

# Town of Essex Other Postemployment Benefits Plan

## GASB 74 & GASB 75 Actuarial Valuation

With a Valuation Date of July 1, 2018

As of the Measurement Date:  
July 1, 2018

For the Reporting Date:  
June 30, 2019

&

As of the Measurement Date:  
July 1, 2019

For the Reporting Date:  
June 30, 2020

Delivered July 26, 2019

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July 26, 2019

***Personal and Confidential***

Ms. Virginia Antell  
Town Accountant  
Town of Essex  
30 Martin Street  
Essex, MA 01929

Dear Ms. Antell:

We have performed an actuarial valuation of the Town of Essex Other Postemployment Benefits Plan for the Reporting Date & fiscal year ending June 30, 2019 with a Measurement Date of July 1, 2018 and a Valuation Date of July 1, 2018. The figures presented in this report reflect the adoption, by the Town of Essex, 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

July 26, 2019

ACTUARIAL CERTIFICATION

This is to certify that Odyssey Advisors has conducted an actuarial valuation of certain benefit obligations of the Town of Essex other postemployment benefit programs with a Valuation Date of July 1, 2018 with a Measurement Date of July 1, 2018 for the Reporting Date & fiscal year ending June 30, 2019 in accordance with Government Account Standards Board Statement No. 74 & 75 and Actuarial Standards of Practice as issued by the American Academy of Actuaries. The actuarial calculations presented in this report have been made on a basis consistent with our understanding of GASB Statements Numbers 74 & 75 for the determination of the liability for postemployment benefits other than pensions.

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

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

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

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

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

## EXECUTIVE SUMMARY

### What caused plan liabilities to change from FY 18 to FY 19?

For the year ending on the Measurement Date of July 1, 2018, the Plan saw an experience gain of \$267,394 or 5.28% of the beginning Total OPEB Liability ("TOL"). This was mainly due to premiums for Non-Medicare Integrated plans increasing less than the expected 16% increase. This was somewhat offset by premiums for Medicare Supplement plans increasing more than the expected 16% 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 3.25% to 3.00% increasing the disclosed liability by \$140 thousand.
- ✓ The expected long-term medical trend has been updated to 4.5% decreasing the disclosed liability by \$360 thousand.
- ✓ The method for developing expected medical claims has been updated increasing the disclosed liability by \$210 thousand.
- ✓ Assumption changes caused Service Cost to decrease by \$2,000.

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 time until fully recognized
- ✓ 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 2.98% as of July 1, 2018.
- ✓ Current Asset Level – The Town had \$0 of assets as of July 1, 2018.
- ✓ 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 integrated) plans - represent 60.69% 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 non-Medicare integrated plans and 4.50% per year for Medicare integrated plans.
- ✓ Discount Rate (3.00%) – 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 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.

## 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, 2016
Measurement Date & Period Ending	July 1, 2018	July 1, 2017
Reporting Date/Fiscal Year End	June 30, 2019	June 30, 2018
Total OPEB Liability	4,952,330	5,068,912
Per Eligible Active Plan Participant	76,985	96,492
Per Retiree/Spouse Plan Participant	92,763	83,621
Total Annual Service Cost (annual benefit accrual)	166,500	166,433
Per Eligible Active Plan Participant	5,045	5,548
Expected Employer Share of Retiree Costs	164,087	129,345
Per Retiree/Spouse Plan Participant	6,311	4,975
Net OPEB Liability as a % of Payroll	240.10%	182.40%
Average Annual Medical Plan Premium (Single Coverage)	8,023	7,535
Average Annual Medical Plan Premium (Family Coverage)	28,505	28,561
<b><u>Projected 2022 Excise Tax Thresholds</u></b>		
Annual Medical Plan Premium (Single Coverage)	12,511	
Annual Medical Plan Premium (Family Coverage)	32,676	



## PRINCIPAL RESULTS OF THE VALUATION

### Town of Essex

**Assuming Pay-as-you-go Funding - 3.00% discount rate**

### Comparison of Plan Liabilities to Prior Valuation

Valuation Date	July 1, 2018	July 1, 2016
For the Measurement Period ending on the Measurement Date of:	July 1, 2018	July 1, 2017
For the Reporting Period & Fiscal Year ending on:	June 30, 2019	June 30, 2018
I. Total OPEB Liability		
A. Actives	2,540,498	2,894,773
B. Retirees/Disabled	<u>2,411,832</u>	<u>2,174,139</u>
C. Total	4,952,330	5,068,912
II. Fiduciary Net Position [Plan Assets]	0	0
III. Net OPEB Liability (Asset) [I. - II.]	4,952,330	5,068,912
IV. Funded Ratio [II. / I.]	0.00%	0.00%
V. Number of Eligible Participants		
A. Actives	33	30
B. Retirees/Disabled & Dependents	<u>26</u>	<u>26</u>
C. Total	59	56
VI. Service Cost	166,500	166,433
VII. Financial Statement Expense	266,396	328,039
VIII. Employer Contribution to the OPEB Trust	0	0
IX. Deferred Inflow of Resources	(218,891)	0
X. Deferred Outflow of Resources	0	0
XI. Money Weighted Rate of Return	N/A	N/A
XII. 20-year Municipal Bond Rate (SAPIHG)	2.98%	3.13%
XIII. Expected Long Term Rate of Return	N/A	N/A
XIV. Crossover Year	N/A	N/A
XV. Discount Rate	3.00%	3.25%

## PRINCIPAL RESULTS OF THE VALUATION

**Town of Essex**  
**Plan Liabilities as of the July 1, 2018 Measurement Date**  
**Assuming Pay-as-you-go Funding - 3.00% discount rate**

	General Government Employees and	School Employees and Retirees	Public Safety Employees and Retirees	Culture & Recreation Employees and	Health & Human Services Employees and Retirees	Sewer Enterprise Employees and Retirees	Water Enterprise Employees and Retirees	Total
I. Total OPEB Liability								
A. Actives	563,542	0	1,196,244	74,222	76,041	353,766	276,683	2,540,498
B. Retirees/Disabled	<u>44,864</u>	<u>160,534</u>	<u>413,969</u>	<u>49,553</u>	<u>147,336</u>	<u>911,201</u>	<u>684,375</u>	<u>2,411,832</u>
C. Total	608,406	160,534	1,610,213	123,775	223,377	1,264,967	961,058	4,952,330
II. Fiduciary Net Position [Plan Assets]	0	0	0	0	0	0	0	0
III. Net OPEB Liability (Asset) [I. - II.]	608,406	160,534	1,610,213	123,775	223,377	1,264,967	961,058	4,952,330
IV. Number of Eligible Participants								
A. Actives	10	0	12	1	2	4	4	33
B. Retirees/Disabled	<u>3</u>	<u>2</u>	<u>5</u>	<u>1</u>	<u>1</u>	<u>4</u>	<u>5</u>	<u>26</u>
C. Total	13	7	17	2	3	8	9	59
<b>For the Reporting Date and Fiscal Year Ending June 30, 2019</b>								
V. Service Cost	48,932	0	74,415	3,627	7,715	15,983	15,828	166,500
VI. Financial Statement Expense	62,241	2,936	107,906	6,104	12,057	40,583	34,569	266,396
VII. Employer Share of Costs	(11,541)	(13,540)	(30,206)	(4,234)	(18,131)	(46,805)	(39,630)	(164,087)
VIII. Employer (Payments)/Withdrawals to/from OPEB Trust	0	0	0	0	0	0	0	0
IX. Total Employer Contribution [VII. + VIII.]	(11,541)	(13,540)	(30,206)	(4,234)	(18,131)	(46,805)	(39,630)	(164,087)

## PRINCIPAL RESULTS OF THE VALUATION

### Town of Essex

**Assuming Pay-as-you-go Funding - 3.00% discount rate**

**For the Period ending on the July 1, 2018 Measurement Date**

	<b>Actives</b>			<b>Retirees/Disabled</b>			<b>Grand Total</b>
	Under Age 65	Age 65+	Actives Total	Under Age 65	Age 65 +	Retirees Total	
<b>Present Value of Future Benefits</b>							
A. Participants	1,094,730	1,497,141	2,591,871	365,901	1,374,077	1,739,978	4,331,849
B. Spouses	<u>1,119,615</u>	<u>788,542</u>	<u>1,908,157</u>	<u>383,102</u>	<u>288,752</u>	<u>671,854</u>	<u>2,580,011</u>
C. Total	2,214,345	2,285,683	4,500,028	749,003	1,662,829	2,411,832	6,911,860
<b>Total OPEB Liability</b>							
A. Participants	587,961	884,089	1,472,050	365,901	1,374,077	1,739,978	3,212,028
B. Spouses	<u>609,666</u>	<u>458,782</u>	<u>1,068,448</u>	<u>383,102</u>	<u>288,752</u>	<u>671,854</u>	<u>1,740,302</u>
C. Total	1,197,627	1,342,871	2,540,498	749,003	1,662,829	2,411,832	4,952,330
<b>Service Cost</b>							
A. Participants	37,525	58,169	95,694	0	0	0	95,694
B. Spouses	<u>39,628</u>	<u>31,178</u>	<u>70,806</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>70,806</u>
C. Total	77,153	89,347	166,500	0	0	0	166,500

## EXHIBIT A

### FINANCIAL STATEMENT DISCLOSURES

(As of the July 1, 2018 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

<b>Components of the Town's OPEB Expenses for the Fiscal Year Ending June 30, 2019</b>	
<b>Description</b>	<b>Amount</b>
I. Service Cost	166,500
II. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	154,619
III. Deferred (Inflows)/Outflows from Plan Design Changes*	0
IV. Deferred (Inflows)/Outflows from Plan Experience**	(53,479)
V. Deferred (Inflows)/Outflows from Changes of Assumptions**	(1,244)
VI. Projected earnings on OPEB plan investments	0
VII. Deferred (Inflows)/Outflows from Earnings on Plan Investments***	0
VIII. Financial statement expense [I. + II. + III. + IV. + V. + VI. + VII.]	266,396

\* Recognized Immediately

\*\* Amortized over 5 years

\*\*\* Amortized over 5 years

## EXHIBIT A

### FINANCIAL STATEMENT DISCLOSURES (As of the July 1, 2018 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
<b>I. Balances for July 1, 2017</b>	5,068,912	0	5,068,912
<b>II. Prior Period Adjustment</b>	0	0	0
<b>III. Balances for July 1, 2017 with Adjustment [I. + II.]</b>	5,068,912	0	5,068,912
<b>Changes for the year:</b>			
IV. Service Cost	166,500	0	166,500
V. Interest on Total OPEB Liability, Service Cost, and Benefit Payments	154,619	0	154,619
VI. Changes in Benefit terms *	0	0	0
VII. Change in assumptions **	(6,220)	0	(6,220)
VIII. Differences between actual and expected experience **	(267,394)	0	(267,394)
IX. Net investment income	0	0	0
X. Employer contributions to Trust	0	164,087	(164,087)
XI. Benefit payments withdrawn from Trust	0	(164,087)	164,087
XII. Benefit payments excluding Implicit Cost	(131,737)	0	(131,737)
XIII. Implicit Cost amount	(32,350)	0	(32,350)
XIV. Total Benefit payments including Implicit Cost [XII. + XIII.]	(164,087)	0	(164,087)
XV. Administrative expense	0	0	0
XVI. Other Charges	0	0	0
<b>XVII. Net Changes [IV.+V.+VI.+VII.+VIII.+IX.+X.+XI.+XIV.+XV.+XVI.]</b>	<b>(116,582)</b>	<b>0</b>	<b>(116,582)</b>
<b>XVIII. Balances at July 1, 2018 [III.+XVII.]</b>	<b>4,952,330</b>	<b>0</b>	<b>4,952,330</b>

\* Recognized Immediately

\*\* Amortized over 5.00 years

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURES

(As of the July 1, 2018 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	2019	2020	2021	2022	2023	2024
2017									
2018	0	5.00	0	0	0	0	0		
2019	(267,394)	5.00	(213,915)	(53,479)	(53,479)	(53,479)	(53,479)	(53,478)	
2020									
2021									
2022									
2023									
2024									
2025									
2026									
Total Remaining Balance			(213,915)						
Net increase (decrease) in OPEB expense				(53,479)	(53,479)	(53,479)	(53,479)	(53,478)	0

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	2019	2020	2021	2022	2023	2024
2017									
2018	0	5.00	0	0	0	0	0		
2019	(6,220)	5.00	(4,976)	(1,244)	(1,244)	(1,244)	(1,244)	(1,244)	
2020									
2021									
2022									
2023									
2024									
2025									
2026									
Total Remaining Balance			(4,976)						
Net increase (decrease) in OPEB expense				(1,244)	(1,244)	(1,244)	(1,244)	(1,244)	0

## EXHIBIT A

### FINANCIAL STATEMENT DISCLOSURES (As of the July 1, 2018 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	2019	2020	2021	2022	2023	2024
2017									
2018	0	5.00	0	0	0	0	0		
2019	0	5.00	0	0	0	0	0	0	
2020									
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, 2018 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, 2018 to be reported for the fiscal year ending June 30, 2019		
	Deferred Outflows of Resources	Deferred Inflows of Resources
I. Differences between actual & expected experience	0	(213,915)
II. Changes of assumptions	0	(4,976)
III. Net difference between projected & actual earnings on OPEB plan investments	0	0
IV. Total [I.+II.+III.]	0	(218,891)
<b>Annual Amortization of Deferred (Inflows)/Outflows</b>		
The balance of deferred (inflows)/outflows as of July 1, 2018 will be recognized in future years as shown below.		
	<b>Year ending June 30:</b>	
	2020	(54,723)
	2021	(54,723)
	2022	(54,723)
	2023	(54,722)
	2024	0
	Thereafter	0



## EXHIBIT A

### FINANCIAL STATEMENT DISCLOSURES

(As of the July 1, 2018 Measurement Date)

#### 4. 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, 2018 Measurement Date, total Town premiums plus implicit costs for the retiree medical program were \$164,087. The Town also made a contribution to an OPEB Trust of \$0 for a total contribution during the measurement period of \$164,087 to be reported on the financial statement for the fiscal year ending June 30, 2019.

#### 5. 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	4.00%
Domestic Equity - Small/Mid Cap	10.00%	Domestic Equity - Small/Mid Cap	6.00%
International Equity - Developed Market	15.00%	International Equity - Developed Market	4.50%
International Equity-Emerging Market	10.00%	International Equity-Emerging Market	7.00%
Domestic Fixed Income	30.00%	Domestic Fixed Income	2.00%
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	100.00%		
		I. Real Rate of Return*	4.00%
		II. Inflation Assumption	2.75%
		III. Total Nominal Return [I. + II.]	6.75%
		IV. Investment Expense	0.25%
		V. Net Investment Return [III.-IV.]	6.50%

\*Geometric Mean

## EXHIBIT A

### FINANCIAL STATEMENT DISCLOSURES

(As of the July 1, 2018 Measurement Date)

#### 6. Funded Status and Funding Progress

Fiscal Year	Measurement Date	Fiduciary Net Position	Total OPEB Liability	Net OPEB Liability	Funded Ratio	Covered Payroll	NOL as a % of Covered Payroll
2015	7/1/2015	\$0	\$3,471,115	\$3,471,115	0.0%	\$2,231,674	155.5%
2016	7/1/2016	\$0	\$4,319,642	\$4,319,642	0.0%	\$2,779,588	155.4%
2017	7/1/2017	\$0	\$5,068,912	\$5,068,912	0.0%	\$2,779,588	182.4%
2018	7/1/2018	\$0	\$4,952,330	\$4,952,330	0.0%	\$2,062,198	240.2%
2019	7/1/2019 (est.)	\$0	\$5,103,516	\$5,103,516	0.0%	\$2,124,064	240.3%
2020	7/1/2020 (est.)	\$0	\$5,273,805	\$5,273,805	0.0%	\$2,187,786	241.1%

## EXHIBIT A

### FINANCIAL STATEMENT DISCLOSURES

(As of the July 1, 2018 Measurement Date)

#### 7. Effect of 1% Change in Healthcare Trend

<u>Impact of a 1% Change in the Healthcare Trend Rate as of the July 1, 2018 Measurement Date</u>			
	<u>1% Decrease</u>	<u>Current Trend Rate</u>	<u>1% Increase</u>
I. Total OPEB Liability	4,293,876	4,952,330	5,779,747
II. Fiduciary Net Position	0	0	0
III. Net OPEB Liability (Asset) [I.-II.]	4,293,876	4,952,330	5,779,747
IV. Service Cost	131,108	166,500	214,812

<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	4,424,943	5,103,516	5,956,216
II. Fiduciary Net Position	0	0	0
III. Net OPEB Liability (Asset) [I.-II.]	4,424,943	5,103,516	5,956,216
IV. Service Cost	135,045	171,495	221,253

#### 8. Effect of 1% Change in Discount Rates

<u>Impact of a 1% Change in the Discount Rate as of the July 1, 2018 Measurement Date</u>			
	<u>1% Decrease</u>	<u>Current Discount Rate</u>	<u>1% Increase</u>
I. Total OPEB Liability	5,655,943	4,952,330	4,372,473
II. Fiduciary Net Position	0	0	0
III. Net OPEB Liability (Asset) [I.-II.]	5,655,943	4,952,330	4,372,473
IV. Service Cost	212,853	166,500	131,379

<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	5,828,609	5,103,516	4,505,957
II. Fiduciary Net Position	0	0	0
III. Net OPEB Liability (Asset) [I.-II.]	5,828,609	5,103,516	4,505,957
IV. Service Cost	219,239	171,495	135,321

## EXHIBIT A

### FINANCIAL STATEMENT DISCLOSURES

(As of the July 1, 2018 Measurement Date)

#### 9. Money Weighted Rate of Return

	Plan Investments / Net External Cash Flows	Periods Invested	Period Weight
I. Beginning value - July 1, 2017	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, 2018 [I.+II.+III.]	0		
Money Weighted Rate of Return	N/A		
Asset Value - July 1, 2018	0		

**EXHIBIT A**  
**FINANCIAL STATEMENT DISCLOSURES**  
(As of the July 1, 2018 Measurement Date)

**10. OPEB Liability, OPEB Expense**

	Fiscal Year Ending June 30, 2019							Total
	Government Employees and Retirees	School Employees and Retirees	Public Safety Employees and Retirees	Recreation Employees and Retirees	Services Employees and Retirees	Sewer Enterprise Employees and Retirees	Water Enterprise Employees and Retirees	
I. Total OPEB Liability as of July 1, 2018	608,406	160,534	1,610,213	123,775	223,377	1,264,967	961,058	4,952,330
II. Fiduciary Net Position as of July 1, 2018	0	0	0	0	0	0	0	0
III. Net OPEB Liability (Asset) as of July 1, 2018 [I. - II.]	608,406	160,534	1,610,213	123,775	223,377	1,264,967	961,058	4,952,330
IV. Service Cost	48,932	0	74,415	3,627	7,715	15,983	15,828	166,500
V. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	20,033	4,710	51,283	3,845	6,810	38,578	29,360	154,619
VI. Projected Earnings on OPEB Plan Investments	0	0	0	0	0	0	0	0
VII. Net Recognition of Deferred (Inflows)/Outflows	(6,724)	(1,774)	(17,792)	(1,368)	(2,468)	(13,978)	(10,619)	(54,723)
VIII. Expense Related to Change in Benefit Terms	0	0	0	0	0	0	0	0
IX. Financial Statement Expense [IV. + V. + VI. + VII. + VIII.]	62,241	2,936	107,906	6,104	12,057	40,583	34,569	266,396
X. Employer Share of Costs	(11,541)	(13,540)	(30,206)	(4,234)	(18,131)	(46,805)	(39,630)	(164,087)
XI. Employer (Payments) Withdrawals to/from OPEB Trust	0	0	0	0	0	0	0	0
XII. Total Employer Contribution [X. + XI.]	(11,541)	(13,540)	(30,206)	(4,234)	(18,131)	(46,805)	(39,630)	(164,087)
XIII. Net OPEB Expense [IX. + XII.]	50,700	(10,604)	77,700	1,870	(6,074)	(6,222)	(5,061)	102,309

  

	Fiscal Year Ending June 30, 2020							Total
	Government Employees and Retirees	School Employees and Retirees	Public Safety Employees and Retirees	Recreation Employees and Retirees	Services Employees and Retirees	Sewer Enterprise Employees and Retirees	Water Enterprise Employees and Retirees	
I. Total OPEB Liability as of July 1, 2019	666,330	150,990	1,705,431	126,845	219,034	1,270,234	964,652	5,103,516
II. Fiduciary Net Position as of July 1, 2019	0	0	0	0	0	0	0	0
III. Net OPEB Liability (Asset) as of July 1, 2019 [I. - II.]	666,330	150,990	1,705,431	126,845	219,034	1,270,234	964,652	5,103,516
IV. Service Cost	50,400	0	76,647	3,736	7,946	16,463	16,303	171,495
V. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	19,585	4,605	50,136	3,759	6,658	37,715	28,704	151,162
VI. Projected Earnings on OPEB plan investments	0	0	0	0	0	0	0	0
VII. Net Recognition of Deferred (Inflows)/Outflows	(6,724)	(1,774)	(17,792)	(1,368)	(2,468)	(13,978)	(10,619)	(54,723)
VIII. Expense Related to Change in Benefit Terms	0	0	0	0	0	0	0	0
IX. Financial Statement Expense [IV. + V. + VI. + VII. + VIII.]	63,261	2,831	108,991	6,127	12,136	40,200	34,388	267,934
X. Employer Share of Costs	(12,061)	(14,149)	(31,565)	(4,425)	(18,947)	(48,911)	(41,413)	(171,471)
XI. Employer (Payments) Withdrawals to/from OPEB Trust	0	0	0	0	0	0	0	0
XII. Total Employer Contribution [X. + XI.]	(12,061)	(14,149)	(31,565)	(4,425)	(18,947)	(48,911)	(41,413)	(171,471)
XIII. Net OPEB Expense [IX. + XII.]	51,200	(11,318)	77,426	1,702	(6,811)	(8,711)	(7,025)	96,463

## EXHIBIT A

### FINANCIAL STATEMENT DISCLOSURES

(As of the July 1, 2018 Measurement Date)

#### 11. 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, 2018 July 1, 2018 June 30, 2019	July 1, 2018 July 1, 2019 June 30, 2020
<b>Source of Deferred Inflow/Outflow</b>		
I. Deferred (Inflow)/Outflow from Actual vs. Expected Experience	(213,915)	(160,436)
II. Deferred (Inflow)/Outflow from Investment Experience	0	0
III. Deferred (Inflow)/Outflow from Changes in Assumptions	(4,976)	(3,732)
<b>Change in Deferred Inflow/Outflow</b>		
I. Deferred Outflow at the beginning of the period	0	0
II. Deferred Outflow created during the period	0	0
III. Deferred Outflow recognized during the period	0	0
IV. Change in Deferred Outflow (II. - III. )	0	0
V. Deferred Outflow at end of the period (I. + IV. )	0	0
VI. Deferred Inflow at the beginning of the period	0	(218,891)
VII. Deferred Inflow created during the period	(273,614)	0
VIII. Deferred Inflow recognized during the period	(54,723)	(54,723)
IX. Change in Deferred Inflow (VII. - VIII. )	(218,891)	54,723
X. Deferred Inflow at end of the period (VI. + IX. )	(218,891)	(164,168)
<b>Net OPEB Liability</b>		
I. Net OPEB Liability at beginning of period	5,068,912	4,952,330
II. Service Cost	166,500	171,495
III. Interest on Total OPEB Liability, Service Cost, and Payments	154,619	151,162
IV. Projected Investment Income	0	0
V. Total Employer Contributions	(164,087)	(171,471)
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. )	157,032	151,186
VIII. Deferred Outflow created during the period	0	0
IX. Deferred Inflow created during the period	(273,614)	0
X. Net OPEB Liability at end of period (I. + VII. + VIII. + IX. )	4,952,330	5,103,516
<b>Net OPEB Expense</b>		
I. Service Cost	166,500	171,495
II. Interest on Total OPEB Liability, Service Cost, and Payments	154,619	151,162
III. Projected Investment Income	0	0
IV. Recognition of Deferred (Inflow)/Outflow	(54,723)	(54,723)
V. Expense Related to Change in Benefit Terms	0	0
VI. Financial Statement Expense (I. + II. + III. + IV. + V. )	266,396	267,934
VII. Benefit Payments	(164,087)	(171,471)
VIII. Contributions to Trust	0	0
IX. Total Employer Payments (VII. + VIII. )	(164,087)	(171,471)
X. Total Net OPEB Expense under GASB 75 (VI. + IX. )	102,309	96,463

## EXHIBIT B

### REQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2018 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:

<b>Actuarially Determined Contribution - Deficiency / (Excess)</b>		
	<b>For the Fiscal Year Ending:</b>	
	<b><u>June 30, 2019</u></b>	<b><u>June 30, 2018</u></b>
I. Service Cost	166,500	166,433
II. 30 year level dollar amortization of NOL	<u>251,080</u>	<u>241,238</u>
III. Actuarial Determined Contribution [I. + II.]	417,580	407,671
IV. Contributions in relation to the actuarially determined contribution	<u>(164,087)</u>	<u>(129,345)</u>
V. Contribution deficiency / (excess) [III. + IV.]	<u>253,493</u>	<u>278,326</u>
Covered employee payroll	2,062,198	2,779,588
Contributions as a % of covered employee payroll	7.96%	4.65%
Discount Rate	3.00%	3.25%
Money Weighted Rate of Return	N/A	N/A

## EXHIBIT B

### REQUIRED SUPPLEMENTARY INFORMATION (As of the July 1, 2018 Measurement Date)

Schedule of Changes in the Town's Net OPEB Liability and Related Ratios		
Valuation Date	July 1, 2018	July 1, 2016
For the Reporting Period & Fiscal Year ending on:	June 30, 2019	June 30, 2018
<b>Total OPEB Liability</b>	4,927,614	5,068,912
I. Service Cost	166,500	166,433
II. Interest on Total OPEB Liability, Service Cost, and Benefit Payments	154,619	161,606
III. Changes in Benefit terms	0	0
IV. Difference between Expected & Actual Plan Experience	(292,110)	0
V. Changes of assumptions	(6,220)	0
VI. Benefit Payments Excluding Implicit Cost	(131,737)	N/A
VII. Implicit Cost Amount	(32,350)	N/A
VIII. Total Benefit payments including Implicit Cost [VI.+VII.]	(164,087)	(129,345)
IX. Net Change in OPEB liability [I.+II.+III.+IV.+V.+VIII.]	(141,298)	198,694
X. Total OPEB liability - beginning of period	5,068,912	4,870,218
XI. Total OPEB liability - end of period [IX.+X.]	4,927,614	5,068,912
<b>Plan Fiduciary Net Position</b>	0	0
XII. Earning from Plan Investments	0	0
XIII. Employer Contribution to trust	164,087	129,345
XIV. Benefit payments from trust, including refunds of member contributions	(164,087)	(129,345)
XV. Administrative expense	0	0
XVI. Other	0	0
XVII. Net change in plan fiduciary net position [XII.+XIII.+XIV.+XV.+XVI.]	0	0
XVIII. Plan fiduciary net position - beginning of period	0	0
XIX. Plan fiduciary net position - end of period [XVII.+XVIII.]	0	0
XX. Net OPEB Liability [XI.-XIX.]	4,927,614	5,068,912
XXI. Plan fiduciary net position as % of total OPEB liability [XIX. / XI.]	0.00%	0.00%
XXII. Covered employee payroll	2,062,198	2,779,588
XXIII. Plan NOL as % of covered employee payroll [XX. / XXII.]	238.95%	182.36%
Single Discount Rate to calculate Plan Liabilities	3.00%	3.25%



## EXHIBIT B

### REQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2018 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, July 1, 2018.

#### Actuarial Assumptions:

Investment Rate of Return:	6.50%, net of OPEB plan investment expense, including inflation.
Municipal Bond Rate	2.98% as of July 1, 2018 (source: S&P Municipal Bond 20-Year High Grade Index – SAPIHG)
Single Equivalent Discount Rate:	3.00%, net of OPEB plan investment expense, including inflation.
Inflation:	2.75% as of July 1, 2018 and for future periods
Salary Increases:	3.00% annually as of July 1, 2018 and for future periods
Cost of Living Adjustment:	Not Applicable
Pre-Retirement Mortality:	RP-2000 Employees Mortality Table projected generationally with scale BB and a base year 2009 for males and females
Post-Retirement Mortality:	RP-2000 Healthy Annuitant Mortality Table projected generationally with scale BB and a base year 2009 for males and females
Disabled Mortality:	RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale BB and a base year 2012 for males and females

## EXHIBIT B

### REQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2018 Measurement Date)

#### Notes to Required Supplementary Information (Continued):

##### Plan Membership

At July 1, 2018, OPEB plan membership consisted of the following:

Inactive employees or beneficiaries currently receiving benefits:	26
Active Employees:	<u>33</u>
Total:	59

##### 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, 2017 to July 1, 2018

- ✓ Discount rate is 3.00% previously 3.25%
- ✓ The expected long-term medical trend has been updated to 4.50%
- ✓ The method for developing expected medical claims has been updated

##### 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, 2018 Measurement Date. For the year ending on the July 1, 2018 Measurement Date total Town premiums plus implicit costs for the retiree medical program were \$164,087. \$32,350 of the \$164,087 represents implicit cost.

## APPENDIX I - LIABILITIES, ASSETS, & CASH FLOWS

### CURRENT FUNDING POLICY (OPEN GROUP)

Pay-as-you-go Funding - 3.00% 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 6.50% return	III. Net OPEB Liability (Asset) [I. - II.]	IV. Funded Ratio [III. / I.]	V. Service Cost	VI. Employer Share of Premiums / Claims	VII. Excess Employer Payments (beyond claims)	VIII. Total Employer Payments [VI. + VII.]	
2019	July 1, 2018	4,952,330	0	4,952,330	0.00%	166,500	164,087	0	164,087	
2020	July 1, 2019	5,103,516	0	5,103,516	0.00%	171,495	171,471	0	171,471	
2021	July 1, 2020	5,273,805	0	5,273,805	0.00%	191,681	177,604	0	177,604	
2022	July 1, 2021	5,449,140	0	5,449,140	0.00%	192,142	203,580	0	203,580	
2023	July 1, 2022	5,604,961	0	5,604,961	0.00%	204,147	215,897	0	215,897	
2024	July 1, 2023	5,758,272	0	5,758,272	0.00%	211,268	228,102	0	228,102	
2025	July 1, 2024	5,881,038	0	5,881,038	0.00%	212,766	257,702	0	257,702	
2026	July 1, 2025	5,977,674	0	5,977,674	0.00%	225,368	289,836	0	289,836	
2027	July 1, 2026	6,099,613	0	6,099,613	0.00%	234,723	280,394	0	280,394	
2028	July 1, 2027	6,238,036	0	6,238,036	0.00%	245,964	279,690	0	279,690	
2029	July 1, 2028	6,366,433	0	6,366,433	0.00%	256,367	298,964	0	298,964	
2030	July 1, 2029	6,521,959	0	6,521,959	0.00%	268,285	290,954	0	290,954	
2031	July 1, 2030	6,691,765	0	6,691,765	0.00%	274,256	289,858	0	289,858	
2032	July 1, 2031	6,844,011	0	6,844,011	0.00%	290,625	302,782	0	302,782	
2033	July 1, 2032	7,041,345	0	7,041,345	0.00%	301,659	298,580	0	298,580	
2034	July 1, 2033	7,241,564	0	7,241,564	0.00%	314,011	311,609	0	311,609	
2035	July 1, 2034	7,450,869	0	7,450,869	0.00%	324,622	307,984	0	307,984	
2036	July 1, 2035	7,694,433	0	7,694,433	0.00%	337,389	309,264	0	309,264	
2037	July 1, 2036	7,940,836	0	7,940,836	0.00%	350,741	309,012	0	309,012	
2038	July 1, 2037	8,247,692	0	8,247,692	0.00%	363,911	296,927	0	296,927	
2039	July 1, 2038	8,564,856	0	8,564,856	0.00%	378,234	309,787	0	309,787	
2040	July 1, 2039	8,943,739	0	8,943,739	0.00%	392,284	284,316	0	284,316	
2041	July 1, 2040	9,327,310	0	9,327,310	0.00%	407,292	304,553	0	304,553	
2042	July 1, 2041	9,719,955	0	9,719,955	0.00%	422,633	321,878	0	321,878	
2043	July 1, 2042	10,117,764	0	10,117,764	0.00%	441,185	344,582	0	344,582	
2044	July 1, 2043	10,502,603	0	10,502,603	0.00%	459,815	381,165	0	381,165	
2045	July 1, 2044	10,896,447	0	10,896,447	0.00%	479,728	401,550	0	401,550	
2046	July 1, 2045	11,275,963	0	11,275,963	0.00%	500,659	440,338	0	440,338	
2047	July 1, 2046	11,639,175	0	11,639,175	0.00%	523,611	481,460	0	481,460	
2048	July 1, 2047	11,986,814	0	11,986,814	0.00%	547,849	522,429	0	522,429	
2049	July 1, 2048	12,339,683	0	12,339,683	0.00%	573,351	547,389	0	547,389	
2050	July 1, 2049	12,702,444	0	12,702,444	0.00%	599,188	569,368	0	569,368	

## APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

### ALTERNATIVE FUNDING SCENARIO (OPEN GROUP)

6.50% discount rate and increasing at 3.00% per year									
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 expected 6.50% return	III. Net OPEB Liability (Asset) ("NOL") [I. - II.]	IV Funded Ratio [II. / I.]	V. Service Cost	VI. Employer Share of Premiums / Claims	VII. Annual Funding / (Payments)	VIII. Total Employer Payments [VI. + VII.]
2019	July 1, 2018	3,331,560	0	3,331,560	0.00%	78,401	164,087	0	164,087
2020	July 1, 2019	3,450,816	88,049	3,362,767	2.55%	88,083	171,471	85,320	256,791
2021	July 1, 2020	3,581,263	184,463	3,396,800	5.15%	87,938	177,604	87,880	265,484
2022	July 1, 2021	3,691,467	287,144	3,404,323	7.78%	93,642	203,580	90,516	294,096
2023	July 1, 2022	3,801,274	399,220	3,402,054	10.50%	97,022	215,897	93,231	309,128
2024	July 1, 2023	3,908,436	521,383	3,387,053	13.34%	97,382	228,102	96,028	324,130
2025	July 1, 2024	3,990,147	654,373	3,335,774	16.40%	103,223	257,702	98,909	356,611
2026	July 1, 2025	4,047,314	798,980	3,248,334	19.74%	107,658	289,836	101,876	391,712
2027	July 1, 2026	4,123,607	956,049	3,167,558	23.18%	113,059	280,394	104,932	385,326
2028	July 1, 2027	4,211,504	1,126,481	3,085,023	26.75%	118,095	279,690	108,080	387,770
2029	July 1, 2028	4,288,948	1,311,240	2,977,708	30.57%	123,901	298,964	111,322	410,286
2030	July 1, 2029	4,386,714	1,511,354	2,875,360	34.45%	126,530	290,954	114,662	405,616
2031	July 1, 2030	4,495,230	1,727,922	2,767,308	38.44%	134,284	289,858	118,102	407,960
2032	July 1, 2031	4,589,499	1,962,117	2,627,382	42.75%	139,402	302,782	121,645	424,427
2033	July 1, 2032	4,715,424	2,215,191	2,500,233	46.98%	145,038	298,580	125,294	423,874
2034	July 1, 2033	4,841,204	2,488,480	2,352,724	51.40%	149,750	311,609	129,053	440,662
2035	July 1, 2034	4,976,606	2,783,412	2,193,194	55.93%	155,524	307,984	132,925	440,909
2036	July 1, 2035	5,133,981	3,101,511	2,032,470	60.41%	161,543	309,264	136,913	446,177
2037	July 1, 2036	5,297,108	3,444,402	1,852,706	65.02%	167,408	309,012	141,020	450,032
2038	July 1, 2037	5,502,861	3,813,819	1,689,042	69.31%	173,834	296,927	145,251	442,178
2039	July 1, 2038	5,715,045	4,211,615	1,503,430	73.69%	180,134	309,787	149,609	459,396
2040	July 1, 2039	5,977,224	4,639,765	1,337,459	77.62%	186,820	284,316	154,097	438,413
2041	July 1, 2040	6,241,759	5,100,376	1,141,383	81.71%	193,633	304,553	158,720	463,273
2042	July 1, 2041	6,512,375	5,595,698	916,677	85.92%	202,025	321,878	163,482	485,360
2043	July 1, 2042	6,785,085	6,128,130	656,955	90.32%	210,451	344,582	168,386	512,968
2044	July 1, 2043	7,044,512	6,700,231	344,281	95.11%	219,511	381,165	173,438	554,603
2045	July 1, 2044	7,308,342	7,314,732	(6,390)	100.09%	229,072	401,550	178,641	580,191
2046	July 1, 2045	7,556,852	7,974,545	(417,693)	105.53%	239,645	440,338	0	440,338
2047	July 1, 2046	7,787,485	8,492,890	(705,405)	109.06%	250,840	481,460	0	481,460
2048	July 1, 2047	7,999,907	9,044,928	(1,045,021)	113.06%	262,627	522,429	0	522,429
2049	July 1, 2048	8,210,815	9,632,848	(1,422,033)	117.32%	274,591	547,389	0	547,389
2050	July 1, 2049	8,423,758	10,258,983	(1,835,225)	121.79%	288,362	569,368	0	569,368
2051	July 1, 2050	8,678,480	10,925,817	(2,247,337)	125.90%	302,181	556,878	0	556,878
2052	July 1, 2051	8,944,994	11,635,995	(2,691,001)	130.08%	316,416	574,884	0	574,884
2053	July 1, 2052	9,253,311	12,392,335	(3,139,024)	133.92%	331,382	592,497	0	592,497
2054	July 1, 2053	9,616,885	13,197,837	(3,580,952)	137.24%	347,580	550,006	0	550,006
2055	July 1, 2054	10,072,655	14,055,696	(3,983,041)	139.54%	364,122	583,974	0	583,974
2056	July 1, 2055	10,457,525	14,969,316	(4,511,791)	143.14%	381,928	611,662	0	611,662
2057	July 1, 2056	10,910,687	15,942,322	(5,031,635)	146.12%	400,180	590,352	0	590,352
2058	July 1, 2057	11,585,240	16,978,573	(5,393,333)	146.55%	419,186	614,336	0	614,336

## APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

### CONTRIBUTION PROJECTION DISCLOSURES

#### **Projection of Contributions using a July 1, 2018 Valuation Date**

<b>For the Period Ending on the Measurement Date</b>	<b>I. Payroll for current employees</b>	<b>II. Payroll for future employees</b>	<b>III. Total employee payroll [I.+II.]</b>	<b>IV. Contributions from current employees</b>	<b>V. Employer Payments for current plan members</b>	<b>VI. Employer Payments for future employees</b>	<b>VII. Total Payments [IV.+V.+VI.]</b>
July 1, 2018	2,062,198	0	2,062,198	0	164,087	0	164,087
July 1, 2019	2,001,746	122,318	2,124,064	0	171,470	0	171,470
July 1, 2020	1,881,831	305,955	2,187,786	0	177,604	0	177,604
July 1, 2021	1,847,902	405,518	2,253,420	0	203,580	0	203,580
July 1, 2022	1,813,833	507,190	2,321,023	0	215,897	0	215,897
July 1, 2023	1,662,915	727,739	2,390,654	0	228,102	0	228,102
July 1, 2024	1,592,278	870,096	2,462,374	0	257,702	0	257,702
July 1, 2025	1,529,778	1,006,467	2,536,245	0	289,836	0	289,836
July 1, 2026	1,484,214	1,128,118	2,612,332	0	280,394	0	280,394
July 1, 2027	1,420,879	1,269,823	2,690,702	0	279,690	0	279,690
July 1, 2028	1,380,566	1,390,857	2,771,423	0	298,964	0	298,964
July 1, 2029	1,257,531	1,597,035	2,854,566	0	290,954	0	290,954
July 1, 2030	1,212,138	1,728,065	2,940,203	0	287,179	2,679	289,858
July 1, 2031	1,141,397	1,887,012	3,028,409	0	296,338	6,444	302,782
July 1, 2032	1,083,694	2,035,567	3,119,261	0	286,679	11,901	298,580
July 1, 2033	1,021,576	2,191,263	3,212,839	0	292,738	18,871	311,609
July 1, 2034	977,545	2,331,679	3,309,224	0	280,908	27,076	307,984
July 1, 2035	963,742	2,444,759	3,408,501	0	277,558	31,706	309,264
July 1, 2036	944,663	2,566,093	3,510,756	0	270,193	38,819	309,012
July 1, 2037	952,572	2,663,507	3,616,079	0	250,943	45,984	296,927
July 1, 2038	950,458	2,774,103	3,724,561	0	258,727	51,060	309,787
July 1, 2039	966,785	2,869,513	3,836,298	0	226,895	57,421	284,316
July 1, 2040	952,653	2,998,734	3,951,387	0	238,861	65,692	304,553
July 1, 2041	954,141	3,115,788	4,069,929	0	243,118	78,760	321,878
July 1, 2042	956,774	3,235,253	4,192,027	0	250,017	94,565	344,582
July 1, 2043	937,593	3,380,195	4,317,788	0	267,706	113,459	381,165
July 1, 2044	906,468	3,540,854	4,447,322	0	266,135	135,415	401,550
July 1, 2045	841,864	3,738,878	4,580,742	0	290,871	149,467	440,338
July 1, 2046	761,087	3,957,077	4,718,164	0	313,084	168,376	481,460
July 1, 2047	676,682	4,183,027	4,859,709	0	334,577	187,852	522,429
July 1, 2048	555,677	4,449,823	5,005,500	0	344,326	203,063	547,389
July 1, 2049	492,624	4,663,041	5,155,665	0	348,823	220,545	569,368
July 1, 2050	416,047	4,894,288	5,310,335	0	319,062	237,816	556,878
July 1, 2051	371,826	5,097,819	5,469,645	0	315,665	259,219	574,884
July 1, 2052	323,301	5,310,433	5,633,734	0	310,327	282,170	592,497
July 1, 2053	251,781	5,550,965	5,802,746	0	243,499	306,507	550,006
July 1, 2054	194,426	5,782,402	5,976,828	0	249,394	334,580	583,974
July 1, 2055	173,726	5,982,407	6,156,133	0	251,590	360,072	611,662
July 1, 2056	143,852	6,196,965	6,340,817	0	202,467	387,885	590,352
July 1, 2057	97,987	6,433,055	6,531,042	0	196,810	417,526	614,336

## APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

### CONTRIBUTION PROJECTION DISCLOSURES (CONTINUED)

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 employee 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, 2058	73,974	6,652,999	6,726,973	0	195,905	447,101	643,006
July 1, 2059	57,832	6,870,950	6,928,782	0	177,759	477,539	655,298
July 1, 2060	39,608	7,097,037	7,136,645	0	169,532	509,395	678,927
July 1, 2061	19,675	7,331,069	7,350,744	0	160,030	543,949	703,979
July 1, 2062	15,546	7,555,720	7,571,266	0	156,223	580,368	736,591
July 1, 2063	12,295	7,786,109	7,798,404	0	152,495	618,949	771,444
July 1, 2064	9,050	8,023,306	8,032,356	0	142,778	660,746	803,524
July 1, 2065	0	8,273,327	8,273,327	0	139,242	702,338	841,580
July 1, 2066	0	8,521,527	8,521,527	0	136,088	746,704	882,792
July 1, 2067	0	8,777,173	8,777,173	0	132,980	793,898	926,878
July 1, 2068	0	9,040,488	9,040,488	0	130,112	842,250	972,362
July 1, 2069	0	9,311,703	9,311,703	0	127,350	892,663	1,020,013
July 1, 2070	0	9,591,054	9,591,054	0	124,666	944,931	1,069,597
July 1, 2071	0	9,878,786	9,878,786	0	121,803	999,657	1,121,460
July 1, 2072	0	10,175,150	10,175,150	0	118,718	1,055,979	1,174,697
July 1, 2073	0	10,480,405	10,480,405	0	115,136	1,114,196	1,229,332
July 1, 2074	0	10,794,817	10,794,817	0	111,025	1,174,985	1,286,010
July 1, 2075	0	11,118,662	11,118,662	0	106,311	1,237,624	1,343,935
July 1, 2076	0	11,452,222	11,452,222	0	100,905	1,302,631	1,403,536
July 1, 2077	0	11,795,789	11,795,789	0	94,816	1,371,141	1,465,957
July 1, 2078	0	12,149,663	12,149,663	0	88,184	1,442,252	1,530,436
July 1, 2079	0	12,514,153	12,514,153	0	80,953	1,515,878	1,596,831
July 1, 2080	0	12,889,578	12,889,578	0	73,345	1,593,239	1,666,584
July 1, 2081	0	13,276,265	13,276,265	0	65,457	1,673,895	1,739,352
July 1, 2082	0	13,674,553	13,674,553	0	57,600	1,757,786	1,815,386
July 1, 2083	0	14,084,790	14,084,790	0	49,877	1,845,514	1,895,391
July 1, 2084	0	14,507,334	14,507,334	0	42,675	1,937,259	1,979,934
July 1, 2085	0	14,942,554	14,942,554	0	35,849	2,033,284	2,069,133
July 1, 2086	0	15,390,831	15,390,831	0	29,683	2,133,640	2,163,323
July 1, 2087	0	15,852,556	15,852,556	0	24,246	2,238,770	2,263,016
July 1, 2088	0	16,328,133	16,328,133	0	19,473	2,349,080	2,368,553
July 1, 2089	0	16,817,977	16,817,977	0	15,401	2,464,399	2,479,800
July 1, 2090	0	17,322,516	17,322,516	0	12,015	2,585,172	2,597,187
July 1, 2091	0	17,842,191	17,842,191	0	9,242	2,711,573	2,720,815
July 1, 2092	0	18,377,457	18,377,457	0	7,084	2,843,806	2,850,890
July 1, 2093	0	18,928,781	18,928,781	0	5,341	2,982,219	2,987,560
July 1, 2094	0	19,496,644	19,496,644	0	3,936	3,126,961	3,130,897
July 1, 2095	0	20,081,543	20,081,543	0	2,868	3,278,378	3,281,246
July 1, 2096	0	20,683,989	20,683,989	0	2,044	3,436,735	3,438,779
July 1, 2097	0	21,304,509	21,304,509	0	1,437	3,602,463	3,603,900

## APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

### FIDUCIARY NET POSITION PROJECTION DISCLOSURES

#### 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. Portion of Employer Contributions for Current Plan Members	III. Total Benefit Payments	IV. Administrative Expense	V. Total Contributions to Trust	VI. Contributions to Trust for Current Plan Members	VII. Investment Earnings	VIII. Ending Fiduciary Net Position for Current Plan Members
July 1, 2018	0	164,087	164,087	0	0	0	0	0
July 1, 2019	0	171,470	171,470	0	0	0	0	0
July 1, 2020	0	177,604	177,604	0	0	0	0	0
July 1, 2021	0	203,580	203,580	0	0	0	0	0
July 1, 2022	0	215,897	215,897	0	0	0	0	0
July 1, 2023	0	228,102	228,102	0	0	0	0	0
July 1, 2024	0	257,702	257,702	0	0	0	0	0
July 1, 2025	0	289,836	289,836	0	0	0	0	0
July 1, 2026	0	280,394	280,394	0	0	0	0	0
July 1, 2027	0	279,690	279,690	0	0	0	0	0
July 1, 2028	0	298,964	298,964	0	0	0	0	0
July 1, 2029	0	290,954	290,954	0	0	0	0	0
July 1, 2030	0	287,179	289,858	0	0	0	0	0
July 1, 2031	0	296,338	302,782	0	0	0	0	0
July 1, 2032	0	286,679	298,580	0	0	0	0	0
July 1, 2033	0	292,738	311,609	0	0	0	0	0
July 1, 2034	0	280,908	307,984	0	0	0	0	0
July 1, 2035	0	277,558	309,264	0	0	0	0	0
July 1, 2036	0	270,193	309,012	0	0	0	0	0
July 1, 2037	0	250,943	296,927	0	0	0	0	0
July 1, 2038	0	258,727	309,787	0	0	0	0	0
July 1, 2039	0	226,895	284,316	0	0	0	0	0
July 1, 2040	0	238,861	304,553	0	0	0	0	0
July 1, 2041	0	243,118	321,878	0	0	0	0	0
July 1, 2042	0	250,017	344,582	0	0	0	0	0
July 1, 2043	0	267,706	381,165	0	0	0	0	0
July 1, 2044	0	266,135	401,550	0	0	0	0	0
July 1, 2045	0	290,871	440,338	0	0	0	0	0
July 1, 2046	0	313,084	481,460	0	0	0	0	0
July 1, 2047	0	334,577	522,429	0	0	0	0	0
July 1, 2048	0	344,326	547,389	0	0	0	0	0
July 1, 2049	0	348,823	569,368	0	0	0	0	0
July 1, 2050	0	319,062	556,878	0	0	0	0	0
July 1, 2051	0	315,665	574,884	0	0	0	0	0
July 1, 2052	0	310,327	592,497	0	0	0	0	0
July 1, 2053	0	243,499	550,006	0	0	0	0	0
July 1, 2054	0	249,394	583,974	0	0	0	0	0
July 1, 2055	0	251,590	611,662	0	0	0	0	0
July 1, 2056	0	202,467	590,352	0	0	0	0	0
July 1, 2057	0	196,810	614,336	0	0	0	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, 2018 Valuation Date

For the Period Ending on the Measurement Date	I. Beginning Fiduciary Net Position for Current Plan Members	II. Portion of Employer Contributions for Current Plan Members	III. Total Benefit Payments	IV. Administrative Expense	V. Total Contributions to Trust	VI. Contributions to Trust for Current Plan Members	VII. Investment Earnings	VIII. Ending Fiduciary Net Position for Current Plan Members
July 1, 2058	0	195,905	643,006	0	0	0	0	0
July 1, 2059	0	177,759	655,298	0	0	0	0	0
July 1, 2060	0	169,532	678,927	0	0	0	0	0
July 1, 2061	0	160,030	703,979	0	0	0	0	0
July 1, 2062	0	156,223	736,591	0	0	0	0	0
July 1, 2063	0	152,495	771,444	0	0	0	0	0
July 1, 2064	0	142,778	803,524	0	0	0	0	0
July 1, 2065	0	139,242	841,580	0	0	0	0	0
July 1, 2066	0	136,088	882,792	0	0	0	0	0
July 1, 2067	0	132,980	926,878	0	0	0	0	0
July 1, 2068	0	130,112	972,362	0	0	0	0	0
July 1, 2069	0	127,350	1,020,013	0	0	0	0	0
July 1, 2070	0	124,666	1,069,597	0	0	0	0	0
July 1, 2071	0	121,803	1,121,460	0	0	0	0	0
July 1, 2072	0	118,718	1,174,697	0	0	0	0	0
July 1, 2073	0	115,136	1,229,332	0	0	0	0	0
July 1, 2074	0	111,025	1,286,010	0	0	0	0	0
July 1, 2075	0	106,311	1,343,935	0	0	0	0	0
July 1, 2076	0	100,905	1,403,536	0	0	0	0	0
July 1, 2077	0	94,816	1,465,957	0	0	0	0	0
July 1, 2078	0	88,184	1,530,436	0	0	0	0	0
July 1, 2079	0	80,953	1,596,831	0	0	0	0	0
July 1, 2080	0	73,345	1,666,584	0	0	0	0	0
July 1, 2081	0	65,457	1,739,352	0	0	0	0	0
July 1, 2082	0	57,600	1,815,386	0	0	0	0	0
July 1, 2083	0	49,877	1,895,391	0	0	0	0	0
July 1, 2084	0	42,675	1,979,934	0	0	0	0	0
July 1, 2085	0	35,849	2,069,133	0	0	0	0	0
July 1, 2086	0	29,683	2,163,323	0	0	0	0	0
July 1, 2087	0	24,246	2,263,016	0	0	0	0	0
July 1, 2088	0	19,473	2,368,553	0	0	0	0	0
July 1, 2089	0	15,401	2,479,800	0	0	0	0	0
July 1, 2090	0	12,015	2,597,187	0	0	0	0	0
July 1, 2091	0	9,242	2,720,815	0	0	0	0	0
July 1, 2092	0	7,084	2,850,890	0	0	0	0	0
July 1, 2093	0	5,341	2,987,560	0	0	0	0	0
July 1, 2094	0	3,936	3,130,897	0	0	0	0	0
July 1, 2095	0	2,868	3,281,246	0	0	0	0	0
July 1, 2096	0	2,044	3,438,779	0	0	0	0	0
July 1, 2097	0	1,437	3,603,900	0	0	0	0	0



## APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

### BENEFIT PAYMENT PROJECTION DISCLOSURES

#### 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	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, 2018	0	164,087	0	164,087	0	164,087	164,087
July 1, 2019	0	171,470	0	171,470	0	166,515	166,515
July 1, 2020	0	177,604	0	177,604	0	167,487	167,487
July 1, 2021	0	203,580	0	203,580	0	186,436	186,436
July 1, 2022	0	215,897	0	215,897	0	192,002	192,002
July 1, 2023	0	228,102	0	228,102	0	196,994	196,994
July 1, 2024	0	257,702	0	257,702	0	216,125	216,125
July 1, 2025	0	289,836	0	289,836	0	236,051	236,051
July 1, 2026	0	280,394	0	280,394	0	221,762	221,762
July 1, 2027	0	279,690	0	279,690	0	214,812	214,812
July 1, 2028	0	298,964	0	298,964	0	222,980	222,980
July 1, 2029	0	290,954	0	290,954	0	210,735	210,735
July 1, 2030	0	287,179	0	287,179	0	201,990	201,990
July 1, 2031	0	296,338	0	296,338	0	202,408	202,408
July 1, 2032	0	286,679	0	286,679	0	190,152	190,152
July 1, 2033	0	292,738	0	292,738	0	188,560	188,560
July 1, 2034	0	280,908	0	280,908	0	175,711	175,711
July 1, 2035	0	277,558	0	277,558	0	168,598	168,598
July 1, 2036	0	270,193	0	270,193	0	159,382	159,382
July 1, 2037	0	250,943	0	250,943	0	143,749	143,749
July 1, 2038	0	258,727	0	258,727	0	143,925	143,925
July 1, 2039	0	226,895	0	226,895	0	122,570	122,570
July 1, 2040	0	238,861	0	238,861	0	125,305	125,305
July 1, 2041	0	243,118	0	243,118	0	123,853	123,853
July 1, 2042	0	250,017	0	250,017	0	123,686	123,686
July 1, 2043	0	267,706	0	267,706	0	128,610	128,610
July 1, 2044	0	266,135	0	266,135	0	124,161	124,161
July 1, 2045	0	290,871	0	290,871	0	131,779	131,779
July 1, 2046	0	313,084	0	313,084	0	137,744	137,744
July 1, 2047	0	334,577	0	334,577	0	142,946	142,946
July 1, 2048	0	344,326	0	344,326	0	142,860	142,860
July 1, 2049	0	348,823	0	348,823	0	140,543	140,543
July 1, 2050	0	319,062	0	319,062	0	124,838	124,838
July 1, 2051	0	315,665	0	315,665	0	119,939	119,939
July 1, 2052	0	310,327	0	310,327	0	114,504	114,504
July 1, 2053	0	243,499	0	243,499	0	87,249	87,249
July 1, 2054	0	249,394	0	249,394	0	86,779	86,779
July 1, 2055	0	251,590	0	251,590	0	85,013	85,013
July 1, 2056	0	202,467	0	202,467	0	66,437	66,437
July 1, 2057	0	196,810	0	196,810	0	62,715	62,715

## APPENDIX I – LIABILITIES, ASSETS, & CASH FLOWS

### BENEFIT PAYMENT PROJECTION DISCLOSURES (CONTINUED)

#### 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	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, 2058	0	195,905	0	195,905	0	60,622	60,622
July 1, 2059	0	177,759	0	177,759	0	53,418	53,418
July 1, 2060	0	169,532	0	169,532	0	49,473	49,473
July 1, 2061	0	160,030	0	160,030	0	45,351	45,351
July 1, 2062	0	156,223	0	156,223	0	42,992	42,992
July 1, 2063	0	152,495	0	152,495	0	40,754	40,754
July 1, 2064	0	142,778	0	142,778	0	37,054	37,054
July 1, 2065	0	139,242	0	139,242	0	35,092	35,092
July 1, 2066	0	136,088	0	136,088	0	33,306	33,306
July 1, 2067	0	132,980	0	132,980	0	31,605	31,605
July 1, 2068	0	130,112	0	130,112	0	30,030	30,030
July 1, 2069	0	127,350	0	127,350	0	28,543	28,543
July 1, 2070	0	124,666	0	124,666	0	27,134	27,134
July 1, 2071	0	121,803	0	121,803	0	25,745	25,745
July 1, 2072	0	118,718	0	118,718	0	24,367	24,367
July 1, 2073	0	115,136	0	115,136	0	22,949	22,949
July 1, 2074	0	111,025	0	111,025	0	21,490	21,490
July 1, 2075	0	106,311	0	106,311	0	19,983	19,983
July 1, 2076	0	100,905	0	100,905	0	18,419	18,419
July 1, 2077	0	94,816	0	94,816	0	16,807	16,807
July 1, 2078	0	88,184	0	88,184	0	15,180	15,180
July 1, 2079	0	80,953	0	80,953	0	13,533	13,533
July 1, 2080	0	73,345	0	73,345	0	11,906	11,906
July 1, 2081	0	65,457	0	65,457	0	10,319	10,319
July 1, 2082	0	57,600	0	57,600	0	8,818	8,818
July 1, 2083	0	49,877	0	49,877	0	7,415	7,415
July 1, 2084	0	42,675	0	42,675	0	6,161	6,161
July 1, 2085	0	35,849	0	35,849	0	5,026	5,026
July 1, 2086	0	29,683	0	29,683	0	4,041	4,041
July 1, 2087	0	24,246	0	24,246	0	3,206	3,206
July 1, 2088	0	19,473	0	19,473	0	2,500	2,500
July 1, 2089	0	15,401	0	15,401	0	1,920	1,920
July 1, 2090	0	12,015	0	12,015	0	1,455	1,455
July 1, 2091	0	9,242	0	9,242	0	1,087	1,087
July 1, 2092	0	7,084	0	7,084	0	809	809
July 1, 2093	0	5,341	0	5,341	0	592	592
July 1, 2094	0	3,936	0	3,936	0	424	424
July 1, 2095	0	2,868	0	2,868	0	300	300
July 1, 2096	0	2,044	0	2,044	0	208	208
July 1, 2097	0	1,437	0	1,437	0	142	142

## APPENDIX II – PLAN PROVISIONS

### Effective Date

GASB 45 was adopted July 1, 2007

GASB 74 was adopted for the fiscal year ending June 30, 2017

GASB 75 was adopted for the fiscal year ending June 30, 2018

### Plan Year

July 1 through June 30.

### Premium Effective Date

**Medicare Supplement Plans:** effective January 1, 2019

**Non-Medicare Plans:** effective July 1, 2019

**Dental Plans:** N/A

### Creditable Service

Elapsed time from date of hire to termination of service date.

### Benefits Offered

Comprehensive Medical Insurance offered through Blue Cross of Massachusetts and \$2,000 of group term Life Insurance.

### Excise Tax

Under the Patient Protection and Affordable Care Act (“PPACA”), a 40% tax will be imposed on the cost of medical benefits in excess of a specified threshold.

### Medicare Part B

The Town does not reimburse Medicare Part B.

The Town does not reimburse Medicare Part B Penalties.

### Surviving Spouse Coverage

Surviving spouses pay 100% of premiums.

## APPENDIX II – PLAN PROVISIONS

### Eligibility

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

### Participant Contributions

Group	Individual	Family
<b>Medical</b>	<ul style="list-style-type: none"> <li>• 25% of premiums for HMO plans</li> <li>• 40% of premiums for PPO/Indemnity plans</li> </ul>	<ul style="list-style-type: none"> <li>• 25% of premiums for HMO plans</li> <li>• 40% of premiums for PPO/Indemnity plans</li> </ul>
<b>Dental</b>	100%	100%
<b>Life</b>	50%	N/A

### APPENDIX III – ACTUARIAL METHODS & ASSUMPTIONS

<u>Pre-Retirement Mortality</u>	RP-2000 Employees Mortality Table projected generationally with scale BB and a base year 2009 for males and females
<u>Post-Retirement Mortality</u>	RP-2000 Healthy Annuitant Mortality Table projected generationally with scale BB and a base year 2009 for males and females
<u>Disabled Mortality</u>	RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale BB and a base year 2012 for males and females
<u>Mortality Experience Study</u>	The mortality assumptions reflect recent experience analysis published in 2014 (based on the years 2006-2011), updated to reflect data through January 1, 2015 for post-retirement mortality, and professional judgement. As such, mortality assumptions reflect observed current mortality as well as expected mortality improvements.
<u>Discount Rate</u>	3.00% per annum (previously 3.25%)
<u>Long Term Rate of Return</u>	6.50% (based on sample investment policy)
<u>Municipal Bond Rate</u>	2.98% as of July 01, 2018 (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, 2018

## APPENDIX III – ACTUARIAL METHODS & ASSUMPTIONS

### Excise Tax

The PPACA Excise tax is expected to take effect for tax years beginning after December 31, 2021. The projected 2022 threshold amounts are \$12,511 for single coverage and \$32,676 for family coverage. For qualified retirees and those engaged in high risk professions, a "kicker" amount of \$1,650 for single coverage and \$3,450 for family coverage is expected to be added to the above thresholds.

### 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	Public Safety Male	Public Safety 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%	1.00%
50 - 51	1.00%	1.50%	2.00%	1.50%	2.00%
52	1.00%	2.50%	2.00%	1.50%	2.00%
53	1.00%	2.50%	2.00%	1.50%	5.00%
54	2.00%	2.50%	2.00%	2.00%	7.50%
55	2.00%	5.50%	6.00%	5.00%	15.00%
56	2.50%	6.50%	20.00%	15.00%	10.00%
57	2.50%	6.50%	40.00%	35.00%	10.00%
58	5.00%	6.50%	50.00%	35.00%	10.00%
59	6.50%	6.50%	50.00%	35.00%	15.00%
60	12.00%	5.00%	40.00%	35.00%	20.00%
61	20.00%	13.00%	40.00%	35.00%	20.00%
62	30.00%	15.00%	35.00%	35.00%	25.00%
63	25.00%	12.50%	35.00%	35.00%	25.00%
64	22.00%	18.00%	35.00%	35.00%	30.00%
65	40.00%	15.00%	35.00%	35.00%	100.00%
66	25.00%	20.00%	40.00%	35.00%	100.00%
67	25.00%	20.00%	40.00%	30.00%	100.00%
68	30.00%	25.00%	40.00%	30.00%	100.00%
69	30.00%	20.00%	40.00%	30.00%	100.00%
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%

In the absence of census data specifying which employees are teachers it was assumed that two thirds of school employees are teachers. If available, actual census data was used.

### 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 2019 grading down 0.00% per year for an ultimate trend rate of 4.50%.

**Non-Medicare Plans:** Initial Trend of 4.50% for 2019 grading down 0.00% per year for an ultimate trend rate of 4.50%.

**Dental Plans:** N/A

#### Participation Rate

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

#### Spouse Participation Rate

It was assumed that 80% of male employees and 70% of female employees who elect retiree healthcare coverage for themselves would also elect coverage for a spouse upon retirement.

#### Spouse Demographics

It was assumed that a male spouse is three years older than a female spouse and same sex spouses were assumed to be the same age. For current retirees, the actual census information was used, if available.

#### Compensation Increases

3.00% per year.

#### Inflation Rate

2.75% 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.

<b>Impact of Implicit Subsidy</b>		
	<b>As of the Measurement Date</b>	
<b>Impact on Liability</b>	<b><u>July 1, 2018</u></b>	<b><u>July 1, 2017</u></b>
I. Actuarial Accrued Liability	4,952,330	5,068,912
II. Actuarial Accrued Liability (Excluding Implicit Subsidy)	<u>3,957,005</u>	<u>N/A</u>
III. Liability from Implicit Subsidy [I. - II.]	995,325	N/A

  

	<b>For the Measurement Period Ending</b>	
<b>Impact on Payments</b>	<b><u>July 1, 2018</u></b>	<b><u>July 1, 2017</u></b>
IV. Employer Payments (Including Implicit Subsidy)	164,087	129,345
V. Actual Employer Payments	<u>131,737</u>	<u>N/A</u>
VI. Implicit Subsidy [IV. - V.]	32,350	N/A

### 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	4,916	3,099	44 & Under	9,663	6,332	65 to 69	4,468	4,468
25 to 29	7,253	3,225	45 to 49	10,614	7,995	70 to 74	4,468	4,468
30 to 34	9,165	4,048	50 to 54	12,486	10,529	75 to 79	4,468	4,468
35 to 39	9,442	5,082	55 to 59	14,435	13,689	80 to 84	4,468	4,468
40 to 44	9,663	6,332	60 to 64	17,177	17,566	85 to 89	4,468	4,468
45 to 49	10,614	7,995	65 to 69	20,591	21,912	90 & Over	4,468	4,468
50 to 54	12,486	10,529	70 to 74	24,282	26,258			
55 to 59	14,435	13,689	75 to 79	28,199	31,013			
60 to 64	17,177	17,566	80 to 84	32,332	35,647			
65 to 69	20,591	21,912	85 to 89	36,907	40,803			
70 & Over	24,282	26,258	90 & Over	36,907	40,803			

\*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, 2018 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	July 1, 2016
<b>A. Average Age at Hire</b>	38.10	37.38
<b>B. Average Service</b>	<u>11.87</u>	<u>12.42</u>
<b>C. Average Current Age</b>	49.97	49.80

### Retired Employees & Spouses

Valuation Date	July 1, 2018	July 1, 2016
<b>A. Under Age 65</b>	7	6
<b>B. Age 65 &amp; Over</b>	<u>19</u>	<u>20</u>
<b>C. Total</b>	26	26

### 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									2
30-34	2	1	1							4
35-39	1	1	1	1						4
40-44										
45-49	3	1			1					5
50-54			1			2	1			4
55-59	1	1		1	1					4
60-64			3		1					4
65-69		2								2
70+			1	1		1				3
<b>Total</b>	10	6	7	3	3	3	1			33

## APPENDIX IV - PLAN DEMOGRAPHICS

### Plan Offerings

	Number of Contracts			
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>	<u>Total</u>
HMO	16		17	33
Managed Blue	6			6
Medex II	4	5		9
Total	26	5	17	48

	Per Contract Costs (monthly)		
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>
HMO	919.38		2,482.33
Managed Blue	309.58	619.16	
Medex II	399.19	798.38	
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.