II. Interest on Total OPEB Liability, Service Cost, and Benefit Payments	243,109	256,109	238,471	232,202
III. Changes in Benefit Terms	0	0	0	0
IV. Difference Between Expected & Actual Plan Experience	0	(1,250,224)	0	556,505
V. Changes of Assumptions	0	(336,109)	314,827	0
VI. Benefit Payments Excluding Implicit Cost	(151,146)	(144,637)	(159,458)	N/A
VII. Implicit Cost Amount	(57,021)	(54,566)	(21,518)	N/A
VIII. Total Benefit Payments Including Implicit Cost [VI.+VII.]	(208,167)	(199,203)	(180,976)	(354,621)
IX. Net Change in OPEB Liability [I.+II.+III.+IV.+V.+VIII.]	267,149	(1,304,769)	656,515	666,722
X. Total OPEB Liability - Beginning of Period	7,106,401	8,411,170	7,754,655	6,456,754
XI. Prior Period Adjustment	0	0	0	631,179
XII. Total OPEB Liability - Beginning of Period with Adjustment	7,106,401	8,411,170	7,754,655	7,087,933
XIII. Total OPEB Liability - End of Period [IX.+XII.]	7,373,550	7,106,401	8,411,170	7,754,655
Plan Fiduciary Net Position	0	0	0	0
XIV. Earning from Plan Investments	0	0	0	0
XV. Employer Contribution to Trust	208,167	199,203	180,976	354,621
XVI. Benefit Payments from Trust, Including Refunds of Member Contributions	(208,167)	(199,203)	(180,976)	(354,621)
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.]	0	0	0	0
XX. Plan Fiduciary Net Position - Beginning of Period	0	0	0	0
XXI. Prior Period Adjustment	0	0	0	0
XXII. Plan Fiduciary Net Position - Beginning of Period with Adjustment	0	0	0	0
XXIII. Plan Fiduciary Net Position - End of Period [XIX.+XXII.]	0	0	0	0
XXIV. Net OPEB Liability [XIII.-XXIII.]	7,373,550	7,106,401	8,411,170	7,754,655
XXV. Plan Fiduciary Net Position as % of Total OPEB Liability [XXIII. / XIII.]	0.00%	0.00%	0.00%	0.00%
XXVI. Covered Employee Payroll	5,387,010	5,230,107	4,938,721	4,794,875
XXVII. Plan NOL as % of Covered Employee Payroll [XXIV. / XXVI.]	136.88%	135.87%	170.31%	161.73%
Single Discount Rate to calculate Plan Liabilities	3.36%	3.36%	3.00%	3.25%

EXHIBIT BREQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2019 Measurement Date)

Notes to Required Supplementary Information:

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

Actuarial Assumptions:

Investment Rate of Return:	N/A
Municipal Bond Rate	3.36% as of July 1, 2019 (source: S&P Municipal Bond 20-Year High Grade Index – SAPIHG)
Single Equivalent Discount Rate:	3.36%, net of OPEB plan investment expense, including inflation.
Inflation:	2.50% as of July 1, 2019 and for future periods
Salary Increases:	3.00% annually as of July 1, 2019 and for future periods
Cost of Living Adjustment:	Not Applicable

EXHIBIT B

REQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2019 Measurement Date)

Pre-Retirement Mortality:	General: RP-2014 Mortality Table for Blue Collar Employees projected generationally with scale MP-2016 for males and 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 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 July 1, 2019 Measurement Date)

Plan Membership

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

Inactive employees or beneficiaries currently receiving benefits:	38
Active Employees:	<u>59</u>
Total:	97

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 July 1, 2018 to July 1, 2019

- ✓ Due to the GASB 75 standards the discount rate has been changed from 3.00% to 3.36%
- ✓ Based on recommendations by PERAC, the mortality table has been updated from the RP-2000 Employees Mortality Table projected generationally with scale BB and a base year 2009 to the RP-2014 Mortality Table projected generationally with scale MP-2016 for males and females
- ✓ The expected long-term medical trend has been updated to 4.50%
- ✓ Based on recent research by the Society of Actuaries, we have updated the assumption for morbidity or age-related costs of medical care

Contributions:

The contribution requirements of plan members and the Town are established and may be amended through Town ordinances. The Town contributed \$0 beyond the pay-as-you-go cost for the period ending on the July 1, 2019 Measurement Date. For the year ending on the July 1, 2019 Measurement Date total Town premiums plus implicit costs for the retiree medical program were \$199,203. \$54,566 of the \$199,203 represents implicit cost.

EXHIBIT BREQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2019 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)

Pay-as-you-go Funding - 3.36% 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 6.44% 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	July 1, 2019	7,106,401	0	7,106,401	0.00%	224,658	199,203	0	199,203	199,203	0	0
2021	July 1, 2020	7,373,550	0	7,373,550	0.00%	232,207	208,167	0	208,167	208,167	0	0
2022	July 1, 2021	7,669,049	0	7,669,049	0.00%	238,347	195,353	0	195,353	195,353	0	0
2023	July 1, 2022	8,011,237	0	8,011,237	0.00%	245,757	216,637	0	216,637	216,637	0	0
2024	July 1, 2023	8,332,809	0	8,332,809	0.00%	254,181	224,844	0	224,844	224,844	0	0
2025	July 1, 2024	8,641,416	0	8,641,416	0.00%	259,387	249,889	0	249,889	249,889	0	0
2026	July 1, 2025	8,941,927	0	8,941,927	0.00%	272,971	276,297	0	276,297	276,297	0	0
2027	July 1, 2026	9,231,719	0	9,231,719	0.00%	283,818	302,345	0	302,345	302,345	0	0
2028	July 1, 2027	9,504,376	0	9,504,376	0.00%	287,326	328,432	0	328,432	328,432	0	0
2029	July 1, 2028	9,760,273	0	9,760,273	0.00%	305,485	362,942	0	362,942	362,942	0	0
2030	July 1, 2029	10,014,106	0	10,014,106	0.00%	316,005	380,887	0	380,887	380,887	0	0
2031	July 1, 2030	10,260,603	0	10,260,603	0.00%	328,030	403,665	0	403,665	403,665	0	0
2032	July 1, 2031	10,507,778	0	10,507,778	0.00%	337,637	418,620	0	418,620	418,620	0	0
2033	July 1, 2032	10,778,735	0	10,778,735	0.00%	353,243	420,295	0	420,295	420,295	0	0
2034	July 1, 2033	11,059,894	0	11,059,894	0.00%	367,621	425,955	0	425,955	425,955	0	0
2035	July 1, 2034	11,407,097	0	11,407,097	0.00%	378,524	394,375	0	394,375	394,375	0	0
2036	July 1, 2035	11,673,010	0	11,673,010	0.00%	395,496	395,591	0	395,591	395,591	0	0
2037	July 1, 2036	12,023,865	0	12,023,865	0.00%	408,144	413,487	0	413,487	413,487	0	0
2038	July 1, 2037	12,407,614	0	12,407,614	0.00%	423,730	420,082	0	420,082	420,082	0	0
2039	July 1, 2038	12,795,208	0	12,795,208	0.00%	437,362	432,337	0	432,337	432,337	0	0
2040	July 1, 2039	13,222,869	0	13,222,869	0.00%	454,244	454,685	0	454,685	454,685	0	0
2041	July 1, 2040	13,677,572	0	13,677,572	0.00%	472,272	462,238	0	462,238	462,238	0	0
2042	July 1, 2041	14,095,548	0	14,095,548	0.00%	492,643	482,379	0	482,379	482,379	0	0
2043	July 1, 2042	14,494,044	0	14,494,044	0.00%	510,868	515,670	0	515,670	515,670	0	0
2044	July 1, 2043	14,984,387	0	14,984,387	0.00%	531,549	521,750	0	521,750	521,750	0	0
2045	July 1, 2044	15,454,497	0	15,454,497	0.00%	553,991	533,584	0	533,584	533,584	0	0
2046	July 1, 2045	16,005,420	0	16,005,420	0.00%	576,454	541,710	0	541,710	541,710	0	0
2047	July 1, 2046	16,593,607	0	16,593,607	0.00%	602,458	551,443	0	551,443	551,443	0	0
2048	July 1, 2047	17,144,462	0	17,144,462	0.00%	628,094	550,128	0	550,128	550,128	0	0
2049	July 1, 2048	17,715,463	0	17,715,463	0.00%	653,792	576,436	0	576,436	576,436	0	0
2050	July 1, 2049	18,387,226	0	18,387,226	0.00%	681,006	604,163	0	604,163	604,163	0	0
2051	July 1, 2050	19,094,202	0	19,094,202	0.00%	714,360	624,727	0	624,727	624,727	0	0

APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

CONTRIBUTION PROJECTION DISCLOSURES

Projection of Contributions using a July 1, 2019 Valuation Date

For the Period Ending on the Measurement Date	I. Payroll for current employees	II. Payroll for future employees	III. Total Payroll [I.+II.]	IV. Contributions from current employees	V. Employer Payments for current plan members	VI. Employer Payments for future employees	VII. Total Payments [IV.+V.+VI.]
July 1, 2019	5,230,107	0	5,230,107	0	199,203	0	199,203
July 1, 2020	4,959,063	427,947	5,387,010	0	208,167	0	208,167
July 1, 2021	4,734,656	813,964	5,548,620	0	195,353	0	195,353
July 1, 2022	4,538,625	1,176,454	5,715,079	0	216,637	0	216,637
July 1, 2023	4,278,662	1,607,869	5,886,531	0	224,844	0	224,844
July 1, 2024	4,101,086	1,962,041	6,063,127	0	249,889	0	249,889
July 1, 2025	3,930,824	2,314,197	6,245,021	0	276,297	0	276,297
July 1, 2026	3,590,291	2,842,081	6,432,372	0	302,345	0	302,345
July 1, 2027	3,387,735	3,237,608	6,625,343	0	328,432	0	328,432
July 1, 2028	3,163,213	3,660,890	6,824,103	0	362,942	0	362,942
July 1, 2029	2,954,452	4,074,374	7,028,826	0	380,887	0	380,887
July 1, 2030	2,682,593	4,557,098	7,239,691	0	403,665	0	403,665
July 1, 2031	2,488,919	4,967,963	7,456,882	0	417,328	1,292	418,620
July 1, 2032	2,342,503	5,338,085	7,680,588	0	417,142	3,153	420,295
July 1, 2033	2,126,313	5,784,693	7,911,006	0	420,173	5,782	425,955
July 1, 2034	1,985,109	6,163,227	8,148,336	0	384,862	9,513	394,375
July 1, 2035	1,838,976	6,553,810	8,392,786	0	381,093	14,498	395,591
July 1, 2036	1,724,739	6,919,831	8,644,570	0	395,037	18,450	413,487
July 1, 2037	1,598,135	7,305,772	8,903,907	0	396,840	23,242	420,082
July 1, 2038	1,498,275	7,672,749	9,171,024	0	403,071	29,266	432,337
July 1, 2039	1,392,139	8,054,016	9,446,155	0	420,290	34,395	454,685
July 1, 2040	1,331,709	8,397,831	9,729,540	0	422,359	39,879	462,238
July 1, 2041	1,250,386	8,771,040	10,021,426	0	434,564	47,815	482,379
July 1, 2042	1,170,347	9,151,722	10,322,069	0	457,986	57,684	515,670
July 1, 2043	1,091,541	9,540,190	10,631,731	0	453,277	68,473	521,750
July 1, 2044	999,943	9,950,740	10,950,683	0	451,103	82,481	533,584
July 1, 2045	942,190	10,337,013	11,279,203	0	442,564	99,146	541,710
July 1, 2046	883,028	10,734,551	11,617,579	0	438,019	113,424	551,443
July 1, 2047	807,564	11,158,542	11,966,106	0	420,506	129,622	550,128
July 1, 2048	696,331	11,628,758	12,325,089	0	428,122	148,314	576,436
July 1, 2049	653,329	12,041,513	12,694,842	0	438,347	165,816	604,163
July 1, 2050	572,670	12,503,017	13,075,687	0	441,243	183,484	624,727
July 1, 2051	511,194	12,956,764	13,467,958	0	434,394	205,342	639,736
July 1, 2052	455,028	13,416,969	13,871,997	0	447,513	229,391	676,904
July 1, 2053	407,744	13,880,413	14,288,157	0	455,967	253,597	709,564
July 1, 2054	359,911	14,356,891	14,716,802	0	424,474	281,976	706,450
July 1, 2055	281,752	14,876,554	15,158,306	0	425,419	313,026	738,445
July 1, 2056	247,756	15,365,299	15,613,055	0	418,403	342,173	760,576
July 1, 2057	217,697	15,863,750	16,081,447	0	394,266	373,653	767,919
July 1, 2058	163,224	16,400,666	16,563,890	0	386,611	408,095	794,706

APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

CONTRIBUTION PROJECTION DISCLOSURES (CONTINUED)

Projection of Contributions using a July 1, 2019 Valuation Date

For the Period Ending on the Measurement Date	I. Payroll for current employees	II. Payroll for future employees	III. Total Payroll [I.+II.]	IV. Contributions from current employees	V. Employer Payments for current plan members	VI. Employer Payments for future employees	VII. Total Payments [IV.+V.+VI.]
July 1, 2059	125,079	16,935,728	17,060,807	0	371,706	443,201	814,907
July 1, 2060	91,385	17,481,246	17,572,631	0	356,051	478,789	834,840
July 1, 2061	65,908	18,033,902	18,099,810	0	344,088	518,846	862,934
July 1, 2062	41,761	18,601,043	18,642,804	0	337,324	562,157	899,481
July 1, 2063	34,067	19,168,021	19,202,088	0	326,407	606,636	933,043
July 1, 2064	27,764	19,750,387	19,778,151	0	317,674	655,536	973,210
July 1, 2065	22,605	20,348,891	20,371,496	0	308,498	707,928	1,016,426
July 1, 2066	18,394	20,964,247	20,982,641	0	291,743	760,736	1,052,479
July 1, 2067	0	21,612,120	21,612,120	0	281,217	816,449	1,097,666
July 1, 2068	0	22,260,484	22,260,484	0	271,408	875,775	1,147,183
July 1, 2069	0	22,928,299	22,928,299	0	260,494	936,079	1,196,573
July 1, 2070	0	23,616,148	23,616,148	0	249,590	998,389	1,247,979
July 1, 2071	0	24,324,632	24,324,632	0	238,746	1,064,865	1,303,611
July 1, 2072	0	25,054,371	25,054,371	0	228,014	1,134,454	1,362,468
July 1, 2073	0	25,806,002	25,806,002	0	217,439	1,205,959	1,423,398
July 1, 2074	0	26,580,182	26,580,182	0	207,046	1,281,269	1,488,315
July 1, 2075	0	27,377,587	27,377,587	0	196,831	1,359,301	1,556,132
July 1, 2076	0	28,198,915	28,198,915	0	186,743	1,440,419	1,627,162
July 1, 2077	0	29,044,882	29,044,882	0	176,762	1,524,536	1,701,298
July 1, 2078	0	29,916,228	29,916,228	0	166,834	1,611,992	1,778,826
July 1, 2079	0	30,813,715	30,813,715	0	156,954	1,703,492	1,860,446
July 1, 2080	0	31,738,126	31,738,126	0	147,098	1,797,902	1,945,000
July 1, 2081	0	32,690,270	32,690,270	0	137,286	1,896,537	2,033,823
July 1, 2082	0	33,670,978	33,670,978	0	127,556	1,999,387	2,126,943
July 1, 2083	0	34,681,107	34,681,107	0	117,935	2,106,823	2,224,758
July 1, 2084	0	35,721,540	35,721,540	0	108,499	2,218,474	2,326,973
July 1, 2085	0	36,793,186	36,793,186	0	99,283	2,334,186	2,433,469
July 1, 2086	0	37,896,982	37,896,982	0	90,348	2,455,840	2,546,188
July 1, 2087	0	39,033,891	39,033,891	0	81,747	2,582,053	2,663,800
July 1, 2088	0	40,204,908	40,204,908	0	73,500	2,713,290	2,786,790
July 1, 2089	0	41,411,055	41,411,055	0	65,646	2,850,492	2,916,138
July 1, 2090	0	42,653,387	42,653,387	0	58,201	2,994,005	3,052,206
July 1, 2091	0	43,932,989	43,932,989	0	51,194	3,143,418	3,194,612
July 1, 2092	0	45,250,979	45,250,979	0	44,640	3,299,477	3,344,117
July 1, 2093	0	46,608,508	46,608,508	0	38,574	3,463,060	3,501,634

APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

FIDUCIARY NET POSITION PROJECTION DISCLOSURES

Projection of OPEB Plan's Fiduciary Net Position using a July 1, 2019 Valuation Date										
For the Period Ending on the Measurement Date	I. Beginning Fiduciary Net Position for Current Plan Members	II. Employer Share of Benefit Payments for Current Plan Members	III. Contributions to Trust for Current Plan Members beyond Pay-as-you- go	IV. Gross Contributions to Trust for Current Plan Members [II. + III.]	V. Administrative Expenses Withdrawn from the Trust for Current Plan Members	VI. Benefit Payments Withdrawn from the Trust for Current Plan Members	VII. Trust Withdrawals for Current Plan Members [V. +VI.]	VIII. Investment Earnings	IX. Ending Fiduciary Net Position for Current Plan Members	
July 1, 2019	0	199,203	0	199,203	0	199,203	199,203	0	0	
July 1, 2020	0	208,167	0	208,167	0	208,167	208,167	0	0	
July 1, 2021	0	195,353	0	195,353	0	195,353	195,353	0	0	
July 1, 2022	0	216,637	0	216,637	0	216,637	216,637	0	0	
July 1, 2023	0	224,844	0	224,844	0	224,844	224,844	0	0	
July 1, 2024	0	249,889	0	249,889	0	249,889	249,889	0	0	
July 1, 2025	0	276,297	0	276,297	0	276,297	276,297	0	0	
July 1, 2026	0	302,345	0	302,345	0	302,345	302,345	0	0	
July 1, 2027	0	328,432	0	328,432	0	328,432	328,432	0	0	
July 1, 2028	0	362,942	0	362,942	0	362,942	362,942	0	0	
July 1, 2029	0	380,887	0	380,887	0	380,887	380,887	0	0	
July 1, 2030	0	403,665	0	403,665	0	403,665	403,665	0	0	
July 1, 2031	0	417,328	0	417,328	0	417,328	417,328	0	0	
July 1, 2032	0	417,142	0	417,142	0	417,142	417,142	0	0	
July 1, 2033	0	420,173	0	420,173	0	420,173	420,173	0	0	
July 1, 2034	0	384,862	0	384,862	0	384,862	384,862	0	0	
July 1, 2035	0	381,093	0	381,093	0	381,093	381,093	0	0	
July 1, 2036	0	395,037	0	395,037	0	395,037	395,037	0	0	
July 1, 2037	0	396,840	0	396,840	0	396,840	396,840	0	0	
July 1, 2038	0	403,071	0	403,071	0	403,071	403,071	0	0	
July 1, 2039	0	420,290	0	420,290	0	420,290	420,290	0	0	
July 1, 2040	0	422,359	0	422,359	0	422,359	422,359	0	0	
July 1, 2041	0	434,564	0	434,564	0	434,564	434,564	0	0	
July 1, 2042	0	457,986	0	457,986	0	457,986	457,986	0	0	
July 1, 2043	0	453,277	0	453,277	0	453,277	453,277	0	0	
July 1, 2044	0	451,103	0	451,103	0	451,103	451,103	0	0	
July 1, 2045	0	442,564	0	442,564	0	442,564	442,564	0	0	
July 1, 2046	0	438,019	0	438,019	0	438,019	438,019	0	0	
July 1, 2047	0	420,506	0	420,506	0	420,506	420,506	0	0	
July 1, 2048	0	428,122	0	428,122	0	428,122	428,122	0	0	
July 1, 2049	0	438,347	0	438,347	0	438,347	438,347	0	0	
July 1, 2050	0	441,243	0	441,243	0	441,243	441,243	0	0	
July 1, 2051	0	434,394	0	434,394	0	434,394	434,394	0	0	
July 1, 2052	0	447,513	0	447,513	0	447,513	447,513	0	0	
July 1, 2053	0	455,967	0	455,967	0	455,967	455,967	0	0	
July 1, 2054	0	424,474	0	424,474	0	424,474	424,474	0	0	
July 1, 2055	0	425,419	0	425,419	0	425,419	425,419	0	0	
July 1, 2056	0	418,403	0	418,403	0	418,403	418,403	0	0	
July 1, 2057	0	394,266	0	394,266	0	394,266	394,266	0	0	
July 1, 2058	0	386,611	0	386,611	0	386,611	386,611	0	0	

APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

FIDUCIARY POSITION PROJECTION DISCLOSURES (CONTINUED)

Projection of OPEB Plan's Fiduciary Net Position using a July 1, 2019 Valuation Date										
For the Period Ending on the Measurement Date	I. Beginning Fiduciary Net Position for Current Plan Members	II. Employer Share of Benefit Payments for Current Plan Members	III. Contributions to Trust for Current Plan Members beyond Pay-as-you-go	IV. Gross Contributions to Trust for Current Plan Members [III. + III.]	V. Administrative Expenses Withdrawn from the Trust for Current Plan Members	VI. Benefit Payments Withdrawn from the Trust for Current Plan Members	VII. Trust Withdrawals for Current Plan Members [V. + VI.]	VIII. Investment Earnings	IX. Ending Fiduciary Net Position for Current Plan Members	
July 1, 2059	0	371,706	0	371,706	0	371,706	371,706	0	0	
July 1, 2060	0	356,051	0	356,051	0	356,051	356,051	0	0	
July 1, 2061	0	344,088	0	344,088	0	344,088	344,088	0	0	
July 1, 2062	0	337,324	0	337,324	0	337,324	337,324	0	0	
July 1, 2063	0	326,407	0	326,407	0	326,407	326,407	0	0	
July 1, 2064	0	317,674	0	317,674	0	317,674	317,674	0	0	
July 1, 2065	0	308,498	0	308,498	0	308,498	308,498	0	0	
July 1, 2066	0	291,743	0	291,743	0	291,743	291,743	0	0	
July 1, 2067	0	281,217	0	281,217	0	281,217	281,217	0	0	
July 1, 2068	0	271,408	0	271,408	0	271,408	271,408	0	0	
July 1, 2069	0	260,494	0	260,494	0	260,494	260,494	0	0	
July 1, 2070	0	249,590	0	249,590	0	249,590	249,590	0	0	
July 1, 2071	0	238,746	0	238,746	0	238,746	238,746	0	0	
July 1, 2072	0	228,014	0	228,014	0	228,014	228,014	0	0	
July 1, 2073	0	217,439	0	217,439	0	217,439	217,439	0	0	
July 1, 2074	0	207,046	0	207,046	0	207,046	207,046	0	0	
July 1, 2075	0	196,831	0	196,831	0	196,831	196,831	0	0	
July 1, 2076	0	186,743	0	186,743	0	186,743	186,743	0	0	
July 1, 2077	0	176,762	0	176,762	0	176,762	176,762	0	0	
July 1, 2078	0	166,834	0	166,834	0	166,834	166,834	0	0	
July 1, 2079	0	156,954	0	156,954	0	156,954	156,954	0	0	
July 1, 2080	0	147,098	0	147,098	0	147,098	147,098	0	0	
July 1, 2081	0	137,286	0	137,286	0	137,286	137,286	0	0	
July 1, 2082	0	127,556	0	127,556	0	127,556	127,556	0	0	
July 1, 2083	0	117,935	0	117,935	0	117,935	117,935	0	0	
July 1, 2084	0	108,499	0	108,499	0	108,499	108,499	0	0	
July 1, 2085	0	99,283	0	99,283	0	99,283	99,283	0	0	
July 1, 2086	0	90,348	0	90,348	0	90,348	90,348	0	0	
July 1, 2087	0	81,747	0	81,747	0	81,747	81,747	0	0	
July 1, 2088	0	73,500	0	73,500	0	73,500	73,500	0	0	
July 1, 2089	0	65,646	0	65,646	0	65,646	65,646	0	0	
July 1, 2090	0	58,201	0	58,201	0	58,201	58,201	0	0	
July 1, 2091	0	51,194	0	51,194	0	51,194	51,194	0	0	
July 1, 2092	0	44,640	0	44,640	0	44,640	44,640	0	0	
July 1, 2093	0	38,574	0	38,574	0	38,574	38,574	0	0	

APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

BENEFIT PAYMENT PROJECTION DISCLOSURES

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

For the Period Ending on the Measurement Date	I. Beginning Fiduciary Net Position for Current Plan Members	II. Benefit Payments	III. Funded Portion of Benefit Payments	IV. Unfunded Portion of Benefit Payments	V. Present Value of Funded Benefit Payments	VI. Present Value of Unfunded Benefit Payments	VII. Present Value of
							Benefit Payments using Single Equivalent Discount Rate
July 1, 2019	0	199,203	0	199,203	0	199,203	199,203
July 1, 2020	0	208,167	0	208,167	0	201,400	201,400
July 1, 2021	0	195,353	0	195,353	0	182,859	182,859
July 1, 2022	0	216,637	0	216,637	0	196,191	196,191
July 1, 2023	0	224,844	0	224,844	0	197,004	197,004
July 1, 2024	0	249,889	0	249,889	0	211,831	211,831
July 1, 2025	0	276,297	0	276,297	0	226,604	226,604
July 1, 2026	0	302,345	0	302,345	0	239,907	239,907
July 1, 2027	0	328,432	0	328,432	0	252,136	252,136
July 1, 2028	0	362,942	0	362,942	0	269,572	269,572
July 1, 2029	0	380,887	0	380,887	0	273,705	273,705
July 1, 2030	0	403,665	0	403,665	0	280,644	280,644
July 1, 2031	0	417,328	0	417,328	0	280,712	280,712
July 1, 2032	0	417,142	0	417,142	0	271,466	271,466
July 1, 2033	0	420,173	0	420,173	0	264,551	264,551
July 1, 2034	0	384,862	0	384,862	0	234,441	234,441
July 1, 2035	0	381,093	0	381,093	0	224,599	224,599
July 1, 2036	0	395,037	0	395,037	0	225,250	225,250
July 1, 2037	0	396,840	0	396,840	0	218,922	218,922
July 1, 2038	0	403,071	0	403,071	0	215,132	215,132
July 1, 2039	0	420,290	0	420,290	0	217,031	217,031
July 1, 2040	0	422,359	0	422,359	0	211,010	211,010
July 1, 2041	0	434,564	0	434,564	0	210,050	210,050
July 1, 2042	0	457,986	0	457,986	0	214,176	214,176
July 1, 2043	0	453,277	0	453,277	0	205,083	205,083
July 1, 2044	0	451,103	0	451,103	0	197,465	197,465
July 1, 2045	0	442,564	0	442,564	0	187,430	187,430
July 1, 2046	0	438,019	0	438,019	0	179,476	179,476
July 1, 2047	0	420,506	0	420,506	0	166,699	166,699
July 1, 2048	0	428,122	0	428,122	0	164,202	164,202
July 1, 2049	0	438,347	0	438,347	0	162,658	162,658
July 1, 2050	0	441,243	0	441,243	0	158,411	158,411
July 1, 2051	0	434,394	0	434,394	0	150,883	150,883
July 1, 2052	0	447,513	0	447,513	0	150,387	150,387
July 1, 2053	0	455,967	0	455,967	0	148,247	148,247
July 1, 2054	0	424,474	0	424,474	0	133,522	133,522
July 1, 2055	0	425,419	0	425,419	0	129,469	129,469
July 1, 2056	0	418,403	0	418,403	0	123,195	123,195
July 1, 2057	0	394,266	0	394,266	0	112,315	112,315
July 1, 2058	0	386,611	0	386,611	0	106,554	106,554

APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

BENEFIT PAYMENT PROJECTION DISCLOSURES (CONTINUED)

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

For the Period Ending on the Measurement Date	I. Beginning Fiduciary Net Position for Current Plan Members	II. Benefit Payments	III. Funded Portion of Benefit Payments	IV. Unfunded Portion of Benefit Payments	V. Present Value of Funded Benefit Payments	VI. Present Value of Unfunded Benefit Payments	VII. Present Value of Benefit Payments using Single Equivalent Discount Rate
July 1, 2059	0	371,706	0	371,706	0	99,116	99,116
July 1, 2060	0	356,051	0	356,051	0	91,855	91,855
July 1, 2061	0	344,088	0	344,088	0	85,884	85,884
July 1, 2062	0	337,324	0	337,324	0	81,459	81,459
July 1, 2063	0	326,407	0	326,407	0	76,260	76,260
July 1, 2064	0	317,674	0	317,674	0	71,807	71,807
July 1, 2065	0	308,498	0	308,498	0	67,467	67,467
July 1, 2066	0	291,743	0	291,743	0	61,728	61,728
July 1, 2067	0	281,217	0	281,217	0	57,567	57,567
July 1, 2068	0	271,408	0	271,408	0	53,753	53,753
July 1, 2069	0	260,494	0	260,494	0	49,915	49,915
July 1, 2070	0	249,590	0	249,590	0	46,271	46,271
July 1, 2071	0	238,746	0	238,746	0	42,822	42,822
July 1, 2072	0	228,014	0	228,014	0	39,567	39,567
July 1, 2073	0	217,439	0	217,439	0	36,506	36,506
July 1, 2074	0	207,046	0	207,046	0	33,631	33,631
July 1, 2075	0	196,831	0	196,831	0	30,933	30,933
July 1, 2076	0	186,743	0	186,743	0	28,393	28,393
July 1, 2077	0	176,762	0	176,762	0	26,002	26,002
July 1, 2078	0	166,834	0	166,834	0	23,744	23,744
July 1, 2079	0	156,954	0	156,954	0	21,612	21,612
July 1, 2080	0	147,098	0	147,098	0	19,596	19,596
July 1, 2081	0	137,286	0	137,286	0	17,695	17,695
July 1, 2082	0	127,556	0	127,556	0	15,906	15,906
July 1, 2083	0	117,935	0	117,935	0	14,228	14,228
July 1, 2084	0	108,499	0	108,499	0	12,664	12,664
July 1, 2085	0	99,283	0	99,283	0	11,212	11,212
July 1, 2086	0	90,348	0	90,348	0	9,871	9,871
July 1, 2087	0	81,747	0	81,747	0	8,641	8,641
July 1, 2088	0	73,500	0	73,500	0	7,517	7,517
July 1, 2089	0	65,646	0	65,646	0	6,495	6,495
July 1, 2090	0	58,201	0	58,201	0	5,572	5,572
July 1, 2091	0	51,194	0	51,194	0	4,742	4,742
July 1, 2092	0	44,640	0	44,640	0	4,000	4,000
July 1, 2093	0	38,574	0	38,574	0	3,344	3,344

APPENDIX II – PLAN PROVISIONS

<u>Effective Date</u>	GASB 74 was adopted for the fiscal year ending June 30, 2017 GASB 75 was adopted for the fiscal year ending June 30, 2018
<u>Plan Year</u>	July 1 through June 30.
<u>Premium Effective Date</u>	Medicare Supplement Plans: effective January 1, 2020 Non-Medicare Plans: effective July 1, 2020 Dental Plans: N/A
<u>Creditable Service</u>	Elapsed time from date of hire to termination of service date.
<u>Benefits Offered</u>	Comprehensive Medical & Dental Insurance offered through Blue Cross Blue Shield of Massachusetts and \$15,000 of Group Term Life Insurance through American International Group.
<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	45%	45%
Dental	100%	100%
Life	25%	N/A

APPENDIX III - ACTUARIAL METHODS & ASSUMPTIONS

<u>Pre-Retirement Mortality</u>	General: RP-2014 Mortality Table for Blue Collar Employees projected generationally with scale MP-2016 for males and females Teachers: RP-2014 Mortality Table for White Collar Employees projected generationally with scale MP-2016 for males and females
<u>Post-Retirement Mortality</u>	General: RP-2014 Mortality Table for Blue Collar Healthy Annuitants projected generationally with scale MP-2016 for males and females Teachers: RP-2014 Mortality Table for White Collar Healthy Annuitants projected generationally with scale MP-2016 for males and females
<u>Disabled Mortality</u>	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
<u>Assumption Experience Study</u>	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.
<u>Discount Rate</u>	3.36% per annum (previously 3.00%, used in the calculation of the Interest Cost)
<u>Net Long Term Rate of Return</u>	6.44% (based on sample investment policy)
<u>Municipal Bond Rate</u>	3.36% as of July 1, 2019 (source: S&P Municipal Bond 20-Year High Grade Index – SAPIHG)
<u>Actuarial Cost Method</u>	Individual Entry Age Normal
<u>Asset-Valuation Method</u>	Market Value of Assets as of the Measurement Date, July 1, 2019

APPENDIX III – ACTUARIAL METHODS & ASSUMPTIONS

Employee Termination

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

Non-Public Safety Employees

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

Public Safety Employees

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

APPENDIX III – ACTUARIAL METHODS & ASSUMPTIONS

Retirement Rates for Eligible Employees

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

Permanent Disability Rates

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

APPENDIX III – ACTUARIAL METHODS & ASSUMPTIONSTrend 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 70% of employees eligible to receive retirement benefits would enroll in the retiree medical plans upon retirement. For life insurance plans, it was assumed that 70% 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.

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>July 1, 2019</u>	<u>July 1, 2018</u>
I. Total OPEB Liability	7,106,401	8,411,170
II. Total OPEB Liability (Excluding Implicit Subsidy)	<u>6,058,834</u>	<u>7,783,346</u>
III. Liability from Implicit Subsidy [I. - II.]	1,047,567	627,824

	For the Measurement Period Ending	
Impact on Payments	<u>July 1, 2019</u>	<u>July 1, 2018</u>
IV. Employer Payments (Including Implicit Subsidy)	199,203	180,976
V. Actual Employer Payments	<u>144,637</u>	<u>159,458</u>
VI. Implicit Subsidy [IV. - V.]	54,566	21,518

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	4,693	2,959	44 & Under	9,225	6,045	65 to 69	4,739	4,739
25 to 29	6,924	3,079	45 to 49	10,133	7,632	70 to 74	4,739	4,739
30 to 34	8,749	3,864	50 to 54	11,920	10,052	75 to 79	4,739	4,739
35 to 39	9,013	4,852	55 to 59	13,780	13,068	80 to 84	4,739	4,739
40 to 44	9,225	6,045	60 to 64	16,397	16,769	85 to 89	4,739	4,739
45 to 49	10,133	7,632	65 to 69	19,656	20,917	90 & Over	4,739	4,739
50 to 54	11,920	10,052	70 to 74	23,180	25,067			
55 to 59	13,780	13,068	75 to 79	26,919	29,605			
60 to 64	16,397	16,769	80 to 84	30,865	34,029			
65 to 69	19,656	20,917	85 to 89	35,232	38,951			
70 & Over	23,180	25,067	90 & Over	35,232	38,951			

*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 July 1, 2019 reflect a closed group and do not reflect any new entrants after the valuation date.

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

APPENDIX IV - PLAN DEMOGRAPHICS

Active Employees

Valuation Date	July 1, 2019	July 1, 2017
A. Average Age at Hire	35.67	35.61
B. Average Service	<u>13.08</u>	<u>12.95</u>
C. Average Current Age	48.75	48.56

Retired Employees & Spouses

Valuation Date	July 1, 2019	July 1, 2017
A. Under Age 65	9	13
B. Age 65 & Over	<u>29</u>	<u>26</u>
C. Total	38	39

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	1									1
25-29	2	1								3
30-34	2		3							5
35-39	1	2	1							4
40-44	2		1	3						6
45-49	1	1		4						6
50-54	5	2	3	1	1	1				13
55-59	3			3		1	4	2		13
60-64	4					1	1	1		7
65-69		1								1
70+										
Total	21	7	8	11	1	3	5	3		59

APPENDIX IV - PLAN DEMOGRAPHICS

Plan Offerings

Number of Contracts

	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>	<u>Total</u>
HMO Blue Benchmark	23		25	48
Medex II	30			30
Total	53	0	25	78

Per Contract Costs (monthly)

	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>
HMO Blue Benchmark	877.68		2,304.25
Medex II	394.91	789.82	
Dental Plan	N/A		N/A

APPENDIX V - OVERVIEW OF GASB 74 & 75

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

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

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

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

APPENDIX V – OVERVIEW OF GASB 74 & 75

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

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

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

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

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

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

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

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

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

GLOSSARY

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

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

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

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

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

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

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

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

GLOSSARY

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

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

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

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

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

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

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

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

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